May 29, 2020

Mr. Keith Kawaoka, Acting Director
Office of Environmental Quality Control
Department of Health
State of Hawaii
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mr. Kawaoka:

Subject: Draft Environmental Assessment
Windward District Operations Base Station - Kailua Beach Park
Tax Map Key: [1] 4-3-009: 002
Kailua, District of Koolaupoko, Oahu, Hawaii

The Department of Design and Construction, City and County of Honolulu, has reviewed the Draft Environmental Assessment (DEA) for the subject project and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish this determination in the next Environmental Notice.

The project will provide a permanent District Operations Base Station facility for the Department of Emergency Services’ Ocean Safety Division and Lifeguard Services personnel assigned to District 2 Windward Oahu.

A PDF of the DEA will be emailed to the Office of Environmental Quality Control with the Environmental Notice publication form. One (1) printed copy of the DEA will be deposited with the Hawaii Documents Center.

Should there be any questions, please contact Bonnie Tung, Project Manager, at 768-8451.

Sincerely,

For Mark Yonamine, P.E.
Director

20-279
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<td>Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)</td>
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<td>(1) Propose the use of state or county lands or the use of state or county funds</td>
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<td>Other required permits and approvals</td>
<td>Special Management Area Use Permit, Water and Water System Requirement, Building Permit, Certificate of Occupancy, Grading, Soil Erosion Control Plan, Waiver, Street Usage, Noise, DCAB approval</td>
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<tr>
<td>Proposing/determining agency</td>
<td>Department of Design and Construction, City and County of Honolulu for Department of Emergency Services</td>
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<tr>
<td>Agency contact name</td>
<td>Ms. Bonnie Tung</td>
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Was this submittal prepared by a consultant?
Yes

Consultant

Gerald Park Urban Planner

Consultant contact name

Gerald Park

Consultant contact email

gpark@gpup.biz

Consultant contact phone

(808) 625-9626

Consultant address

95-595 Kanamee Street #324
Mililani, Hawaii 96789-1431
United States
Map It

Action summary

The action is will provide a permanent District Operations Base Station at Kailua Beach Park for District 2 Windward Oahu. It is one step in implementing the Ocean Safety Division Master Plan (2019) for Oahu.

The facility will be constructed on the mauka side of Mokuula Drive on the site of a former vehicle turnout. A single-story structure of approximately 1,680 square feet is proposed. The structure would house an office, vehicle garage, and space for equipment storage and maintenance. Nine off-street parking stalls will be provided.

Reasons supporting determination

See Section 8 of the Draft Environmental Assessment. Significant adverse short and long-term environmental impacts are not anticipated or can be mitigated by measures disclosed in the assessment. The facility is proposed in an Extreme Tsunami Inundation Zone. The structure is designed to withstand velocity waves to the extent practical.

Attached documents (signed agency letter & EA/EIS)

- [Anticipated-FONSI.814421.pdf](Anticipated-FONSI.814421.pdf)

Authorized individual

Gerald Park

Authorization

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

WINDWARD DISTRICT OPERATIONS BASE STATION
AT KAILUA BEACH PARK
Portion Kawaiola Beach Lots, District of Ko'olau Poko, O'ahu, Hawai'i

Prepared in Partial Fulfillment of Chapter 343, Hawai'i Revised Statutes and Hawaii Administrative Rules, Chapter 11, Section 200.1

Prepared for

Department of Emergency Services
City and County of Honolulu
3375 Koapaka Street H450
Honolulu, Hawai'i 96819

Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawai'i 96813

March 2020
Prepared for

DEPARTMENT OF EMERGENCY SERVICES
City and County of Honolulu
3375 Koapaka Street H450
Honolulu, Hawai‘i 96819

DEPARTMENT OF DESIGN AND CONSTRUCTION
City and County of Honolulu
650 South King Street
Honolulu, Hawai‘i 96813

Prepared by

GERALD PARK URBAN PLANNER
95-595 Kaname‘e Street #324
Mililani, Hawai‘i 96789

JEFFREY NISHI & ASSOCIATES/ARCHITECTS
928 Nuuanu Avenue, Suite 201
Honolulu, Hawai‘i 96817

March 2020
# PROJECT PROFILE

| Project: | Windward District Operations Base Station  
|          | Kailua Beach Park |
| Proposing Agency: | Department of Emergency Services  
|          | City and County of Honolulu  
|          | 3375 Koapaka Street H450  
|          | Honolulu, Hawaii'i 96819 |
| Approving Agency: | Department of Emergency Services  
|          | City and County of Honolulu |
| Location: | Por. Kawai'ula Beach Lots  
|          | Kailua, District of Ko'olau Poko, O'ahu, Hawaii'i |
| Tax Map Key: | [1] 4-3-009: 002 |
| Land Area: | 10.441 acres |
| Land Owner: | State of Hawaii'i |
| State Land Use Designation: | Urban |
| General Plan: | Urban Fringe |
| Sustainable Communities Plan: | Ko'olau Poko |
|          | Parks |
|          | Low Density Residential Parks |
|          | Park Symbol at Kailua Beach Park (011) |
|          | P-2 General Preservation |
|          | Inside Special Management Area |
| Existing Use: | Off-street parking, Open space |
| Need for Environmental Assessment: | §11-200-6 (b)(1)(A) and (b)(2)(B) Use of county lands and funds |
| Anticipated Determination: | Finding of No Significant Impact |
| Contact: | Ms. Bonnie Tung, Architect  
|          | Department of Design and Construction  
|          | City and County of Honolulu  
|          | 650 South King Street  
|          | Honolulu, Hawaii'i 96813 |
|          | Telephone: 768-8451  
|          | E: bonnie.tung@honolulu.gov |
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PREFACE

In conjunction with preparing the Draft Environmental Assessment for the Windward District Operations Base Station, comments about the project were solicited from government agencies and adjoining landowners/residents as part of a pre-assessment consultation process. A list of consulted parties is presented in Section 6 of this assessment and all comments received are found in Exhibit A. Responses were not issued to the commenting parties but responses to their comments are incorporated into the body of the assessment.

The Draft Environmental Assessment includes selected architectural, civil, and landscape drawings. Electrical and mechanical drawings are not included. The selected drawings represent a 35% submittal of schematic design plans. The drawings are anticipated to change further along in the design process but what is presented in the environmental assessment represents the basic design of the District Operations Base Station at this time. Should significant changes in site planning and building design materialize, the Department of Design and Construction will determine if a Supplemental Environmental Assessment should be prepared.

Contributors to the environmental assessment include:

ENPRO Environmental  Phase 1 Environmental Site Assessment
AECOS, Inc.           Natural Resources Report
Cultural Surveys Hawai‘i Archaeological Report and Cultural Impact Assessment

While acknowledging the participation of these consultants and drawings provided by the design team, our firm alone is responsible for errors of fact and judgement.

GERALD PARK URBAN PLANNER

Gerald Park, Principal
SECTION 1
DESCRIPTION OF THE PROPOSED ACTION

The Department of Emergency Services, City and County of Honolulu, proposes to construct a District Operations Base Station at the southern end of Kailua Beach Park in the ahupua'a of Kawailoa, District of Ko'olau Poko, O'ahu, Hawai'i. The site is located mauka of Mokulua Drive and bounded by Mokulua Drive (and a portion of Kailua Beach Park and the Pacific Ocean) on the north, residential dwellings on the east, Kaneapu Place on the west, and a section of Mid-Pacific Country Club on the south.

The property is identified as Tax Map Key [1] 4-3-009: 002 with an area of 10.441 acres. The lot is owned by the State of Hawai'i but under jurisdiction of the City and County of Honolulu.

A Vicinity Map and Tax Map are shown as Figures 1 and 2.

A. Introduction

The Department of Emergency Services is comprised of two divisions: Emergency Medical Services Division and Ocean Safety and Lifeguard Services Division (OSD for short). The proposed District Operations Base Station would provide a permanent facility for OSD's Windward District (District 2).

OSD divides the City and County of Honolulu into five operational districts each with a District Operations Base Station (DOBS). The districts are South Shore, Hanauma Bay, Windward, North Shore, and Leeward. A DOBS is the primary support facility for a district's daily operations. OSD also stores supplies and equipment at a DOBS and the facility offer lifeguards a place for meetings, training, and equipment for physical conditioning. DOBS also operates as a Rescue Craft Base Station. Storage rooms house jet-skis, surfboards, signs, tools, miscellaneous equipment, and extra fuel. Space is also set aside for a work bench for minor equipment maintenance and repair.

Ocean Safety Field Supervisors—typically one captain and three lieutenants—are assigned to each district and are responsible for daily operations and lifeguards. Lifeguard complements vary by district and 45 lifeguards are assigned to District 2. Each district provides tower and mobile patrol response services. Tower based services provide vigilance at selected beach locations. Mobile patrol operations provide limited vigilance, emergency medical response, and ocean rescue at all beach and near shore waters locations in the geographical district. These assets are dispatched throughout the district as needed via the 911 system.

OSD provides ocean safety services for 178 miles of O'ahu's coastline at 181 identified beaches including beaches on two off shore islands. Services include ocean rescue prevention, ocean rescue, emergency medical first response, dispatched mobile patrol, education, and injury prevention programs related to ocean safety. OSD's mission is to act as the primary responder for emergencies on the beaches and in the near shore water for the island of O'ahu. Near shore waters extend from the shore line to 1 mile off shore where the vast majority of ocean recreation activities take place (http://www.honolulu.gov/edoshs.html).
B. Purpose of the Proposed Action

The proposed action is one step in implementing the Ocean Safety Division Master Plan (2019). The Master Plan is a facilities plan that provides OSD with conceptual designs and rough order of magnitude construction estimates, identifies planning issues for future selection of OSD sites, and proposes a 10-year calendar to address shortcomings of the current facilities (Master Plan, 2019).

DOBSs are one type of OSD facilities evaluated in the Master Plan. Currently located at Koko Head District Park in Hawaii Kai, the DOBS for the Windward Ocean Safety District is responsible for the area from the Maunalua Bay Boat ramp on the south shore to the beginning of Marine Corps Base Hawai'i on the north end of Kailua Bay. OSD separated out (2019) the Hanauma Bay Nature Preserve from the Windward District as its own organization District to ensure compliance with City ordinance.

The proposed action will provide a permanent DOBS facility for District 2 Windward O'ahu. Kailua Beach Park was selected because on any day Kailua Bay beaches, off shore islands, and the near shore waters are the most utilized in the region for residents and visitors (subsequent to the separation of Hanauma Bay from the Windward District). Relatively safe ocean conditions, a sloping bottom that offers safe swimming areas, absence of hazardous water conditions, a wide sand beach, and panoramic views of the ocean and offshore islands are natural amenities associated with the park. In combination with man-made improvements and recreational services to include lifeguard towers, tree-shaded lawns and landscaping, and the only public boat ramp in Kailua provide an array of ocean related recreation opportunities for all users.

Features contributing to the DOBS location include.

- The site is on undeveloped land that is part of the beach park;
- It is above sea level and the high elevation provides a commanding view of the park and ocean;
- Proximity and accessibility to a nearby road;
- Proximity and accessibility to the boat ramp for launching rescue watercraft;
- A location outside of most natural hazard zones; and
- A location outside the park per se would not remove beach land from recreational use.

C. Technical Characteristics

1. Site

The Windward District Operations Base Station (hereafter "WDOBS" or "Base Station") will occupy a small section of the north facing slope of Pu‘u Hālō. The site is one of two "turnouts" mauka of Mokulua Drive formerly used for limited overflow off-street beach parking. A bus stop is located at the upper turnout. The proposed DOBS will be constructed on the lower turnout (also labeled a parking area for this assessment). The parking area is approximately 5,700 square feet with a compacted surface of asphalt concrete, crushed coral, gravel, and sand. There are no striped parking stalls but an estimated 11 vehicles can be accommodated. Two 12-foot wide driveways enter/exist onto Mokulua Drive.
The Department of Emergency Services recently placed four storage containers on the lot. The containers are used for storing lifeguard material, equipment, and supplies. The containers are a temporary use and will be removed after the WDOBS is constructed. Metal gates secure bot driveways and off-street public parking is no longer allowed on the lot.

2. Demolition and Site Work

Two existing driveway aprons and surface material on the parking area will be demolished. Wood barriers, bollards, and signs and posts will be removed. Existing irrigation controllers will be relocated from the edge of Mokulua Drive.

Grubbing will remove selected coconut, papaya, sea grape, Christmas berry, a cocoloba tree, and scrub vegetation around the perimeter.

The parking area is not large enough to accommodate the proposed WDOBS. The parking area will be graded and sections of the lower slope of Pu‘u Hālō cut (or excavated) to “tuck” improvements into the hillside. Site work is estimated at 230 CY of cut and 260 CY of fill. The project limits have a gross area of roughly 13,700 square feet.

Drainage improvements will meet City storm water quality requirements and mitigate the anticipated increase in runoff attributable to site development. Vegetated biofilter areas will be provided at the front and side of the building, and parking areas to collect and retain some stormwater volume prior to discharge off the site.

3. Building

A rectangular-shaped structure (60'-0" L X 28'-0" W) with a floor area of 1,680 square feet is proposed. Interior space will be separated equally into office/storage and a garage. Two offices, a restroom/shower, kitchenette, and storage rooms occupy the eastern half of the building. A drive-thru garage, equipment repair/maintenance area, and equipment storage are on the western half. A pick-up truck, two jet skis with a trailer, and an ATV will be housed in the garage; rescue boards will be stored in the office/storage half.

Roll up metal doors at the front and back of the garage will allow vehicle movement into and out of the garage.

The structure will be erected on a poured in place concrete slab on concrete spread footings. Exterior walls will be constructed of CMU and support timber framing for a hip roof. The framing will be covered with timber decking topped with asphalt shingles. Wood lap siding will adorn the ridge area under roof. Finish Floor elevation is 21'-0".

The height of the building is 14'-7" measured from existing grade to top of roof. It is within the 25-foot height envelope for the Preservation zoning district.

A 4'-0" foot high semi-continuous concrete wall at the rear of the facility will retain the sloping hillside.

Window mounted units will air condition some rooms.
An automatic fire sprinkler system will not be installed.

4. Access and Parking

A 22-foot wide two-way driveway for access/egress will be provided at the west end of the site. A driveway ramp will negotiate the difference in road grade elevation to a flat platform (or maneuvering area) behind the building. The platform dead-ends at the east end of the building.

A drive-thru driveway will provide direct access between the garage and Mokulua Drive. The drive-thru provides ease of access for deploying mobile equipment and precludes vehicles and trailers from backing into the garage from the street.

Eight regular and one accessible parking stall will be provided. All stalls will be uncovered and separated by a maneuvering area (the flat platform). Five 90° stalls are arranged on the west side of the building and four parallel stalls on the south. A 3'-6" high CMU wall will screen parked vehicles and back of house functions from the street. The two driveways, parking stalls, and maneuvering area are roughly 5,600 square feet and will be concrete paved.

The zoning district establishes a 30' front yard bounded by a street (Mokulua Drive). The five parking stalls perpendicular to the street are less than 20 feet from the edge of the street and encroach into the front yard setback. Mokulua Drive is not a subdivided street thus the setback can be measured from the edge of pavement. A Waiver will be required to allow the encroachment.

Parking stalls to be lost for public use will not be replaced either at a location near the WDOBS or at the beach park.

5. Infrastructure

Water will be drawn from a 6" transmission main in Mokulua Drive. Average daily potable water use is estimated at 860 gallons per day.

A 6" sewer lateral will connect to a municipal 18" sewer main at Alāla Road / Mokulua Drive. Wastewater discharge is estimated at 560 gallons per day.

Electrical power will be drawn from overhead systems on a utility pole at the front of the building and installed in underground conduits to the building.

6. Accessory Uses / Activities

The WDOBS will not be staffed 24/7 but during a major civil emergency it could be staffed 24/7. The facility will be designed to function as a medical casualty collection point in the aftermath of a natural disaster event. Casualty collection points act as medical triage, treatment, and transport coordination facilities. First responders on station would include Professional First Responders, Certified /Licensed Emergency Medical Care Technicians (EMS, OSD, and others) and licensed I Medical Care Intensive Care Technicians (EMS) during such emergencies.
Emergency Services ambulances will not be posted at the WDOBS. However, the facility could be configured to receive an ambulance in the event the facility or parking lot is used as a triage or extrication site.

A fuel dispensing station is not proposed. Fuel for motorized craft will be dispensed from hand containers.

Sirens and a public address system are not planned for the WDOBS.

OSD motorized response vehicles (ATVs, jet skis) are maintained by a contracted mechanic shop off-site. Trucks are serviced at the City’s AES shop. OSD personnel perform routine maintenance of motorized and non-motorized equipment.

7. Landscaping

The Base Station grounds will be modestly landscaped using salt tolerant and drought resistant native or indigenous trees, shrubs, and groundcover. An underground irrigation system will be installed. Landscape irrigation water is estimated at less than 1,000 gallons per day.

8. Sustainability

Design features to promote sustainability and energy efficiency include a south-facing photovoltaic (PV) array to supplement electrical power, heat pump or tankless water heater, LED lighting, ceiling fans, limited window size with energy efficient insulated glass, and low gallon plumbing fixtures.

9. Resiliency

WDOBS will be built to the 2012 International Building Code for minimum hurricane anticipated loads, wind resistant and impact window strength, storm coveralls for all openings, underground electrical connections to primary power, and hardened communication cabling and hardwired connections.

The building will be hardened against structural damage from an extreme tsunami event but flooding can be anticipated with the likely loss of all interior materials. The makai facing wall be braced on the interior and exterior to mitigate against potential collapse.

10. Operations

At least six lifeguards and two supervisors will base from WDOBS for a total complement of 8 persons. Lifeguards and supervisors will muster daily at the Base Station, receive daily assignments, draw their equipment, and post to the beach park.

Lifeguards on duty at Kailua Beach Park work from 9:00 am to 5:30 pm. These hours will change with extended lifeguard working hours effective July 1, 2021 (Revised Ordinances of Honolulu 19-26). The Ordinance does not specify working hours except to say "all daytime hours from dawn to dusk". The Director of Emergency Services will implement the extended working hours for all City and County Water Safety Officers.
WDOBS also will be used for training sessions for all lifeguards assigned to District 2. Training sessions will be conducted during the year and scheduled for different days with the number of sessions per day to be determined. Sessions typically run ninety (90) minutes.

D. Economic Characteristics

Construction costs are estimated at $2.0 million and will be funded by the City and County of Honolulu. Construction will commence after all approvals are obtained. Construction projected to commence sometime in 2021 with completion in 2022.

The property is owned by the State of Hawai‘i. Executive Order 115 set aside the property to the City and County of Honolulu for public purposes (for park purposes).

A small lot of approximately 2,400 square feet [4-3-009: 059] within the boundaries of the overall property was set aside to the City and County of Honolulu Suburban Water System (now Board of Water Supply) by Executive Order 1607. In 1999 the Governor of the State of Hawai‘i signed Executive Order 3790 cancelling Executive Order 1607 and signed Executive Order 3789 setting aside the lot for the public purpose of adding land to Kailua Beach Park.

E. Social Characteristics

The City does not propose to replace the parking area elsewhere at Kailua Beach Park.

Walkways, parking stalls, and public areas will be designed in compliance with rules, regulations, and accessibility standards pursuant to the Americans with Disabilities Act ("ADA").
District Operations Base
Station at Kailua Beach Park
Kailua Beach Park
TMK: 4-3-009 002
10.441 acres

Por. Kawailoa Beach Lots, Kailua G-H-O Oahu

Figure 2
Tax Map
District Operations Base Station at Kailua Beach Park

Department of Design and Construction, City and County of Honolulu
ASPHALTIC SHINGLES
50 YEAR WARRANTY

CROSS SECTION
SCALE: 1" = 1'-0"

MAKAI ELEVATION
SCALE: 1" = 1'-0"

KAILUA ELEVATION
SCALE: 1" = 1'-0"

LANIKAI ELEVATION
SCALE: 1" = 1'-0"

MAUKA ELEVATION
SCALE: 1" = 1'-0"

42" H - CMU
GUARD RAILING

ASPHALTIC SHINGLES
50 YEAR WARRANTY

WOOD LAPPED SIDING

ASPHALTIC SHINGLES
50 YEAR WARRANTY

WOOD GRILL

ASPHALTIC SHINGLES
50 YEAR WARRANTY

PLANT

FLAT FORM - ELEV. 38'-3.5" F.L.

RAMP UP
SECTION 2
DESCRIPTION OF THE AFFECTED ENVIRONMENT

A. Existing Conditions

Site improvements are literally and figuratively almost non-existent. The principal improvements are a vehicle turnaround, entry and exit driveways, and a parking area of approximately 5,700 square feet. The driveways lack directional signage and markings and motorists use either driveway for access and egress. The parking surface is not paved per se but composed of compacted asphalt concrete, crushed coral, gravel, and sand. There are no striped parking stalls. An estimated 11 vehicles can be parked without impeding through access.

Photograph 1. *Mauka* View of Turnout (Project Location) from Mokulua Drive.

Vertical wooden bollards help protect above ground pressure relief valves and electrical boxes spaced along Mokulua Drive. Wooden bollards stand along a section of the eastern edge of the turnout.

The Department of Emergency Services placed four storage (or shipping) containers on the site in July, 2019 (See Photograph 2). The containers are used for storing lifeguard equipment, tools, and supplies. Driveways to the area are gated and off limits to the public. OSD equipment (rescue boards, jet skis, radios et.al.) also are stored at several comfort stations in the beach park.
B. Environmental Characteristics

1. Climate

Kailua shares the subtropical climate that is typical for most of O‘ahu. Temperatures in the area are generally mild and uniform with monthly average temperatures ranging from 70° F in January to 78° F in August. Mean annual rainfall is about 44 inches. The wet months of the year occur between November and April. The prevailing wind blows from the northeast about 80% of the time at velocities of 0 to 22 knots (Park Engineering, 1982).

2. Geology and Soils

The Soil Conservation Service (1972) maps two soil types—Kokokahi very stony clay 0 to 35% slopes and Papaa clay 35 to 70 percent slopes—across the property. Papaa clay occurs as a circular shape in the "middle" of the ocean facing slope of the pu‘u. Kokokahi clay surrounds the Papaa clay. Both clays are up to 36 to 40" thick atop basalt bedrock. The soil is medium to rapidly permeable and the erosion hazard severe. Papaa clay comprises about 70-75% and Kokokahi clay 25 – 30% of the pu‘u.

3. Topography

The property is a sloping lot where ground elevation rises from north to south and west to east. Along Mokulua Drive, ground elevation rises from about 10 feet at Kaneapu Place to 35-40 feet at the entrance to Lanikai (say at the Lanikai monument). From street grade the property rises north to south to elevation 240-feet at the top of Pu‘u Hālōʻi.
Terrain at the toe of the *puʻu* was graded to construct the two turnouts at separate locations. Elevation contours across the site range from a low of 14 feet above mean sea level on the Kailua side (west) to a high of 24 feet on the Lanikai side (east). Ground slope is about 5% along an east-west gradient.

4. Water Resources

a. Groundwater

According to Mink and Lau (See Table 1), the Waimānalo aquifer system of the Windward aquifer sector underlies the project area (Aquifer/Status Code: 30604212). Groundwater in the Waimānalo aquifer system is high level (not in contact with seawater) unconfined fresh water (where the water table is in the upper surface of the aquifer) segmented by dike compartments. Based on its groundwater status code (1111), the aquifer is currently used as a source of drinking water (salinity is <250 mg/l Cl⁻), irreplaceable, and highly vulnerable to contamination.

Table 1. Aquifer Classification System

<table>
<thead>
<tr>
<th>Aquifer Code</th>
<th>30604212</th>
</tr>
</thead>
<tbody>
<tr>
<td>Island Code</td>
<td>3 - Oahu</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>06 - Windward</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>03 - Waimānalo</td>
</tr>
<tr>
<td>Aquifer Type, Hydrology</td>
<td>2 - High Level</td>
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<tr>
<td>Aquifer Condition</td>
<td>1 - Unconfined</td>
</tr>
<tr>
<td>Aquifer Type, Geology</td>
<td>2 - Dike</td>
</tr>
<tr>
<td>Status Code</td>
<td>1111</td>
</tr>
<tr>
<td>Developmental Stage</td>
<td>1 - Currently Used</td>
</tr>
<tr>
<td>Utility</td>
<td>1 - Drinking</td>
</tr>
<tr>
<td>Salinity (in mg/L Cl⁻)</td>
<td>1 - Fresh (&lt;250))</td>
</tr>
<tr>
<td>Uniqueness</td>
<td>1 - Irreplaceable</td>
</tr>
<tr>
<td>Vulnerability to Contamination</td>
<td>1 - High</td>
</tr>
</tbody>
</table>

*Source:* Mink and Lau, 1990.

The hydrologic gradient in the vicinity of the project site is anticipated to be moderate, with a general trend to the north. Groundwater levels may be influenced by leaking infrastructure and tidal fluctuations. The direction and rate of groundwater flow across the project site may be complicated and is not fully understood (ENPRO, 2018).

b. Surface Water

There are no stream, ponds, wetlands or surface water features on the property.

c. Ocean Water

The Pacific Ocean and Kailua Bay are approximately 150 feet to the north and downslope from the property.
The State Department of Health Water Quality Standard Map for O'ahu (2014) classifies the ocean waters at Kailua Beach Park as Marine Waters Class A. Hawai'i Administrative Rules, Title 11, Chapter 54 states the following:

"It is the objective of Class A waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new sewage discharge will be permitted within embayments. No new industrial discharges shall be permitted within embayments, with the exception of: ......." [Note: Industrial discharge is not associated with the Project].

d. Underground Injection Control

Underground Injection Wells are used for injecting water or other fluids into a groundwater aquifer. State Department of Health rules (Hawai'i Administrative Rules, Title 11, Chapter 23) stipulate conditions governing the location, construction, and operation of injection wells so that injected fluids do not migrate and pollute underground sources of drinking water. Chapter 23 also states criteria for classifying aquifers into those that are designated underground sources of drinking water (USDW) and those that are not (or exempted).

The boundary between USDW and exempt aquifers is generally referred to as the "UIC Line". The UIC Line is delineated for all islands for general information purposes only. Restrictions on injection wells differ, depending on whether the area is inland (mauka) or seaward (makai) of the UIC line (http://health.hawaii.gov/sdwb).

The subject property is below or makai of the UIC line. Wastewater from the facility will not be injected into the ground but discharged into the wastewater collection system in Mokulua Drive.

5. Natural Hazards

a. Flood

The Flood Insurance Rate Map shown as Figure 3 designates the entire property Zone X which is defined as "areas determined to be outside the 0.2% annual chance floodplain" (Federal Emergency Management Agency, 2014). The 0.2% chance flood is the 500-year flood.

b. Tsunami

The Public Safety Map for O'ahu identifies two tsunami evacuation zones for this area of Kailua (Department of Planning and Permitting). A Tsunami Evacuation Zone is delineated from Kailua Bay to Mokulua Drive along the makai edge of the property (See Figure 4). The proposed WDOBS is outside the delineated Tsunami Evacuation Zone.

A second zone labeled Extreme Tsunami Evacuation Zone extends from the Tsunami Evacuation Zone upslope to the 110-foot contour (estimated) across the property. The
Special Flood Hazard Zone Subject to Inundation by the 1% Annual Chance Flood
Zone AE  Base Flood Elevation Determined.
Zone VE  Coastal Flood Zone with Velocity Hazard (Wave Action); Base Flood Elevations Determined.

Floodway Areas in Zone AE
The floodway is the channel of a stream plus adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood height.

Other Flood Areas
Zone X  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.

Other Areas
Zone X  Areas determined to be outside the 0.2% annual Chance Floodplain.
Zone D  Areas in which flood hazards are undetermined, but possible.

Figure 3
FIRM Map
District Operations Base Station at Kailua Beach Park

Source: Federal Emergency Management Agency
Flood Insurance Rate Map
Map Number: 15003OC0290H, Date: Nov. 5, 2014
Figure 4
Tsunami Evacuation Zones
District Operations Base Station at Kailua Beach Park

Legend
- Safe Zone
- Extreme Tsunami Evacuation Zone
- Tsunami Evacuation Zone
- Major Street
- Street


Project Location

Kailua Beach Park

Mid Pacific Country Club
proposed WDOBS falls within the Extreme Tsunami Evacuation Zone. Many residential lots bordering the property on Kaneapu Place, Kawailoa Road, and Alālā Place on the Kailua side and Aalapapa Place on the Lanikai side are inside this zone.

c. Slide Area

The property is not a designated slide area (Department of Planning and Permitting).

d. Sea Level Rise

Sea level rise in coastal areas affecting public and private properties is a concern for the City and County of Honolulu. Modeling and analyses of sea level rise specific to the project and property were not performed for the WDOBS and this environmental assessment. In lieu of intensive analyses, the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (December, 2017) was reviewed and its companion tool, the Hawai‘i Sea Level Rise Viewer, used to gauge potential sea level rise.

The Report models three hazards attributable to sea level rise for the state of Hawai‘i—passive flooding, annual high wave flooding, and coastal erosion. The WDOBS should not be affected by high wave flooding and coastal erosion because of its location away from the shoreline and Pacific Ocean. Passive flooding, however, could pose conditions in need of mitigation.

The Report projects sea level rise for four time periods (See Table 2). The projections are not hard and fast but provide parameters for identifying areas vulnerable to variations in sea level rise. Changes in global climate conditions can influence the projections.

<table>
<thead>
<tr>
<th>Year</th>
<th>Feet</th>
<th>Meters</th>
</tr>
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<tr>
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<td>2</td>
<td>0.5991</td>
</tr>
<tr>
<td>2100</td>
<td>3.2</td>
<td>0.9767</td>
</tr>
</tbody>
</table>

Source: Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (December 2017)

The Sea Level Rise Viewer shows that the WDOBS is outside the Sea Level Rise Exposure Area for this section of Kailua when calculated for passive flooding and a 3.2 foot rise in sea level. A sea level rise exposure area, however, is mapped for a short section of Mokulua Drive between the WDOBS and the second turnout (See Figure 5).
Figure 5
Sea Level Rise Exposure Area
District Operations Base Station at Kailua Beach Park

Source: Hawaii Sea Level Rise Viewer

Legend:
- Approximate area of 3.2 foot rise in sea level

Project Location

Kailua Beach Park

Source: Hawaii Sea Level Rise Viewer

Portion Kawailoa, District of Ko'olau, O'ahu, Hawai'i

Department of Design and Construction, City & County of Honolulu

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6. Environmental Hazards

ENPRO, a hazardous material consultancy, performed a Phase I Environmental Site Assessment (ESA) for the property. The purpose of the ESA was to identify and document the presence of hazardous materials on the property and adjoining areas. Excerpts from the ESA are presented below and the ESA is attached as Exhibit C.

The consultants reported there are:

- No structures, roads, or other improvements
- No underground storage tanks
- No aboveground storage tanks
- One pole mounted electrical transformer with no evidence of leakage
- No wells (supply, monitoring, or dry)
- No odors
- No pools of liquid
- No drums
- No drains and Sumps
- No pits, ponds, lagoons
- No stressed vegetation
- No waste water features
- No septic systems

*De minimis* conditions at the project site
- Motor oil stains from parked vehicles
- One open and unlabeled 5-gallon bucket containing a dried concrete/paint like substance
- On-site dumping of municipal trash (non-hazardous solid waste)

7. Natural Resources

AECOS, Inc. (2019) conducted a natural resources assessment of the property covering botany, avifauna, and mammals. Because only a small portion of the 10.44 acre lot will be improved, the botanical survey focused on the two turnouts and the area in between. A less rigorous survey was conducted for the remainder to the lot. Bird counts were taken at two stations and mammals were recorded as observed. The Natural Resources Assessment is attached as Exhibit D.

The dominant vegetation across the parcel as a whole is *koa haole* scrub. The south facing slopes of the two hills include area of open grassland dominated by fountain grass. Within the *koa haole*, the understory vegetation is either white shrimp plant or Guinea grass, both forming dense growths are co-dominant with the *koa haole*. Large trees, mostly Chinese banyan and *kiawe* occur scattered across the hillslopes.

Vegetation within the narrow Project area (and extending to near Alāla Point) is mixed, including landscaping, much disturbed ground and various typical coastal trees and shrubs, such as *coconut*, sea grape, ironwood, *naupaka*, and button mangrove.
The majority of the plants are non-native introductions to the Hawaiian Islands; only three are native, indigenous species and two are early Polynesian introductions (so-called "canoe plants"). The natives are *naupaka kahukai*, *hau*, and 'uhaloa. These species are widespread in the islands.

Two species of concern as invasive weeds were recorded on the hillside above the Project site. One of the species, a single rubbervine plant (*Cryptostegia spp.*), was described as being of "moderate size (nearly 2 m tall) with numerous lanky branches spreading out from a strong trunk. This plant and three others have since been destroyed by staff of the Honolulu Botanical Gardens. The second species is fountain grass (*Cenchrus setaceus*) which is known to the Lanikai area. The location of both species has been reported to the O'ahu Invasive Species Committee.

The avian assemblage observed are consistent with the coastal scrub and urban environments found at the Project and vicinity. All birds observed during the survey are non-native species naturalized to Hawai'i. Common Mynah and Red-vented Bulbul were the two most abundant species observed with Common mynah most abundant at the project site and Red-vented Bulbul most abundant in the *koa haole* scrub on the hill above the project. Rock Pigeon and Spotted Dove were also frequently observed at the project site.

Protected Hawaiian seabirds, such as the Wedge-tailed Shearwater or 'ua'u kani observed on Popo'i Islet (in Kailua Bay), may overly the Project area. Other protected seabird species include threatened Newell's Shearwater or 'a'o, endangered Hawaiian Petrel or 'ua'a, and endangered Band-rumped Storm-Petrel or 'akē'akē. The US Fish and Wildlife Service also indicated that the above endangered seabirds may occur in the area (PAC, 2019).

The only terrestrial mammalian species observed during the survey was cat. Feral cat feeding station(s) occur in areas accessed by the two turnouts off Mokulua Drive. It is likely that dog and some of the other established alien Muridae found on O'ahu---roof rat, brown rat, and Polynesian rat---use various resources within the general Project area on a seasonal basis. It is also to be expected that small Indian mongoose is present. All of these introduced mammals are deleterious to native ecosystems and native faunal species within them.

No attempt was made to record the Hawaiian Hoary Bat or 'ōpe'a'ape'a, the only native terrestrial mammal, as it would have required nighttime observations with specialized equipment (AECOS, 2019).

### 8. Archaeological Resources

An archaeological Literature Review/Field Inspection (LR/Fl) was performed by Cultural Surveys Hawaii (2020). The LR/Fl is attached as Exhibit E. Of interest is the field survey and excerpts from the report are provided below.

"The archaeologists completed a pedestrian inspection of the entire study area extending *mauka* south in an approximate 50-ft contour as requested by the client spaced 5 ft apart. No surface archaeological historical properties were identified during the field inspection."
The study area is situated at the base of the slope of Alalā Ridge. Alalā Point marks the boundary at the shore between Kailua Beach Park on the west and Lanikai Beach to the east. Residential housing along Kaneapu Place is present along the western edge of the study area. Lanikai residential areas are located outside the study area to the southeast. The study area was fairly steep containing lush vegetation including cactus, *koa haole* (*Leucaena glauca, L. leucocephala*), buffalo grass (*Cenchrus ciliaris*), and various invasive vines, grasses, and shrubs. The eastern portion of the project area was the steepest, containing mostly basalt rock, cactus vegetation, and slick silty clay. Minimal modern refuse items including glass and plastic, a bicycle, and evidence of temporary shelters for squatters were observed throughout the study area.

9. Cultural Resources

Cultural Surveys Hawai‘i (2020) also prepared a cultural assessment for the project and its environs. The purpose of the assessment was to investigate and compile information of traditional cultural practices associated with the area. The investigative phase included a literature review, archaeological survey and reports for the site and adjoining areas, informant interviews and written testimonies.

The description of cultural resources presented below is excerpted from Section 7 Traditional Cultural Practices of the cultural assessment. The description has been paraphrased for brevity. The cultural assessment is attached as Exhibit F.

_Hawaiian Habitation and Agriculture_

During the estimated 1,000 to 1,200 years since Polynesian settlement (Kirch 2010:128), the sand barrier that forms the shore at Kailua Bay has provided a desirable location for residences with a sunny, dry beach area. The well-watered interior lands, including the two marsh/pond areas of Ka'elepulu and Kawai Nui and the many springs and streams of Maunawili, provided bountiful agricultural and resource gathering areas. During the fifteenth and sixteenth centuries, Kailua, O'ahu was the center of a large royal complex with ample playgrounds for sports and physical training, and recreation (Sterling and Summers 1978: 231-22). Supporting this large complex was a most bountiful garden hinterland where fish, fowl, and vegetables were plentiful (Sterling and Summers 1978: 227-228).

Historic documents from the early nineteenth century are amongst the first written observations of the Kailua environment; the region was notably inundated. However, this did not prove to an impediment, rather it opened a range of options for early settlers of the area (Abbott 1992:8). Inhabitants of the _ahu'pu'a_ were responsible for engineering irrigation systems that could in turn increase local agricultural productivity. The modification of freshwater resources was not limited to Kailua and Ko'olaupoko Moku; sometime after AD 1100, complex agricultural irrigation systems were developed across the island chain. Labor for such large-scale or intensive agricultural or construction projects was provided by the _maka'aina_. Continued work upon and cultivation of the land further strengthened the notion of Kailua as _āina momona_ (abundant land).

According to LCA documents, 171 claims were made for Kailua _ahu'pu'a_. A small number of coastal _küle'a_ could be found in the Ka'ōhao/Lanikai area. The remaining claims were in the Kailua town area and into Maunawili, Kailua, Kāneh'ōhe, and Waimānalo were considered choice locations for _ali'i_ and these areas were awarded to
the Crown. The valuation of the Kailua area was largely attributable to the availability of natural resources. These natural resources were carefully guarded by konohoniki. According to Kamakau, the konohoniki was the agent or representative of a landholding chief; later, the term included the chief himself (Kamakau 1976: 151).

Notions of communal or shared interests were altered with the Organic Acts of 1845 and 1846. This legislation initiated the process of the Mahele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown and the ali'i received land titles. Kailua Ahupua'a was awarded to Queen Hakalalepono Kalama. Ali'i did not specify in claims what their lands were used for, however, it appears maka'ainana lands were used for habitation and cultivation, specifically for kalo (taro).

The production (and consumption) of kalo or taro was vitally important to Kailua Ahupua'a. The reliance upon this staple crop is evidenced by the remnants of terraces and/or pond fields, 'auwai (water channels), and earthen and stacked-stone berms with the ahupua'a. Dryland and irrigated agricultural features have been found in Maunawili and along the margins of Kawai Nui Marsh.

A portion of Kailua Ahupua'a was also used for coconut cultivation called Kula o 'Ālele (Coconut Grove). Ultimately the coconut cultivated business failed and the land was subdivided then sold for home sites. Some of the coconut trees still exist today.

Nā Wahi Pana

There exist a myriad of cultural sites or wahi pana for Ko'olaupoko Moku; however, for the ahupua'a of Kailua, 'ili of Ka'ōhao, the islets and ridges were of particular importance. Currently Ka'ōhao is known as the entrance to Lanikai, a housing complex. Mr. de Silva also provided ample information concerning Popoi'a (Note: an offshore island). A fishing shrine was located on the island and later destroyed a tsunami.

The offshore island of Mokulua is home to the kōlea or plover, a favored food of Hawaiians. Bird hunters often traveled to Mokulua by canoe or boat to catch these lovers. Today the island is a State 'Bird Sanctuary.

Mr. de Silva also discussed Kaiwa Ridge which divides Kaohao from Ka'elepulu. He noted that Sterling and Summers reported that the ridge was named for chiefess of Kailua who was the object of the konohoniki Ahiki's deep affection. To be closer to the Kaiwa, Ahiki rose up and pulled himself away from brother peaks (Olomana and Pāku'i) (Sterling and Summers 1978: 239).

Marine and Freshwater Resources

In pre-Contact times, Kailua Ahupua'a was an attractive area for ali'i because of its accessibility to natural fishponds. The 450-acre Kawai Nui Loko was famous for awa (Piper methysticum), a variety of o'opu subspecies, 'ama'ama (mullet), jacks, barracuda lizard fish, and various types of limu. In recent years, environmental pollution and invasive species such as tilapia have plagued the loko.

Kailua Beach Park is a 30-acre public park located on the eastern portion of Kailua Bay; Kailua Beach Park is located to the northwest of the project area. Freshwater enters the sea at Kailua Beach Park. A muliwai (river) is located in the middle of the park that drains
into the bay; this *wahi pana* marks the second location where the waters of Kawai Nui enter the sea.

Mr. de Silva reports that *limu lipoa* was in abundance a both Kailua and Kaʻōhao beach.

Mrs. Harms explained that *limu* was common at Lanikai Beach. She emphasized that *limu* should never be ripped off from the roots from the rocks. They were instead broken off by the tips to ensure regrowth of the plant. However, due to many factors the regrowth of *limu* has rapidly declined.

She reiterated that human intervention by directly removing *limu* from the beaches has caused sand erosion. She affirmed that in traditional times *limu* would wash ashore attracting flies. People would purposefully leave the *limu* to naturally rot on the sand. She asserted that *limu* had naturally produced a type of glue. The layers of *limu* combined with sand held the earth in place. However, with modern methods of land management the *limu* is now removed from the sand and used as inland fertilizer. Consequently, these actions have led to mass erosion.

All the community members concluded that fishing was a gathering activity done at Lanikai Beach and Kailua Beach. Both beaches were known for the fisheries in traditional times.

Diving was a prominent activity at Lanikai Beach. An eminent free diver named Solomon Mahoe was well known in the Kailua community. Several generations of ancestry linked him to Kaʻōhao. Ms. Harms remarked, Mr. Mahoe would not come to the surface of the ocean unless a lobster was held in each of his hands. This act hints at the abundance of lobsters in the vicinity.

Ms. Harms recalled that the *hukilau* or seine (a traditional fishing practice) was a normal activity on Kailua Beach. A man would lay net at sea from a boat while the families along the shore would pull the big net onshore. The catch of the day was divided appropriately amongst participants and the rest of the fish were thrown back to sea to repopulate. Eating of turtles was an acceptable practice during those times.

**Religious Practices**

Kailua was home to ten *heiau*: 1) Alāla, 2) Hālaualolo, 3) Holomakani, 4) Ka'anahau, 5) Keikipu'ipu'i, 6) Kukapoki, 7) Kukuipilau, 8) Pahukini, 9) P'uuwāini'ani'a, and 10) Ulupō. Alāla Heiau was once located at the similarly named point or promontory at the entrance to Kaʻōhao/Lanikai.

Mr. de Silva describe Alāla Heiau, noting that the mele “Ka Lae 'o Alāla takes its name from the heiau below and around which, centuries later, the Powlisons built their house”. Ms. Harms, granddaughter of Anne and Arthur Powlison, mentioned that “there would be ceremonies up here relating to fishing, or people would put offerings on them and go out fishing hopping for good luck.” She recalled that “sometimes we would wake up in the morning and there would be a big papaya sitting up there, or a taro root, or once a can of pork and beans, sitting on the rock.

Mr. de Silva explained that a purification ceremony was practiced at present day Lanikai Beach. The original name of Lanikai Beach was Kaiʻōlena. The name Kaiʻōlena may be broken into two words *kai* and *ōlena*. *Kai* means sea or sea water. *Ōlena* means
turmeric, which originates from India, later becoming a medicinally use type of ginger in Polynesia.

Burials

The project area is situated within the sand berm of Kailua which was utilized as a settlement area by indigenous Hawaiians. As with other nearshore sandy areas in Hawai‘i, this portion of Kailua was also used extensively for burial of the dead. Previous archaeological research has revealed six inadvertent finds of human skeletal remains within Lanikai/Kaʻōhao and more than 15 reports of inadvertent finds of human skeletal remains from the sand berm of Kailua.

According to Mr. de Silva, “I know of no burials there or of any extant cultural sites (except fro the heiau itself)”. Ms. McKenzie stated, “it is not unlikely that there were iwi kūpuna resting the area—although whether they survived the building of the road and other construction over the years is another question.”

10. Scenic Resources

The Coastal View Study (Chu and Jones, 1987) surveyed coastal views and landforms in the eight Development Plan (DP) areas on the island of Oahu. The DP areas were further separated into viewsheds. Scenic sights for each viewshed were identified and labeled Significant Road View or Significant Stationary View. An indication of scenic value was provided for both views. The Study, which was confined to the geographical boundaries of the County delineated Special Management Area (SMA), also identified Important Open Space and Coastal Land Form in the SMA.

Located in Koʻolau Poko, Kailua Beach Park is part of the Kailua Bay Viewshed. The Viewshed is bounded by Mokapu Point on the north, Alāla Point on the south, and includes the communities of Kailua and Lanikai. It is a shallow crescent shaped bay with an offshore island (Popol’a Island). Viewing distance across this bay is approximately 3.5 miles. While pedestrian views are available from the shoreline, the entire coastline (with the exception of Kailua Beach Park) is tightly lined with existing residential homes, effectively eliminating public coastal views from the road.

“The only significant roadway view occurs at Kailua Beach Park between Kaelepuulu Stream and Alāla Point. This lateral coastal view is highly vivid and illustrates a unified visual composition between the viewshed and the predominant residential land uses that line the shoreline. Mauka views include Kaelepuulu Stream and Mid-Pacific Golf Course. Makai views include Kailua Beach Park, and Popoia Island”.

The area of the boat ramp at the southern end of the beach park provides a significant stationary view of the beach park and off-shore islands.

The Study also identified the 10.44 acre property as Important Open Space / Landscape. Hilly areas overlooking Lanikai and Mid-Pacific Golf Course are identified as Important Coastal Landform.

The Koʻolau Poko Sustainable Communities Plan (2017) Open Space Map (Map A-1) identifies scenic views and viewing locations at and of Kailua Beach and surrounding areas. One of the more significant views is a continuous panoramic view from Kailua Bay
of the beach park in the foreground, developed areas mauka of the park, and the Koolau Range in the background. From the ocean and depending on one's location, the panorama takes in Mokapu Peninsula on the west and glimpses of Waimanalo Beach Park to the east. Because of its near shore location, Pu'ū Hālō rises as a prominent landform and landmark when viewed from the ocean.

A prominent stationary viewpoint is in the vicinity of the boat launching ramp. Views of the beach park, the ocean, and close up views of Puʻu Hālō and coastal landforms are considered significant from this location.

C. Land Use Controls

Land use controls for the property are:

State Land Use: Urban
General Plan for Oahu: Urban Fringe
Sustainable Communities Plan: Ko'olau Poko
Open Space Map: Parks
Land Use Map: Low Density Residential
Zoning: P-2 General Preservation
Special Management Area: Within Special Management Area

The State Land Use Commission under the authority of Chapter 205, Hawai'i Revised Statutes classifies all land in the State of Hawai'i as Agricultural, Conservation, Rural, and Urban. Uses in the Agricultural District are regulated by the Land Use Commission; uses in the Conservation District by the Board of Land and Natural Resources, uses in the Rural District by the Land Use Commission, and uses in the Urban District by the respective county government. The zoning powers of the respective counties also govern uses in other than the Conservation District.

- Kailua Beach Park to include park land mauka of Mokulua Drive is classified Urban and bounded by Urban districts on all sides (See Figure 6).

Land use at Kailua Beach Park is under the authority of the City and County of Honolulu and its applicable plans, ordinances, and regulations. City land use policies and controls for O'ahu are vertically aligned or tiered for managing growth and land uses beginning with the General Plan for the City and County of Honolulu ("General Plan"), community development plans and sustainable community plans, and zoning. Special districts and special management area rules provide supplemental controls for defined areas where man-made features and natural resources should be protected and managed.

The General Plan for the City and County of Honolulu ("General Plan") is the first tier. It sets forth broad objectives and policies in eleven functional areas such as Economic Activity, Natural Environment, Energy, Physical Development and Urban Design, and Public Safety. The Population component and its objectives and policies are key to managing growth. The component establishes a population distribution pattern for eight geographic regions comprising the county. Each region has an upper and lower limit (percentage) of the island wide population for a targeted year (currently 2025). The general plan also includes General Plan Development Pattern map depicting the
Figure 6
State Land Use
District Operations Base
Station at Kailua Beach Park
eight districts and the desired development pattern for and within the respective district.

- Kailua is located in the District of Ko'olau Poko on the windward side of the island.
- The development pattern is to maintain developed areas within the district (Kailua and Kaneohe communities) "Urban Fringe" and areas outside the urban fringe "Rural" (Waikâne, Waiâhole, Kahalu'u, and He'eia to the north and Waimânalo to the south).
- Kailua Beach Park is located in the Urban Fringe.

Development Plans or Sustainable Communities Plans prepared for the eight geographic regions in the County comprise the second tier. Although encompassing eight regions where each area's values, vision, and policies for accommodating growth are different, the plans collectively support the General Plan. The Koolau Poko Sustainable Communities Plan (2017) 1) describes the role of Koolau Poko in maintaining the General Plan pattern of development for urban fringe and rural areas, 2) articulates a vision for the District's future shaped around two concepts: protection of natural, scenic, cultural, historic, and agricultural resources and improving and replacing aging infrastructure, as needed; 3) prescribes policies, planning principles, and guidelines for land use and infrastructure, and 4) identifies measures and actions that seek to realize the Plan's vision.

The Sustainable Communities Plan reaffirms the General Plan development pattern for the district. The Plan acknowledges that growth will take place and establishes a Community Growth Boundary spanning the entire district. The boundary identifies areas where growth and infill can occur (inside the boundary) and areas where agriculture, open space, and natural resources should be maintained and preserved (areas outside the boundary).

- The geographic area of Kailua Beach Park is inside the Community Growth Boundary.
- The Beach Park (and project area) is designated Low Density Residential on the Ko'olau Poko Sustainable Communities Plan (Land Use Map A-2).
- The Department of Planning and Permitting has determined that a Public Infrastructure Map amendment is not required for the DOBS capital improvement program project. Improvements to the beach park are symbolized on the Public Infrastructure Map for the district and the symbol allows normal park improvements throughout the park property (DPP, April 2018).

[Note: The Ko'olau Poko Sustainable Communities Plan does not mention DOBS in its discussion of Public Facilities and Infrastructure Policies and Guidelines for Civic and Public Safety Facilities and Resiliency.]

Zoning comprises the third tier of the City's land use management system. As shown on zoning maps for the county, land is zoned by use and density (for example AG-1 Restricted Agriculture with a minimum lot size of 5 acres). The Land Use Ordinance (which incorporates the zoning maps) prescribes the types of uses permitted in zoning districts and associated development standards. The LUO also establishes requirements for parking, specific use standards, signs, development in flood districts and special districts, and administration and enforcement procedures.
The project area is zoned P-2 General Preservation (See Figure 7).

Public uses and structures are permitted in the zoning district pursuant to Article 3, Table 21.3 Master Use Table of the Land Use Ordinance, City and County of Honolulu.

The WDOBS will not exceed the maximum building area (5% of the lot) for the zoning district.

The property is inside the County delineated Special Management Area as shown on Figure 8. The Special Management Area ("SMA") is defined as land extending inland from the shoreline supporting valuable coastal resources that need to be preserved, protected, and where possible restored. Development in the SMA is regulated by the City and County of Honolulu through Chapter 25, Special Management Area, Revised Ordinances of Honolulu.

The Department of Emergency Services will apply for a Special Management Area Permit following the completion of the Environmental Assessment or the Environmental Impact Statement process. The relationship of the proposed project to Special Management Areas Objectives and Policies will be discussed in the Special Management Area Permit Application.

D. Public Facilities

1. Roadway System

Mokulua Drive, which bounds the property on the north, is the only roadway connecting the communities of Kailua and Lanikai. The paved, all-weather surfaced road, is an undivided two-lane, two-way roadway. The posted speed limit is 15 miles per hour. Where it passes the property, this short section of road is relatively straight with good sight distance from the two parking area driveways.

On its northbound approach to Kailua Beach Park the road makes an S-turn to the west in the vicinity of the driveway to the boat ramp. The turn is marked by street signs. At the southbound approach to Lanikai a street sign identifies an impending 90° turn.

The property has been improved with two turnouts (on the Kailua and Lanikai ends) approximately 225± feet apart. Both are surfaced with crushed coral, aggregate, and gravel. Access and egress driveways are unmarked and parking stalls not striped. Bollards prevent unwanted off-street parking along the road shoulder where utility pipes and poles are situated at the Kailua end. A bus stop/shelter at the turnout on the Lanikai end provides public transportation on the TheBus.

The *makai* road shoulder accommodates a multi-use path between the driveway to the boat launching ramp and the Lanikai monument. The 4-foot wide asphalt concrete path is separated from the travel lane by raised asphalt concrete curbing about 4" high. A 2-3' foot high steel guardrail on the ocean side provides drop-off protection. The shoulder widens near the Lanikai monument and is landscaped with grass and beach naupaka.

There is no sidewalk or multi-use path on the *mauka* side and there are no crosswalks fronting the property.
Figure 8
Special Management Area
District Operations Base Station at Kailua Beach Park

Source: City & County of Honolulu GIS Database
There are no delineated bike routes on Mokulua Drive but a marked bike route through
the park starts/ends at the entry to the parking area near the boat launching ramp. The
bike route meanders through the park near to and paralleling Kawailoa Road.

Kaneapu Place, a short, paved street on the southwest, is located entirely within the
property. The street dead ends about 500 feet from its intersection with Alāla Road/
Mokulua Drive. Ground elevation falls from a high of 105 feet at the dead end to 10 feet
at Mokulua Drive. A STOP sign controls outbound traffic at the T-intersection. Sight
distance for east and westbound approaches is poor.

Residences line the west side of the street. A meandering 10-12-foot wide road shoulder
on the east side is used for off-street parking. The edge of shoulder slopes downhill to
the building site below. The difference in elevation from of top of slope directly above the
center of the turnout below (17 feet) and the street varies from 0-feet to 20+ feet depending
on street grade (or elevation).

2. Water

Honolulu Board of Water Supply (BWS) 6-inch and 12-inch transmission mains in
Mokulua Drive provide domestic water and fire flow for this section of Kailua and
Lanikai. Two 1½” water meters supply water to the property.

Fire flow is provided by fire hydrants along Mokulua Drive and one hydrant fronts the
project site.

3. Sewer

A 10-inch municipal wastewater main on the makai side of Mokulua Drive services the
Lanikai community. There is no sewer connection from the parking area.

4. Drainage

Drainage structures are not found on the property or along Mokulua Drive. In all
likelihood, runoff flows from higher elevations to low elevation areas where it flows
towards the ocean and / or ponds and percolates into the ground.

5. Solid Waste

The property per se does not generate solid waste but windblown debris and wantonly
discarded solid waste is strewn about the parking area.

6. Protective Services

Kailua and Lanikai are located in Police District 4 which comprises the Koʻolau Poko and
Koʻolau Loa Districts. The Kailua Police Station located in Kailua on Kuʻulei Road is the
district headquarters. The police station is about 1.0 mile from Kailua Beach Park.

Fire protection originates from the Kailua Fire Station (Station 18) also on Kuʻulei Road
about 1.0 mile away to the northeast.
7. Power and Communication

Pole mounted overhead power, telephone, and CATV systems line the *mauka* side of Mokulua Drive along the road right-of-way. In general there are no utility poles and lines on the *makai* side of Pu'u Hālō (except one pole near the end of Kaneapu Place) but utility poles zig their way up on the *mauka* side from Alāia Place.

8. Parks and Recreation

Located at the eastern end of Kailua Beach Park the property comprises about one-third the area of the 30-acre Kailua Beach Park. Ka'elepulu Canal, oftentimes called a *muliwai*, separates the park into an eastern and western half. According to Clark (1977) "the western half was formerly known as Kalapawai, “the water rascal.” In ancient times Kalapawai was said to have been an excellent surfing area. The eastern half of the park formed the shoreline edge of the lands once known a Kawailoa “the long water”. Now, the only evidence of the old place name is Kawailoa Road, the access road from Kailua to Lanikai".

A shared multi-use path on the *makai* side of Mokulua Drive provides access for pedestrians, bicyclists, skateboarders, joggers, and individual motorized transport users. The path is identified as a bikeway where it enters Kailua Beach Park at eastern end of the park. The bikeway meanders through the park to its western end.
SECTION 3
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS
AND MEASURES TO MITIGATE ADVERSE EFFECTS

A. Assessment Process

The scope of the project was discussed with staff of the Department of Design and Construction, the consulting architect, and consultants. State and County agencies were contacted for information relative to their jurisdiction, expertise, and areas of concern. Time was spent in the field noting site and nearby conditions and features. Pre-assessment consultation with agencies, organizations, and adjoining property owners sought input for preparing the environmental assessment. From the discussions, field investigations, and consults existing conditions and features that could be affected by or affect the project were identified. These influencing conditions are:

- The site was an unpaved off-street parking lot or turnout;
- Four on-site storage containers are used for storing lifeguard equipment, tools, and supplies;
- There are no rare, threatened or endangered flora or fauna present;
- There are no historical features present;
- The property is not in a flood hazard area;
- The property is not within a sea level rise exposure area;
- The property is within an Extreme Tsunami Evacuation Zone;
- Traffic on Mokulua Drive and the lack of adequate beach parking is a concern to residents;
- Approximately eleven (11) parking stalls and a turnaround will be converted to an alternate municipal use and facility;
- The WDOBS structure is 15'-11" high; and
- Water and sewer are available.

B. Short-term Impacts

1. Air Quality

Construction will temporarily affect air quality and the acoustical environment. Grubbing, demolition, grading, stockpiling, backfilling and associated earth moving activities will raise fugitive dust that can settle in adjoining areas. Windy conditions coupled with exposed soil can create severe dust problems. The general contractor will employ dust control measures to prevent the work site and construction equipment and activities from becoming significant dust generators. Control measures shall comply with Chapter 60.1, Air Pollution Control, Title 11, Department of Health, State of Hawaii (and revisions thereto). Frequent water sprinkling and erecting dust screens around the perimeter of the work site are commonly employed for dust control. The site work contractor may implement alternative methods adaptable to the scope of the improvements and site features and conditions.

Most construction equipment and vehicles are diesel powered and emit exhaust emissions typically high in nitrogen dioxide and low in carbon monoxide. The Federal
and State nitrogen dioxide standard ---100mg/m³ per annum---which is an annual standard, is not likely to be exceeded during construction. Carbon dioxide emissions should be less than that generated by passing automobiles. Aldehyde odors from diesel equipment may be detected but should be dispersed by the prevailing winds.

2. Noise

Construction noise, like fugitive dust, cannot be avoided. Exposure to noise will vary by construction phase, the duration of each phase, and the type of equipment used during the different phases. Maximum sound levels in the range of 82-96 db(A) measured at 50 feet from the source will be generated by heavy machinery during the site work phase. After this phase is completed, reductions in sound levels, frequency, and duration can be expected as the building walls, roof, parking area, and interior improvements are constructed.

Community Noise Control regulations establish maximum permissible sound levels for construction activities occurring within "acoustical" zoning districts. Based on the preservation zoning for the site, it is classified a Class A zoning district for noise control purposes. The maximum permissible daytime sound level in the district attributable to stationary noise sources and equipment related to construction activities is 55 dBA during daytime (7:00 AM to 10:00 PM) and 45 dBA during nighttime (10:00 PM to 7:00 AM) (Chapter 46, Community Noise Control, 1996). As disclosed above, construction noise will exceed the 55 dBA threshold during sitework.

In general, construction activities cannot exceed the permissible noise levels for more than ten percent of the time within any twenty-minute period except by permit or variance. Any noise source that emits noise levels in excess of the maximum permissible sound levels cannot be operated without first obtaining a noise permit from the State Department of Health. Although the permit does not attenuate noise per se it regulates the hours during which excessive noise is allowed.

The general contractor will be responsible for obtaining and complying with conditions attached to the permit. Work will be scheduled between the hours of 7:00 AM to 3:30 PM Mondays through Fridays. The contractor will also ensure that construction equipment with motors is equipped with mufflers in proper operating condition.

Noise will be audible over the entire construction period. All construction activities will comply with Chapter 46 Community Noise Control, Title 11, Administrative Rules, Department of Health, State of Hawaii.

Residential uses are a noise sensitive use. Noise is anticipated to be "loudest" during site work and diminish as the building is erected. Exposure to noise will affect residents along Kaneapu Place the most and those farther away on Kawailoa Road and Aalapapa Place the least. Spatial separation between individual residences on Kaneapu Place and the job site, elevation differences, and on-site vegetation will aid in noise attenuation.

3. Erosion

Site work will create opportunities for erosion (fugitive dust and suspended sediment in runoff). Grubbing, grading, and stockpiling of excavated and imported material will be performed in accordance with the erosion control ordinance of the City and County of
Honolulu and grading and erosion control plans approved by the Department of Planning and Permitting, City and County of Honolulu.

The project will comply with construction and post-construction BMP requirements pursuant to the City and County of Honolulu “Rules Relating to Water Quality”.

Construction work will not exceed one (1) acre thus a NPDES General Permit Authorizing Discharges of Storm Water Associated with Construction Activity will be required from the State Department of Health. A Notice of Intent to discharge hydrotesting water effluent for the water system will be submitted to the State Department of Health for review and approval prior to the discharge (Department of Health Comment Letter, 2010).

4. Natural Resources

Adverse effect on plant species are not anticipated. Site work will cut into the toe of the slope and trees, shrubs, and ground cover will be removed. Plant species in this area are common to O‘ahu and the State of Hawai‘i. None of the species observed are rare, threatened, or endangered or proposed for said status. Plant materials recorded for other areas of the hillside will remain intact with the exception of a certain species.

The biological survey revealed the presence of rubbervine (*C. madagascarensis*) an invasive species and the consulting botanist recommended it be destroyed. The species was reported to the Honolulu Botanical Garden who destroyed it and found three more individuals that also were destroyed. Should other individuals appear they too should be destroyed.

Terrestrial mammals (except for a cat) were not observed during the field survey. The Hawaiian hoary bat, the only native terrestrial mammal was neither observed nor effort made to record them at night.

Endangered seabirds may overfly the project area. Night lights can disorient seabirds resulting in their downing and harm from collision and predation from dogs and cats if downed. Security lights will be mounted on the exterior of the WDOBS. The lights will be activated by motion sensors, shielded with light reflectors, and light directed downward to illuminate the ground and not the sky.

5. Archaeological Resources

Surface archaeological and historical features were not observed within the project area. The consulting archaeologists, however, noted “Due to the nature and distribution of historic properties and human burials in the immediate vicinity, there is potential for similar historic properties and/or human burials within the project area. Based on the results of this study, a project effect determination of “effect, with proposed mitigation commitments” is recommended pursuant to HAR 13-275-7. Early consultation with the State Historic Preservation Division is recommended to determine what (if any) further archaeological study is indicated.”


The hazardous materials consultant summarized the Phase I Environmental Site Assessment thusly:
"Based on our investigation, ENPRO has concluded that the risk of contamination at the site is so minimal that no further investigation is needed" (2019).

7. Traffic

On and off-site construction will affect traffic flow on Mokulua Drive. Connecting a sewer lateral to the wastewater manhole in Mokulua Drive will require closing one lane of traffic. The contractor will implement measures to minimize inconvenience to motorists, buses, pedestrians, and bicyclists during construction. These measures will include but are not limited to:

- Keeping one traffic lane open at all times when working in the roadway;
- Posting warning signs on the Lanikai and Kailua sides of the work area to alert motorists of road work and to slow traffic speed;
- Positioning traffic cones and / or other directional devices in the roadway to guide vehicles around work areas;
- Posting off-duty police officers for traffic control;
- Limiting construction to between 7:30 AM and 3:00 PM, Monday through Friday;
- Covering trenches with steel plates at the end of the work day;
- Posting lighted safety devices during night hours.

Road sections affected by construction will be restored to pre-construction conditions or better.

Construction vehicles hauling workers and material will contribute traffic to roads leading to/from the project site. Material deliveries will be scheduled at times that would minimize impacts on local traffic. Materials will be off-loaded on-site or at a nearby location. Should materials have to be unloaded in or adjoining the right-of-way appropriate traffic control measures will be implemented.

C. Long-term Impacts

During pre-assessment consultation residents commented about locating the DOBS in the beach park, noise, DOBS-related traffic, loss of beach parking, on-site fuel storage hazard, location in a flood / tsunami zone, visual degradation, use of natural undisturbed conservation land, and heat buildup from mechanical equipment and loss of tree cover. These concerns and others are treated as long-term impacts.

Project Objectives

A completed project will site the Windward DOBS at a desired beach location in the Ko'olau Poko District. It will provide a needed facility for lifeguard activities and training, secure place storage for watercraft and equipment, and a resiliency hub in the event of a natural disaster. Kailua Beach Park was selected because land is available and the Park is the most populated beach in the OSD Windward District on weekdays and weekends.
Flood Hazard and Tsunami Zones

The Draft Environmental Assessment discloses that the property is outside the flood plain of the 0.2% flood (the 500-year flood) and a tsunami evacuation zone for the area (See Figures 3 and 4). It acknowledges that the site is in an Extreme Tsunami Evacuation Zone where waves of sufficient force and run-up could crash into the WDOBS. Resiliency measures for "hardening" the structure in the event of a hurricane and tsunami were described in the Project Description. Although the structure should withstand both events Interior areas stand to be flooded/damaged as a result extreme events.

The WDOBS is outside the sea level rise exposure area. Passive flooding of the structure is not anticipated.

Land Use Controls

The subject property (TMK [1] 4-3-009: 002) is designated Urban on State land use district maps for Kailua (See Figure 6). The City and County of Honolulu's Ko'olau Poko Sustainable Communities Plan Land Use map prescribes Low Density Residential use of the property. The Open Space and Public Facilities maps for the plan label the property Parks. In support of the Parks designation the property is zoned P-2 General Preservation. Public uses and structures, such as a WDOBS facility, are a permitted use in the preservation zoning district. The proposed use is consistent with State and County land use controls for the lot.

Hazardous Material Storage

Fuel tanks and dispensers for OSD watercraft and vehicles will not be provided. Fuel will be stored in hand containers stored on-site.

Traffic

WDOBS generated traffic is not anticipated to adversely affect traffic circulation on Mokulua Drive and Kawaiola Road. Trip generation (round trip) is estimated at about 16-24 vehicle trips per daily shift. On-duty lifeguards will report to WDOBS for their daily assignment. Watercraft and rescue equipment will be deployed to the beach park before starting their watch. As currently practiced, they will remain at their tower and generally not leave until the end of the work day. At the end of the work day, watercraft and rescue equipment will be returned to WDOBS.

The movement of men and equipment would occur at times when traffic conditions on adjoining streets is “light” prior to and following heavy beach use hours. New working hours for lifeguards, vehicle trip management, and operational adjustments can be implemented if warranted by recurring traffic conditions.

Noise

Nighttime noise should not be an issue as the WDOBS will not be manned or operational at night. The exception to this would be when the facility is activated as a resiliency hub in response to a natural disaster. During such emergencies, noise from sirens (police, fire, and emergency management vehicles), traffic, horns, and loudspeakers cannot be
avoided. Said noise and other sounds will be audible throughout the area and surrounding neighborhoods.

OSD vehicles and rescue craft are not equipped with sirens.

Existing daytime noise at the park is a panoply of sound from stationary and movable sources—vehicles, buses, trucks, overhead aircraft, birds, and people talking, laughing, and simply making noise. Park noises are the sounds of people enjoying all the recreational activities and facilities that Kailua Beach Park has to offer. An operational WDOBS will generate noise as lifeguards muster daily, load and unload equipment, and enter and depart the facility. Work-related noise is not significantly different from noise generated without the DOBS under existing conditions.

Views

The WDOBS and associated improvements will present a new object to seen as compared to existing conditions. This impact cannot be avoided. However, views of DOBS will vary depending from where it is viewed. From Mokulua Drive and beach areas directly makai of the facility the entire front of the structure to include a driveway, parked vehicles, and retaining walls will be seen. The improvements will present a panoramic view of the facility when viewed from the north.

Residents on Aalapapa Place will view the site from above thus incurring "plan" views of the roof, driveways, and maneuvering and parking areas (See Figure 1 which depicts this view).

Ocean facing views from Kaneapu Place should not be significantly affected. Residences on the west side of the street are setback anywhere from 40 to 50 feet from the top of slope above the project site. The setback, the difference in elevation between the top of slope and the project site, plus existing vegetation on the slope already obstruct views of the project site but not of the ocean. Leaving the vegetation covered slope as is would screen ground level views of the structure and improvements. Cutting back vegetation and pruning trees would open the view to the ocean and expose sections of roof and building to view from some residences along the street.

Because of differences in grade, the height of the structure should not extend above the top of slope where the street grade is 36± feet. Vegetation should screen the structure from view from residences along the lower portion of Kaneapu Place.

A color palette has not been selected for painting the building exterior and retaining walls.

Parking Stalls

As disclosed in the Description of the Proposed Action, there are no plans for replacing the parking stalls at either a nearby location or within the beach park. The reality is that parking cannot be provided in the park without foregoing active or passive recreational spaces for parking.

Hiking access to the Lanikai Pillbox will not be allowed through the WDOBS site.
Emergency Conditions

The WDOBS will serve several functions in the event of a civil emergency in the district. It will function as a resiliency hub for direct communication with the Department of Emergency Services and coordinating and dispatching first responders throughout the district prior to and during the emergency. It will also function as medical casualty collection point in the aftermath of a natural disaster event. The facility could be configured to receive an ambulance in the event the facility or parking lot is used as a triage or extrication site.

During emergency situations in the district (or island-wide), the WDOBS could be staffed 24/7 by lifeguards and emergency services personnel. Under such circumstances noise from various sources (sirens, ambulances, shouts, hand held loudspeakers, vehicle horns, adjoining residential properties) and emergency and resident vehicle traffic are likely impacts. These impacts would be multiplied severalfold if a natural disaster were to threaten and or strike Kailua Beach Park and its environs.

Based on the archaeological literature review, field inspection, and informant interviews in the cultural assessment, there are no surface historic resources or traditional cultural practices associated with the site of the proposed WDOBS. There is always the potential for subsurface features/burials being unearthed and archaeological monitoring during construction would be an appropriate mitigating measure.

Traditional Cultural Practices

The cultural assessment talked about the significance of the Ko'olaupoko district to the Hawaiian population, the transitioning of the district from intensive agriculture to an urban residential setting. While there are no known traditional cultural practices associated with the site of the WDOBS, the historical literature and informant interviews disclosed a vibrant cultural history of the area to include previous land uses, wahi pana, religious practices, burials, and ocean and fresh water resources. The remnants of Alala heiau are existent although on private property away from the site of the WDOBS.
SECTION 4
ALTERNATIVES TO THE PROPOSED ACTION

A. No Action

A No Action alternative will maintain the status quo of the building site and the physical environment and preclude the occurrence of all impacts, short and long term, beneficial and adverse described in this Assessment.

B. Alternative On-Site Location

A Site Selection Study was not performed thus alternative locations were not evaluated.
SECTION 5
CONSULTATION

A. Pre-assessment Consultation

Agencies, Organizations, Elected Officials, and Adjoining Property Owners listed below were invited to comment on potential environmental impacts associated with the proposed action. Those that offered comments are identified by an asterisk and all comments are found in Exhibit E.

City and County of Honolulu
Board of Water Supply
Department of Emergency Management
Department of Environmental Services
*Department of Facility Maintenance
Department of Land Management
*Department of Parks and Recreation
*Division of Urban Forestry
*Department of Planning and Permitting
Department of Transportation Services
Honolulu Emergency Services Department
*Honolulu Fire Department
*Honolulu Police Department
*Office of Climate Change, Sustainability, and Resiliency

State of Hawaii
Department of Business, Economic Development and Tourism
* Office of Planning
Department of Land and Natural Resources
 Historic Preservation Division
*Division of Aquatic Resources
*Engineering Division
*Land Division
Department of Health
 Clean Water Branch
Office of Hawaiian Affairs

Federal Government
 *U.S. Fish and Wildlife Service

Organizations and Elected Officials
*Hawaiian Electric Company
Hawaiian Telcom
Kailua Chamber of Commerce
Kailua Neighborhood Board No. 31
Lani-Kailua Outdoor Circle
Lanikai Association
The Honorable Ikaika Anderson, Honolulu City Council
The Honorable Heidi Tsuneyoshi, Honolulu City Council
The Honorable Cynthia Thielen, Representative, 50th Representative District
The Honorable Chris Lee, Representative, 51st Representative District
The Honorable Laura Thielen, Senator, 25th Senatorial District
Hawaii’s Thousand Friends

Adjoining Property Owners

Tax Map Key: 4-3-009
QUEEN’S SURF LLC
Kevin and Genette Simpkins TR
Joel and Mary Cavasso TR
*Robert A. Moeng
Bronson and Deborah Teixeira
*Melody K. Mackenzie TR [Lawrence K. Araki]
*Mark W. Reckson
Bishnu Ramsarran
Louie C. Lee TR
Elizabeth H. Jackson TR
Matthew and Diane Esecson
Steven R. Gormley and James D. Panetta
Lawrence O Basha
Deborah C Rosenthal TR
*Lawrence and Denise Caster
Louie C. Lee
Daniel C. Henshaw
James B. Warlick TR

Tax Map Key: 4-3-008
Peggy P. Bredesen
Cosette M. Harms TR
Daniel J.C. Powlison and Diane M, Smith
Mary and Harvey King TR
*Steven Petranik TR and Ann E. Auman TR
Kempson 1984 TR
Timothy Preston and David Beal Families
James and Elizabeth Graham TR
Walter and Deborah Lichota TR
Dolores L. Myers TR

Tax Map Key: 4-2-002
Mid-Pacific Country Club

Other
Twogood Kayaks Hawaii

B. Draft Environmental Assessment Review

The Draft Environmental Assessment will be distributed to all agencies, organizations, elected officials, adjoining property owners, and others listed above. In addition, copies will be deposited with the Kailua Public Library and the Hawai‘i Documents Center.
Permits and approvals required for the project and approving authorities are listed below. Additional permits and approvals may be required pending final construction plans.

City and County of Honolulu

Honolulu City Council

  Special Management Area Permit

Board of Water Supply

  Water and Water System Requirements for New Developments

Department of Planning and Permitting

  Building Permit for Building, Electrical, Plumbing, Sidewalk/Driveway and Demolition Work
  Certificate of Occupancy
  Grubbing, Grading, and Stockpiling Permit
  Sewer Connection
  Soil Erosion Control Plan
  Waiver (Front yard Encroachment)

Department of Transportation Services

  Street Usage Permit

State of Hawaii

Department of Health

  Variance from Pollution Control (Noise Permit)
  Disability Communications Access Board
Hawai‘i Administrative Rules, Title 11, Department of Health, Chapter 200.1 (Environmental Impact Statement Rules) establish criteria for determining whether an action may have significant effects on the environment (§11-200.1-13). The relationship of the proposed project to these criteria is discussed below.

1) Irrevocably commit a natural, cultural, or historic resource;

   *Surface archaeological and historical features were not observed within the project area.*

2) Curtail the range of beneficial uses of the environment;

   [Pending]

3) Conflict with the State’s environmental policies or long-term environmental goals established by law;

   *The project will not conflict with the State’s environmental policies or long-term goals.*

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

   *Substantial adverse effects on the economic welfare and social welfare of the community and State are not anticipated.*

5) Have a substantial adverse effect on public health;

   *Public health will not be substantially affected during and following construction.*

6) Involve adverse secondary impacts, such as population changes or effects on public facilities;

   *Adverse secondary impacts on public facilities are not anticipated. The project will not affect the population of the area.*

7) Involve a substantial degradation of environmental quality;

   *Environmental quality will not be substantially degraded. Environmental conditions were already altered by construction of the turnout and other man-made improvements thus there is little to no existent natural features.*

8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;
At this time the project does not involve a commitment for a larger action. In the future changes affecting public safety, the Department of Emergency Services, and OSD operations could warrant expanding the proposed WDOBS.

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

Rare, threatened, or endangered flora, mammals, and bird species were not observed or recorded on the property. The Natural Resources report indicated that endangered water birds may overfly the property at different times of the year. It was recommended that exterior lighting should minimize light attraction for the birds at nights. Lights should be equipped with motion sensors, bulbs shielded from above, and the fixtures directed to illuminate ground areas and not shine up into the sky.

An invasive plant species was observed and it and two others of the same species was destroyed by staff of the Honolulu Botanical Gardens.

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

Adverse effects on air and water quality and ambient noise levels are not anticipated during construction. State Department of Health regulations for air, acoustical, and water quality impacts in conjunction with City and County of Honolulu rules for grubbing and grading, soil erosion management, and water quality rules collectively can mitigate construction related impacts.

In the long-run noise levels at the WDOBS should not be significantly different from sounds emanating from the park under existing conditions. Air quality should not be adversely affected as the WDOBS is not a point source for air pollution.

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 WDOBS is not located in all but one of the environmentally sensitive areas cited in this criterion. It is, however, located in an Extreme Tsunami Inundation Zone and could be damaged by extreme tsunami generated waves that reach it.

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

Substantial adverse effects on scenic vistas and view planes are not anticipated. The WDOBS will clearly be visible in panoramic format from Mokulua Drive and from the ocean. Although a new object to be seen, its appearance would resemble that of residential dwellings nearby.

The WDOBS should not adversely interfere or completely obstruct view planes to the ocean from Kaneapu Place. Sited downslope from the street the structure is not high enough to extend above the edge of slope. Vegetation on the slope can screen the roof from view.
13) Require substantial energy consumption or emit substantial greenhouse gases.

Substantial energy consumption is not anticipated. The use of electrical power will be offset by energy efficient design measures. Energy will also be supplied from roof mounted photovoltaic panels.
REFERENCES

AECOS, Inc. August 2019. *Natural resources assessment for an Ocean Safety District Operations Building at Kailua Beach Park on O'ahu.* AECOS No. 1551.


Cultural Surveys Hawai'i. February 2020. *Draft Archaeological Literature Review and Field inspection to Support Consultation with SHPD for the Kailua Ocean Safety Building Project, Kailua Ahupua'a, Ko'olaupoko District, O'ahu TMK:[1] 4-3-009: 002 por.* Prepared for Gerald Park Urban Planner on behalf of the City and County of Honolulu.


Department of Planning and Permitting, City and County of Honolulu. October 1986. *Land Use Ordinance. Ordinance No. 86-96 As Amended.*

Department of Planning and Permitting, City and County of Honolulu. August 2017. *Ko'olau Poko Sustainable Communities Plan. Ordinance 17-42.*


EXHIBITS

EXHIBIT A  Pre-Assessment Consultation Comments

EXHIBIT B  RESERVED


EXHIBIT D  Natural resources assessment for an Ocean Safety District Operations Building at Kailua Beach Park on O'ahu. AECOS No. 1551.

EXHIBIT E  Draft Archaeological Literature Review and Field inspection to Support Consultation with SHPD for the Kailua Ocean Safety Building Project, Kailua Ahupua'a, Ko'olaupoko District, O'ahu TMK: [1] 4-3-009: 002 por.

EXHIBIT F  Draft Cultural Impact Assessment for the Kailua Ocean Safety Building Project, Kailua Ahupua'a, Ko'olaupoko District, Oahu, TMK: [1] 4-3-009: 002.
EXHIBIT A

Pre-Assessment Consultation Comments
September 18, 2019

Mr. Gerald Park, Principal
Urban Planner
95-595 Kana‘me Street, Apt. 324
Mililani, Hawaii 96789

Dear Mr. Park:

Thank you for your letter dated September 5, 2019, requesting the department identify potential environmental impacts to the District Operations Base Station at Kailua Beach Park for the Honolulu Emergency Services Department, Ocean Safety and Lifeguard Services Division.

The concerns we have at this time are as follows:

1. Wastewater from the base station. Where will the connection be located?
2. How will the traffic along the roadway be controlled? Will a crosswalk be installed? The vehicular traffic can be heavy going around the bend into Lani‘kai.

We appreciate being given the opportunity to provide our input. Should you have any questions, please contact Patrick Dumlao, Acting Windward Oahu District Manager, at 768-8980.

Sincerely,

Michele K. Nekota
Director

MKN:kh
(786255)
MEMORANDUM

TO: Robert J. Kroning, P.E., Director
   Department of Design and Construction

FROM: Michele K. Nekota
   Director

SUBJECT: Kailua District Park – Ocean Safety District Operations Base Station

The department is in receipt of your response memorandum dated June 12, 2019, concerning the above-mentioned project. While the Division of Urban Forestry (DUF) found their questions and concerns addressed, they have provided the following comments:

1. To avoid potential conflicts with the community regarding tree removals, as evidenced by recent clearing and grading of the multi-purpose field at Waimanalo Beach Park, submit a Tree Disposition Plan (TDP), and a Qualified Arborist-prepared Tree Assessment Report (TAR) for DUF’s review and comment. The TDP identifies all tree species, including invasive species that are within the project’s limits of grading, filling, and disturbance work. Include trees 20 feet outside of all grading, filling, and disturbance work, and note which trees are to remain, trees requiring protection, trees to be relocated, trees to be demolished, and replaced. Identify trees or groves of trees that provide habitat for nesting sites for (golden plover) birds. The TAR shall be used in the preparation of the TDP, and will discuss tree risk assessments, safety hazards, diagnose, evaluate tree health, treatments, and tree mitigation pruning work. Submit the TAR and TDP to DUF’s Urban Forestry Administrator, Department of Parks and Recreation, 3902 Paki Avenue, Honolulu, Hawaii 96815, or fax to 971-7160, or via email to duf@honolulu.gov.
2. Prior to the start of construction, the preparation and execution of public notification (to the Outdoor Circle, Neighborhood Board, District Councilmember, etc.) for tree removals and any action necessary to defend and justify the work is the responsibility of the Department of Design and Construction (DDC), Facilities Division, and Consultant Architect.

3. In December 2017, Mayor Kirk Caldwell signed the U.S. Conference of Mayors Climate Protection Agreement to fight climate change and combat global warming. The Mayor commented the City and County of Honolulu to plant 100,000 trees by 2025 and achieve 35% urban tree canopy coverage by 2035. To accomplish the Mayor's Initiative, it is imperative that the City take every opportunity to increase tree plantings. As such, the Department of Parks and Recreation requests the support of DDC. Therefore, every project should include tree plantings and require replacement trees for any tree removals.

4. On the plans and specifications, revise the Formal Landscape Maintenance Period from 90 days to 120 days.

5. Consider using "Green Infrastructure" such as tree box filters, permeable pavement, and bio-retention measures, such as vegetated depressions that collect and filter storm water run-off through landscaping, mulch, and soil-based media.

6. After the revisions have been made to the plans, please include this memorandum of comments on your next submittal. Also, DDC's Project Manager and Architect Consultant shall include annotated comments and responses whether they agree or disagree with DUF's plan review comments. This will help DUF expedite the plan review process. DUF will not review subsequent plan submittals without this information attached.

Should you have any questions concerning the above, please contact David Kumasaka, DUF Landscape Architect III, at 971-7151.

MKN:kh
(776129)

cc: Division of Urban Forestry
September 25, 2019

Mr. Gerald Park
Gerald Park Urban Planner
95-595 Kanamee Street, Suite 324
Mililani, Hawaii 96789

Dear Mr. Park:

Subject: Environmental Assessment
   District Operations Base Station at Kailua Beach Park
   Tax Map Key: 4-3-009: 002
   Kailua, Hawaii

In response to your letter dated September 5, 2019, 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, 2012 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1.)

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, 2012 Edition, Section 18.2.3.2.1.)

2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45,720 millimeters) from
a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1, 2012 Edition, Section 18.3.1, as amended.)

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1, 2012 Edition, Sections 18.2.3.4.1.1 and 18.2.3.4.1.2, as amended.)

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

Should you have questions, please contact Acting Battalion Chief Reid Yoshida of our Fire Prevention Bureau at 723-7155 or ryoshida@honolulu.gov.

Sincerely,

WAYNE MASUDA
Acting Assistant Chief

WM/TC: bh
September 25, 2019

Mr. Gerald Park
Gerald Park Urban Planner
95-595 Kanamee Street, 324
Mililani, Hawaii 96789

Dear Mr. Park:

This is in response to your letter of September 5, 2019, requesting input on the pre-assessment consultation, Draft Environmental Assessment, for the District Operations Base Station at Kailua Beach Park project. The Honolulu Police Department (HPD) has reviewed the information provided in your letter to include the vicinity map and preliminary site plan and would like to recommend some mitigation measures.

The impact of the ingress/egress of construction vehicles and equipment should be evaluated to ensure neighborhood traffic flow is not adversely affected. Should the developer find significant impacts, a traffic mitigation plan, including (but not limited to) flag persons, clear signage, cones, special duty police officers, etc., should be implemented. These measures will ensure safe access to the site for construction vehicles and equipment as well as for motorists and pedestrians in the project vicinity.

The HPD also recommends that the developer and/or contractor obtain the necessary street usage permits from the city’s Department of Transportation Services for the purposes of project parking and transporting equipment to the project area.

Should there be any questions, please call Major Crizalmer Caraang of District 4 (Kailua) at 723-8639.

Thank you for the opportunity to review this project.

Sincerely,

ALLAN T. NAGATA
Assistant Chief
Support Services Bureau
Dear Mr. Park,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed District Operations Base Station project comes to fruition, please continue to keep us informed.

Should there be any questions, please contact me at 543-7245.

Thank you,
Rouen Liu
Permit Engineer

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October 4, 2019

Mr. Gerald Park, Principal
Gerald Park Urban Planner
95-595 Kanamee Street, #324
Mililani, Hawaii 96789

Dear Mr. Park:

Subject: District Operations Base Station at Kailua Beach Park
Tax Map Key: (1) 4-3-009:002, Kailua

Thank you for the opportunity to review and comment on the subject project.

Our comments are as follow:

- During construction and upon completion of the project; any damages/deficiencies along the sidewalks and/or roadways on Kawaiolaoa Road shall be repaired to City standards and accepted by the City at no cost to the City and County of Honolulu.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

Ross S. Sasamura, P.E.
Director and Chief Engineer

cc: Department of Design and Construction-Bonnie Tung
Mr. Gerald Park  
Gerald Park Urban Planner  
95-595 Kanamee Street, Unit 324  
Mililani, Hawaii 96789  

Dear Mr. Park:

SUBJECT: Pre-Environmental Assessment Consultation  
District Operations Base Station at Kailua Beach Park  
Mauka of Mokulua Drive – Kailua  
Tax Map Key 4-3-009: 002

Thank you for the opportunity to provide pre-consultation comments for the forthcoming Environmental Assessment (EA). The Department of Planning and Permitting has the following recommendations as you prepare the EA:

1. The subject parcel is within the Special Management Area (SMA), and is subject to Chapter 25, Revised Ordinances of Honolulu. The new facility will require an SMA permit; therefore, the EA should include a discussion of the objectives, policies, and review criteria of the SMA.

2. While the site is not a shoreline lot, it is near the shoreline and part of an ocean-dependent facility. The EA should include a discussion of the Project’s compliance with Mayor’s Directive 18-1 related to climate change and sea level rise.

3. It also appears that this portion of Mokulua Drive is not formally defined as a right-of-way or separate roadway parcel. The EA should include a survey that accurately defines the edge of the Mokulua roadway pavement for development purposes.
4. Finally, the site is in the P-2 General Preservation District, and within the Koolau Poko Sustainable Community Plan Area. The EA should include a discussion of compliance with the Land Use Ordinance and the Sustainable Community Plan.

Thank you for the opportunity to review and comment on this Project. Should you have further questions, please contact Alex Beatty, at 768-8032.

Very truly yours,

[Signature]

Kathy K. Sokugawa
Acting Director
October 8, 2019

Gerald Park  
Principal, Gerald Park Urban Planner  
95-595 Kaname’e Street #324  
Mililani, Hawai‘i 96789

Dear Mr. Park:

Thank you for the opportunity to comment on the proposal to construct a District Operations Base Station (DOBS) for the Lifeguard and Ocean Safety Division, Honolulu Emergency Services Department, on the mauka side of Mokulua Drive on a former overflow parking lot at Kailua Beach Park.

With such a facility proximate to the coast, the Environmental Assessment (EA) should evaluate coastal hazards including tsunami (tsunami and extreme tsunami), hurricane storm surge, mapped special flood hazard areas, and the sea level rise exposure area. Additionally, the proposal should document any potential loss of trees and tree canopy, and propose mitigation measures, for this loss and regardless of tree removal, consistent with City tree planting and tree canopy goals, and the 2006 Urban Reforestation Master Plan.

Again, thank you for the opportunity to comment on the proposal. Should you have further questions regarding this response, please contact Matthew Gonser, Coastal & Water Program Manager, at matthew.gonser@honolulu.gov or (808) 768-2276.

Sincerely,

Joshua Stanbro  
Executive Director and  
Chief Resilience Officer
Mr. Gerald Park  
Principal  
Gerald Park Urban Planner  
95-595 Kanamee Street, #324  
Mililani, Hawaii 96789  

Dear Mr. Park:

Subject: Pre-Assessment Consultation for a Draft Environmental Assessment, District Operations Base Station at Kailua Beach Park  
Kailua, District of Koolaupoko, Oahu  
TMK: (1) 4-3-009: 002

Thank you for the opportunity to provide comments on the pre-consultation request for the preparation of a Draft Environmental Assessment (Draft EA) on the District Operations Base Station (DOBS) at Kailua Beach Park. The pre-consultation review material was transmitted to our office via letter dated September 5, 2019.

It is our understanding that the City and County of Honolulu (CCH), Department of Design and Construction (DDC) proposes a DOBS for lifeguards and Ocean Safety Division personnel, Honolulu Department of Emergency Services. The facility will serve as Windward Oahu’s DOBS at Kailua Beach Park. The project area will be located on the overflow parking lot of the beach park along the Mauka side of Mokulua Drive. The planned single level structure will be 20 feet high and occupy approximately 1,600 square feet of floor space.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

1. **Special Management Area**  
The Draft EA should illustrate the project site’s proximity to the special management area (SMA) designated by the CCH under the Hawaii CZM Law, HRS Chapter 205A. Please consult with the Department of Planning and Permitting, CCH for assessment requirements of SMA Ordinances if a SMA use permit is required.

2. **Stormwater Runoff, Erosion, and Water Resources**  
Pursuant to HAR § 11-200.1-18(7) – identification and summary of impacts and alternatives considered; to ensure that the water and marine resources of Windward Oahu remain
protected, the effects of stormwater inundation, resulting from the construction and operation of this DOBS, should be evaluated in the Draft EA.

Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, open spaces, the potential vulnerability of surface water resources, drainage infrastructure currently in place, and comparing the level of impervious versus permeable in the project area. These items should be considered when developing mitigation measures for the protection of nearby water resources and the coastal ecosystem, pursuant to HAR § 11-200.1-18(8).

If you have any questions regarding this comment letter, please contact Joshua Hekekia of our office at (808) 587-2845.

Mahalo,

Mary Alice Evans
Director
Gerald Park, Principal
GERALD PARK URBAN PLANNER
95-595 Kaname‘e Street, #324
Mililani, HI 96789

via email: gpark@gpup.biz

Dear Sirs:

SUBJECT: Proposed Windward Oahu District Operations Base Station at Kailua Beach Park—Pre-Assessment Consultation for Draft Environmental Assessment, Kailua, District of Koolaupoko, Island of Oahu, Hawaii; TMK: (1) 4-3-009:002

Thank you for the opportunity to review and comment on the above subject matter. The Land Division of the Department of Land and Natural Resources (“DLNR”) distributed a copy of your request and background information to various DLNR Divisions for their review and comments.

Enclosed are responses from DLNR’s a) Division of Aquatic Resources, b) Engineering Division, and c) Land Division—Oahu District. Should you have any questions, please feel free to contact Barbara Lee by phone at (808) 587-0453 or via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files
September 18, 2019
Russell Tsuji, Administrator
Land Division
Department of Land and Natural Resources
State of Hawai‘i
1151 Punchbowl Street, Room 220
Honolulu, Hawai‘i 96813

Dear Mr. Tsuji:

Subject: District Operations Base Station at Kailua Beach Park
Tax Map Key: [1]4-3-009: 002
Kailua, District of Ko‘olau Poko, O‘ahu

We are preparing an environmental assessment for a proposed city facility at Kailua Beach Park. The Department of Design and Construction, City and County of Honolulu, proposes to construct a District Operations Base Station (DOBS) for the Lifeguard and Ocean Safety Division, Honolulu Department of Emergency Services. The facility will serve as the Windward O‘ahu District Operations Base Station.

The project is proposed on a former overflow parking lot on the mauka side of Mokulua Drive. The 14,000 square feet building site would accommodate the DOBS with parking for vehicles and rescue trailers. The single-level, 20-foot high structure will have a floor area of approximately 1,600 square feet. A Vicinity Map and preliminary Site Plan are enclosed.

We invite your participation in identifying potential environmental impacts that may be of interest to the Land Division. Your comments will help in preparing the environmental assessment. Please send your comments to the address on this letterhead by October 22, 2019.

Please contact Ms. Bonnie Tung of the Department of Design and Construction at 808-768-8451 or bonnie.tung@honolulu.gov or me at 808-625-9626 or gpark@gov.hi if you have questions.

We look forward to your participation in the environmental assessment process.

Sincerely,

GERALD PARK URBAN PLANNER

Gerald Park, Principal

Enclosures: As Noted

c: B.Tung, DDC
MEMORANDUM

TO: DLNR Agencies:
- X Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- X Div. of Forestry & Wildlife
- Div. of State Parks
- X Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- X Land Division - Oahu District
- X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Proposed Windward Oahu District Operations Base Station at Kailua Beach Park—Pre-Assessment Consultation for Draft Environmental Assessment

LOCATION: Kailua, District of Koolaupoko, Island of Oahu; TMK Nos. (1) 4-3-009:002

APPLICANT: Gerald Park, Urban Planner, on behalf of the City & County of Honolulu

Transmitted for your review and comment is information on the above-referenced subject, as described in the attached.

Please submit any comments by October 18, 2019. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

( ) We have no objections.
( ) We have no comments.
( ) Comments are attached.

Signed: [Signature]

Attachments
Cc: Central Files

Print Name: Brian J Neilson, DAR Administrator

Date: 10-10-19
MEMORANDUM

TO: Brian J. Neilson
DAR Administrator

FROM: Daniel Lager, Aquatic Biologist

SUBJECT: Proposed Windward Oahu District Operation Base Station at Kailua Beach Park
Pre-Assessment Consultation for Draft Environmental Assessment

Request Submitted by: Gerald Park, Urban Planner on behalf of the City & County of Honolulu

Location of Project: Kailua, District of Koolaupoko, Island of Oahu

Brief Description of Project:

The Department of Design and Construction is proposing the construction of a District Operations Station (DOBS) for the Lifeguard and Ocean Safety Division. This facility will serve the Windward side of Oahu and will accommodate parking for vehicles and rescue trailers. The project has a 14,000 square foot area and a single-level, 20-foot high structure with a floor area of approximately 1,600 square feet.

Comments:

☐ No Comments  ☐ Comments Attached

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

Comments Approved: ______________________ Date: 10/9/2019

Brian J. Neilson
DAR Administrator
TO: DLNR Agencies: 

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Oahu District
- Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Proposed Windward Oahu District Operations Base Station at Kailua Beach Park—Pre-Assessment Consultation for Draft Environmental Assessment

LOCATION: Kailua, District of Koolaupoko, Island of Oahu; TMK Nos. (1) 4-3-009:002

APPLICANT: Gerald Park, Urban Planner, on behalf of the City & County of Honolulu

Transmitted for your review and comment is information on the above-referenced subject, as described in the attached.

Please submit any comments by October 18, 2019. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed: [Signature]

Print Name: Carly S. Chang, Chief Engineer

Date: 11/25/19
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Proposed Windward Oahu District Operations Base Station at Kailua Beach Park—Pre-Assessment Consultation for Draft Environmental Assessment
TMK(s): (1) 4-3-009:002
Location: Kailua, District of Koolaupoko, Island of Oahu
Applicant: Gerald Park, Urban Planner, on behalf of the City & County of Honolulu

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA’s Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

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

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4896.

Signed: CARTY S. CHANG, CHIEF ENGINEER
Date: 9/25/19
TO: DLNR Agencies:  
X Div. of Aquatic Resources  
___ Div. of Boating & Ocean Recreation  
X Engineering Division  
X Div. of Forestry & Wildlife  
___ Div. of State Parks  
X Commission on Water Resource Management  
___ Office of Conservation & Coastal Lands  
X Land Division - Oahu District  
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Proposed Windward Oahu District Operations Base Station at Kailua Beach Park—Pre-Assessment Consultation for Draft Environmental Assessment

LOCATION: Kailua, District of Koolaupoko, Island of Oahu; TMK Nos. (1) 4-3-009:002

APPLICANT: Gerald Park, Urban Planner, on behalf of the City & County of Honolulu

Transmitted for your review and comment is information on the above-referenced subject, as described in the attached.

Please submit any comments by October 18, 2019. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

( ) We have no objections.  
( x ) We have no comments.  
( ) Comments are attached.

Signed: [Signature]

Attachments
Cc: Central Files
Print Name: [Signature]  
Date: 10/18/19
In Reply Refer To: 01EPIF00-2020-TA-0005

October 17, 2019

Mr. Gerald Park
Gerald Park Urban Planner
95-595 Kanamee St. #324
Mililani, Hawaii 96789

Subject: District Operations Base Station at Kailua Beach Park, Kailua, Oahu

Dear Mr. Park,

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

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

If you are representing a federal action agency, please use the official species list on our web-site for your section 7 consultation. You can find out if your project occurs in or near designated critical habitat here: https://ecos.fws.gov/ipac/.

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

Implementing the avoidance, minimization, or conservation measures for the species that may occur in your project area will normally enable you to make a “may affect, not likely to adversely affect” determination for your project. If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then that agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats, and defines measures to minimize and mitigate those adverse effects.

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

Sincerely,

Aaron Nadig

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

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name / Hawaiian Name</th>
<th>Federal Status</th>
<th>May Occur In Project Area</th>
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<td>Mammals</td>
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<tr>
<td>Lasius cinereus semotus</td>
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<td>Reptiles</td>
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<td>Birds</td>
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<tr>
<td>Anas wyvilliana</td>
<td>Hawaiian duck/ koloa</td>
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<tr>
<td>Branta sandvicensis</td>
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<td>Fulica alai</td>
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<td>Le, Ka, Ni, O, Mo, M, L, H, Nihoa</td>
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<td>'Ena'ena</td>
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<td>'Āwiwi</td>
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</table>

Location key: O=O'ahu, K=Kaua'i, M=Maui, H=Hawai'i Island, L=Lāna'i, Mo=Moloka'i, Ka=Kaho'olawe, Ni=Ni'ihau, Le=Lehua
Gerald Park Urban Planner
95-595 Kaname‘e St. #324
Miliiani, Hi 96789

September 15, 2019

Dear Mr. Park,

I am writing in response to your invitation for feedback regarding the proposed city facility at the Kailua Beach Park. While I fully support the need for a District Operations Base Station for the Lifeguard and Ocean Safety Division in Kailua, I don’t feel this is the correct location for it at all.

There is a huge shortage of beach parking in Kailua and it’s just getting worse. The proposed location for the Operations base should be reserved for overflow parking for the beach park. Taking it away would further exacerbate the problem. I have noticed over the years that the beach is where most of the motorist are heading and the beach park itself is under-used. For this reason, I propose building an operations base taking up park land (as it should since it’s serving the beach park) right behind the bathrooms by the Covered picnic structure is ideal. Nobody ever uses this piece of the park and it could be connected to the parking lot at the boat ramp.

This location makes a lot more sense to me.

Thank You

Denise Caster
808-341-5095
595 Kawailoa Rd
Kailua, Hi 96734
Gerald Park

From: bob@twogoodkayaks.com
Sent: Friday, September 13, 2019 11:08 AM
To: gpark@gpup.biz
Subject: Proposed facility at Kailua Beach Park

Aloha,

Based on what your map is showing, This seems like a reasonable location for this facility.

Aloha,

Bob Twogood
President

Twogood Kayaks Hawaii, Inc.
134 B Hamakua Drive
Kailua, Hawaii 96734
Ph. 808 262-5656
bob@twogoodkayaks.com
www.twogoodkayaks.com
September 8, 2019

Thank you, Mr. Park for informing us of this proposed facility at Kailua Beach Park.

As 33-year residents and owners of the nearby property, 17 Aalapapa Place, we welcome this new facility. The frequency of land and sea rescues in our area clearly demonstrates the need for such a facility.

Occasionally, homeless people camp on the land uphill of the planned site. That led to break-ins at our home and our neighbors. One possible side benefit of this new facility will be that it will discourage further homeless encampments. We welcome that.

This proposed site is visible from our backyard. Our only concern is noise from operations at the new facility that would affect nearby residents. Possibly you could recommend facility rules that would:
• discourage loud conversations and other loud noises at night
• discourage use of sirens until the rescue vehicles enter the road

Thank you for your work on this assessment.

Sincerely,

Steve Petranik

Ann E. Auman
What is the distance of the building from the street?

Not sure since site plan not finalized. At least 20 feet setback.

Is excavation of the hillside planned.

Yes some excavation required for portion of building and retaining wall at back.

Modification to existing grade for siting the building.

Grade adjustments necessary to create level pad for building and parking areas. Most likely grade to be lowered rather than raised.

Soils report for hillside:

Unsure if soils report being prepared. Architect to retain soils engineer, civil engineer, and landscape architect.

Are the containers on the site in use? Mr. Moeng hasn’t seen signs of lifeguard activity. Heard that lifeguards preferred locating the containers in the park for ease of ocean access.

Gerald to follow up.

Discussed with DEM about roof covered with soil and grass. Cooler, less intrusive.

Subject not discussed in my conversations with the architect. Will broach to him.

Is a larger version of the site plan available?

Gerald will search for larger version and send electronic file. The site plan was intended to show the general location of the facility. Understand that the site plan I can send is being modified and a final site plan and floor plan have not been approved.

Will I get another chance to comment on the project?

Yes. After a Draft EA is prepared I plan to mail it to adjoining property owners. Document will most likely be in electronic rather than print format.

Thank you for notifying owners like me.

You’re welcome. In total approximately 30 property owners adjoining the site were notified.
Dear Mr. Park,

I am in receipt of your letter dated September 5, 2019, requesting comments relevant to an environmental assessment of the proposed construction of the District Operations Base Station (DOBS) at Kailua Beach Park. I would like to thank you for your effort to obtain input from the surrounding neighborhood residents.

The region for the proposed DOBS site is undeveloped park land contiguous with the developed portion of Kailua Beach Park. It has served as an important source of parking particularly during the heavy weekend traffic of community members going to the beach. The temporary structures that have already been installed at the proposed DOBS site have reduced parking by about 15 vehicles. This has caused drivers to seek parking in surrounding residential neighborhoods. As a resident on Kaneapu Pl, a dead end street adjacent to the site, I find that on some weekend days, there is a continuous flow of traffic up and then down the street, with drivers seeking parking space for their vehicles. I certainly understand that living near a popular beach brings traffic and parking issues to the surrounding neighborhoods. However, the City and County of Honolulu should endeavor to provide the parking necessary to meet the demands of beach goers. In this case, parking capacity is being reduced.

The proposed site is in a flood/tsunami designated zone and along a thoroughfare that serves as the only egress from the Lanikai neighborhood and streets surrounding the park. On busy weekends, particularly if rain showers disrupt beach activities, there is a lineup of stop and go traffic extending well into Lanikai. One can only imagine the exodus from the area if a tsunami was forecast for the windward side of the island. These sorts of traffic issues will impede access to the DOBS site since its proposed location is along this thoroughfare. This difficult access may occur at a time when the services of the Ocean Safety Division are most needed.

Again since I am a resident along Kaneapu Pl, I am concerned about the proposed 20 ft. tall building at its current placement on the site. I anticipate that it will significantly alter my view of Kailua Bay and the beach, which of course may impact the property value of my home. I ask that the City and County consider this concern if they choose to move forward with the DOBS construction at this location doing their best to minimize any such impact including reduced height, relocation of building footprint more towards the Lanikai monument, adding a sod roof to blend in with the surroundings.

Finally, I would like to relate a simple observation. The temporary structures were installed months ago. It appears to me that they are not being used. I'm wondering why. Is it that the lifeguards prefer to use their current location at the other end of the beach park? Does the proposed site really to meet the needs and wishes of the members of the Lifeguard and Ocean Safety Division? Their input is critical to the future use and value of the proposed DOBS construction.

Sincerely,

Robert S. Moeng

cc: Bonnie Tung, Dept. of Design and Construction
October 4, 2019

Gerald Park Urban Planner
95-595 Kaname'e Street, #324
Mililani, HI 96789

Dear Mr. Park:

This is in response to your request for comments regarding the proposed siting of the Windward O'ahu District Operations Base Station for the Lifeguard and Ocean Safety Division, Honolulu Department of Emergency Services. My wife and I live on Kane‘apu Place and my wife's family has lived at our present location for over four-generations.

We have five concerns regarding potential environmental impacts related to the proposed project:

One, traffic in the area is quite congested by the already limited egress and ingress into and out of Ka'ōhao (Lanikai) especially at peak traffic times (morning and afternoon), and on weekends and holidays. This would be exacerbated by Ocean Safety Division vehicles making left turns from the proposed base station, particularly if in responding to emergencies, specialized equipment is required (i.e., jet skis, ATVs, etc.). Moreover, this may affect the ability of Ocean Safety Division personnel to respond immediately to an ocean emergency when time is of the essence;

Two, has a geoanalytical soil study been done for the proposed site of the project? If so, what were the results and the suggested accommodations for construction of the proposed structure? If not, the soil in this area is sand and clay and is susceptible to settling and slippage. Also, what might be the effect to the actual road, as well as the parking area across from the houses, on Kane‘apu Place as a result of this construction;

Three, the proposed project is located in a tsunami zone (and was in fact inundated by the 1946 tsunami that struck Hawai‘i which went as far as what is now Kailua district park and about halfway up Kane‘apu place). Such a location would be rendered useless as a base station in the event of a similar event because of damage to roads, homes, power lines, etc.;

Four, would the proposed base station be used for any storage of fuels for the jet skis, ATVs, etc.? Leaks and spills of fuels so close to the beach and ocean would be a concern, as they would eventually end up in the ocean;

Five, sight planes would be negatively affected by the construction of the proposed 20-foot height of the building. While not having the widespread impact as the other concerns noted above, it is still a valid concern for those so affected.

Mahalo and we look forward to hearing back from you on how these concerns will be addressed.

Sincerely,

Lawrence K. Araki
579 Kane‘apu Pl.

Cc: Bonnie Tung, C&C of Honolulu, Dept. of Design & Construction
Dear Mr Park,

As immediate neighbors to the proposed DOBS at Kailua Beach Park, we have a great many concerns and objections.

First, the visual degradation of building in an important view plane from the Beach Park and the ocean. The trailers that have been placed at the site are quite visible from the Park and the ocean, in an otherwise natural and unspoiled area.

We have always seen this designated as conservation land. We are concerned about building in conservation or park land, not only for this project, but concerned this may set a precedent for further encroachments/degradation of a natural area. We feel it is actually quite important for the character of the Park to preserve natural, unbuilt areas and views.

It is also very visible from our neighborhood and if built at 20 feet high would block beach and ocean views from multiple houses on Kaneapu Place, we bought our houses because we are across from conservation land that should stay unspoiled. We are also concerned about the architecture, roof material and color and potential glare, solar panels which could glare at us in our ocean view, noise from personnel, smoking, heat and noise from air conditioning, heat and noise from traffic in and out of the facility, extra heat from loss of trees shading the site.

Second, the proposed DOBS is right at the crux of a complete traffic mess, a blind curve with conflicting traffic into and out of Lanikai, the Beach parking lot, and our street. Even a small amount of added congestion from DOBS could be the straw that breaks the Camel's back. Weekends especially throughout the summer are complete chaos. We think it makes no sense to put this right in the middle of the madness.

Our street has really suffered from the huge increase in pressure on Kailua Beach Park and environs. In fact, we desperately need the help of an urban planner to deal with multiple issues...parking and traffic especially.

We have several other concerns as well, but wanted to keep our initial reply brief.

We would love to have the chance to meet with you for 30 or 40 minutes at the proposed site. Thank you so much for your time and consideration.

Yours—

Mark
EXHIBIT C

Phase I
Environmental Site Assessment
Project No. 1806-00336-PH1
592 Kaneapu Place
Kailua, Hawaii

prepared for

Jeffrey Nishi & Associates Architects
928 Nuuanu Avenue, Suite 201
Honolulu, Hawaii 96817

July 23, 2018
Phase I Environmental Site Assessment

Kailua Beach Park Combination Tower and Rescue Vehicle Facility
592 Kaneapu Place
Kailua, Hawaii

Prepared by:
ENPRO Environmental
151 Hekili Street, Suite 210
Kailua, Hawaii 96734
808.262.0909
808.262.4449 (fax)
www.enproenvironmental.com

ENPRO Environmental Contact:
Kimberly Rottas
Environmental Consultant
808.748.2114
krottas@enproenvironmental.com

ENPRO Project Number: 1806-00336-PH1
Date of Report: July 23, 2018
On-Site Investigation: June 28, 2018

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### PROJECT AT A GLANCE™

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<th>Acceptable (†)</th>
<th>Routine Solution</th>
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Conditions noted in the Project at a Glance™ table represent the overall conditions of the property. More specific details on assessment components may be included in the text of this report; therefore the Project at a Glance™ should not be used as a stand-alone document.
Based on our investigation, ENPRO has concluded that the risk of contamination at the site is so minimal that no further investigation is required.
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1.0 EXECUTIVE SUMMARY

Jeffrey Nishi and Associates Architects (the Client) retained ENPRO Environmental (ENPRO) to conduct a Phase I Environmental Site Assessment (ESA) of the parking area and undeveloped hillside located at 592 Kaneapu Place in Kailua, Hawaii (the project site). The objective of this assessment was to provide an independent, professional opinion regarding recognized environmental conditions (RECs), as defined by the American Society for Testing and Materials (ASTM), associated with the project site.

This assessment was performed under the conditions of, and in accordance with ENPRO’s Proposal Number 18D-0194-HNL dated April 19, 2018, the ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E1527-13), and All Appropriate Inquiries (AAI) which includes 40 CFR Part 312, §312.21 and §312.31. Any exceptions, additions to, or deletions from the ASTM E1527-13 or AAI practice, details of the work performed, sources of information, and findings are presented in the report. Limitations of the assessment are described in Section 2.6.

The project site, currently owned by the State of Hawaii, is 10.441 acres.

The historical research presented in this report has established the use of the property since 1928, when the property was depicted as an undeveloped hillside.

1.1 FINDINGS AND CONCLUSIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM E1527-13 of the project site. Any exceptions to, or deletions from, this practice are described in Section 2.6 of this report.

This assessment has revealed no evidence of RECs in connection with the project site.

The following de minimis conditions were identified at the project site:

- On-site dumping of municipal trash
- One open and unlabeled 5-gallon bucket containing a dried concrete/paint-like substance
- Motor oil stains from parked vehicles
Recommendations for additional actions regarding the above *de minimis conditions* are listed in Section 10.1.

### 1.2 CONTINUED VIABILITY STATEMENT

An ESA meeting or exceeding the requirements of ASTM E1527-13 and completed less than 180 days prior to the date of acquisition of the property, or (for transactions not involving an acquisition) the date of the intended transaction, is presumed to be valid. The period of validity may be extended to one year from the date of the investigation, provided that the following components of the inquiries are conducted or updated within 180 days of the date of purchase or the date of the intended transaction:

- Interviews with owners, operators, and occupants
- Searches for recorded environmental cleanup liens
- Reviews of federal, tribal, state, and local government records
- Visual inspections of the property and of adjoining properties
- Declaration by the environmental professional responsible for the assessment or update
2.0  INTRODUCTION

2.1  LOCATION AND LEGAL DESCRIPTION

The project site is a vacant parcel in a residential setting (Figures 1 and 2). The longitude and latitude for the project site address are in Table 1.

The project site is further described by the City and County of Honolulu Real Property Tax Office as Tax Map Key (1) 4-3-009: 002. It is located in an area zoned “P-2: General Preservation.”

<table>
<thead>
<tr>
<th>Location Description</th>
<th>Project Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>592 Kaneapu Place in Kailua, Hawaii</td>
</tr>
<tr>
<td>TMK</td>
<td>(1) 4-3-009: 002</td>
</tr>
<tr>
<td>Latitude (North)</td>
<td>21.393896 - 21° 23’ 38”</td>
</tr>
<tr>
<td>Longitude (West)</td>
<td>157.721428 - 157° 43’ 17”</td>
</tr>
<tr>
<td>Elevation</td>
<td>Varies from near sea level to approximately 200 feet above sea level</td>
</tr>
<tr>
<td>Distance and Direction to</td>
<td>Pacific Ocean, approximately 150 feet to the north</td>
</tr>
<tr>
<td>Surface Waters</td>
<td>Kaelepulu Canal 1,480 feet to the west</td>
</tr>
</tbody>
</table>

2.2  SITE AND VICINITY GENERAL CHARACTERISTICS

The project site is located near the northeast shore of the island of Oahu. The project site included one irregular-shaped parcel totaling approximately 10 acres. There were no on-site structures. Primary access to the site was from Mokulua Drive, north of the project site.

2.3  PURPOSE

The objective of this ESA is to provide an independent, professional opinion regarding RECs, as defined by ASTM E1527-13, associated with the project site.
ASTM E1527-13 defines three categories of RECs which may impact the project site.

- A REC is defined as the presence or likely presence of any hazardous substance or petroleum product in, on, or at the property:
  - Due to any release to the environment
  - Under conditions indicative of a release to the environment
  - Under conditions that pose a material threat of a future release to the environment

- Historical RECs (H-RECs) are defined as a past release of any hazardous substance or petroleum product that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authorities or meeting *unrestricted* use criteria established by a regulatory authority, without subjecting the property to any required controls.

- Controlled RECs (C-RECs) are defined as a REC resulting from a past release that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place, subject to the implementation of required controls, such as property use restrictions, AULs, institutional controls, or engineering controls.

Additionally, ASTM E1527-13 allows for the identification of *de minimis* conditions. A *de minimis* condition is defined as a condition that generally does not represent a threat to human 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. A conditioned determined to be *de minimus* is not a REC.

### 2.4 DETAILED SCOPE OF SERVICES

The scope of services in conducting this assessment included:

**Records Review**

- A review of environmental records, including regulatory agency reports, permits, registrations, and consultant’s reports for evidence of RECs available from the property owner or site contact.

- An investigation of historical use of the project site by examining locally available aerial photographs, fire insurance maps, property tax files, recorded
land title records, USGS topographical maps, building department records, zoning/land use records and/or other readily available historical information for evidence of prior land use that could have led to RECs.

- A review of an environmental database search report of federal and state regulatory agency records pertinent to the project site and offsite facilities located within ASTM-specified search distances from the project site.

- A review of regulatory agency files and records if the property, or any of the adjoining properties, is identified on one or more of the standard environmental record sources in the database search, to determine if a REC or de minimis condition exists at the property in connection with the listing.

- A review of readily available information describing the general geology and topography of the project site, local groundwater characteristics, sources of water, power and sewer, and proximity to ecologically sensitive receptors that may be impacted by RECs.

- A review of title and judicial records for environmental liens and AULs on behalf of the user, to meet the requirements of 40 CFR 312.20 and 312.25.

**Site Reconnaissance**

- A site walkthrough inspection of the property for visible evidence of RECs including existing or potential soil and groundwater contamination, as evidenced by:
  - Staining or discoloration
  - Stressed vegetation
  - Indications of waste dumping or burial
  - Pits, ponds or lagoons
  - Containers of hazardous substances or petroleum products
  - Electrical and hydraulic equipment that may contain polychlorinated biphenyls (PCBs), such as transformers or lifts
  - Underground and aboveground storage tanks

- A site property line visual assessment of adjacent properties for evidence of potential offsite RECs that may affect the project site.

**Interviews**

- Interviews with available key site personnel regarding current and previous site activities on the property, especially those involving the use of hazardous substances and petroleum products. Required interviews shall include the following persons:
The User, defined as the party seeking to use ASTM E1527-13 to complete an environmental assessment of the property. A User has specific obligations for completing a successful application of this practice.

The property owner

A key site manager, who shall be identified by the owner, prior to the site visit, as a person with good knowledge of the uses and physical characteristics of the property (for example, a property manager, chief physical plant supervisor, or head maintenance person).

Occupants

Past users, when available

Neighbors, where the property is abandoned and the environmental professional determines there is evidence of potential unauthorized uses of the property

Interviews are summarized in Section 8.0 of this report. Completed property questionnaires are presented in the Appendix.

### 2.5 SIGNIFICANT ASSUMPTIONS

ENPRO, in part, has relied on information supplied by the Client or the Client’s agent(s), listed in Section 8.0, and assumes such information to be factual.

The commercial regulatory database search report, summarizing federal and state regulatory agency records, is provided by a contracted data research firm. The information provided is assumed to be correct unless otherwise noted.

Unless otherwise discovered during review, all other sources of information, whether verbal or written, are assumed to be factual.

### 2.6 LIMITATIONS AND EXCEPTIONS

Access was provided to all known areas of the project site. However, the majority of the project site was inaccessible due to dense vegetation site-wide and steep terrain.

No opinion regarding environmental conditions in areas that were not inspected can be formed.
As a matter of necessity, ENPRO relies largely on readily available sources of information such as the Client, public records, interviews, and contracted research firms for recognizing potential environmental liabilities at a project site/facility. Requests for information resources are made to collect relevant data on current and past practices conducted at the project site/facility. ENPRO may not receive all information requested or be able to confirm received information during the course of the environmental site assessment. Therefore, ENPRO shall not be held responsible for errors, omissions, or misrepresentations resulting from missing documentation or from inaccurate information provided by such sources.

2.7 SPECIAL TERMS AND CONDITIONS

This Phase 1 Environmental Site Assessment did not include any special terms or conditions.
3.0 USER PROVIDED INFORMATION

A property questionnaire was completed by Mr. James Howe, Jr. of the City and County of Honolulu on behalf of the User (Jeffrey Nishi and Associates Architects). A copy of the completed property questionnaire is included in the appendix section of this report. Additional User provided information is detailed in Section 8.1.

3.1 ENVIRONMENTAL CLEANUP LIENS AND ACTIVITY AND USE LIMITATIONS (AUL) REVIEW

On behalf of the User, ENPRO reviewed a search report for environmental liens and AULs prepared by AFX Research, LLC. The report did not identify any environmental liens or AULs associated with the project site. A copy of the AUL and environmental lien search report is included in the appendix section.

3.2 SPECIALIZED KNOWLEDGE

Mr. Howe did not report any specialized knowledge of any RECs in connection with the property.

3.3 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

The project site was commonly known for illegal dumping of municipal trash.

3.4 VALUATION REDUCTION FOR ENVIRONMENTAL IMPAIRMENT

Mr. Howe did not provide information on any reduction of valuation due to environmental impairment.

3.5 OBVIOUS INDICATORS OF PRESENCE OR LIKELY PRESENCE OF CONTAMINATION AT THE PROPERTY

Mr. Howe stated that there were no obvious indicators that point to the presence or likely presence of contamination at the property.
3.6 REASONS FOR PERFORMING PHASE I ENVIRONMENTAL SITE ASSESSMENT

Mr. Howe stated that the purpose for conducting the Phase I ESA was for development of the project site as a combination tower and rescue vehicle facility.
4.0 RECORDS REVIEW

This section presents a review of physical setting sources, standard and additional environmental records sources, and historical use information on the property and surrounding area.

4.1 PHYSICAL SETTING SOURCES

4.1.1 TOPOGRAPHY

Review of the topographic map published by the United States Geological Survey (USGS) 2013 indicated the following:

The project site was located to the north of the Keolu Hills, in the Lanikai District of Kailua, in the northeast region of the island of Oahu. The project site elevation varied from near sea level to approximately 200 feet above sea level.

No individual structures were depicted on the project site. The project site region was coded in green omission tint indicating the area was forested.

The project site region was steeply sloping to the southeast. The nearest body of water was the Pacific Ocean, approximately 150 feet north of the project site. The Kaelepu Canal was located approximately 1,480 feet from the western boundary of the project site. The project site is within 150 meters of a surface water body.

4.1.2 SOILS

A review of the soil type of the area was performed. The soil survey of the island of Oahu is published by the USDA Natural Resources Conservation Service in cooperation with the United States Department of Agriculture (USDA) Soil Conservation Service and University of Hawaii Agricultural Experiment Station. USDA soil survey data is available at http://websoilsurvey.nrcs.usda.gov/app/ and was accessed on June 26, 2018. The following information is pertinent to the project site:

The project site was situated on soil classified as Papaa clay (PYF) and Kokokahi very stony clay (KTKE).

Papaa clay consists of well-drained soils in on uplands on the island of Oahu. The soils formed in colluvium and residuum derived from basalt.
Permeability for Papaa clay is described as very low (between 0.06 and 0.20 inches per hour). The soil is described as having a moderate corrosivity for uncoated steel and a low corrosivity for concrete.

Papaa soils are used for pasture. Natural vegetation consists of guava, Java plum, klu, koa haole, Christmas berry, lantana, sourgrass, and ricegrass.

Kokokahi very stony clay consists of moderately well drained soils on talus slopes and alluvial fans on the island of Oahu. These soils formed in colluvium and alluvium derived from basic igneous rock.

Permeability for Kokokahi very stony clay is described as very low (between 0.06 and 0.63 inches per hour). The soil is described as having a high corrosivity for uncoated steel and a low corrosivity for concrete.

Kokokahi soils are used for pasture and home sites. The natural vegetation consists of kiawe, koa haole, klu, bristly foxtail, piligrass, and bermudagrass.

4.1.3 GEOLOGY/HYDROGEOLOGY

Groundwater beneath the project site occurs in one distinct aquifer within the Waimanalo Aquifer System of the Windward Aquifer Sector. The aquifer is classified as a high level, unconfined, dike aquifer, occurring in dike compartments. The groundwater status is reported as being currently in use for drinking water purposes. The salinity of the groundwater within this aquifer is described as fresh (250 milligrams per liter Cl\textsuperscript{-}). The groundwater is further described as irreplaceable, with a high vulnerability to contamination (Mink and Lau, 1990).

The hydrogeologic gradient in the vicinity of the project site is anticipated to be moderate, with a general trend to the north. Groundwater levels may be influenced by leaking infrastructure and tidal fluctuations. The direction and rate of groundwater flow across the project site may be complicated and is not fully understood.
5.0 HISTORICAL RECORDS REVIEW

According to ASTM E1527-13, the historical search of the property must cover a period of time back to the property’s first developed use, or back to 1940, whichever is earlier.

As part of this assessment, ENPRO reviewed several historical sources of information, including aerial photographs, fire insurance maps, United States Geologic Survey (USGS) topographic maps, building department records, chain of title documents, property tax records and zoning/land use records. On the earliest reference depicting the project site, the 1928 USGS topographic map, the area and streets surrounding the project site had already been developed as a housing tract. The project site itself was a steep hill, labeled “Puu Halo.” Based on common historical knowledge of the development of the island of Oahu, it is ENPRO’s opinion that the project site has not yet been developed. It is ENPRO’s opinion that any previous use of this property was not likely to have resulted in recognized environmental conditions expected to impact the project site.

5.1 TITLE RECORDS

Readily available records at the City and County of Honolulu Tax Assessor’s Office were reviewed to assess past ownership of the project site. Significant ownership transactions are summarized below:

**Table 2**

<table>
<thead>
<tr>
<th>Tax Map Key</th>
<th>Date</th>
<th>Property Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 4-3-009: 002</td>
<td>Prior to 1949</td>
<td>Owned by State of Hawaii</td>
</tr>
</tbody>
</table>

No readily apparent evidence of RECs that are expected to impact the project site was noted in the ownership records reviewed.
5.2 HISTORICAL USE INFORMATION ON THE PROPERTY

5.2.1 HISTORICAL SANBORN MAPS

Sanborn fire insurance map coverage of Oahu included the project site and several historical maps were reviewed as part of this assessment:

- A 1953, 1976, 1980, 1991, and 1993 Sanborn maps. On these maps, the project site was depicted as undeveloped land. The project site was labelled as “Steep Hill.”

No evidence of RECs at the project site were identified in the historic fire insurance maps reviewed. Copies of the Sanborn maps reviewed for this project are provided in the appendix section of this report.

5.2.2 HISTORICAL TOPOGRAPHIC MAPS

The following topographic maps were reviewed as part of this assessment:

- A 1928 topographic map. The scale of this map was one inch equals 1,667 feet. On this map the project site was depicted as a steep, undeveloped hill, labelled as “Puu Halo”. No structures were depicted at the project site.

- A 1952 topographic map. The scale of this map was one inch equals 2,000 feet. No structures were depicted at the project site. A portion of the project site was shaded in green omission tint, indicating that the area was forested.

- 1954, 1959, 1968/1969, and 1970 topographic maps. The scales of these maps varied. These maps were very similar to the 1952 topographic map.

- A 1983 topographic map. The scale of this map was one inch equals 2,000 feet. The entire project site was shaded in green omission tint, indicating that the area was forested.

- A 1998, 1999, and 2013 topographic maps. The scale of these maps was one inch equals 2,000 feet. These maps were very similar to the 1983 topographic map.

Copies of the historic topographic maps reviewed for this project are provided in the appendix section of this report.

5.2.3 HISTORICAL AERIAL PHOTOGRAPHS

The following aerial photographs were reviewed as part of this assessment:
• EDR, dated 1968, 1978, 1985, 1992, 2001, and 2008. The scale of these photographs was approximately one inch equals 500 feet. The project site appeared to be overgrown by brush and grasses. Details of the project site were obscured by poor photographic resolution.

5.3 HISTORICAL USE INFORMATION ON ADJOINING PROPERTIES

5.3.1 HISTORICAL SANBORN MAPS

Sanborn fire insurance map coverage of Oahu included the project site region and the following historical maps were reviewed as part of this assessment:

• A 1953 Sanborn map. On this map, the areas to the east and west of the project site were depicted as a moderately developed housing tract. An unnamed road was depicted north of the project site and Kaneapu Place bordered a portion of the northwestern property boundary. The areas to the north and south of the project site were not labeled, nor did they show any indication of development.

• A 1976 Sanborn map. This map appeared very similar to the 1953 Sanborn map. The residential areas to the east and west of the project site were slightly more developed.

• 1980, 1991, and 1993 Sanborn maps. These maps appeared very similar to the 1976 Sanborn map.

5.3.2 HISTORICAL TOPOGRAPHIC MAPS

The following topographic maps were reviewed as part of this assessment:

• A 1928 topographic map. The scale of this map was one inch equals 1,667 feet. “Alala Point” and an unnamed road were depicted just north of the project site. A vegetated area was depicted to the south of the project site, and the areas to the east and west were developed as a housing tract.

• A 1952 topographic map. The scale of this map was one inch equals 2,000 feet. The vegetated area was still depicted to the south of the project site, and the “Mid-Pacific Country Club” was labelled to the south of the vegetated
area. The housing tract to the east and west of the project site were coded in pink omission tint, indicating densely built-up area.


- A 2013 topographic map. The scale of this map was one inch equals 2,000 feet. The areas surrounding the project site were unshaded (white), indicating the area was not forested. The Mid-Pacific Country Club was no longer labelled.

### 5.3.3 HISTORICAL AERIAL PHOTOGRAPHS

The following aerial photographs were reviewed as part of this assessment:

- EDR, dated 1968, 1978, 1985, 1992, 2001, and 2008. The scale of these photographs was approximately one inch equals 500 feet. The general area surrounding the project site was developed for residential use. The Pacific Ocean was depicted to the north of the project site, and a golf course was depicted to the south. The area immediately southeast of the project site was overgrown by brush and trees. Details of the areas surrounding the project site were obscured by poor photographic resolution.

### 5.4 PREVIOUS ENVIRONMENTAL REPORTS

No previous environmental reports were available for review.
6.0 REGULATORY DATABASE REVIEW

6.1 STANDARD ENVIRONMENTAL RECORD RESOURCES: FEDERAL, STATE AND LOCAL DATABASE SEARCH

The regulatory database search report prepared by Environmental Data Resources, Inc. (EDR) was reviewed to evaluate the project site and listed properties within ASTM-recommended search distances. Federal, state and local databases reviewed are included in the Appendix section of this report.

Project site

The project site was not listed in the EDR regulatory database search report.

Adjacent and Nearby Properties

The EDR regulatory database search report identified a total of 4 sites within the ASTM minimum search distances from the project site.

None of the listed sites are not expected to present an environmental concern to the project site because, based upon ENPRO’s review:

1. They only hold an operating permit (which does not imply a problem) or,
2. They were identified for past regulatory requirements that require no future action or,
3. They are too distant and/or hydrogeologically down gradient or cross gradient relative to the project site.

The EDR regulatory database search report identified one “orphan” site within the ASTM minimum search distances from the project site. Based on our review of the orphan sites listed, it is ENPRO’s opinion the orphan site is not close enough to the project site to constitute a REC expected to impact the property.
6.2 ADDITIONAL ENVIRONMENTAL RECORD RESOURCES: STATE AND LOCAL AGENCY ENVIRONMENTAL RECORD SOURCES

Based on our review of the EDR regulatory database search report, we requested regulatory files for the project site from the State of Hawaii Department of Health (DOH), Solid and Hazardous Waste Branch (SHWB) and the Hazard Evaluation and Emergency Response (HEER) Office.

ENPRO additionally requested information on the project site from the City and County of Honolulu Fire Department and reviewed documents from the Honolulu Department of Planning and Permitting.

6.2.1 DEPARTMENT OF HEALTH

The SHWB Underground Storage Tank (UST) Section:

The UST Section of the DOH SHWB did not have any files for the project site.

The SHWB Hazardous Waste Section:

The Hazardous Waste Section of the DOH SHWB did not have any files for the project site.

The SHWB Solid Waste Section:

The Solid Waste Section of the DOH SHWB did not have any files for the project site.

The HEER Office:

The DOH HEER Office did not have any files for the project site.

6.2.2 BUILDING, PLANNING, AND/OR ZONING DEPARTMENTS

The City and County of Honolulu Department of Planning and Permitting database was reviewed on June 27, 2018 to obtain historical use information for the project site.
Based on our review of the planning and permitting database, evidence of RECs associated with the project site was not discovered.

A copy of the records for the project site can be found in the appendix section of this report

6.2.3 FIRE DEPARTMENT

The City and County of Honolulu Fire Communication Center was contacted on June 26, 2018 to obtain information regarding any fires, complaints, permits, violations involving hazardous materials use, USTs or ASTs on record for the project site and/or adjoining properties.

The City and County of Honolulu Fire Department, Fire Prevention Bureau, responded to our inquiry via email on July 3, 2018. The Fire Prevention Bureau indicated that it does not have any record of USTs and ASTs for the project site. Additionally, no fire or hazardous materials incident responses related to the project site were identified on file.

6.3 VAPOR ENCROACHMENT SCREENING IN PROPERTY INVOLVED IN REAL ESTATE TRANSACTIONS

The EDR Radius Map provided an initial search of all standard government record databases and EDR proprietary historical records within the ASTM E1527-13 recommended radii. ENPRO reviewed those sites related to former dry cleaners, gas stations and manufactured gas plants which met the ASTM E2600 criteria for vapor encroachment screening (VES).

ENPRO reviewed the regulatory database search of those sites for recorded releases of chemicals of concern (COC) within the 1/3 mile and 1/10 mile approximate minimum distances defined in ASTM E2600-10 for vapor encroachment from COC-contaminated sites. This measurement is based upon the distance from the known or suspect contaminated property to the target property boundary. ENPRO’s review of EDR’s database search for potential vapor encroachment conditions (VECs) takes into account the following factors:

- The land use of the target property (TP)
- Type of COC
- Location of known or suspect contaminated property is in the area of concern (AOC) having COC
- Characteristics of the soil
- Depth to groundwater
- Vapor conduits that may result in significant preferential pathways
- Cleanup status of contaminated property

Potential VECs evaluated included all RECs, including H-RECs and C-RECs, with identified releases of petroleum products or other potentially volatile contaminants of concern. As is provided by ASTM E2600-10, ENPRO also considered the predicted hydrogeological gradient around the project site when determining the potential for VECs to impact the site.

ENPRO did not identify any potential VECs within the recommended radii provided in ASTM E2600-10 with the potential to impact the project site.
7.0 SITE RECONNAISSANCE

Site reconnaissance was performed by Ms. Kimberly Rottas on June 28, 2018. The site reconnaissance was conducted on foot. All areas of the property were available for inspection. However, the majority of the project site was inaccessible due to dense vegetation site-wide and steep terrain.

No opinion is provided regarding environmental conditions in areas that were not inspected.

7.1 CURRENT USE OF THE PROPERTY

The project site is a parking area and otherwise vacant parcel on a steep hill.

7.2 DESCRIPTIONS OF STRUCTURES, ROADS & OTHER IMPROVEMENTS

No buildings, structures, roads or other improvements were observed at the project site at the time of this investigation.

Storm water runoff from the project site flows to the north via sheet flow to Mokulua Drive and eventually discharges to the Pacific Ocean.

Wastewater was not generated at the project site.

7.3 CURRENT USES OF ADJACENT AND NEARBY PROPERTIES

The area surrounding the project site consisted of residential properties, a beach, and a country club. Adjoining properties were observed from the project site and from public access lands for signs of RECs and their potential to pose an environmental concern to the project site. These properties are listed in the table on the following page.
Table 3
Summary of Adjacent and Nearby Property Use

<table>
<thead>
<tr>
<th>Direction</th>
<th>Name</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Mokulua Drive/Kailua Beach Park</td>
<td>Traffic Thoroughfare Beach</td>
</tr>
<tr>
<td>South</td>
<td>Mid-Pacific Country Club</td>
<td>Country Club</td>
</tr>
<tr>
<td>East</td>
<td>Single-family homes</td>
<td>Residential</td>
</tr>
<tr>
<td>West</td>
<td>Kaneapu Place/Sin...</td>
<td>Traffic Thoroughfare Residential</td>
</tr>
</tbody>
</table>

Table 4 summarizes the site inspection and findings. All features that were observed during the site reconnaissance, or that were discovered to have been historically present at the project site, are noted in the table. Also indicated in the table are items that may present concerns to the project site. Additional information about items noted in the table can be found in the referenced section of this report.

Table 4
Site Inspection Findings

<table>
<thead>
<tr>
<th>Project Site Environmental Features</th>
<th>Currently / Historically Present</th>
<th>Possible Environmental Concern</th>
<th>Report Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous substances or Petroleum Products</td>
<td>Yes</td>
<td>No</td>
<td>7.4</td>
</tr>
<tr>
<td>Underground Storage Tank, UST</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Aboveground Storage Tank, AST</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Odors</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Air Emissions (stacks, hoods, other point sources)</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Pools of Liquid</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Drums</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Unidentified Substance Containers</td>
<td>Yes</td>
<td>No</td>
<td>7.4</td>
</tr>
<tr>
<td>Electrical Equipment/Possible PCBs</td>
<td>Yes</td>
<td>No</td>
<td>7.7.1</td>
</tr>
<tr>
<td>Hydraulic Equipment/Possible PCBs</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Stains or Corrosion</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Drains</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4 (Continued)

Site Inspection Findings

<table>
<thead>
<tr>
<th>Project Site Environmental Features</th>
<th>Currently / Historically Present</th>
<th>Possible Environmental Concern</th>
<th>Report Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumps</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Pits, Ponds, or Lagoons</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Stained Soil or Pavement</td>
<td>Yes</td>
<td>No</td>
<td>7.4, 7.9</td>
</tr>
<tr>
<td>Stressed Vegetation</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Evidence of Spills or Releases</td>
<td>Yes</td>
<td>No</td>
<td>7.4</td>
</tr>
<tr>
<td>Artificially Filled Areas (Solid Waste Disposal)</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Waste Water</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Wells</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Septic Systems (cisterns, cesspools, dry wells)</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Dry Cleaning Operations</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Agricultural Use (pesticides/herbicides/fungicides)</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Oil/Gas Production or Exploration</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Remedial Activities</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Yes</td>
<td>No</td>
<td>7.6</td>
</tr>
</tbody>
</table>

### 7.4 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

#### Project Site

Visual observation for the use and/or storage of hazardous substances and petroleum products was performed.

The following hazardous substances and/or petroleum products observed on the project site during the site reconnaissance appeared to be causing or contributing to *de minimis* site contamination:

- One open and unlabeled 5-gallon bucket containing a dried concrete/paint-like substance
- Motor oil stains from parked vehicles

**Adjoining or Nearby Sites**

No activities were observed on adjoining or nearby properties that would indicate that hazardous substances and/or petroleum products are likely to be used, generated, stored, accumulated, transported, or disposed.

### 7.5 STORAGE TANKS

#### 7.5.1 UNDERGROUND STORAGE TANKS

**Project Site**

Visual observations for manways, vent pipes, fill connections, concrete pressure dispersion pads, and dispenser pumps were conducted throughout the project site. Evidence indicating historical or current existence of USTs was not observed.

**Adjoining or Nearby Sites**

Visual observations for manways, vent pipes, fill connections, concrete pressure dispersion pads, and dispenser pumps were conducted throughout the accessible areas of adjacent properties. No evidence of the presence of USTs was noted.

There was no indication of the presence of underground storage tank systems and leaking underground storage tank systems registered to any properties near the project site.

#### 7.5.2 ABOVEGROUND STORAGE TANKS

**Project Site**

Visual observations for vent pipes, secondary containment walls, or other evidence of aboveground storage tanks were conducted throughout the project site. Evidence indicating historical or current existence of ASTs was not observed.

Interviews with people knowledgeable of the site and site history did not indicate the past or current existence of ASTs at the project site.
Adjoining or Nearby Sites

Visual observations for vent pipes, secondary containment walls, or other evidence of aboveground storage tanks were conducted throughout the accessible areas of adjacent properties. No evidence of the presence of ASTs was noted.

7.6 SOLID WASTE

Project Site

At the time of our investigation, non-hazardous solid waste due to illegal dumping was observed on-site.

Adjoining or Nearby Sites

At the time of our investigation, non-hazardous solid waste was observed to be generated on adjoining or nearby properties. Waste was in the form of general municipal refuse that was placed into dumpsters located on adjoining sites. The waste was accumulated and transported to an offsite facility for recycling and/or disposal a regular interval basis.

7.7 POLYCHLORINATED BIPHENYLS (PCBs)

Visual observation for electrical equipment or electrical components that use dielectric fluid, hydraulic lift equipment and fluorescent light ballasts that potentially include PCB-containing fluids was conducted. PCBs (polychlorinated biphenyl) are heavily regulated under the Toxic Substances Control Act (TSCA), which obligates a property owner to clean up any spills occurring on their property.

7.7.1 ELECTRICAL TRANSFORMERS/CAPACITORS

One pole-mounted transformer, belonging to Hawaiian Electric Company (HECO), was observed on the project site. Minimal evidence of corrosion on the outside of the pole-mounted transformer was noted during the project site reconnaissance. No evidence of leakage was observed on the pole-mounted transformer.

The identification number on the pole-mounted transformer was recorded and had an identification number above 39500. According to HECO, all transformers with identification numbers above 39500 were purchased after 1980 and therefore are PCB free.
Since the transformers are owned and operated by HECO, HECO is responsible for remediating any environmental impacts they might cause.

No privately-owned transformer equipment was observed at the project site.

### 7.7.2 HYDRAULIC LIFT EQUIPMENT

Visual observation for hydraulic lift equipment or components containing hydraulic fluid that potentially contains PCBs was conducted.

No in-ground hydraulic lift equipment was observed on site at the time of our reconnaissance.

### 7.7.3 FLUORESCENT LIGHT BALLASTS

No fluorescent light fixtures were present at the project site.

### 7.8 WELLS

Evidence of wells (supply, monitoring or dry wells) was not observed during the assessment.

### 7.9 OTHER OBSERVATIONS

The following describes additional observations of the project site:

- **Odors**: Not observed
- **Pools of liquid**: Not observed
- **Drums**: Not observed
- **Drains and Sumps**: Not observed
- **Pits, ponds, lagoons**: Not observed
- **Stained soil or pavement**: Minor oil staining from parked vehicles was observed on bare soil along the northwestern property boundary.
- **Stressed vegetation**: Not observed
Waste water features: Not observed
Septic systems: Not observed
8.0 INTERVIEWS

Interviews with individuals having past or present knowledge of the project site, such as owners, key site managers, occupants, and neighbors are routinely conducted to obtain information indicating RECs in connection with the property. The following individuals were available to interview:

### Table 5
Key Site Interviews

<table>
<thead>
<tr>
<th>Interviewee Name</th>
<th>Relationship to Property</th>
<th>Length of Time Familiar with Property</th>
<th>Date of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Jeffrey Nishi</td>
<td>Architect</td>
<td>Less than one year</td>
<td>07/17/2018</td>
</tr>
<tr>
<td>Mr. James Howe, Jr.</td>
<td>Owner’s Representative</td>
<td>30 years</td>
<td>07/19/2018</td>
</tr>
</tbody>
</table>

8.1 USER

Mr. Jeffrey Nishi, architect for Jeffrey Nishi and Associates Architects, was interviewed via telephone/e-mail on July 17, 2018.

**Project Site**

Mr. Nishi has been familiar with the project site for less than one year and reported no information regarding past or present contamination and/or activities on the property that may have resulted in contamination of the project site.

**Adjoining and Adjacent Properties**

Mr. Nishi reported no information regarding past or present contamination and/or activities on adjacent properties that may have resulted in contamination of the project site.

8.2 OWNER

Mr. James Howe, Jr. of the City and County of Honolulu completed a Property Questionnaire supplied by ENPRO Environmental regarding the project site. A copy of the completed Property Questionnaire is included in the appendix section of this report.
Project Site

Mr. Howe has been familiar with the project site for thirty years and reported no information regarding past or present contamination and/or activities on the property that may have resulted in contamination of the project site.

Adjoining and Adjacent Properties

Mr. Howe reported no information regarding past or present contamination and/or activities on adjacent properties that may have resulted in contamination of the project site.
9.0 EVALUATION

This section documents the findings, opinions, and conclusions of the Phase I ESA. ASTM E1527-13 does not require the environmental professional to provide recommendations regarding identified environmental conditions at the project site. As a service to its clients, ENPRO provides recommendations to further evaluate and/or address environmental concerns in Section 10.1 of this report.

9.1 FINDINGS AND CONCLUSIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM E1527-13 of the project site. Any exceptions to, or deletions from, this practice are described in Section 2.6 of this report.

This assessment has revealed no evidence of RECs in connection with the project site.

The following de minimis conditions were identified at the project site:

- On-site dumping of municipal trash
- One open and unlabeled 5-gallon bucket containing a dried concrete/paint-like substance
- Motor oil stains from parked vehicles

Recommendations for additional actions regarding the above de minimis conditions are listed in Section 10.1.

The following environmental conditions, which are not considered RECs, as defined by ASTM, were observed during the assessment:

- Ecologically sensitive areas

9.2 DATA GAPS

Data gaps are not uncommon in ESAs. A data gap by itself is not inherently significant. The significance is determined by other information and professional experience as to whether the data gap raises reasonable concerns about activities that may present a
According to ASTM E1527-13 and AAI, the Phase I ESA report shall identify and comment on significant data gaps that affect the ability of the environmental professional to identify RECs and name the sources of information that were consulted to address the data gap.

ENPRO did not encounter any significant data gaps during the performance of this Phase I ESA.

9.3 CERTIFICATIONS

ENPRO has completed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the project site. This assessment was performed at the request of the Client, using the methods and procedures consistent with good commercial and customary practices designed to conform to acceptable industry standards.

The information and opinions rendered in this report are intended for the Client for the purposes stated herein (see Section 2.3). This report is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose except as described below without the advance written consent of ENPRO. ENPRO shall not distribute nor publish this report without the consent of the Client except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should be considered and implemented in light of that assignment.

The Client may rely upon this report in evaluating a request for one or more extensions of credit to be secured directly or indirectly by the subject property (including mortgage and mezzanine loans) and the acquisition of the direct or indirect interest in the subject property as applicable.

In expressing the opinions stated in this report, ENPRO has exercised a degree of skill and care ordinarily exercised by a reasonable prudent environmental professional in the same community and in the same time frame given the same or similar facts and circumstances. Documentation and data provided by the Client, designated representatives of the Client or other interested third parties, or from the public domain, and referred to in the preparation of this assessment, have been used and referenced with the understanding that ENPRO assumes no responsibility or liability for their accuracy.

The independent conclusions represent our professional judgment based on information and data available to us during the course of this assignment. Factual information regarding operations, conditions, and test data provided by the Client or their representatives has been assumed to be correct and complete. The conclusions presented are based on the data provided, observations, and conditions that existed on the date of the site visit.
If you have any questions regarding this report, please contact the ENPRO contact listed on the cover of this report at (808) 748-2114.

**Researched by:** Kimberly Rottas, Environmental Consultant  
**Surveyed by:** Kimberly Rottas, Environmental Consultant  
**Written by:** Kimberly Rottas, Environmental Consultant  
**Supervised by:** Randy Herold, President

I declare that to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the project site. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Reviewed by: Randy Herold  
President, ENPRO Environmental
10.0 NON-SCOPE SERVICES

ASTM E1527-13 does not require recommendations. A User should consider whether recommendations for additional inquiries or other services are desired. Recommendations are an additional service that may be useful in the User’s analysis of the property. Unless otherwise directed by the Client, it is ENPRO’s standard practice to include recommendations for addressing all identified RECs at the project site.

ENPRO may also make recommendations regarding conditions identified at the project site which are not considered RECs, such as the proper storage of hazardous materials, the potential presence of asbestos containing materials, and the presence of ecological or cultural resources. Except where otherwise specified, there are no legal or regulatory requirements for the Client or the property owner to follow the recommendations presented in this report.

10.1 RECOMMENDATIONS

Based on our investigation, ENPRO has concluded that the risk of contamination at the site is so minimal that no further investigation is required.

The following de minimis conditions were identified at the project site:

- On-site dumping of municipal trash
- One open and unlabeled 5-gallon bucket containing a dried concrete/paint-like substance
- Motor oil stains from parked vehicles

ENPRO recommends removing and properly disposing of all municipal waste on the property.

10.2 ADDITIONAL ENVIRONMENTAL CONCERNS, NON-ASTM

The following environmental conditions were evaluated for the potential to impact the property though they are not considered RECs as defined by ASTM.
Radon

Radon is a naturally occurring radioactive gas formed by the decay of uranium in bedrock and soil. The potential adverse health effects associated with radon gas depend on several factors including concentration of the gas and duration of exposure. The concentration of radon gas in a building depends on subsurface soil conditions, the integrity of the building’s foundation, and the building’s ventilation system.

Due to the geologic composition of basalt bedrock and the soils that derive from them, as well as the composition of marine-related sediments found in Hawaii, the State of Hawaii has been determined to have a low radon potential (G.M. Reimer, U.S. Geological Survey). Therefore, investigation of radon is not recommended for this property.

Sensitive Ecological Areas

According to the EDR report, the area to the north of the project site was depicted as federal wetlands.
## 11.0 REFERENCES

**Publications:**

<table>
<thead>
<tr>
<th>Names of Publication</th>
<th>Author of Publication</th>
<th>Published by</th>
<th>Date of Publication</th>
<th>Information Obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy For Hawaii</td>
<td>Mink, J.F. and L.S. Lau</td>
<td>Water Resources Research Center, University of Hawaii at Manoa, Honolulu, Hawaii</td>
<td>1990</td>
<td>Groundwater data</td>
</tr>
<tr>
<td>Groundwater Well Index</td>
<td>State of Hawaii, Department of Natural Resources, Commission on Water Management</td>
<td></td>
<td>January 2001</td>
<td>Groundwater wells</td>
</tr>
<tr>
<td>Code of Federal Regulations, Title 40, Part 761, Rules for Controlling PCBs under the Toxic Substance Control Act</td>
<td>U.S. Environmental Protection Agency</td>
<td></td>
<td>December 14, 1990</td>
<td>PCB regulations</td>
</tr>
<tr>
<td>Soil Survey for the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii</td>
<td>Foote, Donald E. et al.</td>
<td>U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station</td>
<td></td>
<td></td>
</tr>
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</table>
Date of Publication: 1972  
Information Obtained: Soil classification

Names of Publication: The EDR Radius Map Report  
Author of Publication: Environmental Data Resources, Inc.  
Date of Publication: June 26, 2018  
Information Obtained: Regulatory database records

Names of Publication: Topographic Maps, Mokapu Point and Koko Head Quadrangles, Hawaii  
Author of Publication: United States Geological Survey (USGS)  
Information Obtained: Historical use

Contacts:

Agency or Business: Jeffrey Nishi & Associates Architects  
Name/Title of Representative: Mr. Jeffrey Nishi  
Telephone Number: 808-528-2656  
Information Obtained: Historical and current property use

Agency or Business: City and County of Honolulu  
Name/Title of Representative: Mr. James Howe, Jr.  
Telephone Number: 808-723-7800

Agency or Business: Solid and Hazardous Waste Branch (SHWB)  
Telephone Number: 808-586-4226  
Date Information was Received: June 13, 2018  
Information Obtained: Regulatory records

Agency or Business: Hazard Evaluation and Emergency Response (HEER)  
Telephone Number: 808-586-4249  
Date Information was Received: June 27, 2018  
Information Obtained: Regulatory records
12.0 REFERENCES

Site Figures
Site Photographs
Historical Research
Regulatory Records Documentation
Records of Communication/Interview
Qualifications of Environmental Professionals
SITE FIGURES
EDR Historical Topo Map Report

<table>
<thead>
<tr>
<th>Site Name:</th>
<th>Client Name:</th>
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</thead>
<tbody>
<tr>
<td>592 Kaneapu Place</td>
<td>ENPRO, Env. Professionals</td>
</tr>
<tr>
<td>Not Reported</td>
<td>151 Hekili Street Suite 210</td>
</tr>
<tr>
<td>Kailua, HI 96734</td>
<td>Kailua, HI 96734</td>
</tr>
<tr>
<td>EDR Inquiry # 5345214.4</td>
<td>Contact: Kim Rottas</td>
</tr>
</tbody>
</table>

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by ENPRO, Env. Professionals were identified for the years listed below. EDR’s Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR’s Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

<table>
<thead>
<tr>
<th>Search Results:</th>
<th>Coordinates:</th>
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<tbody>
<tr>
<td>P.O.#</td>
<td>Latitude: 21.393896 21° 23' 38&quot; North</td>
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<tr>
<td>Project:</td>
<td>Longitude: -157.721428 -157° 43' 17&quot; West</td>
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<tr>
<td></td>
<td>UTM Zone: Zone 4 North</td>
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<td></td>
<td>UTM X Meters: 632536.85</td>
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<td>UTM Y Meters: 2366281.70</td>
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<td>Elevation: 147.54' above sea level</td>
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Maps Provided:

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<thead>
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<tbody>
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<td>1968, 1969</td>
</tr>
<tr>
<td>1959</td>
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**Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 2013 Source Sheets

- **Mokapu Point**
  - 2013
  - 7.5-minute, 24000

- **Koko Head**
  - 2013
  - 7.5-minute, 24000

### 1999 Source Sheets

- **MOKAPUPOINT**
  - 1999
  - 7.5-minute, 24000

- **Koko Head**
  - 1999
  - 7.5-minute, 24000
  - Aerial Photo Revised 1999

### 1998 Source Sheets

- **Mokapu Point**
  - 1998
  - 7.5-minute, 24000
  - Aerial Photo Revised 1998

### 1983 Source Sheets

- **Mokapu**
  - 1983
  - 7.5-minute, 24000
  - Aerial Photo Revised 1978

- **Koko Head**
  - 1983
  - 7.5-minute, 24000
  - Aerial Photo Revised 1978
**Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1970 Source Sheets

- OAHU
  - 1970
  - 15-minute, 62500

### 1968, 1969 Source Sheets

- **Mokapu**
  - 1968
  - 7.5-minute, 24000
  - Aerial Photo Revised 1968

- **Koko Head**
  - 1969
  - 7.5-minute, 24000
  - Aerial Photo Revised 1968

### 1959 Source Sheets

- **Koko Head**
  - 1959
  - 7.5-minute, 24000
  - Aerial Photo Revised 1959

- **Mokapu**
  - 1959
  - 7.5-minute, 24000
  - Aerial Photo Revised 1959

### 1954 Source Sheets

- **HONOLULUVICINITYNORTH**
  - 1954
  - 7.5-minute, 24000
**Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1952 Source Sheets

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- TP, Mokapu Point, 2013, 7.5-minute
- S, Koko Head, 2013, 7.5-minute

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

- TP, MOKAPUPOINT, 1999, 7.5-minute
- S, Koko Head, 1999, 7.5-minute

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals

TP, Mokapu Point, 1998, 7.5-minute
This report includes information from the following map sheet(s).

TP, Mokapu, 1983, 7.5-minute
S, Koko Head, 1983, 7.5-minute

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

- TP, OAHU, 1970, 15-minute

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

TP, Mokapu, 1968, 7.5-minute
S, Koko Head, 1969, 7.5-minute

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

TP, Mokapu, 1959, 7.5-minute
S, Koko Head, 1959, 7.5-minute

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

SITE NAME: 592 Kaneapu Place
ADDRESS: Not Reported
CLIENT: ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

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- S, Koko Head, 1952, 7.5-minute

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**ADDRESS:** Not Reported  
**CLIENT:** ENPRO, Env. Professionals
This report includes information from the following map sheet(s).

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ADDRESS: Not Reported
Kailua, HI 96734
CLIENT: ENPRO, Env. Professionals

TP, MOKAPU, 1928, 7.5-minute
592 Kaneapu Place
Not Reported
Kailua, HI 96734

Inquiry Number: 5345214.8
June 26, 2018
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### Search Results:

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592 Kaneapu Place
Not Reported
Kailua, HI 96734

Inquiry Number: 5345214.3
June 27, 2018
Certified Sanborn® Map Report

06/27/18

Site Name: 592 Kaneapu Place
Not Reported
Kailua, HI 96734
EDR Inquiry # 5345214.3

Client Name: ENPRO, Env. Professionals
151 Hekili Street Suite 210
Kailua, HI 96734
Contact: Kim Rottas

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Certified Sanborn Results:

Certification #: B83D-4AA7-94CE
PO #: 1806-00336-PH1
Project: 592 Kaneapu Place

Maps Provided:

1993
1991
1980
1976
1953

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Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1993 Source Sheets

Volume 4, Sheet 415
1993

Volume 4, Sheet 416
1993

1991 Source Sheets

Volume 4, Sheet 416
1991

Volume 4, Sheet 415
1991

1980 Source Sheets

Volume 4, Sheet 416
1980

Volume 4, Sheet 415
1980

1976 Source Sheets

Volume 4, Sheet 415
1976

Volume 4, Sheet 416
1976
Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1953 Source Sheets

Volume 4, Sheet 415
1953

Volume 4, Sheet 416
1953
This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

- Volume 4, Sheet 416
- Volume 4, Sheet 415

Site Name: 592 Kaneapu Place
Address: Not Reported
City, ST, ZIP: Kailua, HI 96734
Client: ENPRO, Env. Professionals
EDR Inquiry: 5345214.3
Order Date: 06/27/2018
Certification #: B83D-4AA7-94CE
Copyright: 1993

Certified Sanborn® Map

0 Feet 150 300 600

5345214 - 3 page 5
This Certified Sanborn Map combines the following sheets:
Outlined areas indicate map sheets within the collection.

Volume 4, Sheet 415
Volume 4, Sheet 416
This Certified Sanborn Map combines the following sheets. Outlined areas indicate map sheets within the collection.

Site Name: 592 Kaneapu Place
Address: Not Reported
City, ST, ZIP: Kailua, HI 96734
Client: ENPRO, Env. Professionals
EDR Inquiry: 5345214.3
Order Date: 06/27/2018
Certification # B83D-4AA7-94CE
Copyright 1976

0 Feet 150 300 600

Volume 4, Sheet 416
Volume 4, Sheet 415
This Certified Sanborn Map combines the following sheets. Outlined areas indicate map sheets within the collection.

Volume 4, Sheet 416
Volume 4, Sheet 415
SITE PHOTOGRAPHS
Photo 2
592 Kaneapu Place, Facing Northeast

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
Photo 3
592 Kaneapu Place, Facing Northwest

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
Photo 4
De Minimus Oil Stains from Parked Vehicles

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
Photo 5
Open and Unlabeled 5-Gallon Bucket

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
Photo 6
On-Site Dumping

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
Photo 7
Mokulua Drive and Pacific Ocean, North of the Project Site

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
Photo 8
Kaneapu Street and Residential Area, Northwestern Property Boundary

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
Photo 9
Residential Area, East of Project Site

Project Number: 1806-00336-PH1
592 Kaneapu Place
Date of Photos: June 28, 2018
HISTORICAL RESEARCH
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Findings

City Directory Images

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**Thank you for your business.**

Please contact EDR at 1-800-352-0050 with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.’s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR’s City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR’s Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

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Data by
infoUSA®
FINDINGS

TARGET PROPERTY STREET

Not Reported
Kailua, HI 96734

No Addresses Found
# FINDINGS

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REGULATORY RECORDS
DOCUMENTATION
592 Kaneapu Place
Not Reported
Kailua, HI 96734

Inquiry Number: 5345214.2s
June 26, 2018
Thank you for your business.
Please contact EDR at 1-800-352-0050 with any questions or comments.

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A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NOT REPORTED
KAILUA, HI 96734

COORDINATES

Latitude (North): 21.3938960 - 21˚ 23' 38.02''
Longitude (West): 157.7214280 - 157˚ 43' 17.14''
Universal Tranverse Mercator: Zone 4
UTM X (Meters): 632538.9
UTM Y (Meters): 2366142.5
Elevation: 111 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5941083 MOKAPU POINT, HI
Version Date: 2013
Target Property Address: NOT REPORTED
KAILUA, HI 96734

Click on Map ID to see full detail.

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<th>SITE NAME</th>
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TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list
NPL_______________________ National Priority List
Proposed NPL______________ Proposed National Priority List Sites
NPL LIENS______________ Federal Superfund Liens

Federal Delisted NPL site list
Delisted NPL______________ National Priority List Deletions

Federal CERCLIS list
FEDERAL FACILITY__________ Federal Facility Site Information listing
SEMS____________________ Superfund Enterprise Management System

Federal CERCLIS NFRAP site list
SEMS-ARCHIVE__________ Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list
CORRACTS______________ Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list
RCRA-TSDF______________ RCRA - Treatment, Storage and Disposal

Federal RCRA generators list
RCRA-LQG______________ RCRA - Large Quantity Generators
RCRA-SQG______________ RCRA - Small Quantity Generators
RCRA-CESQG____________ RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries
LUCIS____________________ Land Use Control Information System
US ENG CONTROLS______ Engineering Controls Sites List
EXECUTIVE SUMMARY

US INST CONTROL. Sites with Institutional Controls

Federal ERNS list
ERNS. Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists
SWF/LF. Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists
INDIAN LUST. Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists
FEMA UST. Underground Storage Tank Listing
INDIAN UST. Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries
ENG CONTROLS. Engineering Control Sites
INST CONTROL. Sites with Institutional Controls

State and tribal voluntary cleanup sites
VCP. Voluntary Response Program Sites
INDIAN VCP. Voluntary Cleanup Priority Listing

State and tribal Brownfields sites
BROWNFIELDS. Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists
US BROWNFIELDS. A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites
INDIAN ODI. Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9. Torres Martinez Reservation Illegal Dump Site Locations
ODI. Open Dump Inventory
IHS OPEN DUMPS. Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites
US HIST CDL. Delisted National Clandestine Laboratory Register
CDL. Clandestine Drug Lab Listing
US CDL. National Clandestine Laboratory Register

Local Land Records
LIENS 2. CERCLA Lien Information
EXECUTIVE SUMMARY

Records of Emergency Release Reports
HMIRS.......................... Hazardous Materials Information Reporting System
SPILLS.......................... Release Notifications
SPILLS 90....................... SPILLS 90 data from FirstSearch

Other Ascertainable Records
RCRA NonGen / NLR............. RCRA - Non Generators / No Longer Regulated
FUDS............................ Formerly Used Defense Sites
SCRD DRYCLEANERS............. State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR................... Financial Assurance Information
EPA WATCH LIST................ EPA WATCH LIST
2020 COR ACTION................ 2020 Corrective Action Program List
TSCA............................. Toxic Substances Control Act
TRIS.............................. Toxic Chemical Release Inventory System
SSTS............................. Section 7 Tracking Systems
ROD.............................. Records Of Decision
RMP.............................. Risk Management Plans
RAATS........................... RCRA Administrative Action Tracking System
PRP.............................. Potentially Responsible Parties
PADS............................ PCB Activity Database System
ICIS............................. Integrated Compliance Information System
FTTS............................. FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS............................ Material Licensing Tracking System
COAL ASH DOE............... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER............ PCB Transformer Registration Database
RADINFO......................... Radiation Information Database
HIST FTTS....................... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS......................... Incident and Accident Data
CONSENT......................... Superfund (CERCLA) Consent Decrees
INDIAN RESERV................. Indian Reservations
FUSRAP......................... Formerly Utilized Sites Remedial Action Program
UMTRA.......................... Uranium Mill Tailings Sites
LEAD SMELTERS................. Lead Smelter Sites
US AIRS......................... Aerometric Information Retrieval System Facility Subsystem
US MINES....................... Mines Master Index File
ABANDONED MINES............. Abandoned Mines
FINDS.......................... Facility Index System/Facility Registry System
ECHO............................ Enforcement & Compliance History Information
UXO............................ Unexploded Ordnance Sites
DOCKET HWC..................... Hazardous Waste Compliance Docket Listing
FUELS PROGRAM.............. EPA Fuels Program Registered Listing
AIRS.................. List of Permitted Facilities
DRYCLEANERS................. Permitted Drycleaner Facility Listing
Financial Assurance........ Financial Assurance Information Listing
LEAD........................... LEAD
UIC........................... Underground Injection Wells Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records
EDR MGP.......................... EDR Proprietary Manufactured Gas Plants
EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives
RGA HWS, Recovered Government Archive State Hazardous Waste Facilities List
RGA LF, Recovered Government Archive Solid Waste Facilities List
RGA LUST, Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS
Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in bold italics are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS
SHWS: The State Hazardous Waste Sites records are the states’ equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

A review of the SHWS list, as provided by EDR, and dated 01/23/2018 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

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State and tribal leaking storage tank lists
LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health’s Active Leaking Underground Storage Tank Log Listing.

A review of the LUST list, as provided by EDR, and dated 03/16/2018 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

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State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health’s Listing of Underground Storage Tanks.

A review of the UST list, as provided by EDR, and dated 03/16/2018 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

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Tank Status: Currently in Use
Tank Status: Permanently Out of Use
Facility Id: 9-101979
Date Closed: 08/01/1990

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

DOD: Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within approximately 1 mile of the target property.

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Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

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### EDR HIGH RISK HISTORICAL RECORDS

#### EDR Exclusive Records

| EDR MGP                  | 1.000                  | 0               | 0     | 0         | 0         | 0       | NR  | 0             |
| EDR Hist Auto            | 0.125                  | 0               | NR    | NR        | NR        | NR      | NR  | 0             |
| EDR Hist Cleaner         | 0.125                  | 0               | NR    | NR        | NR        | NR      | NR  | 0             |

### EDR RECOVERED GOVERNMENT ARCHIVES

#### Exclusive Recovered Govt. Archives

| RGA HWS                  | 0.001                  | 0               | NR    | NR        | NR        | NR      | NR  | 0             |
| RGA LF                   | 0.001                  | 0               | NR    | NR        | NR        | NR      | NR  | 0             |
| RGA LUST                 | 0.001                  | 0               | NR    | NR        | NR        | NR      | NR  | 0             |

- Totals -- | 0 | 0 | 2 | 0 | 2 | 0 | 4 |
# MAP FINDINGS SUMMARY

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<th>Search Distance (Miles)</th>
<th>Target Property</th>
<th>&lt; 1/8</th>
<th>1/8 - 1/4</th>
<th>1/4 - 1/2</th>
<th>1/2 - 1</th>
<th>&gt; 1</th>
<th>Total Plotted</th>
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**NOTES:**
- TP = Target Property
- NR = Not Requested at this Search Distance
- Sites may be listed in more than one database
### DOD: BELLOWS AIR FORCE STATION

- **Region**: SE
- **Location**: BELLOWS AIR FORCE STATION (County), HI
- **Elevation**: 3634 ft.

**DOD Details**:
- **Feature 1**: Air Force DOD
- **Feature 2**: Not reported
- **Feature 3**: Not reported
- **URL**: Not reported
- **Name 1**: Bellows Air Force Station
- **Name 2**: Not reported
- **Name 3**: Not reported
- **State**: HI
- **Tile name**: HIHONOLULU

### LUST: MID PACIFIC CC

- **Location**: 266 KAELEPULU DR, KAILUA, HI 96734
- **Distance**: 0.160 mi. (847 ft.)

**LUST Details**:
- **Facility ID**: 9-101979
- **Facility Status**: Site Cleanup Completed (NFA)
- **Facility Status Date**: 10/27/1999
- **Release ID**: 900124
- **Project Officer**: Renato Maniulit

**UST Details**:
- **Facility ID**: 9-101979
- **Owner**: MID-PACIFIC COUNTRY CLUB
- **Owner Address**: 266 KAELEPULU DR, Kailua, 96734 96734
- **Latitude**: 21.388689
- **Longitude**: -157.722275
- **Horizontal Reference Datum Name**: NAD83
- **Horizontal Collection Method Name**: GPS

**Tank Details**:
- **Tank ID 1**: 1
  - **Date Installed**: 08/01/1990
  - **Tank Status**: Currently in Use
  - **Tank Capacity**: 550
  - **Substance**: Gasohol

- **Tank ID 2**: 2
  - **Date Installed**: 08/01/1990
  - **Tank Status**: Currently in Use
  - **Tank Capacity**: 550
  - **Substance**: Diesel

- **Tank ID R-01**: Not reported
### MID PACIFIC CC (Continued)

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<td>Substance:</td>
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**HI Financial Assurance:**
- Alt Facility ID: 9-101979
- Tank Id: 2
- Tank Status: Currently in Use
- FRTYPE: Insurance
- Expiration Date: 06/21/2016

- Alt Facility ID: 9-101979
- Tank Id: R-01
- Tank Status: Permanently Out of Use
- FRTYPE: Insurance
- Expiration Date: 06/21/2016

- Alt Facility ID: 9-101979
- Tank Id: 1
- Tank Status: Currently in Use
- FRTYPE: Insurance
- Expiration Date: 06/21/2016

- Alt Facility ID: 9-101979
- Tank Id: R-02
- Tank Status: Permanently Out of Use
- FRTYPE: Insurance
- Expiration Date: 06/21/2016

**COUNTRYSIDE APARTMENTS**

- SHWS: S117391423
- N/A

#### Relative: Lower
- **Actual:** 0 ft.

**SHWS:**
- Organization: Not reported
- Supplemental Location: Not reported
- Island: Oahu
- Environmental Interest: Countryside Apartments
- HID Number: Not reported
- Facility Registry Identifier: Not reported
- Lead Agency: HEER
- Program: Fast Track
- Project Manager: Melody Calisay
- Hazard Priority: High
- Potential Hazards And Controls: Hazard Present
- Island: Oahu

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**KAILUA, HI 96734**

**TC5345214.2s Page 9**
COUNTRYSIDE APARTMENTS (Continued)

SDAR Environmental Interest Name: Countryside Apartments
HID Number: Not reported
Facility Registry Identifier: Not reported
Lead Agency: HEER
Potential Hazard And Controls: Hazard Present
Priority: High
Assessment: Response Necessary
Response: Response Ongoing
Nature of Contamination: Found: Chlordane in soil is the primary TCOC.
Nature of Residual Contamination: Not reported
Use Restrictions: Controls Required to Manage Contamination
Engineering Control: Not reported
Description of Restrictions: Not reported
Institutional Control: Not reported
Within Designated Areawide Contamination: Not reported
Site Closure Type: Not reported
Document Date: Not reported
Document Number: Not reported
Document Subject: Not reported
Project Manager: Melody Calisay
Contact Information: (808) 586-4249 2385 Waimano Home Rd, Pearl City, HI 96782
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To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

**STANDARD ENVIRONMENTAL RECORDS**

**Federal NPL site list**

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

**NPL Site Boundaries**

**Sources:**

- EPA's Environmental Photographic Interpretation Center (EPIC)
  - Telephone: 202-564-7333
- EPA Region 1
  - Telephone 617-918-1143
- EPA Region 3
  - Telephone 215-814-5418
- EPA Region 4
  - Telephone 404-562-8033
- EPA Region 5
  - Telephone 312-886-6686
- EPA Region 10
  - Telephone 206-553-8665

**Proposed NPL:** Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

**NPL LIENS:** Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.
Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

- Date of Government Version: 05/13/2018
- Source: EPA
- Date Data Arrived at EDR: 05/30/2018
- Telephone: N/A
- Date Made Active in Reports: 06/22/2018
- Last EDR Contact: 05/30/2018
- Number of Days to Update: 23
- Next Scheduled EDR Contact: 07/16/2018
- Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing
A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

- Date of Government Version: 11/07/2016
- Source: Environmental Protection Agency
- Date Data Arrived at EDR: 01/05/2017
- Telephone: 703-603-8704
- Date Made Active in Reports: 04/07/2017
- Last EDR Contact: 04/06/2018
- Number of Days to Update: 92
- Next Scheduled EDR Contact: 07/16/2018
- Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System
SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA’s Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

- Date of Government Version: 05/18/2018
- Source: EPA
- Date Data Arrived at EDR: 05/30/2018
- Telephone: 800-424-9346
- Date Made Active in Reports: 06/22/2018
- Last EDR Contact: 05/30/2018
- Number of Days to Update: 23
- Next Scheduled EDR Contact: 07/30/2018
- Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive
SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA’s knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly
RCRA-SQG: RCRA - Small Quantity Generators
RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators
RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/16/2018
Date Data Arrived at EDR: 02/22/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 78
Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/09/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73
Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73
Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies
Federal ERNS list

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/19/2018  
Date Data Arrived at EDR: 03/27/2018  
Date Made Active in Reports: 06/08/2018  
Number of Days to Update: 73  
Source: National Response Center, United States Coast Guard  
Telephone: 202-267-2180  
Last EDR Contact: 03/27/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

SHWS: Sites List
Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 01/23/2018  
Date Data Arrived at EDR: 02/21/2018  
Date Made Active in Reports: 02/26/2018  
Number of Days to Update: 5  
Source: Department of Health  
Telephone: 808-586-4249  
Last EDR Contact: 02/21/2018  
Next Scheduled EDR Contact: 06/04/2018  
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Permitted Landfills in the State of Hawaii
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/17/2012  
Date Data Arrived at EDR: 04/03/2013  
Date Made Active in Reports: 05/10/2013  
Number of Days to Update: 37  
Source: Department of Health  
Telephone: 808-586-4245  
Last EDR Contact: 03/30/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 03/16/2018  
Date Data Arrived at EDR: 03/21/2018  
Date Made Active in Reports: 04/10/2018  
Number of Days to Update: 20  
Source: Department of Health  
Telephone: 808-586-4228  
Last EDR Contact: 06/01/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Semi-Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

Date of Government Version: 10/24/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies
INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/12/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Next Scheduled EDR Contact: 06/06/2018  
Source: EPA Region 8  
Telephone: 303-312-6271  
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska.

Date of Government Version: 10/12/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Next Scheduled EDR Contact: 06/06/2018  
Source: EPA Region 7  
Telephone: 913-551-7003  
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/06/2018  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Next Scheduled EDR Contact: 08/06/2018  
Source: EPA Region 6  
Telephone: 214-665-6597  
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Next Scheduled EDR Contact: 08/06/2018  
Source: EPA Region 4  
Telephone: 404-562-8677  
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/14/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Next Scheduled EDR Contact: 08/06/2018  
Source: EPA Region 1  
Telephone: 617-918-1313  
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/16/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Next Scheduled EDR Contact: 08/06/2018  
Source: EPA Region 5  
Telephone: 312-866-7439  
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada.

Date of Government Version: 09/30/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Next Scheduled EDR Contact: 08/06/2018  
Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Data Release Frequency: Varies
State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

- Date of Government Version: 05/15/2017
- Source: FEMA
- Telephone: 202-646-5797
- Last EDR Contact: 04/13/2018
- Next Scheduled EDR Contact: 07/23/2018
- Data Release Frequency: Varies

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST’s are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

- Date of Government Version: 03/16/2018
- Source: Department of Health
- Telephone: 808-586-4228
- Last EDR Contact: 06/01/2018
- Next Scheduled EDR Contact: 09/10/2018
- Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

- Date of Government Version: 04/24/2017
- Source: EPA Region 6
- Telephone: 214-665-7591
- Last EDR Contact: 05/18/2018
- Next Scheduled EDR Contact: 08/06/2018
- Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

- Date of Government Version: 10/16/2017
- Source: EPA Region 5
- Telephone: 312-886-6136
- Last EDR Contact: 05/18/2018
- Next Scheduled EDR Contact: 08/06/2018
- Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

- Date of Government Version: 10/14/2017
- Source: EPA, Region 1
- Telephone: 617-918-1313
- Last EDR Contact: 05/18/2018
- Next Scheduled EDR Contact: 08/06/2018
- Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations).

- Date of Government Version: 10/14/2017
- Source: EPA Region 4
- Telephone: 404-562-9424
- Last EDR Contact: 05/16/2018
- Next Scheduled EDR Contact: 08/06/2018
- Data Release Frequency: Varies
INDIAN UST R10: Underground Storage Tanks on Indian Land

Date of Government Version: 10/24/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 09/30/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Source: EPA Region 9  
Telephone: 415-972-3368  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/12/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Source: EPA Region 8  
Telephone: 303-312-6137  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 01/13/2018  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80  
Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites
A listing of sites with engineering controls in place.

Date of Government Version: 01/23/2018  
Date Data Arrived at EDR: 02/21/2018  
Date Made Active in Reports: 02/26/2018  
Number of Days to Update: 5  
Source: Department of Health  
Telephone: 404-586-4249  
Last EDR Contact: 02/21/2018  
Next Scheduled EDR Contact: 06/04/2018  
Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls
Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 01/23/2018  
Date Data Arrived at EDR: 02/21/2018  
Date Made Active in Reports: 02/26/2018  
Number of Days to Update: 5  
Source: Department of Health  
Telephone: 808-586-4249  
Last EDR Contact: 02/21/2018  
Next Scheduled EDR Contact: 06/04/2018  
Data Release Frequency: Varies

State and tribal voluntary cleanup sites
INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

VCP: Voluntary Response Program Sites
Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 01/23/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 02/26/2018
Number of Days to Update: 5

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites
With certain legal exclusions and additions, the term ‘brownfield site’ means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 01/23/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 02/26/2018
Number of Days to Update: 5

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment.

Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/21/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites
INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.
Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.
Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.
Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.
Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176
Source: Department of Health & Human Services, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 05/04/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.
Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing
A listing of clandestine drug lab site locations.
Date of Government Version: 08/04/2010
Date Data Arrived at EDR: 09/10/2010
Date Made Active in Reports: 10/22/2010
Number of Days to Update: 42
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies
US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this
web site as a public service. It contains addresses of some locations where law enforcement agencies reported
they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites.
In most cases, the source of the entries is not the Department, and the Department has not verified the entry
and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example,
contacting local law enforcement and local health departments.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Quarterly

Local Land Records
LIENS 2: CERCLA Lien Information
A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent
Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination.
CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 94
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports
HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

SPILLS: Release Notifications
Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency
Response since 1988.

Date of Government Version: 02/16/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 02/27/2018
Number of Days to Update: 6
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 05/23/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically,
they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are
already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39
Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records
RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018  Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/28/2018  Telephone: (415) 495-8895
Date Made Active in Reports: 06/22/2018  Last EDR Contact: 03/28/2018
Number of Days to Update: 86  Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015  Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 07/08/2015  Telephone: 202-528-4285
Date Made Active in Reports: 10/13/2015  Last EDR Contact: 05/25/2018
Number of Days to Update: 97  Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005  Source: USGS
Date Data Arrived at EDR: 11/10/2006  Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007  Last EDR Contact: 04/13/2018
Number of Days to Update: 62  Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Date Data Arrived at EDR: 02/06/2006  Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007  Last EDR Contact: 04/11/2018
Number of Days to Update: 339  Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017  Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017  Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017  Last EDR Contact: 05/15/2018
Number of Days to Update: 63  Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.
EPA WATCH LIST: EPA WATCH LIST
EPA maintains a “Watch List” 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. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

TSCA: Toxic Substances Control Act
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

TRIS: Toxic Chemical Release Inventory System
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.
ROD: Records Of Decision
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

RMP: Risk Management Plans
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

RAATS: RCRA Administrative Action Tracking System
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

PADS: PCB Activity Database System
PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB’s who are required to notify the EPA of such activities.
### ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

| Date of Government Version: 11/18/2016 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 11/23/2016 | Telephone: 202-564-2501 |
| Date Made Active in Reports: 02/10/2017 | Last EDR Contact: 04/09/2018 |
| Number of Days to Update: 79 | Next Scheduled EDR Contact: 07/23/2018 |
| Data Release Frequency: Quarterly |

### FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

| Date Data Arrived at EDR: 04/16/2009 | Telephone: 202-566-1667 |
| Date Made Active in Reports: 05/11/2009 | Last EDR Contact: 08/18/2017 |
| Number of Days to Update: 25 | Next Scheduled EDR Contact: 12/04/2017 |
| Data Release Frequency: Quarterly |

### FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

| Date of Government Version: 04/09/2009 | Source: EPA |
| Date Data Arrived at EDR: 04/16/2009 | Telephone: 202-566-1667 |
| Date Made Active in Reports: 05/11/2009 | Last EDR Contact: 08/18/2017 |
| Number of Days to Update: 25 | Next Scheduled EDR Contact: 12/04/2017 |
| Data Release Frequency: Quarterly |

### MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

| Date of Government Version: 08/30/2016 | Source: Nuclear Regulatory Commission |
| Date Data Arrived at EDR: 09/08/2016 | Telephone: 301-415-7169 |
| Date Made Active in Reports: 10/21/2016 | Last EDR Contact: 05/03/2018 |
| Number of Days to Update: 43 | Next Scheduled EDR Contact: 08/20/2018 |
| Data Release Frequency: Quarterly |

### COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

| Date of Government Version: 12/31/2005 | Source: Department of Energy |
| Date Data Arrived at EDR: 08/07/2009 | Telephone: 202-586-8719 |
| Date Made Active in Reports: 10/22/2009 | Last EDR Contact: 06/07/2018 |
| Number of Days to Update: 76 | Next Scheduled EDR Contact: 09/17/2018 |
| Data Release Frequency: Varies |

### COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.
<table>
<thead>
<tr>
<th>Database Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB TRANSFORMER</td>
<td>The database of PCB transformer registrations that includes all PCB registration submittals.</td>
</tr>
<tr>
<td>RADINFO</td>
<td>The Radiation Information Database contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.</td>
</tr>
<tr>
<td>HIST FTTS</td>
<td>A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.</td>
</tr>
<tr>
<td>HIST FTTS INSPECTION</td>
<td>A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.</td>
</tr>
<tr>
<td>DOT OPS</td>
<td>Department of Transportation, Office of Pipeline Safety Incident and Accident data.</td>
</tr>
</tbody>
</table>
CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 79
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program
DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 24
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies
LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust.

Date of Government Version: 04/05/2001  Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010  Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010  Last EDR Contact: 12/02/2009
Number of Days to Update: 36  Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016  Source: EPA
Date Data Arrived at EDR: 10/26/2016  Telephone: 202-564-2496
Date Made Active in Reports: 02/03/2017  Last EDR Contact: 09/26/2017
Number of Days to Update: 100  Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016  Source: EPA
Date Data Arrived at EDR: 10/26/2016  Telephone: 202-564-2496
Date Made Active in Reports: 02/03/2017  Last EDR Contact: 09/26/2017
Number of Days to Update: 100  Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 01/25/2018  Source: Department of Labor, Mine Safety and Health Administration
Date Data Arrived at EDR: 02/28/2018  Telephone: 303-231-5959
Date Made Active in Reports: 05/11/2018  Last EDR Contact: 05/31/2018
Number of Days to Update: 72  Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005  Source: USGS
Date Data Arrived at EDR: 02/29/2008  Telephone: 703-648-7709
Date Made Active in Reports: 04/18/2008  Last EDR Contact: 05/30/2018
Number of Days to Update: 49  Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  Source: USGS
Date Data Arrived at EDR: 06/08/2011  Telephone: 703-648-7709
Date Made Active in Reports: 09/13/2011  Last EDR Contact: 05/30/2018
Number of Days to Update: 97  Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies
ABANDONED MINES: Abandoned Mines
An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/08/2018  Source: Department of Interior
Date Data Arrived at EDR: 03/13/2018  Telephone: 202-208-2609
Date Made Active in Reports: 06/08/2018  Last EDR Contact: 06/20/2018
Number of Days to Update: 87  Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/21/2018  Source: EPA
Date Data Arrived at EDR: 02/23/2018  Telephone: (415) 947-8000
Date Made Active in Reports: 03/23/2018  Last EDR Contact: 06/06/2018
Number of Days to Update: 28  Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 01/04/2018  Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/19/2018  Telephone: 202-564-0527
Date Made Active in Reports: 04/13/2018  Last EDR Contact: 06/01/2018
Number of Days to Update: 84  Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016  Source: Department of Defense
Date Data Arrived at EDR: 10/31/2017  Telephone: 703-704-1564
Date Made Active in Reports: 01/12/2018  Last EDR Contact: 04/13/2018
Number of Days to Update: 73  Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 02/25/2018  Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/17/2018  Telephone: 202-564-2280
Date Made Active in Reports: 06/08/2018  Last EDR Contact: 06/06/2018
Number of Days to Update: 83  Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.
<table>
<thead>
<tr>
<th>Source/Listing</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AIRS:</strong> List of Permitted Facilities</td>
<td>A listing of permitted facilities in the state.</td>
</tr>
<tr>
<td><strong>DRYCLEANERS:</strong> Permitted Drycleaner Facility Listing</td>
<td>A listing of permitted drycleaner facilities in the state.</td>
</tr>
<tr>
<td><strong>Financial Assurance:</strong> Financial Assurance Information Listing</td>
<td>A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.</td>
</tr>
<tr>
<td><strong>LEAD:</strong> Lead Inspection Listing</td>
<td>Lead inspections</td>
</tr>
<tr>
<td><strong>UIC:</strong> Underground Injection Wells Listing</td>
<td>A listing of underground injection well locations.</td>
</tr>
<tr>
<td><strong>EDR Exclusive Records</strong></td>
<td></td>
</tr>
<tr>
<td><strong>EDR MGP:</strong> EDR Proprietary Manufactured Gas Plants</td>
<td>The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR’s researchers. Manufactured gas sites were used in the United States from the 1800’s to 1950’s to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.</td>
</tr>
</tbody>
</table>
EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential
gas station/filling station/service station sites that were available to EDR researchers. EDR’s review was limited
to those categories of sources that might, in EDR’s opinion, include gas station/filling station/service station
establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station,
filling station, auto, automobile repair, auto service station, service station, etc. This database falls within
a category of information EDR classifies as “High Risk Historical Records”, or HRHR. EDR’s HRHR effort presents
unique and sometimes proprietary data about past sites and operations that typically create environmental concerns,
but may not show up in current government records searches.

EDR Hist Cleaner: EDR Exclusive Historical Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential
dry cleaner sites that were available to EDR researchers. EDR’s review was limited to those categories of sources
that might, in EDR’s opinion, include dry cleaning establishments. The categories reviewed included, but were
not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls
within a category of information EDR classifies as “High Risk Historical Records”, or HRHR. EDR’s HRHR effort presents
unique and sometimes proprietary data about past sites and operations that typically create environmental concerns,
but may not show up in current government records searches.

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived
from historical databases and includes many records that no longer appear in current government lists. Compiled
from Records formerly available from the Department of Health in Hawaii.

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases
and includes many records that no longer appear in current government lists. Compiled from Records formerly available
from the Department of Health in Hawaii.
RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists.

Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186
Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association’s annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics’ primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics’ primary database on private school locations in the United States.
Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA
Telephone: 877-336-2627

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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Groundwater flow velocity is generally impacted by the nature of the geologic strata.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.
GROUNDWATER FLOW DIRECTION INFORMATION
Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

TOPOGRAPHIC INFORMATION
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY
General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES

Source: Topography has been determined from the USGS 7.5’ Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.
HYDROLOGIC INFORMATION
Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<table>
<thead>
<tr>
<th>Flood Plain Panel at Target Property</th>
<th>FEMA Source Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>15003C0290H</td>
<td>FEMA FIRM Flood data</td>
</tr>
</tbody>
</table>

Additional Panels in search area:

<table>
<thead>
<tr>
<th>FEMA Source Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEMA FIRM Flood data</td>
</tr>
</tbody>
</table>

NATIONAL WETLAND INVENTORY

<table>
<thead>
<tr>
<th>NWI Quad at Target Property</th>
<th>Data Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOKAPU</td>
<td>YES - refer to the Overview Map and Detail Map</td>
</tr>
</tbody>
</table>

HYDROGEOLOGIC INFORMATION
Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<table>
<thead>
<tr>
<th>MAP ID</th>
<th>LOCATION</th>
<th>GENERAL DIRECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Reported</td>
<td>FROM TP</td>
<td>GROUNDWATER FLOW</td>
</tr>
</tbody>
</table>
GROUNDWATER FLOW VELOCITY INFORMATION
Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY
Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT GEOLOGIC AGE IDENTIFICATION

<table>
<thead>
<tr>
<th>Era:</th>
<th>Category:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
</tr>
<tr>
<td>System:</td>
<td></td>
</tr>
<tr>
<td>Series:</td>
<td>Code:</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

(decoded above as Era, System & Series)

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture’s (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

**Soil Map ID: 1**

<table>
<thead>
<tr>
<th>Soil Component Name</th>
<th>Kokokahi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Surface Texture</td>
<td>very stony clay</td>
</tr>
<tr>
<td>Hydrologic Group</td>
<td>Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.</td>
</tr>
<tr>
<td>Soil Drainage Class</td>
<td>Moderately well drained</td>
</tr>
<tr>
<td>Hydric Status</td>
<td>Not hydric</td>
</tr>
<tr>
<td>Corrosion Potential - Uncoated Steel</td>
<td>Moderate</td>
</tr>
<tr>
<td>Depth to Bedrock Min</td>
<td>&gt; 0 inches</td>
</tr>
<tr>
<td>Depth to Watertable Min</td>
<td>&gt; 0 inches</td>
</tr>
</tbody>
</table>

---

**Soil Layer Information**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Boundary</th>
<th>Soil Texture Class</th>
<th>Classification</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 inches</td>
<td>14 inches</td>
<td>very stony clay</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 4.23 Min: 0.42 Max: 7.3 Min: 6.1</td>
</tr>
<tr>
<td>2</td>
<td>14 inches</td>
<td>44 inches</td>
<td>very stony clay</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 1.41 Min: 0.01 Max: 7.8 Min: 6.6</td>
</tr>
</tbody>
</table>

---

**Soil Map ID: 2**

<table>
<thead>
<tr>
<th>Soil Component Name</th>
<th>Papaa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Surface Texture</td>
<td>clay</td>
</tr>
<tr>
<td>Hydrologic Group</td>
<td>Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.</td>
</tr>
<tr>
<td>Soil Drainage Class</td>
<td>Well drained</td>
</tr>
</tbody>
</table>
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

---

### Soil Layer Information

<table>
<thead>
<tr>
<th>Layer</th>
<th>Upper</th>
<th>Lower</th>
<th>Soil Texture Class</th>
<th>Classification</th>
<th>Unified Soil</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 inches</td>
<td>11 inches</td>
<td>clay</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 4.23 Min: 0.42</td>
<td>Max: 6.5 Min: 6.1</td>
</tr>
<tr>
<td>2</td>
<td>11 inches</td>
<td>27 inches</td>
<td>clay</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 1.41 Min: 0.01</td>
<td>Max: 6.5 Min: 6.1</td>
</tr>
<tr>
<td>3</td>
<td>27 inches</td>
<td>40 inches</td>
<td>silty clay loam</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay</td>
<td>Max: 14.11 Min: 4.23</td>
<td>Max: 6.5 Min: 6.1</td>
</tr>
<tr>
<td>4</td>
<td>40 inches</td>
<td>50 inches</td>
<td>bedrock</td>
<td>Not reported</td>
<td>Not reported</td>
<td>Max: 0.42 Min: 0.02</td>
<td>Max: Min:</td>
</tr>
</tbody>
</table>

---

**Soil Map ID: 3**

Soil Component Name: Jaucas

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches
Soil Layer Information

<table>
<thead>
<tr>
<th>Layer</th>
<th>Upper</th>
<th>Lower</th>
<th>Soil Texture Class</th>
<th>Classification</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 inches</td>
<td>12 inches</td>
<td>sand</td>
<td>Granular materials (35 pct. or less passing No. 200), Fine Sand.</td>
<td>COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.</td>
<td>Max: 141 Min: 42.34</td>
</tr>
<tr>
<td>2</td>
<td>12 inches</td>
<td>59 inches</td>
<td>sand</td>
<td>Granular materials (35 pct. or less passing No. 200), Fine Sand.</td>
<td>COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.</td>
<td>Max: 141 Min: 42.34</td>
</tr>
</tbody>
</table>

Soil Map ID: 4

Soil Component Name: Beaches

Soil Surface Texture: coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 92 inches
<table>
<thead>
<tr>
<th>Layer</th>
<th>Soil Texture Class</th>
<th>Classification</th>
<th>Saturated hydraulic conductivity</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>coarse sand</td>
<td>Granular materials (35 pct. or less passing No. 200), Fine Sand.</td>
<td>COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.</td>
<td>Max: 141 Min: 42.34</td>
</tr>
<tr>
<td>2</td>
<td>coarse sand</td>
<td>Granular materials (35 pct. or less passing No. 200), Fine Sand.</td>
<td>COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.</td>
<td>Max: 141 Min: 42.34</td>
</tr>
</tbody>
</table>

**Soil Map ID: 5**

- **Soil Component Name:** Kokokahi
- **Soil Surface Texture:** clay
- **Hydrologic Group:** Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
- **Soil Drainage Class:** Moderately well drained
- **Hydric Status:** Not hydric
- **Corrosion Potential - Uncoated Steel:** High
- **Depth to Bedrock Min:** > 0 inches
- **Depth to Watertable Min:** > 0 inches
### Soil Layer Information

<table>
<thead>
<tr>
<th>Boundary</th>
<th>Classification</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layer</td>
<td>Upper</td>
<td>Lower</td>
<td>Soil Texture Class</td>
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<tr>
<td>1</td>
<td>0 inches</td>
<td>14 inches</td>
<td>clay</td>
</tr>
<tr>
<td>2</td>
<td>14 inches</td>
<td>44 inches</td>
<td>clay</td>
</tr>
</tbody>
</table>

---

**Soil Map ID:** 6

**Soil Component Name:** Waialua

**Soil Surface Texture:** silty clay

**Hydrologic Group:** Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

**Soil Drainage Class:** Moderately well drained

**Hydric Status:** Not hydric

**Corrosion Potential - Uncoated Steel:** Moderate

**Depth to Bedrock Min:** > 0 inches

**Depth to Watertable Min:** > 0 inches

---

### Soil Layer Information

<table>
<thead>
<tr>
<th>Boundary</th>
<th>Classification</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
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</thead>
<tbody>
<tr>
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<td>Upper</td>
<td>Lower</td>
<td>Soil Texture Class</td>
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<tr>
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### Soil Layer Information

<table>
<thead>
<tr>
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<th>Soil Texture Class</th>
<th>AASHTO Group</th>
<th>Unified Soil</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>11 inches</td>
<td>59 inches</td>
<td>silty clay</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 4.23 Min: 1.41</td>
<td>Max: 7.3 Min: 6.1</td>
</tr>
</tbody>
</table>

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### Soil Map ID: 7

- **Soil Component Name:** Ewa
- **Soil Surface Texture:** silty clay loam
- **Hydrologic Group:** Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
- **Soil Drainage Class:** Well drained
- **Hydric Status:** Not hydric
- **Corrosion Potential - Uncoated Steel:** Moderate
  - **Depth to Bedrock Min:** > 0 inches
  - **Depth to Watertable Min:** > 0 inches

---

### Soil Layer Information

<table>
<thead>
<tr>
<th>Layer</th>
<th>Upper</th>
<th>Lower</th>
<th>Soil Texture Class</th>
<th>AASHTO Group</th>
<th>Unified Soil</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 inches</td>
<td>7 inches</td>
<td>silty clay loam</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 14 Min: 4.23</td>
<td>Max: 7.3 Min: 6.6</td>
</tr>
<tr>
<td>2</td>
<td>7 inches</td>
<td>29 inches</td>
<td>silty clay loam</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 14 Min: 4.23</td>
<td>Max: 7.3 Min: 6.6</td>
</tr>
</tbody>
</table>
### Soil Layer Information

<table>
<thead>
<tr>
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<th>Lower</th>
<th>Soil Texture Class</th>
<th>AASHTO Group</th>
<th>Unified Soil</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>29 inches</td>
<td>38 inches</td>
<td>bedrock</td>
<td>Not reported</td>
<td>Not reported</td>
<td>Max: 42 Min: 1</td>
<td>Max: Min:</td>
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</tbody>
</table>

**Soil Map ID: 8**

- **Soil Component Name:** Keaau
- **Soil Surface Texture:** clay
- **Hydrologic Group:** Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
- **Soil Drainage Class:** Poorly drained
- **Hydric Status:** Partially hydric
- **Corrosion Potential - Uncoated Steel:** High
- **Depth to Bedrock Min:** > 0 inches
- **Depth to Watertable Min:** > 70 inches

### Soil Layer Information

<table>
<thead>
<tr>
<th>Layer</th>
<th>Upper</th>
<th>Lower</th>
<th>Soil Texture Class</th>
<th>AASHTO Group</th>
<th>Unified Soil</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 inches</td>
<td>14 inches</td>
<td>clay</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 14.11 Min: 1.41</td>
<td>Max: 7.8 Min: 7.4</td>
</tr>
<tr>
<td>2</td>
<td>14 inches</td>
<td>33 inches</td>
<td>clay</td>
<td>Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.</td>
<td>FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.</td>
<td>Max: 4.23 Min: 0.42</td>
<td>Max: 7.8 Min: 7.4</td>
</tr>
<tr>
<td>3</td>
<td>33 inches</td>
<td>38 inches</td>
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<td>Not reported</td>
<td>Max: 705 Min: 42.34</td>
<td>Max: Min:</td>
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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information

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<th>Layer</th>
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<th>Lower</th>
<th>Soil Texture Class</th>
<th>Classification</th>
<th>Saturated hydraulic conductivity micro m/sec</th>
<th>Soil Reaction (pH)</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>38 inches</td>
<td>57 inches</td>
<td>sand</td>
<td>Granular materials (35 pct. or less passing No. 200), Fine Sand.</td>
<td>COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.</td>
<td>Max: 705 Min: 141.14</td>
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</tbody>
</table>

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<table>
<thead>
<tr>
<th>DATABASE</th>
<th>SEARCH DISTANCE (miles)</th>
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<tbody>
<tr>
<td>Federal USGS</td>
<td>1.000</td>
</tr>
<tr>
<td>Federal FRDS PWS</td>
<td>Nearest PWS within 0.001 miles</td>
</tr>
<tr>
<td>State Database</td>
<td>1.000</td>
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FEDERAL USGS WELL INFORMATION

<table>
<thead>
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<th>MAP ID</th>
<th>WELL ID</th>
<th>LOCATION FROM TP</th>
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<tbody>
<tr>
<td>1</td>
<td>USGS40000270491</td>
<td>0 - 1/8 Mile NE</td>
</tr>
<tr>
<td>A4</td>
<td>USGS40000270414</td>
<td>1/8 - 1/4 Mile SSE</td>
</tr>
<tr>
<td>B5</td>
<td>USGS40000270419</td>
<td>1/8 - 1/4 Mile SSW</td>
</tr>
<tr>
<td>6</td>
<td>USGS40000270413</td>
<td>1/4 - 1/2 Mile SE</td>
</tr>
</tbody>
</table>

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<table>
<thead>
<tr>
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<th>WELL ID</th>
<th>LOCATION FROM TP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>No PWS System Found</td>
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Note: PWS System location is not always the same as well location.
### STATE DATABASE WELL INFORMATION

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<td>1/8 - 1/4 Mile SSE</td>
</tr>
<tr>
<td>B3</td>
<td>HI90000000001469</td>
<td>1/8 - 1/4 Mile SSW</td>
</tr>
<tr>
<td>7</td>
<td>HI90000000001470</td>
<td>1/4 - 1/2 Mile SE</td>
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</tbody>
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### Map ID

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<th>Elevation</th>
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<td>NE</td>
<td>0 - 1/8 Mile</td>
<td>Lower</td>
<td>FED USGS</td>
<td>USGS40000270491</td>
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</tbody>
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#### Org. Identifier:
USGS-HI

#### Formal name:
USGS Hawaii Water Science Center

#### Monloc Identifier:
USGS-212352157432401

#### Monloc name:
3-2343.BA IWS -05

#### Monloc type:
Well

#### Monloc desc:
Not Reported

#### Huc code:
20060000

#### Drainagearea Units:
Not Reported

#### Contrib drainagearea units:
Not Reported

#### Longitude:
-157.7205889

#### Source map scale:
24000

#### Horiz Acc measure:
1

#### Horiz Acc measure units:
seconds

#### Horiz Collection method:
Interpolated from map

#### Horiz coord refsys:
NAD83

#### Vert measure units:
feet

#### Vert measure val:
70.00

#### Vert acc measure units:
feet

#### Vert acc measure val:
10

#### Vert collection method:
Interpolated from topographic map

#### Vert coord refsys:
HILOCAL

#### Countrycode:
US

#### Aquifername:
Not Reported

#### Formations:
Not Reported

#### Aquifer type:
Not Reported

#### Construction date:
19720809

#### Well depth:
90

#### Wellhole depth:
90

#### Wellname:
Kailua

#### Old name:
Not Reported

#### Wid:
3-2343-001

#### Island:
Oahu

#### Yr drilled:
0

#### Driller:
Not Reported

#### Quad map:
14

#### Long83dd:
-157.720278

#### Lat83dd:
21.390833

#### Gps:
0

#### Utm:
-1

#### Owner user:
Mid-Pacific Country Club

#### Land owner:
Not Reported

#### Pump insta:
Not Reported

#### Old number:
419

#### Casing dia:
Not Reported

#### Well type:
Not Reported

#### Well depth:
135

#### Solid case:
Not Reported

#### Perf case:
Not Reported

#### Use:
UNU - Unused

#### Use year:
Not Reported

#### Init head:
Not Reported

#### Init head2:
Not Reported

#### Init head3:
Not Reported

#### Init cl:
500

#### Test date:
Not Reported

#### Test gpm:
Not Reported

---

**A2**

### SSE

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<td>SSE</td>
<td>1/8 - 1/4 Mile</td>
<td>Lower</td>
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</table>

#### Wid:
3-2343-001

#### Island:
Oahu

#### Yr drilled:
0

#### Driller:
Not Reported

#### Quad map:
14

#### Long83dd:
-157.720278

#### Lat83dd:
21.390833

#### Gps:
0

#### Utm:
-1

#### Owner user:
Mid-Pacific Country Club

#### Land owner:
Not Reported

#### Pump insta:
Not Reported

#### Old number:
419

#### Casing dia:
Not Reported

#### Ground el:
Not Reported

#### Well depth:
135

#### Solid case:
Not Reported

#### Perf case:
Not Reported

#### Use:
UNU - Unused

#### Use year:
Not Reported

#### Init head:
Not Reported

#### Init head2:
Not Reported

#### Init head3:
Not Reported

#### Init cl:
500

#### Test date:
Not Reported

#### Test gpm:
Not Reported
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**B3 SSW**

1/8 - 1/4 Mile Lower

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**HI WELLS**

HI90000000001469
### GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

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#### A4

**SSE**

**1/8 - 1/4 Mile**

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Ground-water levels, Number of Measurements: 0

#### B5

**SSW**

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Source map scale: 24000

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</tr>
<tr>
<td>Pump depth:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Aqui code:</td>
<td>30604</td>
</tr>
<tr>
<td>Latest hd:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Pir:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Surveyor:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>T:</td>
<td>Not Reported</td>
</tr>
</tbody>
</table>

**GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS**
Federal EPA Radon Zone for HONOLULU County: 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 level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96734
Number of sites tested: 28

<table>
<thead>
<tr>
<th>Area</th>
<th>Average Activity</th>
<th>% &lt;4 pCi/L</th>
<th>% 4-20 pCi/L</th>
<th>% &gt;20 pCi/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living Area - 1st Floor</td>
<td>0.064 pCi/L</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Living Area - 2nd Floor</td>
<td>Not Reported</td>
<td>Not Reported</td>
<td>Not Reported</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Basement</td>
<td>Not Reported</td>
<td>Not Reported</td>
<td>Not Reported</td>
<td>Not Reported</td>
</tr>
</tbody>
</table>
TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

HYDROGEOLOGIC INFORMATION

AQUIFLOW® Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture’s (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.
LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
   Source: EPA/Office of Drinking Water
   Telephone: 202-564-3750
   Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
   Source: EPA/Office of Drinking Water
   Telephone: 202-564-3750

USGS Water Wells: USGS National Water Inventory System (NWIS)
   This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database
   Source: Commission on Water Resource Management
   Telephone: 808-587-0214
   CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
   Source: USGS
   Telephone: 703-356-4020
   The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
   Source: EPA
   Telephone: 703-356-4020
   Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
   Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
   Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR’s Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey
ENVIRONMENTAL LIEN & AUL REPORT

Order # 79-77079-47-EL
AFX Reference # 79-77079-47

592 KANEAPU PL
KAILUA, HI 96734

Completed 06/29/2018
Effective 06/01/2018

AFX RESEARCH, LLC
A Quarter-Century of Title Document Research Expertise
999 Monterey St. Suite 380, San Luis Obispo, CA 93401
(877) 848-5337 / www.afxllc.com
### SOURCES SEARCHED

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source 1</td>
<td>HONOLULU COUNTY RECORDER’S OFFICE</td>
</tr>
<tr>
<td>Source 2</td>
<td>HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES</td>
</tr>
<tr>
<td>Source 3</td>
<td>UNITED STATES ENVIRONMENTAL PROTECTION AGENCY</td>
</tr>
</tbody>
</table>

### TARGET PROPERTY

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Owner(s)</td>
<td>STATE OF HAWAII - OWNER / CITY AND COUNTY OF HAWAII - LESSEE</td>
</tr>
<tr>
<td>Street Address</td>
<td>592 KANEAPU PL</td>
</tr>
<tr>
<td>City, State Zip Code</td>
<td>KAILUA, HI 96734</td>
</tr>
<tr>
<td>APN/Parcel/PIN</td>
<td>1-4-3-009-002-002</td>
</tr>
<tr>
<td>Legal Description</td>
<td>CITY OF KAILUA, COUNTY OF HONOLULU, HI / PARCEL: 1-4-3-009-002-0000</td>
</tr>
</tbody>
</table>

### PROPERTY OWNERSHIP

| Owner(s) | STATE OF HAWAII - OWNER / CITY AND COUNTY OF HAWAII - LESSEE |
**ENVIRONMENTAL LIENS**

| NO ENVIRONMENTAL LIENS WERE FOUND FOR SUBJECT PROPERTY. |

**ACTIVITY AND USE LIMITATIONS (AUL)**

<p>| NO AUL WERE FOUND FOR SUBJECT PROPERTY. |</p>
<table>
<thead>
<tr>
<th>LEASES AND MISCELLANEOUS INSTRUMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO LEASES OR MISCELLANEOUS INSTRUMENTS FOUND FOR SUBJECT PROPERTY.</td>
</tr>
</tbody>
</table>
Our Environmental Lien and AUL report provides a summary of recorded information on a specific property from the time the current owner purchased the property, to present time. The report is intended to assist in the search for environmental liens filed in land title records. The report will verify property ownership and provide information on recorded environmental liens and/or Activity and Use Limitations that have been recorded from the time the current owner purchased the property, forward.

Our professional network of trained researchers follow established industry protocols and use client-supplied property information to complete this Environmental Lien and AUL report. The research is conducted at all appropriate government offices based on the location of the subject property. This would include city, county, state, federal and tribal offices as needed. The report includes:

- Current deed information (i.e. grantor, grantee, recording dates)
- Legal Description
- Environmental Lien information
- Activity and Use Limitation information
- Copies of any Environmental Liens and/or documents referencing AULs that are listed within our summary report

-Disclaimer-

This report was prepared for the use of AFX Research LLC (AFX), exclusively. This report is neither a guarantee of title, a commitment to insure, nor a policy of title insurance. **NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT.** AFX specifically disclaims the making of any such warranties, including without limitation, merchantability or fitness for a particular use or purpose. The information contained in this report is retrieved as it is recorded from the various agencies that make it available. The total liability is limited to the fee paid for this report.
## Building Permit (pre 1999)

**Building Permit:** 349329  
**Application Number:** A1994-03-0309  
**Description:** ALALI PT PARK - OT  
**Issued Date:** Mar 7, 1994  
**Status:** Completed  
**Job Location:** 592 KANEAPU PL  
**Created Date:** Mar 7, 1994  
**Completed Date:** May 31, 1994

### Tax Map Key

**Warning:** TMK 4-3-009:002 [454809 sq ft.] 10.4441 ac., POID=61128.592 KANEAPU PL Kalua 96734 01/01/1800 to Current TAXPIN = 61128

### Details

- **Project Name:** ALALI PT PARK  
- **Owner Name:** CITY & COUNTY OF HONOLULU  
- **Plan Maker:** STEPHEN FREDRICK MECHLER  
- **Contractor:** GREG CULVER-PUALANI LANDSCAPE

- **Accepted Value:** 100  
- **Occupancy Group Category:** IRRIGATION  
- **Occupancy Group:** 20 - Structure other than building & unclassified  
- **Structure Code:** 01 - NO STRUCTURE, FOUNDATIONS, SPRINKLER SYSTEM  
- **Construction Type Actual:**  
- **Construction Type Min:**  
- **Number Of Stories:** 0  
- **Total Floor Area:** 0  
- **Ownership Type:** Public

### Residential Units / Hotel Rooms (Code: A=Add; D=Delete)

- **Hotel Room Code:**  
- **Number of Rooms:**  
- **Residential Units Code:**  
- **Number of Units:**

### Inspections (RC=Received; CP=Completed; NA=Not Applicable)

<table>
<thead>
<tr>
<th>Code</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Code Inspection</td>
<td>CP May 31, 1994</td>
</tr>
<tr>
<td>Electrical Code Inspection</td>
<td>NA Mar 7, 1994</td>
</tr>
<tr>
<td>Plumbing Code Inspection</td>
<td>NA Mar 7, 1994</td>
</tr>
</tbody>
</table>

### Type of Work

- ☐ New Building  
- ☐ Repair  
- ☐ Plumbing Work  
- ☐ Foundation Only  
- ☐ Demolition  
- ☑ Other Work

- IRRIGATION
<table>
<thead>
<tr>
<th>Work Category</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Shell Only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alteration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sidewalk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driveway</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cancel
Parcel Number: 430090020000
Owner Name: STATE OF HAWAII Fee Owner
Location Address: 592 KANEAPU PL
Property Class: RESIDENTIAL
Land Area (approximate sq ft): 454,810
Land Area (acres): 10.441

Assessment Information

<table>
<thead>
<tr>
<th>Assessment Year</th>
<th>Property Class</th>
<th>Assessed Land Value</th>
<th>Dedicated Use Value</th>
<th>Land Exemption</th>
<th>Net Taxable Land Value</th>
<th>Assessed Building Value</th>
<th>Building Exemption</th>
<th>Net Taxable Building Value</th>
<th>Total Property Assessed Value</th>
<th>Total Property Exemption</th>
<th>Total Net Taxable Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>RESIDENTIAL</td>
<td>$3,436,600</td>
<td>$0</td>
<td>$0</td>
<td>$3,436,600</td>
<td>$38,200</td>
<td>$0</td>
<td>$38,200</td>
<td>$3,474,800</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

2018 amended values not to be posted until new tax rates are processed on or after July 20.

Appeal Information
No appeal information on parcel.

Land Information

Property Class: RESIDENTIAL
Square Footage: 454,810
Acreage: 10.441

Improvement Information
No improvement information available for this parcel.

Other Building and Yard Improvements
No information associated with this parcel.

Permit Information

<table>
<thead>
<tr>
<th>Date</th>
<th>Permit Number</th>
<th>Reason</th>
<th>Permit Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/07/1994</td>
<td>349329</td>
<td></td>
<td>$100</td>
</tr>
</tbody>
</table>

Sales Information
No sales information associated with this parcel.

Current Tax Bill Information

<table>
<thead>
<tr>
<th>Tax Period</th>
<th>Description</th>
<th>Original Due Date</th>
<th>Taxes Assessment</th>
<th>Tax Credits</th>
<th>Net Tax</th>
<th>Penalty</th>
<th>Interest</th>
<th>Other</th>
<th>Amount Due</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
</tbody>
</table>

No Tax Information available on this parcel.
RECORDS OF COMMUNICATION/INTERVIEW
NOTICE TO REQUESTER

TO: Kim Rottas, ENPRO / Fax NO. 262-4449 SW Section
(Requester's name)

FROM: Hawaii Dept. of Health, Solid and Hazardous Waste Branch, Amy Liana, (808) 586-4226, amy.liana@doh.hawaii.gov
(Agency, and agency contact person's name, telephone number, & email address)

DATE THAT THE RECORD REQUEST WAS RECEIVED BY AGENCY: 6/26/18

DATE OF THIS NOTICE: 7/10/18

GOVERNMENT RECORDS YOU REQUESTED (attach copy of request or provide brief description below):
1.
2.
3.
4.

THIS NOTICE IS TO INFORM YOU THAT YOUR RECORD REQUEST:
☐ Will be granted in its entirety.

☐ Cannot be granted. Agency is unable to disclose the requested records for the following reason:
☐ Agency does not maintain the records. (HRS § 92F-3)
☐ Other agency that is believed to maintain records: _____________

☐ Agency needs further clarification or description of the records requested. Please contact the agency and provide the following information: __________________________

☐ Request requires agency to create a summary or compilation from records, but requested information is not readily retrievable. (HRS § 92F-11(c))

☐ Will be granted in part and denied in part, OR ☐ Is denied in its entirety
Although the agency maintains the requested records, it is not disclosing all or part of them based on the exemptions provided in HRS § 92F-13 and/or § 92F-22 or other laws cited below. (Describe the portions of records that the agency will not disclose.)

RECORDS OR INFORMATION WITHHELD | APPLICABLE STATUTES | AGENCY JUSTIFICATION

REQUESTER'S RESPONSIBILITIES:
You are required to (1) pay any lawful fees and costs assessed; (2) make any necessary arrangements with the agency to inspect, copy or receive copies as instructed below; and (3) provide the agency any additional information requested. If you do not comply with the requirements set forth in this notice within 20 business days after the postmark date of this notice or the date the agency makes the records available, you will be presumed to have abandoned your request and the agency shall have no further duty to process your request. Once the agency begins to process your request, you may be liable for any fees and costs incurred. If you wish to cancel or modify your request, you must advise the agency upon receipt of this notice.
METHOD & TIMING OF DISCLOSURE:

Records available for public access in their entireties must be disclosed within a reasonable time, not to exceed 10 business days from the date the request was received, or after receipt of any prepayment required. Records not available in their entireties must be disclosed within 5 business days after this notice or after receipt of any prepayment required. HAR § 2-71-13(c). If incremental disclosure is authorized by HAR § 2-71-15, the first increment must be disclosed within 5 business days of this notice or after receipt of any prepayment required.

Method of Disclosure:

☐ Inspection at the following location: _______________________ 

☐ As requested, a copy of the record(s) will be provided in the following manner:
   ☐ Available for pick-up at the following location: _______________________ 
   ☐ Will be mailed to you.
   ☐ Will be transmitted to you by other means requested: _______________________ 

Timing of Disclosure: All records, or the first increment if applicable, will be made available or provided to you:

☐ On ______________, 20__. 

☐ After prepayment of 50% of fees and 100% of costs, as estimated below.

For incremental disclosures, each subsequent increment will be disclosed within 20 business days after:

☐ The prior increment (if one prepayment of fees is required and received), or

☐ Receipt of each incremental prepayment, if prepayment for each increment is required.

Records will be disclosed in increments because the records are voluminous and the following extenuating circumstances exist:

☐ Agency must consult with another person to determine whether the record is exempt from disclosure under HRS chapter 92F.

☐ Request requires extensive agency efforts to search, review, or segregate the records or otherwise prepare the records for inspection or copying.

☐ Agency requires additional time to respond to the request in order to avoid an unreasonable interference with its other statutory duties and functions.

☐ A natural disaster or other situation beyond agency’s control prevents agency from responding to the request within 10 business days.

ESTIMATED FEES & COSTS AND PAYMENT:

FEES: For personal record requests under Part III of chapter 92F, HRS, the agency may charge you for its costs only, and fee waivers do not apply.

For public record requests under Part II of chapter 92F, HRS, the agency is authorized to charge you fees to search for, review, and segregate your request (even if a record is subsequently found to not exist or will not be disclosed in its entirety). The agency must waive the first $30 in fees assessed for general requesters, OR in the alternative, the first $60 in fees when the agency finds that the request is made in the public interest. Only one waiver is provided for each request. See HAR §§ 2-71-19, -31 and -32.

COSTS: For either personal or public record requests, the agency may charge you for the costs of copying and delivering records in response to your request, and other lawful fees and costs.

PREPAYMENT: The agency may require prepayment of 50% of the total estimated fees and 100% of the total estimated costs prior to processing your request. If a prepayment is required, the agency may wait to start any search for or review of the records until the prepayment is received by the agency. Additionally, if you have outstanding fees or costs
from previous requests, including abandoned requests, the agency may require prepayment of 100% of the unpaid balance from prior requests before it begins any search or review for the records you are now seeking.

The following is an itemization of what you must pay, based on the estimated fees and costs that the agency will charge you and the applicable waiver amount that will be deducted:

For public record requests only:

Fees:
- Search Estimate of time to be spent: 15 mins ($2.50 for each 15-minute period)
- Review & segregation Estimate of time to be spent: ___ hours ($5.00 for each 15-minute period)
- Fees waived □ general ($30), OR □ public interest ($60) (Only one waiver per request)
- Other (Pursuant to HAR §§ 2-71-19 & 2-71-31)

Total Estimated Fees:

For public or personal record requests:

Costs:
- Copying Estimate of # of pages to be copied: ___ @ $ ___ per page, pursuant to HRS § 92-21)
- Delivery Postage
- Other

Total Estimated Costs:

TOTAL ESTIMATED FEES AND COSTS from above:

☐ The estimated fees and costs above are for the first incremental disclosure only. Additional fees and costs, and no further fee waivers, will apply to future incremental disclosures.

☐ PREPAYMENT IS REQUIRED (50% of fees + 100% of costs, as estimated above) $

☐ UNPAID BALANCE FROM PRIOR REQUESTS (100% must be paid before work begins) $

TOTAL AMOUNT DUE AT THIS TIME $

Payment may be made by: ☐ cash
☐ personal check payable to ___________________________
☐ other ___________________________

For questions about this notice or the records being sought, please contact the agency person named at the beginning of this form. Please note that the Office of Information Practices (OIP) does not maintain the records of other agencies, and a requester must seek records directly from the agency it believes maintains the records. If the agency denies or fails to respond to your written request for records or if you have other questions regarding compliance with the UIPA, then you may contact OIP at (808) 586-1400, oip@hawaii.gov, or 250 South Hotel Street, Suite 107, Honolulu, Hawaii 96813.

OIP (rev. 12/1/2015)
REQUEST TO ACCESS A GOVERNMENT RECORD

DATE: June 26, 2018
TO: DOI/EIM/8olid & Hazardous Waste Branch (Fax, 808-586-7509)
FROM: Kim Rottas ENPRO Environmental

151 Hekili Street, Suite 210 (808) 748-2114 phone
Kailua, Hawaii 96734 (808) 264 1419 fax

To confirm you have received this request, the processor of this request may be asked if the agency is aware of your request. If you are aware of the request, please provide any information that will allow the agency to contact you (name or alias, telephone or fax number, mailing address, e-mail address, etc).

I WOULD LIKE THE FOLLOWING GOVERNMENT RECORD:

Describe the government record as specifically as possible so that it can be located. Try to provide a record name, subject matter, date, location, purpose, or names of persons whom the record refers, or other information that could help the agency identify the record. A complete and accurate description of the government record you request will prevent delays in locating the record. Attach a second page if needed.

Aloha,

I am currently working on an Environmental Site Assessment for the following property located on Oahu: 592 Kaneapu Place in Kailua, Hawaii. I would like to review regulatory records for the following properties:

- 592 Kaneapu Place (project site)
- Mid Pacific CC, 266 Kaelipulu Drive, Facility ID 9-101979

My report is due July 10, 2018. In light of my timeline, I would greatly appreciate any assistance you can provide in expediting access to the files. Mahalo for your time and assistance,

Kim Rottas

I WOULD LIKE: (please check one or more of the options below)

☐ To inspect the government record.
☐ A copy of the government record: (Please check one of the options below) See the back of this page for information about fees that you may be required to pay for agency services to process your request. Description: Copying and transmission charges may also apply to certain options.

☐ Pick up at agency (date and time):
☐ Mail
☐ Fax (toll free and only if available)
☐ Other, if available (please specify):

☐ If the agency maintains the records in a form other than paper, please advise in which format you would prefer to have the record.

☐ Electronic ☐ Audio ☐ Other (please specify):

☐ Check this box if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

OFFICIAL USE ONLY:

Office Manager: Date: OIF (rev. 07/29/99)
TO: Kim Rottas
(Requester's name)

FROM: Dept. of Health/Hazard Evaluation & Emergency Response Office / (808)586-4249
(Agency, and agency contact person's name, telephone number, & email address)

DATE THAT THE RECORD REQUEST WAS RECEIVED BY AGENCY: June 26, 2018

DATE OF THIS NOTICE: June 26, 2018

GOVERNMENT RECORDS YOU REQUESTED (attach copy of request or provide brief description below):
1. (Attached)
2.
3.
4.

THIS NOTICE IS TO INFORM YOU THAT YOUR RECORD REQUEST:
☐ Will be granted in its entirety.
☒ Cannot be granted. Agency is unable to disclose the requested records for the following reason:
☐ Agency does not maintain the records. (HRS § 92F-3)
☐ Other agency that is believed to maintain records:
☐ Agency needs further clarification or description of the records requested. Please contact the agency and provide the following information:
☐ Request requires agency to create a summary or compilation from records, but requested information is not readily retrievable. (HRS § 92F-11(c))

☐ Will be granted in part and denied in part, OR ☐ Is denied in its entirety
Although the agency maintains the requested records, it is not disclosing all or part of them based on the exemptions provided in HRS § 92F-13 and/or § 92F-22 or other laws cited below.
(Describe the portions of records that the agency will not disclose.)

RECORDS OR INFORMATION WITHHELD                      APPLICABLE STATUTES                      AGENCY JUSTIFICATION

REQUESTER'S RESPONSIBILITIES:
You are required to (1) pay any lawful fees and costs assessed; (2) make any necessary arrangements with the agency to inspect, copy or receive copies as instructed below; and (3) provide the agency any additional information requested. If you do not comply with the requirements set forth in this notice within 20 business days after the postmark date of this notice or the date the agency makes the records available, you will be presumed to have abandoned your request and the agency shall have no further duty to process your request. Once the agency begins to process your request, you may be liable for any fees and costs incurred. If you wish to cancel or modify your request, you must advise the agency upon receipt of this notice.

METHOD & TIMING OF DISCLOSURE:
REQUEST TO ACCESS A GOVERNMENT RECORD

DATE: June 26, 2018
TO: Hazard Evaluation & Emergency Response Office (Fax: 586-7537)
FROM: Kim Rottas, ENPRO Environmental
       151 Hekili Street, Suite 210 (808) 748-2114 phone
       (808) 262-4449 fax

Although you are not required to provide any personal information, you should provide enough information to allow the agency to contact you about this request. The processing of this request may be stopped if the agency is unable to contact you. Therefore, please provide any information that will allow the agency to contact you (name or alias, telephone or fax number, mailing address, e-mail address, etc.).

I WOULD LIKE THE FOLLOWING GOVERNMENT RECORD:

Describe the government record as specifically as possible so that it can be located. Try to provide a record name, subject matter, date, location, purpose, or names of persons to whom the record refers, or other information that could help the agency identify the record. A complete and accurate description of the government record you request will prevent delays in locating the record. Attach a second page if needed.

Aloha,

I am currently working on an Environmental Site Assessment for the following property located on Oahu: 592 Kaneapu Place in Kailua, Hawaii. I would like to review regulatory records for the following properties:

- 592 Kaneapu Place (project site)
- Mid Pacific CC, 266 Kaelepulu Drive, Facility ID 9-101979

My report is due July 10, 2018. In light of my timeline, I would greatly appreciate any assistance you can provide in expediting access to the files. Mahalo for your time and assistance,

Kim Rottas

I WOULD LIKE: (please check one or more of the options below)

☐ To inspect the government record.
☐ A copy of the government record: (Please check one of the options below.) See the back of this page for information about fees that you may be required to pay for agency services to process your record request. Note: Copying and transmission charges may also apply to certain options.
   ☐ Pick up at agency (date and time): ___________________________
   ☐ Mail
   ☐ Fax (tell free and only if available)
   ☐ Other, if available (please specify):

☐ If the agency maintains the records in a form other than paper, please advise in which format you would prefer to have the record.
   ☐ Electronic ☐ Audio ☐ Other (please specify): ___________________________

☐ Check this box if you are attaching a request for waiver of fees in the public interest. (see waiver information on back).

OFFICIAL USE ONLY: SEE BACK FOR IMPORTANT INFORMATION
To: Kimberly Rottas;

RE: Request dated June 26, 2018
592 Kaneapua Place

Dear Kim Rottas,

Good morning! The Honolulu Fire Department has completed your request. There were no found records of any above ground or underground storage tanks, hazardous materials incidents or previous fires at the abovementioned property.

Sincerely,
Christine Cabalo
Information Specialist
Honolulu Fire Department

From: Kimberly Rottas [mailto:krottas@enproenvironmental.com]
Sent: Tuesday, June 26, 2018 11:20 AM
To: *HFD Request for Information <HFDRFI@honolulu.gov>
Subject: Record request

Hello,

Please see the attached record request.

Thank you,

Kim Rottas
Environmental Professional

151 Hekili Street Suite 210 Kailua HI 96734
Cell: 808-542-8242 Direct: 808-748-2114
Ph: 808-262-0909 Fx: 808-262-4449
www.enproenvironmental.com
Phase I Environmental Site Assessment Property Questionnaire

Communication with: Name: James P. Hayes, Jr.
Company: City County of Honolulu
Phone Number: 723-7800
Date: 7/19/2013
Amount of Time: 30 years
Familiar With Site: Adjacent property
Relationship to Site:

PROJECT NO.: 1806-00336-PH1
PROJECT NAME/ADDRESS: 592 Kaneapu Place

Prior to answering the questions supplied in the table below, please provide ENPRO with the following information:

A. What is your purpose/reason for requesting a Phase I Environmental Site Assessment of the above referenced property?

B. Can you supply a floor plan diagram and list of tenants for the structures at the property? If so, please attach copies with your questionnaire responses or send separately prior to the site visit.

DIRECTIONS: Please answer all questions to the best of your knowledge and in good faith. Mark the appropriate response with an “X”. (Note: U/NR indicates “Unknown” or “No Response”). If you not know the answer, please check the U/NR box rather than the No box. Please also elaborate on ALL Yes responses in the Comment box (for example, if the response to “Is the adjoining property used for an industrial use?” is Yes, please explain, e.g., “The building next door is used for canning tomatoes”). You may also provide additional information to U/NR and No responses as necessary. If you have any questions while completing the questionnaire, please contact us.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>2. Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Are you aware of any notices from any governmental entity regarding any possible violation(s) of environmental laws or possible liability relating to hazardous substances or petroleum products in, on, or from the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
<td>Comment</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>4. Are you aware of any <em>environmental cleanup liens</em> against the property that are filed or recorded under federal, tribal, state, or local law?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>5. Are you aware of any <em>Activity and Use Limitations (AULs)</em>, including engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state, or local law?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>6. Do you have any <em>specialized knowledge</em> or experience related to possible environmental concerns at the property or nearby properties? (For example, are you involved in the same line of business as the current or former occupants at the property or adjacent/nearby properties such that you would have specialized knowledge of the chemicals and processes used by this type of business?)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>7. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the <em>devalued purchase price</em> is because contamination is known or believed to be present at the property? (Please reply in Comment section)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>8. Are you aware of <em>commonly known or reasonably ascertainable information</em> about the property or nearby properties that would help ENPRO to identify conditions indicative of releases or threatened releases? (For example, neighboring property is known to have once been a vehicle junk yard)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>9. Do you know any <em>past uses</em> of the property which may have contributed to potential contaminant releases?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>10. Do you know of any <em>specific chemicals</em> that are present or once were present at the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>11. Do you know of any <em>spills or other chemical releases</em> that have taken place at the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>12. Do you know of any <em>environmental cleanups</em> that have taken place at the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>13. Based on your knowledge and experience related to the property, are there any <em>obvious indicators</em> that point to the presence or likely presence of contamination at the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>14. a.) Is the <em>property</em> used for an industrial use?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b.) Are any <em>adjacent properties</em> used for an industrial use?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>15. a.) Has the <em>property</em> been used for an industrial use <em>in the past</em>?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b.) Have any of the <em>adjacent properties</em> been used for an industrial use <em>in the past</em>?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
<td>Comment</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>16. a.) Is the <strong>property</strong> used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b.) Are any of the <strong>adjacent properties</strong> used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>17. a.) Has the <strong>property</strong> been used in the past as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b.) Have any of the <strong>adjacent properties</strong> been used in the past as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>18. a.) Are there currently any automotive or industrial batteries damaged or discarded, or pesticides, paints, or other chemicals in individual containers of greater than five gallons in volume or fifty gallons in the aggregate, stored on, or used at the <strong>property</strong> or at the <strong>facility</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b.) Have there been previously any automotive or industrial batteries damaged or discarded, or pesticides, paints, or other chemicals in individual containers of greater than five gallons in volume or fifty gallons in the aggregate, stored on or used at the <strong>property</strong> or at the <strong>facility</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>19. a.) Are there currently any industrial drums (typically 55-gallon) or sacks of chemical located on the <strong>property</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b.) Have there been previously any industrial drums (typically 55-gallon) or sacks of chemical located on the <strong>property</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>20. a.) Are there currently any ground water monitoring wells or other ground water wells (e.g., drinking water wells) located on the <strong>property</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b.) Have there been previously any ground water monitoring wells or other ground water wells (e.g., drinking water wells) located on the <strong>property</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>21. a.) Are there currently any ground water monitoring wells or other ground water wells (e.g., drinking water wells) located on any of the <strong>adjacent properties</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b.) Have there been previously any ground water monitoring wells or other ground water wells (e.g., drinking water wells) located on any of the <strong>adjacent properties</strong>?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
<td>Comment</td>
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<tr>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>22. a.) Has fill dirt been brought onto the property which originated</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>from a contaminated site?</td>
<td></td>
<td></td>
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<tr>
<td>b.) Has fill dirt been brought onto the property which is of unknown</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>origin?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. a.) Are there currently any pits, ponds or lagoons on the property</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>in connection with waste treatment or waste disposal?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.) Have there been previously any pits, ponds or lagoons on the</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>property in connection with waste treatment or waste disposal?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. a.) Is there currently any stained soil on the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b.) Has there been previously any stained soil on the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>25. a.) Are there currently any registered or unregistered storage</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>tanks (above ground or underground) located on the property?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.) Have there been previously any registered or unregistered storage</td>
<td>Yes</td>
<td></td>
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<tr>
<td>tanks (above ground or underground) located on the property?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. a.) Are there currently any vent pipes, fill pipes, or access ways</td>
<td>Yes</td>
<td></td>
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<tr>
<td>indicating a fill pipe protruding from the ground on the property or</td>
<td></td>
<td></td>
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<tr>
<td>adjacent to any structures on the property?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.) Have there been previously any vent pipes, fill pipes, or access</td>
<td>Yes</td>
<td></td>
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<tr>
<td>ways indicating a fill pipe protruding from the ground on the property</td>
<td></td>
<td></td>
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<tr>
<td>or adjacent to any structures on the property?</td>
<td></td>
<td></td>
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<tr>
<td>27. a.) Are there currently any flooring, drains, or walls located</td>
<td>Yes</td>
<td></td>
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<tr>
<td>within the structure(s) on the property that are stained by substances</td>
<td></td>
<td></td>
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<tr>
<td>other than water or are emitting foul odors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.) Have there been previously any flooring, drains, or walls located</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>within the structure(s) on the property that are stained by substances</td>
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<td></td>
</tr>
<tr>
<td>other than water or are emitting foul odors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. a.) If the property is served by a private well or non-public water</td>
<td>Yes</td>
<td></td>
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<tr>
<td>system, have contaminants been identified in the well or system that</td>
<td></td>
<td></td>
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<tr>
<td>exceed guidelines applicable to the water system?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.) If the property is served by a private well or non-public water</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>system, has the well been designated as contaminated by any government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>environmental/health agency?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. a.) Are there any environmental liens or government</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>notifications relating to current violations of environmental laws with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>respect to the property or any facility located on the property?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.) Are you aware of the past existence of any environmental violations</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>of environmental laws with respect to the property or any facility</td>
<td></td>
<td></td>
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<tr>
<td>located on the property?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
<td>Comment</td>
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<tr>
<td>----------</td>
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<td>---------</td>
</tr>
<tr>
<td>30. a.) Have you been informed of the existence of any hazardous substances or petroleum products which are currently used or stored on the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>b.) Have you been informed of the past existence of any hazardous substances or petroleum products used or stored on the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>31. a.) Are you aware of any previous Environmental Site Assessments of the property or facility which indicated the presence of hazardous materials or petroleum products?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>b.) Are you aware of any previous Environmental Site Assessments which indicated the contamination of the property or facility?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>c.) Are you aware of any previous Environmental Site Assessments which recommended further assessment of the property or facility?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>32. a.) Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products involving the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>b.) Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products involving the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>c.) Are you aware of any notices from any government entity regarding any possible violations of environmental laws or possible liability relevant to hazardous substances or petroleum products involving the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>33. a.) Does the property discharge waste water on or adjacent to the property, other than storm water, into a storm water sewer system?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>b.) Does the property discharge waste water on or adjacent to the property, other than storm water, into a sanitary sewer system?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>34. Have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials been dumped above grade, buried, and/or burned on the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>35. Is there any transformer, capacitor, or any hydraulic equipment on the property for which there are any records of the presence of PCBs?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>36. a.) Is there now, or have there ever been any asbestos-containing materials (ACM) in any application on the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>b.) Has there ever been any testing for ACM conducted on the property?</td>
<td>Yes</td>
<td>✓</td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>36. c.) Is there an asbestos Operations and Maintenance (O &amp; M) program in place at the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>37. a.) Is there now, or have there ever been any Lead-Based Paint (LBP) in any application on the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b.) Has there ever been any testing for LBP conducted on the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c.) Is there a LBP O &amp; M program in place at the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>38. Has the water at the property ever been tested for lead?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>39. Has radon testing ever been conducted at the property?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>40. Is the property, or any portion of the property, located or involved in any Ecologically Sensitive Areas (i.e., wetlands, coastal barrier resource areas, coastal barrier improvement act areas, flood plain, endangered species, etc.)?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>41. a.) Is the property, or any property within 1.0 mile of the property, listed on the Federal National Priorities List (NPL)?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b.) Is the property, or any property within 0.5 miles of the property, listed on the Federal CERCLIS List?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c.) Is the property, or any property within 1.0 mile of the property, listed by the Federal government as a RCRA TSD Facility?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>42. a.) Is the property, or any property within 1.0 mile of the property, listed by the State government as a Hazardous Waste site?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b.) Is the property, or any property within 0.5 miles of the property, listed by the State government as a CERCLIS-equivalent site?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c.) Is the property, or any property within 0.5 miles of the property, listed by the State as a Leaking Underground Storage Tank (LUST) site?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c.) Is the property, or any property within 0.5 miles of the property, listed by the State as a Solid Waste/Landfill facility?</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
Respondent Affirmation:

Respondent represents that to the best of the respondent's knowledge the above statements and facts are true and correct and to the best of the respondent's actual knowledge, no material facts have been suppressed or misstated.

Signature ____________________________ Date ____________
(For oral communications, the word “Affirmed” appears on the signature line)

or

Answers to this questionnaire have been orally communicated to a representative of Environmental Professionals, completed by:

Name ____________________________ Signature ____________________________ Date ____________
QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS
CAREER HISTORY

Experienced in conducting ASTM Standard Phase I and Phase II Environmental Site Assessments and site assessment work addressing PCBs, petroleum-related contaminants, pesticides, asbestos, metals, underground storage tanks (USTs), and non-point source contaminants and review of federal, state and county databases and regulatory files.

Experienced in developing Environmental Hazard Evaluations (EHEs), Environmental Hazard Management Plans (EHMPs).

Experienced in fugitive gas emission monitoring.

Experienced in collecting multi-incremental soil samples.

Experienced in conducting hazardous materials surveys and environmental site assessments for asbestos containing building materials, and lead containing paint.

Experienced in conducting surveys for moisture intrusion, visible suspect mold and indoor air quality investigations.

Experienced in conducting post remediation verification (PRV) for mold and moisture intrusion remediation and hygienic indoor surfaces.

Experienced in the planning and execution of ground penetrating radar (GPR) surveys.

Research experience includes fieldwork and writing during the investigation of Surtseyan eruption dynamics, impacts of jetting during littoral explosions, mass transport on the Martian surface, GPR studies of pyroclastic runout, and disaster preparedness in the Hawaiian islands.

EDUCATION


PUBLICATIONS


SPECIALIZED TRAINING

30 Hour OSHA Construction; October 2016
40 Hour EM 385-1-1; October 2016
GHS and OSHA Hazardous Communication; October 2016
Lead Renovator; September 2016
40 Hour HAZWOPER; July 2016
Lead Paint Regulations; March 2016
Gas Free Instrumentation, 2016
Volcanic Crisis Awareness, Coastal Community Resilience; 2012
Tsunami Awareness; 2011
Disaster Management; 2010
CERTIFICATIONS

Hawaii State Certified Lead Inspector, Certification No. PB-0842

AHERA Asbestos Building Inspector and Project Monitor, Certification No. HIASB-4124

ACAC Council-Certified Fire and Smoke Damage Technician, Certification No. 1712016

ACAC Council-Certified Indoor Environmental Consultant, Certification No. 1801016
CAREER HISTORY

More than thirty years of documented success in the establishment and leadership of professional environmental companies, managing technical projects and improving management and information systems. Strong interpersonal and technical skills. Broad experience in building science, indoor air quality, environmental assessments, hazardous waste remediation, and technological applications.

EDUCATION

M.S., Environmental Management, University of Hawaii 1976
B.S., Marine Biology, Chaminade University, 1972
Project Management, University of Hawaii, 1992
Strategic Planning, University of Hawaii, 1990

EXECUTIVE MANAGEMENT

For 12 years, was CEO/COO for a $20 million resource recovery/hazardous waste management group servicing Hawaii and the Pacific Basin.

GEOGRAPHIC EXPERIENCE

Projects performed in Guam, Philippines, Japan, Korea, Singapore, Thailand, Indonesia, Malaysia, Hong Kong, Micronesia, Polynesia, United States, Canada and the Caribbean.

ENVIRONMENTAL SERVICES

Successfully expanded environmental services firm from a staff of 10 to 160 and 2 office locations to 8 by increasing capabilities and client base. Managed critical environmental projects applying technical solutions with a proven record of client confidence.

ENVIRONMENTAL CONSULTING

Founded, organized, and developed interdisciplinary professional company of geotechnical and environmental specialists. Established offices in Hawaii and Guam. Institutionalized environmental auditing as a standard operating procedure for corporate application.

ENVIRONMENTAL EXPERT

Recognized national speaker, writer, expert witness, and expert consultant on environmental issues and indoor air quality.

ENVIRONMENTAL ANALYSIS

Founded, organized and developed Environmental Laboratory of the Pacific (EmLab P&K), a state-of-the-art analytical lab dedicated to organic and inorganic environmental testing services for the Pacific Basin Region. Founded MoldPro International, a bioaerosol laboratory, and Analytica, an asbestos laboratory.

INDOOR AIR QUALITY

In 1993, established ENPRO Environmental, a national firm specializing in environmental due diligence, indoor air quality and building science forensics.
PROFESSIONAL AFFILIATIONS

National Board Director – American Indoor Air Quality Council
National Board Director – Indoor Air Quality Association
Hawaii Chapter Director – American Indoor Air Quality Council
Charter Member, Texas Indoor Air Quality Association
Past President, National Association of Industrial and Office Properties
National Environmental Affairs Committee – National Association of Office and Industrial Properties
Founding Director – Hawaii Association of Environmental Professionals
ASTM E-50 Committee on Environmental Assessment
ASTM Mold Task Force
Board Member – Certified Commercial Investment Member
Board Member – Le Jardin Academy

CERTIFICATIONS

Board Certified Indoor Environmental Consultant (CIEC)
Board Certified Indoor Air Quality Manager (CIAQM)
Registered Environmental Assessor
Certified Hazardous Materials Manager, Master Level
Certified Hazardous Waste Specialist
Registered Environmental Professional
Certified Asbestos Designer/Planner/Inspector
Certified Lead Inspector/Supervisor/Risk Assessor
Certified Residential Measurement Provider, Radon
IICRC Water Restoration Technician
EXHIBIT D

Natural resources assessment for an Ocean Safety District Operations Building at Kailua Beach Park on O'ahu. AECOS No. 1551.
Natural resources assessment for an Ocean Safety District Operations Building at Kailua Beach Park on O‘ahu

Prepared by:

AECOS, Inc.
45-939 Kamehameha Hwy, Suite 104
Kāne‘ohe, Hawai‘i 96744-3221

November 11, 2019
Natural resources assessment for an Ocean Safety District Operations Building at Kailua Beach Park on O'ahu

November 11, 2019

Eric B. Guinther and Bryson Luke
AECOS Inc.
Kamehameha Highway, Kāne'ohe, Hawai'i 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: guinther@aecos.com

Introduction

The City & County of Honolulu, Department of Design and Construction is proposing to construct an Ocean Safety District, Combined Tower and Rescue Craft Facility ("Project") on TMK: 4-3-009:002 in Kailua, windward O'ahu (see cover photo). The lot is located at the corner of Mokulua Drive and Kaneapu Place, at the far southeast end of Kailua Beach Park. The subject parcel encompasses the western face of Alāla Point, and extends inland some 1400 ft from the north end at Alāla Point to the back of lots on Pauahilanui Place. The parcel includes two ridge tops separated by a dry swale (Figure 1), the higher ridge (Pu'u Hālō) reaches to around 270 ft above sea level (asl) with an eastern face towards Lanikai and a southern face towards Mid-Pacific Country Club. Two turnout areas, formerly used for limited overflow parking for Kailua Beach Park and boat launch ramp a short distance away, occur on the mauka side of Mokulua Drive on this parcel. The proposed building and parking area would occupy the lower of these turnouts and cover roughly 0.25 ac of the 10.441-ac parcel. The proposed structure is a single-story building with offices, restrooms, kitchenette, storage areas, and a large garage.

Methods

Botanical Survey

A property boundary (survey area) map was loaded on a Trimble 6000 Series GNSS unit (GeoXH) for use during the botanical survey conducted by Eric

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1 Report prepared for Gerald Park, Urban Planner for public release during the entitlements process.
Figure 1. Location of Project site on Project parcel (TMK: 4-3-009:002; outlined in yellow). Shown are two avian point-count stations (green dots) and location of a *Cryptostegia* plant (red dot).
Guinther on July 31, 2019. The GNSS unit recorded the progress tracks of the botanist, providing real time feedback on location and adequacy of coverage during a wandering (pedestrian) transect survey and served as a guide to the survey area limits.

Because the proposed Project involves only a small portion of the 10-ac parcel, the plant survey was divided into two phases. First, a detailed survey of all the low-sloping ground along Mokulua Drive was surveyed following our standard plant survey methodology (a wandering pedestrian transect) and intended to cover the readily buildable portion of the parcel encompassing the two turnouts and an area of ground between these. This phase covered fully the Project design plan area. Plant species were identified as they were encountered and notes taken to develop a relative abundance for each species recorded. Any plant not immediately recognized during the survey was photographed and/or a representative feature (flower, fruit, etc.) collected for later identification at the laboratory. For the second phase, a less rigorous survey was undertaken, intended to characterize the vegetation and develop a list other plant species present on the parcel without regard to abundance or attempting to visit all parts of the parcel.


**Bird and Mammal Survey**

An avian survey in the Project area was conducted by Bryson Luke on August 5, 2019 in the morning hours when birds are most active. Two point-count stations were selected on the Project parcel, one station near the location of the proposed Project building and one station along the crest of the hill above the Project (green dots in Figure 1, above). Weather conditions were ideal for avian observations, with no rain and only a light wind. All birds observed and/or heard during an 8-minute period at each station were identified to species and counted. Additional avian species observed in the Project area beyond the point-count period were noted as incidental observations. While on-site, AECOS biologists surveyed the Project site for Hawaiian seabird burrows and any suspect areas noted if present.

The avian phylogenetic order and nomenclature used in this report follow the *Hawaiian Island Birds Checklist* (VanderWerf et al., 2018), which is based on the *Checklist of North and Middle America Birds* by American Ornithological Society.
(AOS; Chesser et al., 2018). Hawaiian common names are provided for indigenous and endemic species, as applicable.

The survey of mammals was limited to visual detection, coupled with visual observation of scat, tracks, and other animal sign. No survey was conducted for the only native Hawaiian land mammal, the 'ōpe'a'ape'a or Hawaiian hoary bat (*Lasiurus cinereus semotus*), detection of which would require night surveys deploying special detection equipment. The population of this bat on O'ahu is sparse.

**Results**

**Vegetation**

The dominant vegetation across the parcel as a whole is *koa haole* (*Leucaena leucocephala*) scrub. The south facing slopes of the two hills include areas of open grassland dominated by fountain grass (*Cenchrus setaceus*). Within the *koa haole*, the understory vegetation is either white shrimp plant (*Justicia betonica*) or Guinea grass (*Megathyrsus maximus*), both forming dense growths that are co-dominant with the *koa haole*. Larger trees, mostly Chinese banyan (*Ficus microcarpa*) and kiawe (*Prosopis pallida*), occur scattered across the hillslopes. At Alāla Point and the upper part of the property southeast of Alāla Point, night-blooming cereus (*Hylocereus undatus*) and massive growths of milk-striped euphorbia or mottled-candlestick plant (*Euphorbia lactea*) and bougainvillea (*Bougainvillea spectabilis*) are present. Presumably these species were planted long ago to discourage access to abutting residential properties. Vegetation within the narrow Project area (and extending to near Alala Point) is mixed, including landscaping, much disturbed ground, and various typical coastal trees and shrubs, such as coconut (*Cocos nucifera*), sea grape (*Coccoloba uvifera*), ironwood (*Casuarina equisetifolia*), naupaka (*Scaevola sericea*), and button mangrove (*Conocarpus erectus*). A second turnout area to the northeast of the building site is being actively planted and watered with the low ‘Green Island’ hedge and zoysia grass. Some cutting and clearing of brush and weedy areas is on-going at the Project site, presently occupied by containers belonging to Ocean Safety Division (Figure 2).

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2 By the Lani-Kailua Outdoor Circle; signs warning against removal of a construction fence and any trees is posted by Department of Parks and Recreation, Division of Urban Forestry (DUF).
Figure 2. Project building site looking inland (mauka), presently occupied by temporary storage structures belonging to Ocean Safety.

Flora

A listing of all the plants observed during the survey is provided as Table 1. Qualitative abundance ratings are provided for all species found within the lower part of the parcel along Mokulua Drive. Any of these species that are also prominent elsewhere on the parcel are identified by note <1>. Species for which no abundance rating is provided were observed only outside of the detailed survey area.

The flora listing contains 57 taxa, 40 (70%) of which were seen in the detailed survey of the Project site and vicinity along Mokulua Drive between Kaneapu Place and the curve at Alāla Point. The majority of the plants are non-native introductions to the Hawaiian Islands; only three (5%) are native, indigenous species and two (3.5%) are early Polynesian introductions (so-called “canoe plants”). The natives are naupaka kahakai (Scaevola taccada), hau (Hibiscus tiliaceus), and 'uhaloa (Waltheria indica). These species are widespread in the Islands.
Table 1. Checklist of plants growing on the Ocean Safety Operations Facility site and TMK: 4-3-009:002 in Kailua, O’ahu.

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
<th>Common name</th>
<th>STATUS</th>
<th>ABUNDANCE</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOWERING PLANTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- DICOTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACANTHACEAE</td>
<td><em>Asystasia gangetica</em> (L.) T. Anderson</td>
<td>Chinese violet</td>
<td>Nat</td>
<td>O</td>
<td>&lt;1&gt;</td>
</tr>
<tr>
<td></td>
<td><em>Justicia betonica</em> L.</td>
<td>white shrimp plant</td>
<td>Nat</td>
<td>AA</td>
<td>&lt;1&gt;</td>
</tr>
<tr>
<td>AMARANTHACEAE</td>
<td><em>Alternanthera pungens</em> Kunth</td>
<td>khaki weed</td>
<td>Nat</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>APOCYNACEAE</td>
<td><em>Cryptostegia</em> sp.</td>
<td>rubber vine</td>
<td>Nat</td>
<td>---</td>
<td>&lt;4&gt;</td>
</tr>
<tr>
<td>ASTERACEAE</td>
<td><em>Calyptocarpus vialis</em> Less.</td>
<td>---</td>
<td>Nat</td>
<td>Uc</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Emilia fosbergii</em> Nicolson</td>
<td>Flora’s paintbrush</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Sphagnetica trilobata</em> L.</td>
<td>wedelia</td>
<td>Nat</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Tridax procumbens</em> L.</td>
<td>coat buttons</td>
<td>Nat</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>BIGNONIACEAE</td>
<td><em>Tabebuia cf. chrysea</em> S.F. Blake</td>
<td>roble amarillo</td>
<td>Nat</td>
<td>---</td>
<td>&lt;3&gt;</td>
</tr>
<tr>
<td></td>
<td><em>Tabebuia</em> spp.</td>
<td>cut stump, regenerating</td>
<td>Orn</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>BRASSICACEAE</td>
<td><em>Lepidium virginicum</em> L.</td>
<td>---</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>CACTACEAE</td>
<td><em>Hylocereus undatus</em> (Haw.) Britton</td>
<td>night-blooming cereus</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&amp; Rose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CARICACEAE</td>
<td><em>Carica papaya</em> L.</td>
<td>papaya</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>CASUARINACEAE</td>
<td><em>Cassuarina equisetifolia</em> L.</td>
<td>ironwood</td>
<td>Nat</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>COMBRETACEAE</td>
<td><em>Conocarpus erectus</em> L.</td>
<td>sea mulberry</td>
<td>Nat</td>
<td>O</td>
<td>&lt;2&gt;</td>
</tr>
<tr>
<td>CONVOLVULACEAE</td>
<td><em>Ipomoea obscura</em> (L.) Ker-Gawl.</td>
<td>---</td>
<td>Nat</td>
<td>R</td>
<td>&lt;3&gt;</td>
</tr>
<tr>
<td></td>
<td><em>Merremia aegyptica</em> (L.) Urb.</td>
<td>hairy merremia</td>
<td>Nat?</td>
<td>R</td>
<td>&lt;3&gt;</td>
</tr>
<tr>
<td></td>
<td><em>Stictocardia tillifolia</em> (Desr.) H. Hallier</td>
<td>pilikai</td>
<td>Nat</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>EUPHORBIACEAE</td>
<td><em>Euphorbia lactea</em> Haw.</td>
<td>milk-striped euphorbia</td>
<td>Orn</td>
<td>---</td>
<td></td>
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</tbody>
</table>
Table 1 (continued).

<table>
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<tr>
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<tbody>
<tr>
<td>FABACEAE</td>
<td><em>Chamaecrista nictitans</em> (L.) Moench</td>
<td>partridge pea</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Desmodium incanum</em> DC.</td>
<td>Spanish clover</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Indigophora hendecaphyla</em> Jacq.</td>
<td>creeping indigo</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Leucaena leucocephala</em> (Lam.) deWit</td>
<td><em>koa haole</em></td>
<td>Nat</td>
<td>C &lt;1&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Prosopis pallida</em> (Humb. &amp; Bonpl. ex Willd.) Kunth</td>
<td>kiawe</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>GOODENIACEAE</td>
<td><em>Scaevola taccada</em> (Gaertn.) Roxb.</td>
<td>naupaka kahakai</td>
<td>Ind</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>LAMIACEAE</td>
<td><em>Hyptis pectinata</em> (L.) Poit.</td>
<td>comb hyptis</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>MALVACEAE</td>
<td><em>Hibiscus tiliaceus</em> L.</td>
<td><em>hau</em></td>
<td>Ind</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Malvastrum coromandelianum</em> (L.) Garcke</td>
<td>false mallow</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Sida ciliaris</em> L.</td>
<td>---</td>
<td>Nat</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Sida rhombifolia</em> L.</td>
<td>Cuba jute</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Sida spinosa</em> L.</td>
<td>prickly sida</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Waltheria indica</em> L.</td>
<td>‘<em>uhaloa</em>’</td>
<td>Ind</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>MORACEAE</td>
<td><em>Ficus microcarpa</em> L. fil.</td>
<td>Chinese banyan</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Ficus microcarpa var. crassifolia</em> (W.C. Shieh) J.C. Liao.</td>
<td>‘Green Island’ hedge</td>
<td>Orn</td>
<td>Oc &lt;2&gt;</td>
<td></td>
</tr>
<tr>
<td>NYCTAGINACEAE</td>
<td><em>Boerhavia coccinea</em> Mill.</td>
<td>false ‘<em>alena</em>’</td>
<td>Nat</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Bougainvillea spectabilis</em> Willd.</td>
<td>bougainvillea</td>
<td>Orn</td>
<td>U &lt;1&gt;</td>
<td></td>
</tr>
<tr>
<td>OCHNACEAE</td>
<td><em>Ochna thomasiiana</em> Engler &amp; Gilg</td>
<td>Mickey Mouse plant</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>OLEACEAE</td>
<td><em>Jasminum fluminense</em> Vell.</td>
<td>---</td>
<td>Nat</td>
<td>--- &lt;4&gt;</td>
<td></td>
</tr>
<tr>
<td>OXALIDACEAE</td>
<td><em>Oxalis corniculata</em> L.</td>
<td>‘<em>ihi</em>’ai, yellow wood sorrel</td>
<td>Pol</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>POLYGONACEAE</td>
<td><em>Antigonon leptopus</em> Hook. &amp; Arnott</td>
<td>Mexican creeper</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Coccoloba uvifera</em> (L.) L.</td>
<td>sea grape</td>
<td>Orn</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Coccoloba</em> sp.</td>
<td>similar to sea grape</td>
<td>Orn</td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>
Table 1 (continued).

<table>
<thead>
<tr>
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<th>Status</th>
<th>Abundance</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERBENACEAE</td>
<td>Lantana camara L.</td>
<td>lantana</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stachytarpheta australis Moldenke</td>
<td>vervain</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>FLOWERING PLANTS – MONOCOTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGAVACEAE</td>
<td>Agave sisalana Perrine</td>
<td>sisal</td>
<td>Nat</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sansevieria trifasciata Prain</td>
<td>bowstring-hemp</td>
<td>Orn</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>ARECACEAE</td>
<td>Cocos nucifera L.</td>
<td>coconut palm; niu</td>
<td><strong>Pol</strong></td>
<td><strong>U</strong></td>
<td></td>
</tr>
<tr>
<td>CYPERACEAE</td>
<td>Cyperus gracilis R. Br.</td>
<td>McCoy grass</td>
<td>Nat</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>POACEAE (GRAMINEAE)</td>
<td>Bothriochloa pertusa (L.) A. Camus Morrone</td>
<td>pitted beardgrass</td>
<td>Nat</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cenchrus setaceus (Forssk.)</td>
<td>fountain grass</td>
<td>Nat</td>
<td>---</td>
<td>&lt;4&gt;</td>
</tr>
<tr>
<td></td>
<td>Chloris barbata (L.) Sw.</td>
<td>swollen fingergrass</td>
<td>Nat</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cynodon dactylon (L.) Pers.</td>
<td>Bermuda grass</td>
<td>Nat</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dactyloctenium aegypticum (L.) Willd.</td>
<td>beach wiregrass</td>
<td>Nat</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eleusine indica (L) Gaertn.</td>
<td>wiregrass</td>
<td>Nat</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Megathyrsus maximus (Jacq.) B.K. Simon &amp; W.L. Jacobs</td>
<td>Guinea grass</td>
<td>Nat</td>
<td>AA</td>
<td>&lt;1&gt;</td>
</tr>
<tr>
<td></td>
<td>Paspalum dilatatum Poir.</td>
<td>Dallis grass</td>
<td>Nat</td>
<td>U</td>
<td>&lt;2&gt;</td>
</tr>
<tr>
<td></td>
<td>Zoysia matrella var. matrella Merr.</td>
<td>Manila grass</td>
<td>Nat</td>
<td>Uc</td>
<td>&lt;2&gt;</td>
</tr>
</tbody>
</table>

Key to Table 1.

Status = distributional status

- **Ind.** = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
- **Nat.** = naturalized, exotic, plant introduced to the Hawaiian Islands since 1778 and well-established.
- **Orn.** = exotic, ornamental or cultivated; plant not naturalized (not well-established outside of cultivation).
- **Pol.** = Polynesian introduction before 1778.

Abundance = occurrence ratings for plants in survey area.

- **R** = Rare - only one, two, or three plants seen.
- **U** = Uncommon - several to a dozen plants observed.
- **O** = Occasional - found regularly around the site.
- **C** = Common - considered an important part of the vegetation and observed numerous times.
- **A** = Abundant - found in large numbers; may be locally dominant.

Lower case letters indicate clustered distribution: number of plants greater than abundance category (for R, U, or O), which then becomes indication of number of clusters. For C or A letter indicates species very common or abundant in limited area(s) only.

Notes:

- <1> Species also common to abundant elsewhere on parcel.
- <2> Recent landscape planting.
- <3> Plant without flower or fruit; identification uncertain.
- <4> Noxious weed or invasive of concern.
Avian Biota

The avian survey of the Project area recorded a total of 124 individual birds of 15 species (Table 2) from two point-count stations. No native indigenous bird species were observed at the Project area or nearby vicinity during the survey. Several individual Wedge-tailed Shearwater (*Ardenna pacifica*), an indigenous seabird species, were observed on Popoi‘a Islet, located approximately 1,500 ft north from the Project site (see Fig. 1).

Table 2. Avian species detected on August 5, 2019 survey of TMK: 4-3-009:002 in Kailua, O‘ahu.

<table>
<thead>
<tr>
<th>ORDER</th>
<th>FAMILY</th>
<th>Species</th>
<th>Common Name</th>
<th>Status</th>
<th>Total Count</th>
</tr>
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<tr>
<td>COLUMBIFORMES</td>
<td>COLUMBIDAE</td>
<td>Columba livia</td>
<td>Rock Pigeon</td>
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<td></td>
<td></td>
<td>Streptopelia chinensis</td>
<td>Spotted Dove</td>
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<td>Geopelia striata</td>
<td>Zebra Dove</td>
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<tr>
<td>PELECANIFORMES</td>
<td>PROCELLARIIDAE</td>
<td>Ardenna pacifica</td>
<td>Wedge-tailed Shearwater</td>
<td>I</td>
<td>*</td>
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<tr>
<td>PROCELLARIIFORMES</td>
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<td>Bubulcus ibis</td>
<td>Cattle Egret</td>
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<td>PASSERIFORMES</td>
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<td>Pycnonotus cafer</td>
<td>Red-vented Bulbul</td>
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<td></td>
<td>Pycnonotus jocosus</td>
<td>Red-whiskered Bulbul</td>
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<td></td>
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<td>Japanese White-eye</td>
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<td>TIMALIIDAE</td>
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<td>Red-billed Leiothrix</td>
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<td>STURNIDAE</td>
<td>Acridotheres tristis</td>
<td>Common Myna</td>
<td>NN</td>
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<td>Paroaria coronata</td>
<td>Red-crested Cardinal</td>
<td>NN</td>
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<td>FRINGILLIDAE</td>
<td>Haemorhous mexicanus</td>
<td>House Finch</td>
<td>NN</td>
<td>3</td>
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<tr>
<td></td>
<td>PASSERIDAE</td>
<td>Passer domesticus</td>
<td>House Sparrow</td>
<td>NN</td>
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</table>
Table 2 (continued).

ORDER
FAMILY
Species              Common Name       Status    Total Count

ESTRILDIDAE
Estrilda astrild     Common Waxbill     NN        8
Lonchura oryzivora   Java Sparrow      NN        6

* Species observed outside of count station, incidental observation, far from Project site.

Legend to Table 2.

Status –  I = Indigenous
          NN = Naturalized, non-native species (introduced).

Mammalian Biota

The only terrestrial mammalian species observed during our survey was cat (Felis catus). Feral cat feeding station(s) occur in areas accessed by the two turnouts off Mokulua Drive. It is likely that dog (Canis familiaris) and some of the other established alien Muridae found on O'ahu—roof rat (Rattus rattus), brown rat (Rattus norvegicus), and Polynesian rat (Rattus exulans hawaiiensis)—use various resources within the general Project area on a seasonal basis. It is also to be expected that small Indian mongoose (Herpestes javanicus) is present. All of these introduced mammals are deleterious to native ecosystems and native faunal species within them.

Discussion

Botanical Resources

Two species of concern as invasive weeds were recorded during our survey, both observed outside of the Project site on the hillslope above the site. A rubbervine plant\(^3\) is located not far from the “terminal pole” seen in Figure 3. The plant is a moderate-sized (nearly 2 m tall) shrub with numerous lanky branches (whips) spreading out from a strong trunk (see Figure 4). This plant should be removed and destroyed, but doing so requires knowledge of the

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\(^3\) Two species (Cryptostegia madagascarensis Bojer ex Decne and C. grandiflora Roxb. ex R. Br.), both endemic to Madagascar, are accepted as valid by Klackenberg (2001) and both are present as introductions in Hawai‘i. Distinguishing the two requires close examination of floral structures, which were not present at the time of our survey on the single specimen found. Also, the length of the fruit (a follicle) might be useful (over 10 cm in C. madagascarensis). Both species are regarded as equally problematic invasive species (HISC, 2019; OISC, 2019).
Figure 3. West side of Project site looking south. “Terminal pole” is well-beyond the end of Kaneapu Place, but below the top of the ridge. A rubbervine plant is located near this pole.

potential danger to the person doing the cutting (see HISC, 2019). The dry hills in this area would seem an ideal environment for the further spread of Cryptostegia and more specimens could be present nearby as our survey of this area was minimal in coverage. The location of the plant was reported to the HISC; however, the response received back (Speith, 2019) pointed out that HISC does not actually do on-the-ground management ("...would not be able to conduct any direct ‘plant removing’...") so C&C Honolulu, as owner of the parcel, took on the task of removing of this specimen (and others⁴).

⁴ “Tom [Null] and I [Talia Portner] found 4 individuals of the Cryptostegia madagascarensis... 3 of the individuals were quite large (10” diam) and reaching out upwards of 20’! All individuals were flowering and budding, we did find two old seed pods. Tom girdled the largest plant and cut through the smaller plants, we applied garlon to both cuts, we used approximately 150ml of garlon. We left all the plant parts on site and flagged the trail we took. I would suggest checking in a month or so and there’s probably more out there.” (Portner, 2019).
Figure 4. Project area rubbervine plant showing opposite leaves, dark brown stems with lenticels, and distinctive double seed pods.

The grassy fields on the south-facing hillslope are dominated by fountain grass (*Cenchrus setaceus*, formerly *Pennisetum setaceum*) recognized by the O‘ahu Invasive Species Committee as a “priority target species” (OISC, 2019). This grass is known from the Lanikai area. The location of the grass has been reported to OISC. However, OISC no longer considers this grass a priority and no longer assists with fountain grass removal on O‘ahu (Speith, 2019). Eradication of this species from the parcel is unlikely to be achievable.

No plant species of any concern with respect to listing under either federal or State of Hawai‘i as threatened or endangered under endangered species statutes (HDLNR, 1998; USFWS, nd (a)) occur on or near the Project site. No plants of any particular resource value were observed by our survey, and only plants in the immediate vicinity of the Project site might be subject to loss from activity associated with the project. As is evident in Fig. 3 (above), most of the
site is highly disturbed. No trees listed by the C&C Exceptional Tree Program (C&C, 2017) occur on the property. However, a letter from C&C Parks & Recreation (Parks, 2019) relaying concerns of the department’s Division of Urban Forestry (DUF) and requesting specific steps to be taken prior to removal of any trees on the Project site, specifies creation of a Tree Disposition Plan (TDP) that “identifies all tree species including invasive species that are within the project’s limit of grading, filling, and disturbance work.” As can be seen in Figs. 2 and 3 (above), the building site is surrounded by trees. These trees are mostly sea grape (Coccoloba uvifera) and are mostly outside the area of grading (although an actual grading plan has not yet been created). Sea grape is not a tree of any particular interest beyond the fact that it is a typical landscape planting in coastal areas like Kailua. Some trees on the southeast corner of the site have been severely trimmed (evident in Fig. 3 between the storage shed and a house roof seen in the background). Ironwood (Casuarina equisetifolia) and button mangrove or sea mulberry (Conocarpus erectus) are also present in the area, but likely beyond the actual Project grading area.

The densest grove of trees at the site occurs on the west side, forming a copse separating the Project site from Kaneapu Pl., a short street with residential lots limited to the west side of the street. Within this cluster of trees (again mostly sea grape) occur a coconut (Cocos nucifera), a hau tree (Hibiscus tiliaceus), and an unusual Coccoloba (may be a species other than C. uvifera) with elongated leaves (seen at far right in Fig. 3) that superficially resemble those of the tropical almond (Terminalia catappa). This unusual Coccoloba is a large, older tree, so the unusual leaves are not a juvenile characteristic. Fruiting structures are those of a Coccoloba.

Avian Resources

The avian assemblage observed at the Project area are consistent with the coastal scrub and urban environments found at the Project and vicinity. All birds observed during the survey are non-native species naturalized to Hawai‘i. Common Myna (Acridotheres tristis) and Red-vented Bulbul (Pycnonotus cafer) were the two most abundant species observed during the survey, with Common Myna most abundant at the Project site; and Red-vented Bulbul most abundant in the koa haole scrub on the hill above the Project. Rock Pigeon (Columba livia) and Spotted Dove (Streptopelia chinensis) were also frequently observed in the vicinity of the Project site.

Protected Hawaiian seabirds, such as the Wedge-tailed Shearwater observed on Popo‘ia Islet, may overfly the Project area. Other protected seabird species include threatened Newell’s Shearwater or ‘a‘o (Puffinus newelli), endangered Hawaiian Petrel or ‘ua‘u (Pterodroma sandwichensis), and endangered Band-
rumped Storm-Petrel or ‘akē’akē (*Oceanodroma castro*). USFWS advises that BMPs for Hawaiian seabirds be implemented during the breeding, nesting, and fledging seasons (March 1 to December 15) when nocturnally flying seabirds are most likely to traverse Project areas. Night lights can disorient seabirds, resulting in their potential downing and harm from collision with objects and/or predation by dogs and cats if downed (Reed et al., 1985; Telfer et al., 1987).

- If the Project work will result in night-time lighting sources, including lights from night-time construction or facilities operations, then risk of incidentally downing nocturnally-flying seabirds will increase. To avoid and minimize potential Project impacts to seabirds, USFWS recommends the following applicable 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 timer controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area; and avoid all night-time construction during the seabird fledging period from September 15 through December 15 (USFWS, nd (b)). All external lighting structures should be fully “dark sky compliant” (HDLNR-DOFAW, 2016).

White Tern (*Gygis alba*), or *manu o Kū*, is another indigenous seabird listed as threatened under the State of Hawaiʻi endangered species statute HRS 195D (HDLNR, 2015). White Tern occurs on O`ahu (USFWS, 2005), with the majority of the population found in the downtown Honolulu area. White Tern was not observed (or expected to occur) in the Project area, and Project activities are not anticipated to have a deleterious impact to the species.

**Hawaiian Hoary Bat**

The Hawaiian hoary bat or ‘ōpeʻapeʻa (*Lasiurus cinereus semotus*) is the only native terrestrial mammal in the Hawaiian Islands. We did not attempt to record Hawaiian hoary bats as this effort would require night-time observations with specialized equipment. Although sparsely distributed in the low to mid-elevation areas on the Island, the Project site itself offers minimal habitat for this species, lacking dense vegetation (Tomich, 1986; USFWS 1998). The following recommendation, along with preservation of all or a majority of trees on the site, will minimize adverse impacts to this species.

- Potential adverse impacts to pupping bats can be avoided or minimized by not clearing woody vegetation taller than 15 ft (4.6 m) between June 1 and September 15, the period in which young bats are potentially at risk from clearing of a roost tree.
Jurisdictional Waters

No federal jurisdictional features (tidal waters, streams, or wetlands) occur anywhere on the subject parcel.

Critical Habitat

Federally delineated Critical Habitat is not present in the Project area. Thus, the Project as proposed, will not impinge on federally designated Critical Habitat. No equivalent habitat designation exists under state law.

References


_____. 2015. Hawai‘i Administrative Rules, Title 13, Department of Land and Natural Resources, Subtitle 5 Forestry and Wildlife, Part 2 Wildlife, Chapter 124, Indigenous Wildlife, Endangered and Threatened Wildlife,


Portner, T. 2019. Email sent Joshlyn Sand (Honolulu.gov) and forwarded to Jeanne Ishikawa, Deputy Director, Dept. of Parks and Recreation from Talia Portner, Horticulturist, Honolulu Botanical Gardens and dated October 22, 2019.


EXHIBIT E

Draft Archaeological Literature Review and Field inspection to Support Consultation with SHPD for the Kailua Ocean Safety Building Project, Kailua Ahupua'a, Ko'olaupoko District, O'ahu TMK:[1] 4-3-009: 002 por.
Draft
Archaeological Literature Review and Field Inspection to Support Consultation with SHPD for the Kailua Ocean Safety Building Project, Kailua Ahupua‘a, Koʻolaupoko District, Oʻahu
TMK: [1] 4-3-009:002 por.

Prepared for
Gerald Park Urban Planner
on behalf of the
City and County of Honolulu

Prepared by
Brittany Enanoria, B.A.,
Michelle Pammer Clark, B.A.,
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawaiʻi, Inc.
Kailua, Hawaiʻi
(Job Code: KAILUA 89)

May 2020
## Project Description and Summary of Background Research

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<tr>
<th>Reference</th>
<th>Archaeological Literature Review and Field Inspection to Support Consultation with SHPD for the Kailua Ocean Safety Building Project, Kailua Ahupua‘a, Ko‘olaupoko District, O‘ahu, TMK: [1] 4-3-009:002 por. (Enanoria et al. 2020)</th>
</tr>
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<tr>
<td>Date</td>
<td>May 2020</td>
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<tr>
<td>Project Number(s)</td>
<td>Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KAILUA 89</td>
</tr>
<tr>
<td>Investigation Permit Number</td>
<td>CSH completed the fieldwork component of this study under archaeological fieldwork permit number 19-07, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.</td>
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<td>City and County of Honolulu</td>
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<tr>
<td>Land Jurisdiction</td>
<td>City and County of Honolulu</td>
</tr>
<tr>
<td>Project Location and Project Area Description</td>
<td>The study area is located south of Mokulua Drive and is generally bounded by Kaneapu Place to the southwest, and the slope of Alāla Ridge to the south. The project area is depicted on a portion of a 1998 Mokapu U.S. Geological Survey (USGS) topographic quadrangle.</td>
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<tr>
<td>Project Description and Related Disturbance</td>
<td>The Department of Design and Construction, City and County of Honolulu, proposes to construct a District Operations Base Station (‘‘DOBS’’) for the Department of Emergency Services Ocean Safety and Lifeguard Services Division. The facility is proposed at the southeast end of Kailua Beach Park mauka (inland)/south of Mokulua Drive. The site is currently used as a turnaround area. It was formerly used as an off-street parking area for the overflow of beach traffic. The proposed facility includes a rectangular-shaped structure measuring 60 feet (ft) long, 28 ft wide, with a height of 16 ft. The interior space contains a floor area of 1,680 square (sq) ft and will include two offices, a restroom/shower, a storage room, a garage, an equipment repair/maintenance area, and an equipment storage area. The structure will be erected on a poured-in-place concrete slab on concrete spread footings. Exterior walls will be constructed of concrete masonry units (CMU) and support timber framing for a hip roof. The framing will be covered with timber decking topped with asphalt shingles. Wood lap siding will adorn the ridge area under roof. Ground disturbing activities will include building foundations and utility hookups to the City and County of Honolulu roads for water, sewer, and electricity. Eight regular and one handicap accessible parking stalls will be provided. All parking stalls will be uncovered and double loaded at a...</td>
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Cultural Surveys Hawai'i Job Code: KAILUA 89

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<thead>
<tr>
<th>Project Acreage</th>
<th>The project area comprises approximately 0.09 to 0.11 acres (0.03 to 0.04 hectares).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Purpose</td>
<td>This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project and, based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-276. Consequently, this report cannot be used to make formal recommendations for SHPD review and acceptance.</td>
</tr>
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| Background Research | Historic maps and photographs (Figure 5 through Figure 17) provide a cultural context and chronology of the changing landscape of the study area and the surrounding portions of Kailua. The study area is southeast of Kailua Beach Park between the residential neighborhood of Kawailoa to the west, and the Lanikai (Ka‘ōhao) neighborhood on the east. Soil within the project area consists of Kokokahi (KTKE), 0 to 35% slopes (Foote et al. 1972). The project area receives an average of approximately 1,500 mm (59 inches) of annual rainfall (Giambelluca et al. 2013).

During the estimated 1,500 years since initial Polynesian settlement, the sand barrier that forms the shore at Kailua Bay has provided a desirable location for residences with its sunny, dry beach area. The well-watered interior lands, including the two marsh/pond areas of Ka‘elepulu and Kawainui and the many springs and streams of Maunawili, provided abundant agricultural and resource-gathering areas. During the fifteenth and sixteenth centuries, Kailua was the center of a large royal complex with ample playgrounds for sports, physical training, and recreation (Sterling and Summers 1978).

Seventy-one Land Commission Awards (LCA) were claimed before the Board of Commissioners to Quiet Land Titles (Land Commission) in Kailua. In the Māhele records, 123 house lots are mentioned in the awards for Kailua (Waihona ‘Aina 2020). Where “kahuaehale,” “or homes, are mentioned, these house lots are typically bounded “on all sides by upland,” indicating an overwhelmingly inland settlement pattern. Early twentieth century testimony (Kailua Library 1977:10, Soloman Mahoe interview) indicates the fishermen at the shore traded ocean fish for taro with the upland farmers, probably a long-established pattern. LCA lots in Kailua mention numerous fisheries and pools where fish would have been raised. The current study area has no maneuvering area on the north. A 4-ft high CMU wall will screen parked vehicles and back of house functions from Mokulua Drive.
In the early 1900s, Kaneohe Ranch came to dominate land holdings in the Kailua and Kāneʻohe area. Included within this acreage is much ranch land, which had been bought, sold, let, and used as ranch land by numerous parties since the mid-1850s. The 1906 Donn map (Figure 6) and 1913 U.S. Army Engineers map (Figure 7) show the project area within grazing lands. A 1919 U.S. War Department map (Figure 8) shows what appear to be numerous fence lines and enclosures, probably related to ranching and dairy activities.

In 1931, Arthur and Anne Powlison built the iconic “Hilltop House” (State Inventory of Historic Places [SIHP] # 50-80-11-9009) atop Alāla Ridge, just mauka/southeast of the study area (Dunn 2009:245). The couple moved to Hawaiʻi in 1924 when Arthur accepted a position as superintendent of the Department of Parks and Recreation. Following a family picnic in the Lanikai/Kaʻōhao area, the family explored the ridge and found six natural holes in the landscape, which spark their vision of creating the Hilltop House. Prior to planning and construction, the Powlisons sought advice from a Native Hawaiian acquaintance, as the proposed house site sat directly in front of a shrine, Alāla shrine (Puʻuhālo), which was used by fishermen to locate the best fishing grounds (Mahoe 2009). Additionally, Alāla Heiau once stood in this area, but was long destroyed by this time. Although the Native Hawaiian friend gave the Powlisons his blessing, the family was cautioned to not destroy or remove any rocks from the property, and this suggestion was honored. The Hilltop House was used by the military during World War II as a training center and vantage point for 3 years. The Hilltop House is a private family residence still held by the Powlison family and was renovated in 2008 (Dunn 2009:247).

Aerial photographs and historic maps spanning from the 1930s through the 1980s show the vicinity of the study area changing from mostly agricultural to a residential area (Figure 9 through Figure 17). The majority of the study area remained undeveloped with the exception of Kaneapu Place to the west and parking lot areas to the north.

<table>
<thead>
<tr>
<th>Prior Archaeological Studies</th>
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<tr>
<td>Previous archaeological studies and historic properties within and in the immediate vicinity of the project area are presented in Figure 18 and Figure 19, and summarized in Table 1 and Table 2.</td>
</tr>
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Early archaeological surveys of the Kawailoa/Lanikai (Kaʻōhao) coastal area of Kailua focused on the location of traditional surface structures such as shrines and heiau (pre-Christian place of worship). Later archaeological surveys have focused on the inadvertent discovery of human remains, mainly in Jaucas sands near the shore, and in the...
subsurface excavation of pre-Contact (before 1778) and early post-Contact (ca. 1778-1850) cultural deposits.

Historic properties include archaeological sites and historic structures listed on the Hawai‘i Register of Historic Places (HRHP) and National Register of Historic Places (NRHP). These listed sites are mainly residential houses associated with important people in the history of Kailua or built in a particular style associated with early Hawai‘i architecture.

J. Gilbert McAllister identified one site within the vicinity of the study area, Site 378, Alāla Heiau. Bishop Museum archaeologists also recorded this site as Site 18, Alāla Shrine (Sterling and Summers 1978). McAllister tried to confirm many of the heiau mentioned by Thrum. An informant pointed out the location at Alāla Point, although no remains of any heiau were noted. McAllister agreed with Thrum that if a structure had been at Alāla Point, it was more likely to have been some type of simple shrine rather than a heiau. McAllister stated, “When the site was indicated by Solomon Mahoe, my reaction was similar to that already expressed by Thrum.”

In addition to Site 18, the Bishop Museum archaeologists recorded two sites near the study area: Site 16, Popoi Island and Site 17, Kanepolu Stones. These are mentioned in Sterling and Summers’ Sites of O‘ahu, but there are no published reports for these sites.

Sterling and Summers (1978:240) note there are “Ko’a on each of the two islands of Mōkulu, off Lanikai.” One of these, the ko’a at Popoi‘a Island, is specifically discussed:

(Site 16) Ko’a for moi [threafish; Polydactylus sexfilis] located almost in center of island. There are no walls remaining. Much coral lying around. It was nearly obliterated by tidal wave of 1946. Small overhang under which offerings were placed still visible. Louis Mahoe, informant, said that this ko’a was used by his father, with appropriate pule [prayer], at least up to the 1920’s. [Sterling and Summers 1978:238]

The Guardian Rocks were basalt rocks commemorating the coming of Kanepolū to Kamehameha III:

(Site 17) Kane-polū (pronounced by Mahoe, Kane-p’lu) at Nawelu’s place are several large rocks. These were guards and when he came there he found them scattered about on the lot (on Kawailua Road, opposite Kai-lani camp). He had collected a few of them and these are close together now, another about 10 feet away. They are basalt. Another, which he states is now covered by earth
(next door garden) is a coral rock, with the imprint of a man’s leg upon it.)

The story connected with these rocks is of the time of Kamehameha III. The King was in Kailua on a fishing expedition, staying in the cave at the foot of Alala Point […]

Kane-polū was a man who was born, grew up, and died in one day. He belonged to Kuli-ouou. The King sent for him to come to Alāla and he came […] ‘perhaps he flew, I don’t know’ […] The stones were guards set to watch for his coming. When he arrived it was getting dark, and as night fell, he slipped on the coral stone, leaving an imprint ‘of his leg’ on it, and was killed. This stone was ‘His leg’ […] ‘Where the rest of his body is, nobody knows.’ [Sterling and Summers 1978:238]

Two archaeological studies have been conducted in the near vicinity of the study area, Groza et al. 2010 and Blahut et al. 2018. Groza et al. 2010, identified two sets of inadvertent human remains, SIHP # -6937, fronting 971 Mokulua Drive, and SIHP # -7032, fronting 122 Lanipō Drive, and a cultural layer, SIHP # -6967, including a possible ‘ulu maika (game stone), a possible sling stone, a grinding stone, 15 fire pit features, and one historic trash pit. Blahut et al. 2018, identified a subsurface cultural deposit, SIHP # -8166, including a single feature containing charcoal, few basalt and coral cobbles, faunal material, and marine shell midden.

Two burial sites have been recorded in the vicinity of the study area, Pietrusewsky 1988 (no SIHP #) and Kawachi and Smith 1990 (SIHP # -4222).

<table>
<thead>
<tr>
<th>Predicative Model</th>
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<tbody>
<tr>
<td>Two surface historic properties were previously identified within the vicinity of the study area, atop of Alāla Ridge, including Alāla Heiau (Site 378), which was also recorded by the Bishop Museum as Alāla Shrine (Site 18), and the iconic “Hilltop House” (SIHP # -9009). According to historic accounts, Alāla Heiau was long destroyed prior to the early 1920s. Alāla Shrine, however, is still extant atop of Alāla Ridge near the Hilltop House. The location of Alāla Shrine is probably one of the highest vantage points closest to the shoreline with views expanding from Lanikai Beach and Kailua Beach, which is likely why Hawaiian fishermen chose this location. As with other near-shore sandy areas in Hawaiʻi, this portion of Kailua was used for burial of the dead. Although previous archaeological research has revealed six inadvertent finds of human skeletal remains within Kaʻōhao/Lanikai and more than 15 reports of inadvertent finds</td>
</tr>
</tbody>
</table>
of human skeletal remains from the sand berm of Kailua, the entire study area is located off a roadway cut into the base of a Alāla Ridge. Therefore, the likelihood for encountering subsurface historic properties is low. Based on previous studies, expected finds in low-lying areas might include evidence of both indigenous Hawaiian occupation (habitation and burial) and historic ranching and habitation. Evidence of traditional Hawaiian land use could include subsurface cultural deposits containing midden, fire pits, artifacts, and/or human burials.

Field Inspection

CSH archaeologists Samara Goncalves de Albuquerque, B.A., and Brittany Enanoria, B.A., completed the field inspection on 20 December 2019 under the direction of Project Director Michelle Pammer Clark, Project Manager Douglas Borthwick, B.A., and the general supervision of Principal Investigator Hallett H. Hammatt, Ph.D. This work required approximately 0.25 person-days to complete.

The archaeologists completed a pedestrian inspection of the entire study area extending mauka/south in an approximate 50-ft contour as requested by the client spaced 5 ft apart (Figure 20). No surface archaeological historic properties were identified during the field inspection. Figure 21 through Figure 36 show the general project area conditions.

The study area is situated at the base of the slope of Alāla Ridge. Alāla Point marks the boundary at the shore between Kailua Beach Park to the west and Lanikai Beach to the east (see Figure 21). Residential housing along Kaneapu Place is present along the western edge of the study area (see Figure 22 and Figure 23). Lanikai residential areas are located outside the study area to the southeast. The study area was fairly steep containing lush vegetation including cactus, koa haole (Leucaena glauca, L. leucocephala), buffalo grass (Cenchrus ciliaris), and various invasive vines, grasses, and shrubs (see Figure 25 through Figure 31). The eastern portion of the project area was the steepest, containing mostly basalt rock, cactus vegetation, and slick silty clay (see Figure 25 and Figure 26). Minimal modern refuse items including glass and plastic, a bicycle, and evidence of temporary shelters for squatters were observed throughout the study area (see Figure 29). A semi-paved turnout area containing four portable units currently utilized as a temporary lifeguard base yard was observed outside the northeast portion of the study area. Adjacent and east of the turnout area is a semi-paved permitted parking lot area (see Figure 32 through Figure 35). The two lots are situated on flat ground slightly sloping east containing coconut trees, landscaped grassy areas, and bounded by multiple wooden bollards reinforced with concrete. The northeastern edge outside the study area contains an active City and County of Honolulu bus stop along Mokulua Drive (see Figure 36).
**Recommendations**

Due to the nature and distribution of historic properties and human burials in the immediate vicinity, there is potential for similar historic properties and/or human burials within the project area. Based on the results of this study, a project effect determination of “effect, with proposed mitigation commitments” is recommended pursuant to HAR §13-275-7. Early consultation with SHPD is recommended to determine what (if any) further archaeological study is indicated.
Figure 1. Portion of the 1998 Mokapu Point USGS 7.5-minute topographic quadrangle showing the location of the project area
Figure 2. TMK: [1] 4-3-09 showing the project area (Hawai‘i TMK Service 2014)
Figure 3. Aerial photograph showing the location of the project area (Google Earth Imagery 2016)

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TMK: [1] 4-3-009:002 por.
Figure 4. Portion of a 1998 Mokapu Point USGS topographic quadrangle, with overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972; USDA SSURGO 2001), indicating soil types within and surrounding the project area.
Figure 5. Portion of an 1899 Wall map of Kailua (RM 2049) showing the location of the study area.
Figure 6. Portion of a 1906 Donn Hawaii Territory Survey map of Oahu Island, with land use (RM 2374) depicting the study area within grazing lands
Figure 7. Portion of a 1913 U.S. Army Engineers topographic map, Mokapu quadrangle, depicting study area with no development in the vicinity
Figure 8. Portion of a 1919 U.S. Army War Department fire control map, Waimanalo quadrangle depicting historic ranching activities in the vicinity of the study area.
Figure 9. Portion of a 1936 U.S. Army War Department terrain map, Mokapu quadrangle, depicting study area with urban development in the vicinity and presence of Kaneapu Place.
Figure 10. Portion of a 1943 U.S. Army War Department terrain map, Kailua quadrangle, depicting study area with continuing urban development in the vicinity
Figure 11. Portion of a 1949 Kailua Coast aerial photograph (UH SOEST) depicting study area in a mostly undeveloped flat area
Figure 12. Portion of a 1952 Mokapu USGS topographic quadrangle, depicting study area
Figure 13. Portion of a 1963 Kailua Coast Aerial photograph (UH SOEST) showing the study area and development in the vicinity.
Figure 14. Portion of a 1968 Mokapu USGS topographic quadrangle, showing study area within Kailua Beach Park
Figure 15. Portion of a 1971 Kailua Coast Aerial photograph (UH SOEST) showing the study area still mostly in an undeveloped area.
Figure 16. Portion of a 1978 Kailua Coast Aerial photograph (UH SOEST) showing the study area
Figure 17. Portion of a 1988 Kailua Coast Aerial photograph (UH SOEST) showing the study area
Figure 18. Portion of a 1998 Mokapu Point USGS topographic quadrangle depicting previous archaeological studies in the vicinity of the study area
Figure 19. Portion of a 1998 Mokapu Point USGS topographic quadrangle depicting previous archaeological sites in the vicinity of the study area
Table 1. Previous archaeological studies in the vicinity of the project area

<table>
<thead>
<tr>
<th>Reference</th>
<th>Type of Investigation</th>
<th>Location</th>
<th>Results (SIHP # 50-80-11**** unless otherwise noted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAllister 1933</td>
<td>Archaeological reconnaissance survey</td>
<td>Island-wide</td>
<td>Describes 16 sites within Kailua Ahupua’a, including Ka‘elepulu Fishpond (Site 377) and Alāla Heiau (Site 378); in all, eight heiau reported for Kailua</td>
</tr>
<tr>
<td>Sterling and Summers 1978</td>
<td>Archaeological reconnaissance survey</td>
<td>Island-wide</td>
<td>Consolidates from other studies sites of O‘ahu including ko’a at Popoi’a Island (Site 16), Kanepolu Stones (Site 17), Alāla Fishing Shrine (Site 18), and Waile‘a Fishing Shrine (Site 19)</td>
</tr>
<tr>
<td>Bath and Smith 1988</td>
<td>Data recovery</td>
<td>Lanikai 8-inch water main project</td>
<td>Four human burials recovered; SIHP # -3738</td>
</tr>
<tr>
<td>Hurlbett and Haun 1987</td>
<td>Archaeological inventory survey</td>
<td>Bellows Air Force Station</td>
<td>Identified seven historic properties including a field cultivation and irrigation complex (SIHP # 50-80-15-3309), an irrigation channel (SIHP # -3311), a complex of structural features (SIHP # -3305), a large platform or heiau (SIHP # -3306); a small stone platform (SIHP # -3307); a small hearth (SIHP # -3308); and a lithic scatter on the crest of a stabilized dune surface (SIHP # -3310).</td>
</tr>
<tr>
<td>Pietrusewsky 1988</td>
<td>Data recovery</td>
<td>Kailua Beach Park</td>
<td>Single burial removed, osteological analysis completed</td>
</tr>
<tr>
<td>Smith and Kawachi 1988</td>
<td>SHPD burial removal report</td>
<td>1063 Ko‘oho‘o Place, Lanikai/Ka‘ōhao</td>
<td>Single burial (SIHP # -3740) recovered, osteological analysis completed</td>
</tr>
<tr>
<td>Kawachi and Smith 1989</td>
<td>SHPD field check</td>
<td>Kaiwa Ridge, Lanikai/Ka‘ōhao, TMK: [1] 4-2-002:017</td>
<td>Notes two WWII bunkers; informant asserts former ko’a or kilo i’a locations, notes possibility of caves</td>
</tr>
</tbody>
</table>

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TMK: [1] 4-3-009:002 por.
<table>
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<tr>
<th>Reference</th>
<th>Type of Investigation</th>
<th>Location</th>
<th>Results (SIHP # 50-80-11**** unless otherwise noted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kawachi and Smith 1990</td>
<td>SHPD burial</td>
<td>481-A1 Kawaiola Rd, TMK: [1] 4-3-010:032 (East side Ka’elepulu Stream)</td>
<td>Single flexed burial (SIHP # -4222)</td>
</tr>
<tr>
<td>Dye 1991</td>
<td>Burial recovery</td>
<td>1414 ʻA‘alapapa Dr, Lanikai/ Kaʻōhao, TMK: [1] 4-3-004:005</td>
<td>Burial recovered (SIHP # -3738) (see Hammatt and Shideler 1992 for work on same project)</td>
</tr>
<tr>
<td>Orndoff and Clark 1991</td>
<td>Archaeological reconnaissance survey</td>
<td>Phase I Flood Control Project, Lanikai, TMK: [1] 4-3-001 through 005</td>
<td>No historic properties were observed except for modern refuse associated with nearby residences. Archaeological monitoring is recommended for future ground disturbances.</td>
</tr>
<tr>
<td>Hammatt and Shideler 1992</td>
<td>Burial recovery</td>
<td>1414 ʻA‘alapapa Dr, Lanikai/ Kaʻōhao, TMK: [1] 4-3-004:005</td>
<td>Archaeological disinterment of inadvertent burial finds (three individuals) (see Dye 1991 for work on same project); SIHP # -3738 used by Bath and Smith 1988</td>
</tr>
<tr>
<td>Cleghorn 1997</td>
<td>Data recovery</td>
<td>Kuʻukama St</td>
<td>Reports recovery of human skeletal material designated SIHP # -5530</td>
</tr>
<tr>
<td>Ormsby et al. 2003</td>
<td>Archaeological monitoring</td>
<td>Kalaheo Ave Sewer project, Kailua, TMKs: [1] 4-2-001, 019, 020; 4-4-022–032; 4-4-011</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Fong et al. 2008</td>
<td>Archaeological monitoring</td>
<td>Kalaheo Ave, from intersection of Kaluamo’o St to Kailua Rd, TMKs: [1] 4-3-011–016, 026–030, and 069</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Tulchin and Hammatt 2009</td>
<td>Archaeological inventory survey</td>
<td>Geary Residence at 136 Haokea Dr, TMK: [1] 4-3-006:023</td>
<td>Identified SIHP # -7054, a pre-Contact hearth</td>
</tr>
<tr>
<td>Groza and Hammatt 2010</td>
<td>Archaeological monitoring</td>
<td>Wanaʻao Rd/Keolu Dr</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Reference</td>
<td>Type of Investigation</td>
<td>Location</td>
<td>Results (SIHP # 50-80-11**** unless otherwise noted)</td>
</tr>
<tr>
<td>---------------------------</td>
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</tr>
<tr>
<td>Groza et al. 2010</td>
<td>Archaeological monitoring and burial plans</td>
<td>Mokulua Dr 8-inch water main project, Part II</td>
<td>Two sets of inadvertently discovered human remains (SIHP #s -6937 and -7032) and a cultural layer within A horizon designated as SIHP # -6967</td>
</tr>
<tr>
<td>Wilson and Spear 2011</td>
<td>Archaeological assessment (no finds AIS)</td>
<td>Approx. 7-acre Lanikai/Kaʻōhao residential property, TMKs: [1] 4-3-05:077-086</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Hammatt and Shideler 2012</td>
<td>Literature review and field inspection</td>
<td>Kailua Beach Park</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Lance and Hammatt 2012</td>
<td>Archaeological assessment</td>
<td>211 S. Kalāheo Ave, TMK: [1] 4-3-014:010</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Hawkins and Desilets 2013</td>
<td>Archaeological assessment</td>
<td>1611 Mokulua Drive, TMK [1] 4-3-001:009</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Fechner and Cleghorn 2014</td>
<td>Archaeological assessment</td>
<td>860 Mokulua Drive, TMK [1] 4-3-008:049</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>McIntosh and Cleghorn 2014</td>
<td>Archaeological assessment</td>
<td>1561 Mokulua Drive, TMK: [1] 4-3-003:049</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Kahahane and Cleghorn 2015</td>
<td>Archaeological assessment</td>
<td>1055 Koʻo hoʻo Place, TMK: [1] 4-3-006:009</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Rice and Hammatt 2016</td>
<td>Archaeological assessment</td>
<td>Lanikai Elementary School</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Blahut et al. 2018</td>
<td>Archaeological inventory survey</td>
<td>Kawaiola Road Drainage Improvements; TMKs: [1] 4-3-009:001 por.; 4-3-010:084 and 088</td>
<td>Identified SIHP # -8166, a subsurface cultural deposit containing a single feature of potentially late pre-Contact to post-Contact origin, containing charcoal, few basalt and coral cobbles, faunal material, and marine shell midden</td>
</tr>
</tbody>
</table>
Table 2. Summary of identified historic properties in the vicinity of the project area

<table>
<thead>
<tr>
<th>SIHP # 50-80-11****</th>
<th>Site Type/Name</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0016</td>
<td>Site 16, Ko‘a at Popoi‘a Island</td>
<td>A ko‘a (fishing shrine) for mo‘i was located near the center of the island; in 1946, a tidal wave almost completely destroyed it; no walls remain though a lot of coral is laying around</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>-0017</td>
<td>Site 17, Kanepolu Stones</td>
<td>Legendary stones said to have been guards set to watch for the coming of Kanepolu, a man who was born, grew up, and died in a single day; when he arrived, he slipped on a coral stone, leaving an imprint of his leg on it, and died</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>-0018</td>
<td>Site 18, Alāla Fishing Shrine</td>
<td>In 1939, an informant described it as a natural shrine on the top of Alāla that fisherman at sea looked at and used, along with Wailea Fishing Shrine, to locate the best fishing grounds in the sea; Alāla described as not only a shrine but a fish god</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>SIHP # 50-80-11****</td>
<td>Site Type/Name</td>
<td>Description</td>
<td>Reference</td>
</tr>
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</tr>
<tr>
<td>-0019</td>
<td>Site 19, Waile’a Fishing Shrine</td>
<td>In 1939, an informant described it as a natural shrine above “Hale aloha” that fisherman at sea looked at and used, along with Alāla Fishing Shrine, to locate the best fishing grounds in the sea; Waile’ā described as not only a shrine but a fish god</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>-0377</td>
<td>Site 377, Ka’elepulu Fishpond</td>
<td>Formerly a freshwater pond located inland about two-thirds of a mile from shore; pond was approximately 280 acres and limited by natural contours and some earth embankments</td>
<td>McAllister 1933</td>
</tr>
<tr>
<td>-0378</td>
<td>Site 378, Alāla Heiau</td>
<td>Heiau credited as being temple where ceremonies attending the royal birth of Kualii took place ca. 1640; no traces of the heiau remain and no evidence shows a heiau of this importance was located here</td>
<td>McAllister 1933</td>
</tr>
<tr>
<td>-2025</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains at a private home</td>
<td>Clark 1980</td>
</tr>
<tr>
<td>-3738</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains in two locations dating to pre-Contact period; at least four individuals documented by Bath and Smith (1988) and at least three individuals documented by Hammatt and Shideler (1992)</td>
<td>Bath and Smith 1988; Hammatt and Shideler 1992</td>
</tr>
<tr>
<td>-3740</td>
<td>Burial site</td>
<td>Inadvertent discovery of an adult female (flexed burial) aged 40 to 45 dating to pre-Contact period, skeletal remains found in a dark yellowish brown colluvium</td>
<td>Smith and Kawachi 1988</td>
</tr>
<tr>
<td>-4222</td>
<td>Burial site</td>
<td>Inadvertent discovery of an adult female (flexed burial) aged 40 years or older, skeletal remains identified in clean white sand</td>
<td>Kawachi and Smith 1990</td>
</tr>
<tr>
<td>-5530</td>
<td>Burial site</td>
<td>Inadvertent discovery of an adult individual, skeletal remains appear to be previously disturbed, most likely during development of the subdivision</td>
<td>Cleghorn 1997</td>
</tr>
<tr>
<td>SIHP # 50-80-11****</td>
<td>Site Type/Name</td>
<td>Description</td>
<td>Reference</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>-6937</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains dating to pre-Contact period; skeletal remains associated with a single individual found in Jaucas sand, and may have been previously disturbed by a utility line</td>
<td>Groza et al. 2010</td>
</tr>
<tr>
<td>-6967</td>
<td>Subsurface cultural deposit</td>
<td>Discontinuous subsurface cultural layer with primarily pre-Contact activity; generally evidenced by a buried A horizon developed on natural Jaucas sand that pervades the area, and that contains areas enriched with pockets of indigenous Hawaiian cultural material</td>
<td>Groza et al. 2010</td>
</tr>
<tr>
<td>-7032</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains dating to pre-Contact period; skeletal remains associated with a single individual found in Jaucas sand, and may have been previously disturbed by a utility line</td>
<td>Groza et al. 2010</td>
</tr>
<tr>
<td>-7054</td>
<td>Subsurface cultural deposit</td>
<td>A hearth determined to be of pre-Contact origin; screened samples yielded fire-cracked rock, basalt flakes, water-rounded pebbles (basalt), marine shell midden, and fish bone</td>
<td>Tulchin and Hammatt 2009</td>
</tr>
<tr>
<td>-7507</td>
<td>Historic residence</td>
<td>Harold Eichelberger family beach house</td>
<td>SHPD Hawai‘i Register: 14 January 2013</td>
</tr>
<tr>
<td>-8166</td>
<td>Subsurface cultural deposit</td>
<td>Single feature of potentially late pre-Contact to post-Contact origin containing charcoal, few basalt and coral cobbles, faunal material, and marine shell midden</td>
<td>Blahut et al. 2018</td>
</tr>
<tr>
<td>-8196</td>
<td>Military concrete bunker</td>
<td>Station Podmore consisting of two WWII era concrete fire stations</td>
<td>Kawachi and Smith 1989 and Monahan 2018</td>
</tr>
<tr>
<td>-9009</td>
<td>Historic residence</td>
<td>“Hilltop house,” “Pu‘uhonua,” or “Bird Lady’s House” built by Arthur and Anne Powlison in the 1920s, constructed without removing any rock from on top of hill; used by military during WWII as a training center and vantage point</td>
<td>SHPD Hawai‘i Register: 24 June 2006</td>
</tr>
</tbody>
</table>

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TMK: [1] 4-3-009:002 por.
<table>
<thead>
<tr>
<th>SIHP # 50-80-11****</th>
<th>Site Type/Name</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>-9037</td>
<td>Historic residence</td>
<td>Miles and Kathy Anderson residence, 1320 ‘A’alapapa Dr; Hawaiian plantation style home built in 1928; moved to Lanikai in 1942</td>
<td>SHPD Hawai‘i Register: 30 June 2007</td>
</tr>
<tr>
<td>-9064</td>
<td>Historic residence</td>
<td>Clarence Cooke guest beach house, 1548 Mokulua Dr; Hawaiian beach house built in 1929</td>
<td>SHPD Hawai‘i Register: 18 June 2009</td>
</tr>
<tr>
<td>-9098</td>
<td>Historic residence</td>
<td>Richard J. Boyen beach cottage; 123 Kaiolena Dr; Hawaiian style home built in 1933</td>
<td>SHPD Hawai‘i Register: date not available</td>
</tr>
<tr>
<td>-9115</td>
<td>Historic residence</td>
<td>Andrade beach retreat, 908 Mokulua Dr</td>
<td>SHPD Hawai‘i Register: date not available</td>
</tr>
<tr>
<td>-9763</td>
<td>Historic residence</td>
<td>Robert McCorriston beach house, 1056 Mokulua Dr; Hawaiian style bungalow home built in 1929</td>
<td>SHPD Hawai‘i Register: 28 June 1993</td>
</tr>
<tr>
<td>-9846</td>
<td>Lanikai monument</td>
<td>Marker used to designate entry to the Lanikai subdivision, near 726 Mokulua Dr</td>
<td>SHPD Hawai‘i Register: 18 June 2003</td>
</tr>
</tbody>
</table>
Figure 20. 2016 ESRI Aerial Imagery depicting study area in red and archaeologist’s field inspection track log in yellow
Figure 21. General photo of project area to the right depicting the northwest corner of the project area at Kaneapu Place with the Powlison house and Alâla fishing shrine at the top of the left side of Alâla Ridge.

Figure 22. General view of the western edge of study area in the residential area along Kaneapu Place; view to southeast.
Figure 23. General view of the western edge of study area in the residential area along Kaneapu Place; view to northwest

Figure 24. General view of the northeastern portion of the study area depicting Mokulua Drive and the Lanikai monument to the left, and a steep, rocky cliff area on the right; view to east
Figure 25. General view of the eastern portion of the study area depicting a moderately sloping area with slick silty clay; view to south

Figure 26. General view of the eastern portion of the study area depicting a moderately sloping area and vegetation; view to southeast
Figure 27. General view of the central portion of the study area depicting low-lying vegetation and a permitted parking lot to the right of Mokulua Drive; view to northeast

Figure 28. General view of the central portion of the study area depicting vegetation and a slightly sloping flat area between the temporary lifeguard base yard and permitted parking lot to the left of Mokulua Drive; view to northwest
Figure 29. General view of the central portion of the study area depicting lush vegetation and evidence of squatters in the upper left; view to southwest

Figure 30. General view of the central portion of the study area depicting lush vegetation, Kaneapu Place residences to the left, and Kailua Beach to the right; view to northwest
Figure 31. General view of the western portion of the study area showing lush vegetation and Mokulua Drive to the left, view to northeast

Figure 32. General view of the western portion of the study area from Mokulua Drive; view to southeast
Figure 33. General view outside the northern portion of the study area depicting the four temporary units for the lifeguard base yard; view to west

Figure 34. General view at the edge of the northwestern portion of the study area depicting semi-paved permitted parking lot bordered by wooden bollards; view to east
Figure 35. General view of a grassy landscaped area at the edge of the northeastern end of the study area; view to northeast

Figure 36. Active City and County of Honolulu bus stop along Mokulua Drive outside the study area; view to west
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FINAL
Cultural Impact Assessment for the
Kailua Ocean Safety Building Project,
Kailua Ahupua‘a, Ko‘olaupoko District, O‘ahu
TMK: [1] 4-3-009:002

Prepared for
Gerald Park Urban Planner

Prepared by
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: KAILUA 90)

May 2020
### Management Summary

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<td>Date</td>
<td>May 2020</td>
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<tr>
<td>Project Number(s)</td>
<td>Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KAILUA 90</td>
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<tr>
<td>Agencies</td>
<td>State of Hawai‘i, Department of Health, Office of Environmental Quality Control (DOH/OEQC)</td>
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<td>City and County of Honolulu</td>
</tr>
<tr>
<td>Project Proponent</td>
<td>City and County of Honolulu</td>
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<td>Project Location</td>
<td>The study area is located along Mokulua Drive and is generally bounded by Kaneapu Place to the southwest, and the bank of Pu‘uhalo to the south. The project area is depicted on a portion of a 1998 Mokapu U.S. Geological Survey (USGS) topographic quadrangle.</td>
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<td>Project Description</td>
<td>The City and County of Honolulu, Department of Design and Construction, proposes to construct a District Operations Base Station (“DOBS”) for the Department of Emergency Services Ocean Safety and Lifeguard Services Division at Kailua Beach. A rectangular-shaped structure (60-feet [ft] length by 28-ft width) with a floor area of 1,680 square (sq) ft and a height of 16 ft, measured from the existing grade to the top of the roof is proposed. The interior space will be separated equally into office/storage and a garage. Two offices, a restroom/shower, and a storage room occupy the northern half of the building. A garage, equipment repair/maintenance area, and equipment storage are on the southern half. The structure will be erected on a poured-in-place concrete slab on concrete spread footings. The exterior walls will be constructed of cement masonry unit (CMU, otherwise known as hollow tile) and will support timber framing for a hip roof. The framing will be covered with timber decking topped with asphalt shingles. Wood lap siding will adorn the ridge area under the roof. Eight regular parking stalls and one handicap accessible stall will be provided. All stalls will be uncovered and double loaded at a maneuvering area on the north. A 4 ft high CMU wall will screen parked vehicles and back of house functions from Mokulua Street.</td>
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<td>Project Acreage</td>
<td>The project area comprises approximately 0.09 to 0.11 acres (0.03 to 0.04 hectares).</td>
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<td>Document Purpose</td>
<td>This cultural impact assessment (CIA) was prepared to comply with the State of Hawai‘i’s environmental review process under Hawai‘i Revised Statutes (HRS) §343, which requires consideration of the</td>
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proposed project’s potential effect on cultural beliefs, practices, and resources. Through document research and cultural consultation efforts, this report provides information compiled to date pertinent to the assessment of the proposed project’s potential impacts to cultural beliefs, practices, and resources (pursuant to the Office of Environmental Quality Control’s Guidelines for Assessing Cultural Impacts) which may include traditional cultural properties (TCPs). These TCPs may be significant historic properties under State of Hawai‘i significance Criterion e, pursuant to Hawai‘i Administrative Rules (HAR) §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6). The document will likely also support the project’s historic preservation review under HRS §6E and HAR §13-275 and §13-284. The document is intended to support the project’s environmental review and may also serve to support the project’s historic preservation review under HRS §6E-8 and HAR §13-284.

Results of Background Research

Background research for this project yielded the following information (presented in approximate chronological order):

1. Kailua Ahupua‘a is the largest valley on the windward side of O‘ahu, and the largest ahupua‘a (land division extending from the uplands to the sea) of the moku (district) Ko’olaupoko (approximately 15 km by 11 km). The name Kailua, meaning “two seas,” refers to the two large inland waters, Kawai Nui Pond and Ka‘elepulu Pond (Pukui et al. 1974:69; Quebral et al. 1992:14).

2. Kawai Nui Marsh was traditionally known as Kawai Nui Loko or the big freshwater pond. Kawai Nui Marsh is a celebrated, noted, and legendary place in Hawaiian traditions. The legends of Kawelo, Kahalaopuna, Keaomelemele, the menehune (legendary race of small people who worked at night) all refer to Kawai Nui, as does the history of the ruling chiefs Kūali‘i and Olopana. The marsh was the home of the mo‘o (lizard, reptile of any kind, dragon, serpent; water spirit) Hauwahine and the wish-fulfilling tree, Mākālei. The demi-goddess Hi‘iaka and her companion Wahine-oma‘o visited, and Kawai Nui’s fame is related in numerous chants (Drigot 1982:84–96).

3. Ka‘elepulu Pond is a large marsh pond which was formerly an embayment. In legend, Paku‘i, a famous runner, was delegated...
by Haumea to tend the Kaʻelepulu fishpond. Another legend associated with Kaʻelepulu tells of the runner Uluanui of Oʻahu: it was said that he could carry a fish from Kaʻelepulu pond in Kailua, traverse the island by way of Waialua, and bring the fish—still alive and wriggling—into Waikīkī (Malo 1951:220).

4. Kawaiola is an ‘ili (land section, next in importance to ahupua’a and usually a subdivision of an ahupua’a) located in the ahupua’a of Kailua. In the Māhele, Kamehameha III claimed this land for himself and his heirs. Kawaiola consists of two portions, one going up to the peak of Olomana from Kalanianaʻole Highway and the other just outside Lanikai/Kaʻōhao along the beach. In the upper portion is found the present women’s prison in the old facilities formerly known as the Kawaiola Girls’ School (State Inventory of Historic Places [SIHP] # 50-80-11-1362). The project area is located within the ‘ili of Kawaiola.

5. The traditional name of the area now known as Lanikai is Kaʻōhao. The name of the place Kaʻōhao comes from the tale about “the tying”—the tying of two women by Hāuna, kahu (honored attendant) to high chief Lonoikamakahiki of Hawaiʻi Island after the women were beaten at a game of kōnane (ancient game resembling checkers) (Fornander 1916-1917:4:314–315).

6. Traditional history describes Kailua as the residence of many prominent Oʻahu ruling chiefs. Olopana is said to have “established several heiaus [pre-Christian place of worship] in Kāneʻohe and Kailua, including Pahukini and Holomakani in the Kawainui area” (Kelly and Nakamura 1981:3). Fifteenth century ruler Oahu-a-Kākuhihewa built a government house called Pāmoa in the plain known as ʻĀlele (McAllister 1933:185–186). In the seventeenth century, Kūaliʻi was born at Kalapawai in Kailua (Beckwith 1940:395; Fornander 1880:278). In the eighteenth century, Kahekili and his chiefs lived in Kailua after he conquered the island in 1780 (Mustapha 1985:2). After Kamehameha I conquered Oʻahu in 1799, he came to Kailua and worked side by side with the people to clean and restore Kawai Nui Fishpond. When Kamehameha III came to the windward side, one of his retreats was at Alāla.

7. Kailua is known to have contained ten heiau: 1) Alāla, 2) Hālualalolo, 3) Holomakani, 4) Kaʻanahau, 5) Keikipuʻipuʻi, 6) Kukapoki, 7) Kukuipilau, 8) Pahukini, 9) Puʻuwāniʻani’a, and 10) Ulupō. Of these, Alāla Heiau is located east of the project
area. Birth rituals, including the piko (navel) cutting ceremony for the child, were performed at Alāla Heiau. The sacred drums, Hāwea and ‘Ōpuku were moved from Ho‘olonopahu and taken to Alāla at Kūali‘i’s birth for this ceremony (Thrum 1923:92).

8. A total of 71 Land Commission Awards (LCA) were claimed before the Board of Commissioners to Quiet Land Titles (Land Commission) in Kailua. In the Māhele records, 123 house lots are mentioned in the awards for Kailua (Waihona ‘Aina 2020). Where “kahuahale,” or house, are mentioned, these house lots are typically bounded “on all sides by upland,” indicating an overwhelmingly inland settlement pattern. Early twentieth century testimony (Kailua Library 1977:10, Solomon Mahoe interview) indicates the fishermen at the shore traded ocean fish for taro with the upland farmers, probably a long-established pattern. LCA lots in Kailua mention numerous fisheries and pools where fish would have been raised. The current study area has no kuleana (originally referred to a right of property in any business or other matter but afterwards was applied to the land holding of the tenant residing in the ahupua’a [Lucas 1995:61]) LCA lots associated with it.

9. For nearly 100 years following the Māhele, Kailua grew into an important area of commercial agriculture. In the early 1900s, rice was the major crop of Kailua, replacing numerous lo‘i (irrigated terrace) in the former taro lands of Maunawili. Kawai Nui, the area between the present Hāmākua Drive and the beach, and the area around Ka‘elepulu Pond provided areas for the expansion of rice. Multiple rice mills were functioning in Kailua Ahupua‘a, one of which was located in the vicinity of the present day Adventist Health Castle Hospital. Taro was followed by truck farming of rice and western crops.

10. In the early 1900s, Kaneohe Ranch (Castle Trust) eventually acquired much of the land in Kailua (Hall 1997:84). Included within this acreage were areas that had been bought, sold, leased, and used as ranch land by numerous parties since the mid-1850s. Kaneohe Ranch, in addition to ranching, grew pineapple and sugarcane. With the decline of rice farming around the margins of Kawai Nui, cattle stock moved onto the abandoned agricultural lands. Ranching in Kailua continues today, albeit on a drastically reduced scale, along Pu‘u o ‘Ehu ridge.

11. The nearest fisheries to the project area were the government-administered Kawailoa Fishery and Ala‘apapa Fishery.
Southeast of Kawaiola Fishery was Ala‘apapa Fishery, that makes up the western half of modern-day Ka‘ōhao. Northwest of Kawaiola Fishery was Kailua Fishery owned by N.R. Rice.  

12. Truck farming of avocado, papaya, and western crops followed the decline of rice agriculture. The Kūkanono slopes along Kailua Road and extending toward Kawai Nui Marsh were utilized for cultivation, raising chickens, and pig farming. The Kailua Fruit Stand, owned and operated by the Nishikawa family, was the most successful of the Kūkanono truck farms. The stand was in the location of today’s Christ Church Uniting Disciple and Presbyterians on Kailua Road. The family worked and leased the lands for 25 years until the development of the Kūkanono neighborhood (Hollier 2011).  

13. Lanikai is a housing subdivision, first built up in the 1910s and 1920s, which consists of the ‘ili of Kawailoa, Ala‘apapa, and Mokulua. The area was traditionally called Ka‘ōhao. Clark noted that “Lanikai is not a proper Hawaiian word but was devised by this community’s promoters. The name probably was intended to mean ‘royal sea’ or perhaps ‘heavenly sea,’ which in proper Hawaiian, would have been Kailani, but the words were transposed and joined as they would be in English, rather than in Hawaiian” (Clark 1977:175).  

14. In 1920s, Arthur and Anne Powlison built their house atop of Alāla Heiau, just mauka (upland) of the study area (Dunn 2009:245). The house sits directly in front of Alāla shrine (Pu‘uhālo), which was used by fishermen to locate the best fishing grounds (Mahoe 2009:234–239). Alāla Heiau had once stood in this area but was long destroyed by this time. The Hilltop House was used by the military during World War II (WWII) as a training center and vantage point for three years. The Hilltop House is a private family residence still within the Powlison family and was renovated in 2008 (Dunn 2009:247).  

15. By the 1950s, the truck farms were slowly replaced by housing, municipal, and retail developments. Kailua was promoted as the bedroom community for Honolulu businessmen, only “8 miles and 20 minutes” from downtown (Hall 1997:141). Residential developments were planned for more outlying areas of Kailua Town, such as Olomana, Pōhākupu, and ʻOnewa Hills (Hall 1997:141).

### Results of Community Consultation

CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to a
total of 73 individuals or groups; five responded, two provided written testimony, and two of these *kamaʻāina* (native born) and/or *kūpuna* (elders) met with CSH for more in-depth interviews. Consultation was received from community members as follows:

1. Herb Lee, Executive Director of the Pacific American Foundation  
2. Cosette Harms, resident of Kailua  
3. Melody MacKenzie, cultural descendant of the Kailua Ahupuaʻa and a member of Kailua Kaua Hoʻoilo  
4. Kīhei de Silva, cultural descendant of the Kailua Ahupuaʻa and *kamaʻāina*, and also a member of Kailua Kaua Hoʻoilo

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<th>Based on information gathered from the community consultation, participants voiced their concerns in a cultural context.</th>
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<td>1. Cosette Harms noted the significance of Alāla Heiau, “There would be ceremonies up here relating to fishing, or people would put offerings on them and go out fishing hoping for good luck.” She recalled, “sometimes we would wake up in the morning and there would be a big papaya sitting up there, or a taro root, or once a can of pork and beans, sitting on the rock. And my mother watched the guy climb on the rock and place the papaya, And then he went down, jumped on a fishing boat and went fishing.”</td>
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<td>2. Ms. Harms recalled traditional cultural practices exercised on Kailua Beach including the traditional fishing technique known as <em>hukilau</em> (a seine) and gathering <em>limu</em> (seaweed). She knew of fishing huts from old photographs, which were used by fishermen.</td>
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<td>3. Ms. Harms also noted that Kailua was used for agriculture. She recalled that before the development of the Lanikai community, there were watermelon farms located in the vicinity of the project area. Parts of Kailua were once used to grow banana patches, papaya groves, and dairy farms with cows.</td>
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<td>4. Melody MacKenzie stated she is “not aware of any specific cultural practices associated with the area that the Ocean Safety Building will be built in,” however, she mentioned “the significance of Puʻu Hālō and the importance of Alāla,” adding “it is not unlikely that there were iwi kūpuna resting in the area - although whether they survived the building of the road and other construction over the years is another question.”</td>
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<tr>
<td>5. Mr. de Silva mentioned he knows of no burials or any extant cultural sites within the project area, except for Alāla Heiau. He noted that the sacred ceremony of a <em>piko</em> cutting ceremony was conducted at Alāla Heiau for Kūaliʻi. He also noted that Alāla is not only a heiau, but also considered a fishing site and <em>koʻa</em>. Alāla point was also a favorite camping and fishing site for</td>
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6. Mr. de Silva stated that the people of Kailua used to gather *limu līpoa* (*Dictyopteris plagiogramma* and *D. australis*), a type of seaweed that showcased a unique aroma and taste. He explained that “The beaches of Kailua and Ka‘ōhao were once famous for the limu līpoa that was easily gathered on the inner reef shallows of the bay and that washed ashore in dark, fragrant masses during stormy weather” ([de Silva 2019:12]).

7. Mr. de Silva suggested construction commence with caution as the significance of Alāla is still revered and honored amongst the ‘ilima noho papa. He recommended an Archaeological Inventory Survey (AIS) be conducted before “any such work commences.”

8. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.

9. In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.
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### Section 5 Previous Archaeological Research

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Introduction

1.1 Project Background

At the request of Gerald Park Urban Planner, on behalf of the City and County of Honolulu, Cultural Surveys Hawai‘i, Inc. (CSH) is conducting a cultural impact assessment (CIA) for the proposed Kailua Ocean Safety Building project, Kailua Ahupua‘a, Ko‘olaupoko District, O‘ahu, Tax Map Key (TMK):[1] 4-3-009:002. The facility is proposed at the southern end of Kailua Beach Park mauka (upland) of Mokulua Street. The site was formerly a turnaround and off-street parking area for overflow beach traffic. The project is to build a one-story Ocean Safety Building and a parking lot (approximately 3,000 square feet [sq ft]). The utility connection will be to the City and County of Honolulu road for water, sewer, and electricity. The project area is depicted on a portion of the 1998 Mokapu Point U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a 2016 aerial photograph (Figure 2), and a tax map plat (Figure 3).

The Department of Design and Construction, City and County of Honolulu, proposes to construct a District Operations Base Station (“DOBS”) for the Department of Emergency Services Ocean Safety and Lifeguard Services Division at Kailua Beach.

A rectangular-shaped structure (60-ft length by 28-ft width) with a floor area of 1,680 sq ft and a height of 16 ft, measured from the existing grade to the top of the roof, is proposed. The interior space will be separated equally into office/storage and a garage. Two offices, a restroom/shower, and a storage room occupy the northern half of the building. A garage, equipment repair/maintenance area, and equipment storage are on the southern half (Figure 4–Figure 6).

The structure will be erected on a poured-in-place concrete slab on concrete spread footings. The exterior walls will be constructed of cement masonry unit (CMU, otherwise known as hollow tile) and will support timber framing for a hip roof. The framing will be covered with timber decking topped with asphalt shingles. Wood lap siding will adorn the ridge area under the roof. The height of the building is 14 ft 7 inches measured from existing grade to the top of the roof.

Eight regular parking stalls and one handicap accessible stall will be provided. All stalls will be uncovered and double loaded at a maneuvering area on the north. A 4-ft high CMU wall will screen parked vehicles and back of house functions from Mokulua Street.

1.2 Document Purpose

This cultural component is prepared to comply with the State of Hawai‘i’s environmental review process under Hawai‘i Revised Statutes (HRS) §343, which requires consideration of the proposed project’s potential effect on cultural beliefs, practices, and resources. Through document research, this report provides information compiled to date pertinent to the assessment of the proposed project’s potential impacts to cultural beliefs, practices, and resources (pursuant to the Office of Environmental Quality Control’s Guidelines for Assessing Cultural Impacts) which may include traditional cultural properties (TCPs). These TCPs may be significant historic properties under State of Hawai‘i significance Criterion e, pursuant to Hawai‘i Administrative Rules (HAR) §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to
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associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6). The document will also support the project’s historic preservation review under HRS §6E and HAR §13-275 and §13-284. The document is also intended to support the project’s environmental review.

1.3 Scope of Work

The scope of work for this cultural component includes the following:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal, and other resources or agricultural pursuits as may be indicated in the historic record.

2. Review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.

3. Consultation and interviews with knowledgeable parties regarding cultural and natural resources and practices at or near the parcel; present and past uses of the parcel; and/or other practices, uses, or traditions associated with the parcel and environs.

4. Preparation of a report that summarizes the results of these research activities and provides recommendations based on findings.

1.4 Natural Environment

Kailua Ahupua’a is the largest valley on the windward side of O‘ahu, and the largest ahupua’a (land division extending from the uplands to the sea) of the moku (district) Ko‘olaupoko (approximately 15 km by 11 km). On the southeast of Kailua are the ahupua’a of Waimānalo, Kāne‘ohe on the northwest, and Honolulu to the south. From the Ko‘olau ridgeline, Kailua Ahupua’a extends down two descending ridgelines that provide the natural boundaries for the sides of the ahupua’a. The fourth side is bordered by the reef line of Kailua Bay.

During the estimated 1,200 years since initial the Polynesian settlement, the sand barrier that forms the shore at Kailua Bay has provided a desirable location for residences with a sunny, dry beach area. The well-watered interior lands, including the two marsh/pond areas of Ka‘elepulu and Kawai Nui and the many springs and streams of Maunawili, provided bountiful agricultural and resource gathering areas. During the fifteenth and sixteenth centuries, Kailua, O‘ahu was the center of a large royal complex with ample playgrounds for sports and physical training, and recreation (Sterling and Summers 1978:231–232). Supporting this large complex was the most bountiful hinterland where fish, fowl, and vegetables were plentiful (Sterling and Summers 1978:227–228).

The project area is located just inland of Kailua Beach mauka (upland) of Mokulua Drive leading up to the Ka‘ohao (Lanikai) entrance. It is located within the ‘ili (land division smaller than an ahupua’a) of Kawaihoa which is a lele (detached part of an ‘ili located elsewhere) which cuts off the ‘ili of Ka‘elepulu from the sea.
1.4.1 Ka Lepo (Soil)

According to the United States Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), soils within the project area consist of Jaucas sand (JaC), Kokokahi very stony clay, 0 to 35% slopes (KTKE), and Papaa clay, 35 to 75% slopes (PYF). Figure 7 illustrates the various soil sediments within the vicinity of the project area.

Soils of the Jaucas sand (JaC) series are described as follows:

This series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean. These soils occur on all the islands of this survey area. They developed in wind- and water-deposited sand from coral and seashells. [Foote et al. 1972:48]

Soils of the Kokokahi series (KTKE) are described as follows:

This series consists of moderately well drained soils on talus slopes and alluvial fans on the island of Oahu. These soils developed in colluvium and alluvium derived from basic igneous rock. They are moderately sloping to steep. [Foote et al. 1972:73]

Soils of the Papaa series (PYF) are described as follows:

This series consists of well-drained soils on uplands on the island of Oahu. These soils formed in colluvium and residuum derived from basalt. They are moderately sloping to very steep. [Foote et al. 1972:110]

1.4.2 Ka Makani (Winds)

Makani is the Hawaiian term for the wind. There are several named winds in the Kailua area. Moa’e is the name of the regular trade wind (Pukui and Elbert 1986:249) blowing from the northeast. The A’e Loa is another name for the northeast trade wind, same as Moa’e (Pukui and Elbert 1986:4). There is also the north wind Māluualua (Pukui and Elbert 1986:234). Fornander (1916-1917:4:388) describes Kailua’s “dry waste” Anea winds as “making lazy, unnerving; characteristic of the South Wind, Hema.” The following chant, composed in honor of Kūali‘i, notes a Naea wind which may be the same as the Anea wind.

I ka ipu a Kupaka, The vessel of Kupaka,  
O Ku no ke ali‘i. Ku is the King.  
O Kailua makani anea, oneanea, Kailua, with its unnerving wind, soul-dulling wind.  
Makani aku a Hema, The wind of Hema,  
He mama wale ka leo ke ualo mai —e,— The calling voice is lost in the wind,  
[Lyons 1893:160–178]
Figure 7. Portion of a 1998 Mokapu Point USGS topographic quadrangle, with overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972; USDA SSURGO 2001), indicating soil types within and surrounding the project area.
The Wind Gourd of La’amaomao tells the story of Pāka’a and his son Kuapāka’a who are descendants of the wind goddess La’amaomao. With their possession of this special wind gourd, they could control and call forth the winds of Hawai‘i. Pāka’a’s chant traces the winds of and surrounding Kailua Ahupua’a. Pāka’a’s chant is listed below and recounts the Malanai wind of Kailua:

He Malanai ko Kailua, Malanai is of Kailua,
Pae i Waimanalo ka limu-li-puupuu Limu-li-pu‘u-pu‘u comes ashore at Waimānalo

[Nakūina 1904:57:51]

The makani Malanai is a gentle trade wind from the northeast. This famed, gentle breeze is described in The Epic Tale of Hi‘iakaikapōliopele, when the goddess passes through Kailua. The song describes the different attributes of Kailua:

Kiʻiekiʻe i luna ke kū a Ahiki Majestic is Ahiki’s stance above
Holo ana ke aka i lalo o Kawainui Its shadow spreading down across Kawainui
Nānā aʻe ‘oe, ‘oki ke alo o ka pali If you look, the cliff face is sliced
He laumania nō mai luna a lalo ē, Smooth from top to bottom, ah, there
i laila
I laila nō māua me ka Malanai There were we, with the Malanai breeze

[Hoʻoulu malāhi ‘iehie 2008b:113] [Hoʻoulu malāhi ‘iehie 2008a:141]

The Malanai is mentioned again when Hiʻiaka notices Hauwahine, the moʻo (water spirit) goddess and her companion. Hiʻiaka chants the following:

Kailua i ke oho o ka Malanai Kailua in the wisps of the Malanai wind
Moe ē ka lau o ke ‘uki The blade of the ‘uki grass lie still
Pūʻiwa i ka leo o ka manu Startled by the cry of the birds
E kuhi ana ‘oe he wahine You surmise they are women
‘Aʻole lā But it is not so
‘O Hauwahine mā nō kēlā That is Hauwahine and friend
‘O nā wahine o Kailua i ka la ‘i The women of Kailua in the calm

[Hoʻoulu malāhi ‘iehie 2008b:155] [Hoʻoulu malāhi ‘iehie 2008a:146]

1.4.3 Ka Ua (Rains)

Precipitation is a major component of the water cycle and is responsible for depositing wai (fresh water) on local flora. Pre-Contact kāna (Native Hawaiians) recognized two distinct annual seasons. The first, known as kau (period of time, especially summer), lasts typically from May to
October and is a season marked by a high-sun period corresponding to warmer temperatures and steady trade winds. The second season, *ho‘oilo* (winter, rainy season) continues through the end of the year from November to April and is a much cooler period when trade winds are less frequent, and widespread storms and rainfall become more common (Giambelluca et al. 1986:17).

Each small geographic area on O‘ahu had a Hawaiian name for its own rain. According to Akana and Gonzalez:

Rain names are a precious legacy from our kūpuna who were keen observers of the world around them and who had a nuanced understanding of the forces of nature. They knew that one place could have several types of rain, each distinct from the other. They knew when a particular rain would fall, its color, its duration, its intensity, its path, its sound, its scent, and its effect on the land and their lives […] Rain names are a treasure of cultural, historical, and environmental information.  
[Akana and Gonzalez 2015:xx]

It was a customary and necessary tradition to grant a name for each type of rain. Rains were named to show their action toward plants or the supposed effects on people or their possessions (Pukui and Elbert 1986:361). Many rains are identified in the broader district of Ko‘olaupoko. ‘Āpuakea, Hā‘ao, and Kapua‘ikanaka are the rains associated with the *ahuʻula* of Kailua. The following section presents a literary work that mentions these rains or *ua*.

1.4.3.1 *Ka Ua* ‘Āpuakea

*The Epic Tale of Hi‘iakaikapōlepe* describes the visit of the goddess Hi‘iaka to Kailua. This section of the story explains her introduction to Mālei, mother of ‘Āpuakeanui, the person for whom the ‘Āpuakea rain was named:

*No kēlā inoa mai ‘o ‘Āpuakeanui i loa‘a mai ai kēlā ua kaulana o Kailua e hele mai ai a haluku iho i ka ulu hala o Kekele me Luluku, ‘o ia ho‘i ka ua ‘Āpuakea, i holo ma ko ke mele, penei: […]*

From that name, ‘Āpuakeanui, came the name of the famous rain of Kailua that pummels the hala groves of Kekele and Luluku, namely the ‘Āpuakea, which goes like this in song: […]

*Hele ha‘aheo ka ua ‘Āpuakea*  
The ‘Āpuakea rain moves proudly along

*Holo ‘au‘i i ke kai o Maluaka ē, i laila*  
Slipping off into the sea of Maluaka, ah, there

*Ka‘a ‘ōlelo ka ua i luna o ka hala*  
Words are spoken by the rain on the hala

*Ke po‘o o ka hala o ‘Āhulimanu*  
The uppermost hala of ‘Āhulimanu

[Akana and Gonzalez 2015:6–7]

The quote below was spoken by Hi‘iaka to Ka‘anahau, a handsome man of Kailua who fixed Hi‘iaka her favorite dish of steamed *lū‘au* (young taro tops).

*Akā, ‘o ka ‘u wahi ‘ai na‘e, aia lá i ka ua ‘Āpuakea o Kailua.*
But the food I want [likely referring metaphorically to her lover] is there in the ‘Āpuakea rain. [Akana and Gonzalez 2015:6]

The ‘Āpuakea rain is also mentioned in a song titled *Pela kapu o Kakae* by the Kawaihau Glee Club. The Malanai *makani* of Kailua is mentioned in this song as well:

<table>
<thead>
<tr>
<th>Line</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eka ka ua ‘Āpuakea</td>
<td><em>O ‘Āpuakea rain</em></td>
</tr>
<tr>
<td>Kui ‘ia mai nā ‘āhihi</td>
<td><em>The ‘āhihi blossoms are to be strung</em></td>
</tr>
<tr>
<td>Na ka Malanai e lawe mai</td>
<td><em>The Malanai wind will bring them</em></td>
</tr>
<tr>
<td>I wehi, i ‘ohu no Kalani</td>
<td><em>As a decoration, an adornment for the chief</em></td>
</tr>
</tbody>
</table>

[ Akana and Gonzalez 2005:6 ]

1.4.3.2 Ka Ua Hāʻao

Hāʻao is a rain that falls at Wailea Point located between Kaʻōhao in Kailua and Waimānalo. The following verse is from the story of Hiʻiaka mentioned above.

<table>
<thead>
<tr>
<th>Line</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>E nānā iho ana i Waipuʻilani</em></td>
<td>Gazing down on Waipuʻilani</td>
</tr>
<tr>
<td><em>E noho iho ana i Kaʻanaokāhinahina</em></td>
<td>Residing there at Kaʻanaokāhinahina</td>
</tr>
<tr>
<td><em>Eia au i ka ua aka Hāʻao</em></td>
<td>Here am I in the Hāʻao rain</td>
</tr>
<tr>
<td><em>I walea ai i ke kui pua ‘āhihi</em></td>
<td>Delightedly stringing lehua ‘āhihi blossoms</td>
</tr>
<tr>
<td><em>He lei no Lea, wahine i ke kuahiwi</em></td>
<td>As a lei for Lea, woman of the mountain</td>
</tr>
</tbody>
</table>

[ Akana and Gonzalez 2015:27–28 ]

1.4.3.3 Ka Ua Kapuaʻikanaka

Another Kailua rain, Pālāwai, is mentioned in Hiʻiaka’s chant about her encounter with Kaʻanahau. It is a thrumming rain; Kapuaʻikanaka is another rain of Kailua that means “footsteps.” It is mentioned below in a *mele* sung by Hiʻiaka to the handsome man, Kaʻanahau, of Kailua:

<table>
<thead>
<tr>
<th>Line</th>
<th>Translation</th>
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<tbody>
<tr>
<td><em>I ia wā ‘o ia i ‘ike aku ai i ka hele kawewe ‘ana a’e a ka ua i Pālāwai</em> […]</td>
<td><em>I kēia wā i paeaea a’e ai ‘o ia i kēia kau e pili ana i ke kāne, iala Ka ‘anahau, a iala Pele ho‘i.</em></td>
</tr>
</tbody>
</table>

At that point, she recognized the thrumming rain of Pālāwai […] At this time, she presented the following chant about Kaʻanahau, which also pertained to Pele.

<table>
<thead>
<tr>
<th>Line</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ku‘u kāne i ka ala pili o Mahinui</em></td>
<td>My man of the clinging path of Mahinui</td>
</tr>
<tr>
<td><em>Mai ka ua kapua‘i kanaka i Pālāwai</em></td>
<td>From the rain of Pālāwai that follows like footsteps</td>
</tr>
<tr>
<td><em>Ka ua o Kailua i kai ē</em></td>
<td>The rain of Kailua by the sea</td>
</tr>
</tbody>
</table>

[ Akana and Gonzalez 2015:68 ]
1.4.4 Nā Kahawai (Streams)

There are many streams in the rich, productive valley of Kailua. The main streams are the Maunawili-Kahanakiki Stream system, which drains the sub-area of 15,000 acres including Maunawili Valley and Mokapu Point. The Maunawili Stream is a perennial stream with an extensive tributary network (State of Hawaii 1983:23). In the uplands, there are Kapa'a and Kahana Iki. Maunawili Stream system is made up of the Makawao, ‘Ainoni, Aniani, ‘Ōma'o, Palapū, Li'ilii, Olomana, Aawa, and Kihululu streams. There are two streams in Kawailoa ‘ili: one on the face of Olomana and one in the lowlands of Ka‘elepulu. The Ka‘elepulu Stream, Kawaihui Stream, and Kawaihui Canal are all drainage streams for Kawaihui and Ka‘elepulu.

There are also smaller and possibly intermittent. Api Spring is piped to the Kawailoa Training School for Girls. Near the Pali is the Kapakahpi Stream about 500 ft in elevation, while the Pikoaukea Spring flows from about 660 ft in elevation. Kawailoa Spring is located near Kawailoa Heiau. Pūpū‘ōpae Stream leads from Ka‘elepulu to Kamokowa‘a Stream with outlet in Kailua Bay. Punawai Stream is a stream near Wailea Point. Meanwhile, Po‘opo’o Stream is under the Ka‘iwa Ridge between Po‘opo’o Place and Lanīpō Drive, which flows through Lanikai/Ka‘ōhao and into the sea.

1.4.5 Lihikai ame ka Moana (Seashore, Ocean)

The makai (seaside) region provided a variety of fish and ocean invertebrates for consumption. Traditionally, the seashore and ocean areas were vitally important for resource extraction in the early days of settlement, and fishermen along the coast maintained a respected status within traditional Hawaiian society. Kanahele (1995:17) asserts that “early Hawaiians regarded fishing as the oldest, and hence the most prestigious of professions.”

1.4.5.1 Ka‘ōhao

The traditional name of the area now known as Lanikai is Ka‘ōhao. Clark noted that the flat reef fronting Ka‘ōhao was known as ‘A‘alapapa which translates to “fragrant shelf.” This reef was covered with limu (seaweed) notably the fragrant limu lipe‘epe‘e (Laurencia parvipapillata, L. dotyi, L. succisa).

Ka‘ōhao extended from Alala Point to the hill sloping down from Ka‘iwa Ridge, just about opposite the present Onekea Street. In the ocean fronting Ka‘ōhao was a flat reef covered with seaweeds that was known as ‘A‘alapapa, the ‘fragrant shelf.’ The papa was noted especially for its limu lipe‘epe‘e, which is one of the fragrant seaweeds. [Clark 1977:175]

Sterling and Summers (1978:240) cite McAllister regarding Ka‘ōhao: “The reef with small islands [Mokulua and Popoi‘a] off of Ka‘ōhao were built by the Menchune in one night for the protection of the people. The menchune did not finish the work.” The Boundary Commission review for Ka‘elepulu showed the fishing right of this land was over one mile from the shore and just outside the breakers, the tabu fish was the ‘Uhu,’ but the people went to law, and it was decided that the reef bounded the fisheries, so this was thrown open. Thus the Mokulua Islands and Popoia Island are integral parts of the ahupua‘a of Kailua. [Boundary Commission 1892, Oahu 2:89]
1.4.5.1.1 Mokulua Islands

The name for the area between Kaʻōhao and Popoʻokaʻala is called Mokulua, named after the two islands located offshore of Kaʻōhao:

In former times, a single stream ran through this region of Mokulua that was called Wailea, ‘pleasing water.’ The muliwai where Wailea met the ocean was often filled with fish. In later years the name Wailea was extended to the nearby point, once known as Popoʻokaʻala. Popoʻo, as it was more commonly called was, like Alala, important as the site of a fishing shrine. Both points were used by fishermen as landmarks for locating offshore fishing areas. Besides being called Wailea Point, Popoʻo is also known as “Smith’s Point,” for Helen and Alvin Smith who purchased 1.6 acres there in 1936. [Clark 1977:175]

The Mokulua Islands consist of two basaltic islets; Mokulua North which is 225 ft high and Mokulua South which is 201 ft high (USGS 1952). Located on these islets are fishing shrines and an adz quarry. These are the islands referenced by Clark:

‘the two islands,’ more commonly known as ‘Twin Islands.’ The former Hawaiian community in Kailua referred to the bigger island as Moku Nui and to the smaller as Moku Iki. Today both are State bird sanctuaries, and landing is prohibited without a permit from the Division of Fish and Game. However, because of the popularity of its beach as a picnicking area and as a landing for small sailing craft, recreational permits for Moku Nui are always granted free of charge. Access to the rest of the island and all of Moku Iki are still restricted. [Clark 1977:176–177]

1.4.5.1.2 Popoiʻa Island

Popoiʻa Island is a flat islet located off Kaʻōhao. Popoiʻa means “Popo, rotted;— iʻa, fish. Rotted fish. According to Mahoe, it is called by this name because of the bones of the fish left there” (Sterling and Summers 1978:238). The islet is also a bird refuge. Sterling and Summers discuss the koʻa (fishing shrine) at Popoiʻa Island:

*Koʻa for moi [threadfish; *Polydactylus sexfilis*] located almost in the center of the island. There are no walls remaining. Much coral lying around. It was nearly obliterated by a tidal wave of 1946. Small overhang under which offerings were placed still visible. Louis Mahoe, an informant, said that this koʻa was used by his father, with appropriate pule [prayer], at least up to the 1920s. [Sterling and Summers 1978:238]

1.4.5.2 Lanikai Beach (traditionally called Kaʻōhao)

Lanikai Beach comprises the entire length of Mokulua Drive in Lanikai. According to Clark:

Lanikai Beach is a nearly straight sandy stretch more than a mile long, varying between 20 and 100 feet in width. Many of the beachfront lots are bordered by seawalls to prevent further erosive action of the ocean. Ironically, such protective construction has been a primary cause of the loss of the sand beach in several sections. Swimming is safe along the entire beach. The sandy ocean bottom is shallow, and the inshore waters are well protected by the offshore reef, which dissipates most of the ordinary wave energy. There are no particularly hazardous
areas anywhere along Lanikai Beach. Three rights-of-way for the general public are provided along its length. [Clark 1977:176]

1.4.5.3 Kailua Bay

Kailua Bay is located north of the project area between Alāla and Kapoho points. Kailua Bay spans 2.5 miles and consists of a beach park, a pier (no longer remaining), and a boat ramp. Clark discusses Kailua Bay:

The bay and the 2.5-mile calcareous sand beach that lines it at between Alala and Kapoho Points. The beach park is at the south end of the beach, where it is bisected by Kaʻelepulu Canal. The boat ramp is at the south end of the beach park in the lee of Alala Point. The windsurf site is off the beach park Lit., two seas (probably two currents). [Clark 2002:142]

1.4.5.4 Kailua Beach Park

Clark describes the Kailua Beach Park, located at 450 Kawailoa Road, north of the proposed project area:

Kailua Beach Park is a thirty-acre public park located at the eastern end of Kailua Bay. Besides its grassy spaces and picnic facilities, the beach park has three lifeguard towers, one of which is manned daily all year long, and a public boat ramp at Alāla Point, the only one in Kailua. The beach is always sand and wide, narrowing only in the boat ramp area. The ocean bottom slopes gently to the deeper offshore waters, providing an excellent swimming area. There are no hazardous conditions. [Clark 1977:173–174]

According to the City and County of Honolulu Department of Parks and Recreation, the accretion of sand at Kailua Beach:

Suggest[s] that three to four centuries ago, except for the Alala Point area, all low-lying parts of the park were seaward of the shoreline. […] In 1884, the site of the pavilion and the most mauka-Kailua corner of the park (where the pavilion access road enters the park) were seaward of the shoreline, and what is now Liihawai Road, was the center of the Kaʻelepulu Stream channel. [City and County of Honolulu Department of Parks and Recreation 1991:9]

1.4.6 Built Environment

The study area is east of Kailua Beach Park between the residential neighborhood of Kawailoa to the west, and the Laniikai/Kaʻōhao neighborhood on the east. The study area is situated at the base of the slope of Alāla Ridge. Alāla Point marks the boundary at the shore between Kailua Beach Park to the west and Laniikai Beach to the east. There are two paved public parking lots within the study area. The eastern portion of the study area contains a city bus stop. Residential housing borders east and west of the study area.
Section 2  Methods

2.1 Archival Research

Research centers on Hawaiian activities including ka’ao (legends), wahi pana (storied places), ‘ōlelo no’eau (proverbs), oli (chants), mele (songs), traditional mo’olelo (stories), traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai‘i State Archives, the Bishop Museum Archives, the University of Hawai‘i at Mānoa’s Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai‘i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona ‘Āina Corporation’s Māhele database (Waihona ‘Āina 2020), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of ‘Āina website (Ava Konohiki 2015).

2.2 Community Consultation

2.2.1 Scoping for Participants

We begin our consultation efforts with utilizing our previous contact list to facilitate the interview process. We then review an in-house database of kūpuna, kama‘aina, cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior’s NHO list), and community groups. We also contact agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response to the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.2 “Talk Story” Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their ‘ike (insight) and mana‘o (opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

“Talk Story” sessions range from the formal (e.g., sit down and kūkākākā [consultation, discussion] in participant’s choice of place over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH also conducts group interviews, which range in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewee’s
answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) providing missing details for moʻolelo.

CSH seeks kōkua (assistance) and guidance in identifying past and current traditional cultural practices of the study area. Those aspects include general history of the ahupua‘a; past and present land use of the study area; knowledge of cultural sites (for example, wahi pana, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (kaʻao and moʻolelo); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

2.2.3 Interview Completion

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask to make any necessary edits. Once the interviewee has made those edits, we incorporate their ʻike and manaʻo into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant’s transcription, interview summary, and any photos that were taken during the interview. We also include a thank you card and honoraria. This is for the interviewee’s records.

It is important to CSH cultural researchers to cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their ʻohana (family). CSH researchers feel this is an important component to building relationships and being part of an ʻohana and community.

“I ulu no ka lālā i ke kumu”—the branches grow because of the trunk,” an ʻōlelo noʻeau (#1261) shared by Mary Kawena Pukui with the simple explanation: “Without our ancestors we would not be here” (Pukui 1983:137). As cultural researchers, we often lose our kūpuna but we do not lose their wisdom and words. We routinely check obituaries and gather information from other informants if we have lost our kūpuna. CSH makes it a point to reach out to the ʻohana of our fallen kūpuna and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.
Section 3  Kaʻao and Moʻolelo

Hawaiian storytellers of old were greatly honored; they were a major source of entertainment and their stories contained teachings while interweaving elements of Hawaiian lifestyles, genealogy, history, relationships, arts, and the natural environment (Pukui and Green 1995:IX). According to Pukui and Green, storytelling is better heard rather than read for much becomes lost in the transfer from the spoken to the written word and kaʻao are often full of kaona or double meanings.

Kaʻao are defined by Pukui and Elbert as a “legend, tale […], romance, [and/or], fiction” (Pukui and Elbert 1986:108). Kaʻao may be thought of as oral literature or legends, often fictional or mythic in origin, and have been “consciously composed to tickle the fancy rather than to inform the mind as to supposed events” (Beckwith 1970:1). Conversely, Pukui and Elbert define moʻolelo as a “story, tale, myth, history, [and/or] tradition” (Pukui and Elbert 1986:254). The moʻolelo are generally traditional stories about the gods, historic figures or stories that cover historic events and locate the events with known places. Moʻolelo are often intimately connected to a tangible place or space.

In differentiating kaʻao and moʻolelo it may be useful to think of kaʻao as expressly delving into the wao akua (realm of the gods), discussing the exploits of akua (gods) in a primordial time. However, it is also necessary to note there are exceptions, and not all kaʻao discuss gods of an ancient past. Moʻolelo on the other hand, reference a host of characters from aliʻi (royalty), to akua and kupua (supernatural beings), to finally makaʻāinana (commoners), and discuss their varied and complex interactions within the wao kānaka (realm of man). Beckwith elaborates, “In reality, the distinction between kaʻao as fiction and moʻolelo as fact cannot be pressed too closely. It is rather in the intention than in the fact” (Beckwith 1970:1). Thus, a so-called moʻolelo, which may be enlivened by fantastic adventures of kupua, “nevertheless corresponds with the Hawaiian view of the relation between nature and man” (Beckwith 1970:1).

Both kaʻao and moʻolelo provide important insight into a specific geographical area, adding to a rich fabric of traditional knowledge. The preservation and passing on of these stories through oration remains a highly valued tradition. Additionally, oral traditions associated with the study area communicate the intrinsic value and meaning of a place, specifically its meaning to both kamaʻāina as well as others who also value that place.

The following section presents traditional accounts of ancient Hawaiians living in the vicinity of the project area. Many relate an age of mythical characters whose epic adventures inadvertently lead to the Hawaiian race of aliʻi and makaʻāinana. The kaʻao in and around the project area shared below are some of the oldest Hawaiian stories that have survived; they still speak to the characteristics and environment of the area and its people. Figure 8 highlights place names from the moʻolelo mentioned below. The project area is also highlighted in relation to these place names.
Figure 8. Map showing known place names in *ahupua‘a* of Kailua

CIA for the Kailua Ocean Safety Building Project, Kailua, Koʻolaupoko, Oʻahu

TMK: [1] 4-3-009:002

Cultural Surveys Hawai‘i Inc.
3.1 Nā Kaʻao

3.1.1 Kaʻōhao

The name of the place Kaʻōhao comes from the tale about “the tying”—the tying of two women by Hāuna, kahu or advisor to high chief Lonoikamakahiki of Hawai‘i Island after the women were beaten at a game of kōnane:

The women were taken by Hāuna to the canoes where he said to one of them: ‘This canoe shall be yours with everything in it from stem to stern, including the men. The men shall be your servants; they are not for you to sleep with.’ And as he had spoken to her, so in like manner, he spoke to the second woman. He then left the women and proceeded to meet Lonoikamakahiki.

[…]. The place where this act took place was given the name Kaohao and so it remains to this day. The place is in Kailua, Koolaupoko, Oahu. [Fornander 1916-1917:4:314–315]

3.1.2 Olomana

Olomana translates to “forked hill” (Pukui et al. 1974:170). Olomana rises 1,643 ft from the valley floor. The extinct volcano of Olomana has two neighboring peaks, Pāku‘i and Ahiki. The following moʻolelo describes the legendary and feared warrior, Olomana.

Palila, the great warrior of Kaua‘i and son of Ka-lua-o-Palena (chief of half of Kaua‘i) and Mahinui (daughter of Hina) had two natures: one of a man and the other of spirit (Beckwith 1970:414). In search of an adventure, Palila stood at a knoll called Komo-i-ke-anu, threw his club while clinging on to one end. Palila arrived at Nualolo at Ka-maile then flew on to Kaʻena Point on O‘ahu and onto Wai-kele where he met Ahu-a-Pau, chief of O‘ahu who was presiding over games. Palila was told that if he slew Kamai-kaahui, a shark-man “terrorizing the country,” he would win Ahu-a-Pau’s daughters, Ke-alamikioi and Ka-lehua-wai (Beckwith 1970:414).

Ahu-a-Pau sen Palila on a circuit without forewarning him of beings he would encounter. Palila set out on his journey and met Olomana, the 36-ft warrior who oversaw the lands spanning from Makapuʻu Point to Kaʻōio Point. Palila landed on the giant, cut through Olomana, and cast pieces of his body over the ‘āina (land). One portion of the giant’s body that was hurled toward the sea was called Mahi-nui; the large peak that remained was named Olomana (Beckwith 1970:415).

The middle of the three peaks of Mount Olomana, Pāku‘i, is named after the legendary keeper of the Kawai Nui and Ka‘elepulu fishponds who was a fast runner (Pukui et al. 1974:176). Ahiki is the closest peak to Waimānalo, and is named after the konohiki (headman of an ahupua’a land division under the chief) of Ka‘elepulu and Kawaiinui ponds (Pukui et al. 1974:5).

Traditions related to early creation stories also mention Olomana (Creed and Chijioji 1991:33). One of these is the Story of Pupuhuluana, which credits Olomana with helping to bring food back to the island after it was sequestered by the angered goddess Haumea.

3.1.3 Pupuhuluana

This moʻolelo told to Kamakau by his astronomer uncle involves Pupuhuluana (variations of the name include Pupuhuluena, Kupuahuluena, and Puluana), the kahuna (priest) who was a
navigator and said to have introduced food plants to the Hawaiian Islands, and Haumea, the earth-
goddess.

The first part of the story represents a celestial event. A meteor had hit O'ahu Island. Kulauka
lived above Kaumana on O'ahu. The grandchild of Wailoa and Haumea, Kapahu, lived at Lelepuia
(Beckwith 1970:431). Although Kulauka and his brother Kulakai often quarreled, the two weaved
a bird out of 'ie'ie (an endemic woody, branching climber; Freycinetia arborea) vine and covered
it with feathers. The two brothers kidnapped Kapahu with the bird disguise. When Haumea
attempted to catch her grandchild, one of the brothers threw out a stone to her. Haumea reached
out for what she thought was her grandchild, but the stone thundered when she tried to catch it.
Out of revenge, Haumea seized all the food items from the Hawaiian Islands and retired to
Nu‘umealani.

According to Beckwith, the islands of O'ahu, Kaua‘i, Maui, and Hawai‘i were affected by a
terrible drought. The rest of the story is how the food was brought back to the islands. Pupuhuluana
and Kapala, strong and swift runners of Kaua‘i, traveled to O'ahu seeking food. These two men
traveled to the land of Maunawili where they found three of Haumea’s male attendants: Olomana,
Ahiki, and Paku‘i. They are joined by two of Haumea’s female attendants: Makawao and Hauli.
Pupuhuluana and Kapala learned that the group was living off pōpolo (black nightshade; Solanum
nigrum) and ti, the only two food items Haumea left for the subsistence of her people. After other
trials, Pupuhuluana and Kapala carved life-like images of Ieiea and Po‘opalu, the fishermen of
Makali‘i. Then Olomana sent Pakui, Pupuhuluana, and Kapala to Ololoimehani, the land of
Makali‘i east of O‘ahu. Here, Pakui and the men of Kaua‘i brought back potatoes, taro, bananas,
sugarcane, ‘ape (Alocasia macrorrhiza), ti, yams, hoi (bitter yam; Dioscorea bulbifera), pia
(arrowroot; Tacca leotopetaloides), ‘ulu (breadfruit; Artocarpus altilis), ‘ōhi‘a ‘ai (mountain
apple; Eugenia malaccensis), coconuts, and hō‘i‘o (edible fern; Diplazium anottii) (Beckwith

3.1.4 Kū‘ilioloa and Kaulu

Handy and Handy relay the story of the mythical dog Kū‘ilioloa, in the context of the legend of
Kailua-born Kaulu:

Ku-‘ilio-loa is mentioned in the legend of Kaulu (Fornander 1916-1917:4:522-524)
who was born at Kailua on Oahu—he who first challenged the great surf breaking
on the beach. Kaulu ‘reached for the surf and broke it into small pieces, thus making
the surf small unto this day.’ Other waves he met he likewise broke. ‘After this he
continued on his way until he met Kuililoloa, a dog that was guarding the land and
the sea. Another battle was fought in which Kuililoloa was torn to pieces, therefore
dogs are small to this day.’ [Handy and Handy 1972:247]

3.1.5 Paumakua

Paumakua was born at Kuaohe in Kailua on O‘ahu. During the twelfth century, Paumakua
visited many foreign lands (Westervelt 1923:95). Fornander discusses Paumakua returning to
O‘ahu with two priests, Auakahinu and Auakamea, who several priestly families have descended
from.

The various legends referring to this Paumakua relate more or less of his
wanderings in foreign lands; how he circumnavigated the world (*Kaapuni
Kahiki’), meaning thereby all foreign lands outside of the Hawaiian group. One of these legends relates that on his return from one of his foreign voyages he brought back with him to Oahu two white men, said to have been priests, Auakahinu and Auakamea, afterwards named Kaekae and Maliu, and from whom several priestly families in after ages claimed their descent and authority. The legend further states that Paumakua on the same occasion also brought a prophet (kaula) called Malela, but whether the latter was also a white man the tradition is not so explicit.

The white foreigners who came with Paumakua are in the legend said to have been ‘Ka haole nui, maka alohilohi, ke a aholehole, maka aa, lea puua keokeo nui, maka ulaula’ (‘Foreigners of large stature, bright sparkling eyes, white cheeks, roguish, staring eyes, large white hogs with reddish faces’). [Fornander 1880:24–25]

3.2 Nā Wahi Pana (Storied Places)

Wahi pana are legendary or storied places of an area. These legendary or storied places may include a variety of natural or human-made structures. Oftentimes dating to the pre-Contact period, most wahi pana are in some way connected to a particular mo’olelo, however, a wahi pana may exist without a connection to any particular story. Davianna McGregor outlines the types of natural and human-made structures that may constitute wahi pana:

Natural places have mana, and are sacred because of the presence of the gods, the akua, and the ancestral guardian spirits, the ‘aumakua. Human-made structures for the Hawaiian religion and family religious practices are also sacred. These structures and places include temples, and shrines, or heiau, for war, peace, agriculture, fishing, healing, and the like; pu‘uhonua, places of refuge and sanctuaries for healing and rebirth; agricultural sites and sites of food production such as the lo‘i pond fields and terraces slopes, ‘auwai irrigation ditches, and the fishponds; and special function sites such as trails, salt pans, holua slides, quarries, petroglyphs, gaming sites, and canoe landings. [McGregor 1996:22]

As McGregor makes clear, wahi pana can refer to natural geographic locations such as streams, peaks, rock formations, ridges, offshore islands and reefs, or they can refer to Hawaiian land divisions such as ahupua‘a or ‘ili, and man-made structures such as fishponds. In this way, the wahi pana of Kailua tangibly link the kama‘aina of Kailua to their past. It is common for places and landscape features to have multiple names, some of which may only be known to certain ‘ohana or even certain individuals within an ‘ohana, and many have been lost, forgotten or kept secret through time. Place names also convey kaona and huna (secret) information that may even have political or subversive undertones. Before the introduction of writing to the Hawaiian Islands, cultural information was exclusively preserved and perpetuated orally. Hawaiians gave names to literally everything in their environment, including individual garden plots and ‘auwai (waterway or ditch), house sites, intangible phenomena such as meteorological and atmospheric effects, pōhaku (rock, stone), pūnāwai (freshwater springs), and many others. According to Landgraf (1994), Hawaiian wahi pana “physically and poetically describes an area while revealing its historical or legendary significance” (Landgraf 1994:v).
3.2.1 Kailua

The name Kailua, meaning “two seas,” apparently refers to the two large inland waters, Kawai Nui Pond and Kaʻelepulu Pond (Pukui et al. 1974:69; Quebral et al. 1992:14). Kawai Nui Marsh was traditionally known as Kawai Nui Loko, or the big freshwater pond. Kawai Nui Marsh is a celebrated, noted, and legendary place in Hawaiian traditions. The legends of Kawelo, Kahalaopuna, Keaomelemale, the *menehune* all refer to Kawai Nui, as does the history of the ruling chiefs Kūaliʻi and Olopana. The demi-goddess Hiʻiaka and her companion Wahine-omaʻo visited, and Kawai Nui’s fame is related in numerous chants (Drigot and Seto 1982:84–96). Historically, a portion of Kawai Nui Marsh was a 450-acre fishpond cleared of encroaching vegetation by the communal efforts of the *ahupuaʻa* residents. Kawai Nui was recognized for the abundance of resources that the area supplied to the Hawaiian people, including avian, earth, fish, and plant resources.

Hauwahine’s residency at Kawai Nui Loko follows that of Haumea the goddess of fertility and childbirth. She protected Kailua and ensured that all the people of the *ahupuaʻa* shared in the pond’s wealth but also punished those who were greedy (Beckwith 1970:126). A rock formation at Nā Pōhaku o Hauwahine symbolizes this moʻo goddess. Nā Pōhaku o Hauwahine are on the right-hand side of Kapaʻa Quarry Road at the Y-intersection before entering the Kapaʻa Landfill Transfer Station.

Thus it was with Hauwahine, at her ponds of Kawai nui and Kaʻelepulu and with Laukapu at her pond of Maunalua They were the guardians who brought the blessing of abundance of fish, and of health to the body, and who warded off illness and preserved the welfare of the family and their friends. This honoring was a fixed rule (*kanawai paʻa*) on these lands and brought the young fish to the sea and to the ponds. Sometimes, when the land was blessed with an abundance of young fish in the sea, the overlord (*haku*) of that land, or the land agent (*konohiki*) would become haughty and indifferent to the welfare of the poor and the fatherless; and when they saw the boys and girls with their gourds for storing ‘fish,’ *ipu wai kahakai*, they would become overbearing, seize the gourds and break them without pity for the fatherless, and smash the gourds of the women without giving them a chance to speak. An *ipu wai kahakai* could do no harm—it could not take away all the oysters and shrimps, but for no cause at all (*mai ka lani mai ka honua*) the overbearing ‘shark’ would come and break the gourd in pieces. Then the guardian moʻo, who loved the poor and the fatherless, would take away all the ‘fish’ she had given for high and low alike, for the rich and the poor. When she saw the rights of the many abused, she took away the blessing altogether, leaving nothing but the rocks which endure and the earth which crumbles. Her chagrin (*lili*) could not be appeased by supplication (*kalokalo*) but by penitence and restitution; that was the only way to bring prosperity back to the land. [Kamakau 1964:83–84]

Pilahi Paki, in an oral history done with Muriel Seto, said that the stones overlooking Kawai Nui on Puʻu ‘o ‘Ehu are sacred to Hauwahine and her companion. The reason for this is connected to the ancient Hawaiian notion that the channel/canal beneath Puʻu ‘o ‘Ehu connects Kawai Nui and Kaʻelepulu and was considered to be the coital connection between the two fishponds, giving
the area great mana (spiritual power). Kawai Nui Marsh was considered male and Ka‘elepulu Pond, female. They mated at Kawailoa according to a Hawaiian tradition (Paki 1972:59).

According to legend, Hauwahine had a companion, a second mo‘o, who reportedly lived at the hala (Pandanus odoratissimus) grove near the Ka‘elepulu Stream. If one sees yellow grass and yellow rush in the stream, it is a sign of the presence of the two mo‘o women (Kelly and Nakamura 1981:3).

Ka‘elepulu Pond is a large marsh pond which was formerly an embayment. In the 1960s, it was developed into a residential area and christened “Enchanted Lake.” In legend, Paku‘i, a famous runner was delegated by Haumea to tend the Ka‘elepulu fishpond. Another legend associated with Ka‘elepulu tells of the runner Uluanui of O‘ahu: it was said that he could carry a fish from Ka‘elepulu pond in Kailua, traverse the island by way of Waialua, and bring the fish—still alive and wriggling—into Waikīkī (Malo 1951:220). At the time of the Māhele, no less than 120 lo‘i (taro terraces) were claimed in the large marsh area. In 1880, George Bowser described Ka‘elepulu Lake as containing innumerable ducks and geese, waterhens, herons, and other wildfowl. In its waters were plenty of freshwater fish (Kelly and Nakamura 1981:47).

That Kailua was a “fat” land, a land of plentiful food in all times, was suggested by several legends. The Mākālei, or Fish-Attracting Tree, was a mythological tree or stick that could summon fish from Kawai Nui. Reportedly located near the present day Hāmākua Bridge, it was described as a never-failing source of a plentiful supply of food (Beckwith 1970:279–280 and Pukui and Elbert 1986:382). The earth mother goddess Haumea is depicted in Hawaiian folklore as the one who brings the Mākālei tree to Kawai Nui, thereby establishing the fertile waters of the marsh. The removal of the tree by Haumea to punish the ali‘i who forgot to distribute Kawai Nui’s fish to a small, redhead boy named Kahinihiniula and his grandmother Neula is a strong reminder of the chiefs’ responsibility of stewardship to the planters on whom they depended for food and power. Once the ali‘i realized their shortcomings, Haumea returned the Mākālei tree to a hidden place and the fish returned to Kawai Nui (Creed and Chiogioji 1991:6).

Another tradition of the ample productivity of the Kailua region involves the edible haupia (coconut pudding)-like mud called lepo-ai ‘ai, which was available from Kawai Nui Marsh (Kelly and Nakamura 1981:5). This tradition implies a bountiful Kailua where even the mud was regarded as edible. Kauluakalana, a chief born in Kailua after the time of Wākea, travelled to the pillars of Kahiki and brought back the “lepo-ai-ia” or edible mud, which is found only in Kawai Nui. Sterling and Summers discuss Kauluakalana:

When there was a shortage of taro in Kailua, during Kamehameha’s stay there with his men, the men of Kailua went to the pond of Kawainui to get the edible mud of Kawainui. It was a mud brought from Kahiki by Kauluakalana and put in the pond of Kawainui. The warriors and servants of Kamehameha ate the mud which had been put in the calabashes. [Sterling and Summers 1974:231–232]

Kailua is one of the places where, following their arrival on O‘ahu from Kahiki, the menehune were assigned to live. These legendary workers are credited with the construction of numerous fishponds and religious structures. Fornander points out that the term menehune in Tahitian had become the name for the lowest laboring class of people—suggesting a Tahitian origin for the term for the legendary workers (Fornander 1996:23).
As noted previously, the goddess Hi’iaka became enamored with “the handsome one of Kailua” (Kanahau/Kanaahau), and lingered “to pay the ‘ilā‘au debt’ […]", and that was how the saying became known that those of Kailua ‘fish on the sand,’” meaning “to seek one’s ‘sustenance’ onshore” (Ho’oulumāhiehie 2008:142). So both “fishing on the sand” and “paying a lū‘au debt” are short condensed sayings with bold imagery that express a commonplace fact of experience.

### 3.2.2 Kawaihoa

Kawaihoa is an ‘īli located in the ahupua’a of Kailua. In the Māhele, Kamehameha III claimed this land for himself and his heirs. Kawaihoa consists of two portions, one going up to the peak of Olomana from Kalaniana‘ole Highway and the other just outside Lanikai/Ka‘ōhao along the beach. In the upper portion is found the present women’s prison in the old facilities formerly known as the Kawaihoa Girls’ School (State Inventory of Historic Places [SIHP] # 80-11-1361). A cinder cone lies behind the buildings and above it rises Olomana Peak, consisting of lavas filled with secondary minerals. “They are washed into the gulches nearby and are sought by gem collectors” (Stearns 1978:23). The project area is located within the ‘īli of Kawaihoa.

### 3.2.3 Alāla Heiau and Shrine

Alāla (SIHP # 50-80-11-378) was a heiau (pre-Christian place of worship) once located at the similarly named point or promontory at the entrance to Ka‘ōhao/Lanikai. McAllister, having visited the site with Solomon Mahoe, found it as described previously by Thomas Thrum, who noted the heiau had

> the distinction of being the temple where the ceremonies attending the royal birth of about 1640, were performed, but of which no traces of any kind now remain […] the site to which we were now directed, while convenient and appropriate for a ko‘a, or fisher-folks’ heiau, gave no evidence by stones in the vicinity, contour of the hill at the point shown, or other feature, of ever having been the location of a temple of the importance alleged. [Thrum in McAllister 1933:190]

In Sites of O’ahu, Sterling and Summers cite the following description of the natural shrine of Alāla, given by an informant:

> (Site 18) Where a cement sign with ‘Lanikai’ on it stands. Looking up from this spot we saw the most extraordinary house built on and over the huge rocks. It is owned by Arthur Powlison. The ‘haunted house’, Mrs. Alona calls it because it was built directly in front of Alāla, a natural shrine on the hill. We had to move some distance away to see Alāla on the hill, behind the house. The fishermen of old watched this big rock on the hill and Wailea, another natural shrine a distance away at a place called Wailea, to locate the best fishing grounds in the sea. ‘It is too bad,’ said Mrs. Alona, ‘to deprive Alāla of an unobstructed view of the sea, for Alāla is not only a shrine but a “fish” god. So is Wailea.’ [Sterling and Summers 1978:239]

### 3.2.4 Alāla Point Cave

This cave is described by Sterling and Summers:

> Charles Kamanu, Sr., Solomon Mahoe, Jr., and Nawelu have each mentioned the cave at Alala Point, running through to Mid-Pacific Country Club grounds. Both
entrances are blocked up. Solo Mahoe, Jr., said his grandmother told him that this was used as a refuge cave in times of trouble. [Sterling and Summers 1978:238]

From Sterling and Summers, we learn the story of Kanepolū. This story comes from the time of Kamehameha III. The King was in Kailua on a fishing expedition, staying in the cave at the foot of Alāla Point.

3.2.5 Guardian Rocks (Kane-polū)

The Guardian Rocks were basalt rocks commemorating the coming of Kanepolū to Kamehameha III:

(Site 17) Kanepolū (pronounced by Mahoe, Kanepolu) at Nawelu’s place are several large rocks. These were guards and when he came there he found them scattered about on the lot (on Kawaiula Road, opposite Kailani camp). He had collected a few of them and these are close together now, another about 10 feet away. They are basalt. Another, which he states is now covered by earth (next door garden) is a coral rock, with the imprint of a man’s leg upon it.)

The story connected with these rocks is of the time of Kamehameha III. The King was in Kailua on a fishing expedition, staying in the cave at the foot of Alāla Point […] [see Section 3.2.3]

Kanepolū was a man who was born, grew up, and died in one day. He belonged to Kuliouou. The King sent for him to come to Alāla and he came […] ‘perhaps he flew, I don’t know’ […] The stones were guards set to watch for his coming. When he arrived it was getting dark, and as night fell, he slipped on the coral stone, leaving an imprint ‘of his leg’ on it, and was killed. This stone was ‘His leg’ […] ‘Where the rest of his body is, nobody knows.’ [Sterling and Summers 1978:238]

3.2.6 Puʻuhālo

Puʻuhālo is where of the Powlisons built their house. It is also a peak at the entrance to Lanikai, same as Alāla, (a Natural Shrine), and one of the division markers for the ‘ili of Kawaiola. The name most likely comes from halo, meaning to peer with hands shading the eyes. “Prominent and commanding stones were uses as lookouts for fish” (McAllister 1933:20).

This place has a large rock located atop Alāla Ridge that was used as place of refuge of Kamehameha I, located behind the Powlison residence which has been given the same name (see Figure 35).

The places of refuge of the ancient people were district divisions, as Kailua and Waikane at Koolaupoko, and Kualoa, which was a very sacred place and a real place of refuge for condemned persons, for when they entered it they were saved. For all O‘ahu, Kawiwi (at Waianae) was the place of refuge during the time of war. [McAllister 1933:18]

3.2.7 Kaʻiwa

Kaʻiwa is a ridge located mauka of Lanikai and west of Kaʻelepulu on the boundary between Kailua and Waimānalo near the shore. Kaʻiwa was the name of a beautiful chiefess who lived there. The hill of Kaʻiwa or Kalaeokaʻiwa, is described in Sterling and Summers:
On the hill Kaʻiwa, in Lanikai, which bears her name, there once lived a beautiful chiefess. She was desired by Ahiki, who one day started to come to her. He was stopped by Kaulekoa of Kaneohe (whose right name was Kana). That is why Ahiki is a little further forward than the other two peaks, Olomana and Pakui. [Sterling and Summers 1978:239]

The Kekipuipui Heiau (SIHP # 50-80-11-380) was located at the highest point on Kaʻiwa Ridge between Lanikai and Waimānalo, possibly at Puʻu o Lanikai (McAllister 1933:190). A field check of Kaʻiwa ridge found nothing but modern pill boxes. According to McAllister,

The site pointed out by [informant Solomon] Mahoe was used for pineapples, and consequently traces of a heiau have been obliterated […]

Kamehameha caused the renovation of Keikipuipui, which was a great work with the erection of adorning images outside of the paehumu [fence separating inner temple from the exterior]; wooden images they were, of Ohia, carved with grinning mouth and elongated head topped as with a helmet. The thighs and legs were rounded, and below the feet was the long length of timber, to secure its erection in the ground. [McAllister 1933:191]

3.2.8 ‘Ālele

The place ‘Ālele (SIHP # 50-80-11-369) is described by McAllister as follows:

The approximate location in the coconut grove of the famous house built by Kākuhihewa at Alele in Kailua. Kamakau (49) describes the place as follows:

At Alele in Kailua he (Kākuhihewa [paramount chief of Oʻahu in the fifteenth century]) erected a government house for himself forty fathoms long, and fifteen fathoms wide, which was named Pamo. The main purpose of this house was for debating land divisions, claiming ancestors, genealogy registration, practice with war club, spear thrusting, astrology, designing, astronomy, konane, instruction in royal ancestral songs, royal songs, running, cliff leaping, bowling, sliding, boxing. [McAllister 1933:185–186]

3.2.9 Punawai

Punawai is described by Sterling and Summers as a place where a residence now stands at 1435 Mokulua Drive. According to an informant, who did not know the extent of the place,

The stream bed that is in the gully of Poʻopoʻo once was a flowing stream that came Through this land then made a bend back, emptying into the sea at about where Dr. Rollo Brown’s house now stands (next to 1508 Mokulua). In the lot next to Girdler’s, many water-worn pebbles may be found.

In the olden days the women lived here at Punawai while their menfolk practiced spear-throwing at Kaʻohao. The men were under kapu [taboo] during these practice sessions, coming to their women only on weekends. [Sterling and Summers 1978:239]
3.2.10 Wailea

Wailea Point is located between Kaʻōhao/Lanikai and Waimānalo. “Lea” is both the name of a goddess of canoe makers and the name of a fish god who stands on Wailea (“Water of Lea”) (Pukui et al. 1974:224).

Sterling and Summers (1978:239) describe the natural shrine known as Waileʻa as being located “[u]p above ‘Hale aloha’ […] bold and clear against the skyline […] The beautiful homes here are built where the old native road used to be.”

3.3 Nā ‘Ōlelo Noʻeau (Proverbs)

Hawaiian knowledge was shared by way of oral histories. Indeed, one’s leo (voice) is oftentimes presented as hoʻokupu (“to cause growth,” a gift given to convey appreciation, to strengthen bonds); the high valuation of the spoken word underscores the importance of the oral tradition (in this case, Hawaiian sayings or expressions), and its ability to impart traditional Hawaiian “aesthetic, historic, and educational values” (Pukui 1983:vii). Thus, in many ways these expressions may be understood as inspiring growth within reader or between speaker and listener:

They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawaiʻi and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawaiʻi, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. Taken together, the sayings offer a basis for an understanding of the essence and origins of traditional Hawaiian values. The sayings may be categorized, in Western terms, as proverbs, aphorisms, didactic adages, jokes, riddles, epithets, lines from chants, etc., and they present a variety of literary techniques such as metaphor, analogy, allegory, personification, irony, pun, and repetition. It is worth noting, however, that the sayings were spoken, and that their meanings and purposes should not be assessed by the Western concepts of literary types and techniques. [Pukui 1983:vii]

Simply, ‘ōlelo noʻeau may be understood as proverbs. The Webster dictionary notes a proverb as “a phrase which is often repeated; especially, a sentence which briefly and forcibly expresses some practical truth, or the result of experience and observation.” It is a pithy or short form of folk wisdom. Pukui equates proverbs as a treasury of Hawaiian expressions (Pukui 1995:xii). Oftentimes within these Hawaiian expressions or proverbs are references to places. This section draws from the collection of author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing ‘āina (land), chiefs, plants, and places. The following proverbs concerning Kailua come from Mary Kawena Pukui’s ‘Ōlelo Noʻeau (Pukui 1983).

3.3.1 ‘Ōlelo Noʻeau #503

The following proverb describes an event that the people of Kailua threw after Kamehameha conquered the island of Oʻahu:

Hawaiʻi palulāʻī.
Ti leaf lickers of Hawaiʻi.
This saying originated after Kamehameha conquered the island of O‘ahu. The people of Kailua, O‘ahu, gave a great feast for him, not expecting him to bring such a crowd of people. The first to arrive ate up the meat, so the second group had to be content with licking and nibbling at the bits of meat that adhered to the ti leaves, in derision, the people of O‘ahu called them ‘ti-leaf lickers.’ [Pukui 1983:60]

3.3.2 ‘Ōlelo No‘eau #758

The following ‘ōlelo no‘eau mentions the edible mud of Kawainui.

He lepo ka ‘ai a O‘ahu, a mā‘ona no i ka lepo.

*Earth is the food of O‘ahu, and it is satisfied with its earth.*

Said in derision of O‘ahu, which was said to be an earth-eating land. In olden times, an edible mud like gelatine was said to fill Kawainui Pond. The mud, which was brought hither from Kahiki in ancient days, was once served to the warriors and servants of Kamehameha as a replacement for *poi*. [Pukui 1983:84–85]

3.3.3 ‘Ōlelo No‘eau #866

The following ‘ōlelo no‘eau describes the character of the ‘o‘opu (general name for fishes included in the families Eleotridae, Gobiidae, and Blennidae):

He ‘o‘opu ku‘ia, ka i‘a hilahila o Kawainui.

*A bashful ‘o‘opu, the shy fish of Kawainui.*

Said of a bashful person. Kawainui at Kailua was one of the largest ponds on O‘ahu. [Pukui 1983:94]

3.3.4 ‘Ōlelo No‘eau #1801

The followings ‘ōlelo no‘eau speaks of the Kailua and Kāne‘ohe ahupua‘a.

Kini Kailua, mano Kāne‘ohe.

*Forty thousand in Kailua, four thousand in Kāne‘ohe.*

A great number. Said by a woman named Kawaiho‘olana whose grandson was ruthlessly murdered by someone from either Kailua or Kāne‘ohe. She declared that this many would perish by sorcery to avenge him. Another version credits Keohokauouli, a *kahuna* in the time of Kamehameha, for this saying. He suggested sorcery as a means of destroying the conqueror’s O‘ahu enemies. [Pukui 1983:193]

3.3.5 ‘Ōlelo No‘eau #2092

The following ‘ōlelo no‘eau speaks of the Mākālei tree.

Mākālei, lā‘au pī‘i ona ‘ia e ka i‘a.

*Mākālei, the stick that attracts and draws the fish.*

Said of a handsome person who attracts the interest of others. Mākālei was a supernatural tree who attracted fish. [Pukui 1983:227]
3.3.6 ‘Ōlelo No‘eau #2118

The following ‘ōlelo no‘eau warns of the actions of carelessness referencing the hau bark in Kailua.

Mālama o ‘ike i ke kaula ‘ili hau o Kailua.

Take care lest you feel the hau-bark role of Kailua.

Take care lest you get hurt. When braided into a rounded rope, hau bark is strong, and when used as a switch it can be painful. [Pukui 1983:230]

[Emerson 1965:258–259]

3.4 Nā Mele (Songs)

The following section draws from the Hawaiian art of mele, poetic song intended to create two styles of meaning.

Words and word combinations were studied to see whether they were auspicious or not. There were always two things to consider the literal meaning and the kaona, or ‘inner meaning.’ The inner meaning was sometimes so veiled that only the people to whom the chant belonged understood it, and sometimes so obvious that anyone who knew the figurative speech of old Hawai‘i could see it very plainly. There are but two meanings: the literal and the kaona, or inner meaning. The literal is like the body and the inner meaning is like the spirit of the poem.

The Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that might arise. The ancient poets carefully selected men worthy of carrying on their art. These young men were taught the old meles and the technique of fashioning new ones. [Pukui 1949:247]

There exist a number of mele that concern or mention Kailua. These particular mele may also be classified as mele wahi pana (songs for legendary or historic places). Mele wahi pana such as those presented here may or may not be accompanied by hula (dance) or hula wahi pana (dance for legendary or historic places). As the Hula Preservation Society notes,

_Hula Wahi Pana_ comprise a large class of dances that honor places of such emotional, spiritual, historical, or cultural significance that chants were composed for them. Only the composers of the chants could know the deepest meanings, as they would be reflections of their feelings and experiences [...] Since the subjects of Wahi Pana compositions are extremely varied, their implementation through hula are as well. Coupled with the differences from one hula style and tradition to the next, _Hula Wahi Pana_ can be exceptionally diverse. They can be done sitting or standing, with limited body movement or wide free movement; with or without the use of implements or instruments; with the dancers themselves chanting and/or playing an implement or being accompanied by the ho‘opa‘a [drummer and hula chanter (memorizer)]. Beyond the particular hula tradition, what ultimately determines the manner in which a _Hula Wahi Pana_ is performed are the specific
place involved, why it is significant, the story being shared about it, and its importance in the composer’s view. [Hula Preservation Society 2014]

Mele or chant about Kailua frequently mention the two fishponds famous for their mullet and awa. They also tout the taro gardens of the area (Beckwith 1979:276; Drigot and Seto 1982:78), legends of Hi’iaka, Kahinahinaula, Mākālei Tree, Ka’ulu are a few (Hammatt. et al. 1999:6). Wai’auia is the land adjoining the now non-existent mākahā (sluice gate) of Kawainui Pond.

3.4.1 I Lanikai

The following mele was written by Nancy Gustafsson. It was recorded by Ledward Ka’apana’s group with vocals sung by Darren Benitez. Mr. Benitez also sang the mele at the 1993 Merrie Monarch Festival for Johnny Lum Ho’s halau (a place of learning) entry in the “Miss Aloha Hula” competition (Huapala n.d.).

Kau mai la i luna o mahealani, The moon above us was shining bright,

Ua hula kaua i ke one kea, While we were dancing on sand so white,

Pukukui kaua i ke ahiahi, So close together ’neath the evening sky,

E ‘uhene la a pili kaua i Lanikai Oh, what a joy to be with you at Lanikai

Aia ko’u mana’o i Lanikai My thoughts are often at Lanikai,

I laila kaua i nanea ai, Relaxed together, just you and I,

I ka pa konane a ka mahina, The moon was shining high in the sky,

Ha’awi au i ko’u aloha ia ‘oe i Lanikai I gave my love away to you at Lanikai

[Huapala n.d.]

3.4.2 Hanohano Wailea

This mele written by Kīhei de Silva began as a “hula kālā’au” (dance with sticks). It is the school song of Ka’ōhao Charter School. This mele is 22 years old but its author recently added four new verses to the original four-verse composition—“an accomplishment,” he says, “that finally brings the song to its proper conclusion. It was only half a lei (garland); now it’s whole.” De Silva’s complete explanation of the song—or “as complete as it gets” follows:

Hanohano Wailea i ka’u ‘ike lā I hold Wailea in high regard; she is glorious in my sight

Ka wahine kia’i ‘au i ke kai She is the guardian-woman who reaches into the sea

Pūnāwai ‘ili ili nehe i ke kai lā The pebbles of Pūnāwai clatter in the tide
Its cool waters wander through the hala grove.

Kaʻiwa rests high above

Ahiki moves closer to her, to her mountain ridge

Alāla stretches taut the skin of ʻōpuku clouds

The descendants of Kūaliʻi draw near

The sheltered sea of Kaiʻōlena is what I love

Fond memories come to rest at Mokulua

They are husband and wife in the red rays of sunrise

May the eyes observe and understand

Kaʻōhao attends to this mele

Of my beautiful land spread out below

Tell the song’s refrain

Glorious is Wailea in my sight.

[de Silva 2016]

3.5 Nā Oli (Chants)

Oli, according to Mary Kawena Pukui (Pukui 1995:xvi–xvii), are often grouped according to content. Chants often were imbued with mana; such mana was made manifest through the use of themes and kaona. According to Pukui, chants for the gods (pule) came first, and chants for the aliʻi, “the descendants of the gods,” came second in significance. Chants “concerning the activities of the earth peopled by common humans,” were last in this hierarchy (Pukui 1995:xvi–xvii). Emerson conversely states,

In its most familiar form the Hawaiians—many of whom [were lyrical masters]—used the oli not only for the songful expression of joy and affection, but as the vehicle of humorous or sarcastic narrative in the entertainment of their comrades. The dividing line, then, between the oli and those other weightier forms of the mele, the inoa, the kanikau (threnody), the pule, and that unnamed variety of mele in which the poet dealt with historic or mythologic subjects, is to be found almost wholly in the mood of the singer. [Emerson 1965:254]
While oli may vary thematically, subject to the perspective of the ho‘opa‘a (chanter), it was undoubtedly a valued art form used to preserve oral histories, genealogies, and traditions, to recall special places and events, and to offer prayers to akua and ‘aumākua (family gods) alike. Perhaps most importantly, as Alameida (1993:26) writes, “chants […] created a mystic beauty […] confirming the special feeling for the environment among Hawaiians: their one hānau (birthplace), their kula iwi (land of their ancestors).”

3.5.1 Oli Komo no Kawainui

‘Ahahui Mālama i ka Lōkahai is “devoted to the preservation of native species and ecosystems and the importance of their relationship to Hawaiian culture.” They recite the following chant, Oli komo no Kawainui, prior to their entrance into Kawainui. Their website reports the chant was “composed in the year 2000 by an ‘Ahahui member with training in Hawaiian protocols and chant under respected practitioner Kumu John Keola Lake, a kupuna advisor to our organization.”

KAHEA

Hā‘ale‘ale ka leo (o) ka ‘alae
He māpunu leo polō ‘ai i ka la‘i
He pule kānaenae i Ulupō
I ulu pono la i Ulumawao

CALL

Full is the voice of the ‘alae
A voice of invitation in the calm
A chant of request to Ulupō
That true inspiration reaches Ulumawao

Kakali ka neke i ka nihi
(i) ka niʻo o ka wahinewai
Ke nihi ka hele nei, e!
Ke nihi ka hele nei, e!

PANE

Mawehe ‘ia ka neki i ka wai
E hōʻike i ka wai ‘ānapanapa
Hōʻike pū nō ka manaʻo pono
E mai, hele mai, i nā pōhaku
E mai, hele mai, eia nō mākou nei

RESPONSE:

The neki bullrushes part at the water
Revealing the shimmering waters
Revealed along with your righteous intent
Approach, enter, at [Nā Pohaku]
Approach, enter, here we are

[‘Ahahui Mālama i ka Lōkahai 2012]

The chant contains kaona or hidden meanings; ‘Ahahui provided the following explanations, copied verbatim from their website:

‘alae: The ‘alae (Hawaiian gallinule) is an endangered endemic waterbird of Kawainui, and in ancient times, the ‘alae symbolized the voice of the chief whose opinion swayed the chiefly council. Some consider the voice of the ‘alae an ill omen, but as a kinolau of Hauwahine (see wahinewai, below) the voice of the ‘alae is an auspicious thing at Kawainui!
mapuna leo: literally: wafted voice of few words; an apt description of the voice of the ‘ālae! But ‘mapuna’ also alludes to the life-giving freshwater springs that arise in Kawaihuanui.

polo ‘ai: literally: to summon, to invite. Also a veiled allusion to the famous lepo ‘ai (edible mud) of Kawaihuanui, one of the ‘ai kamaha‘o (astonishing foods) of the land.

Ulupō heiau and Ulumawao hill lie before and behind you as you chant at Nā Pohaku, and the play on ʻulu (growth, inspiration) is intended here.

neke: an ambiguous reference to two plants of Kawaihuanui: a fern, and also a bullrush of the same name. A variant of the name is ‘neki.’

ni‘o: doorway or sacred threshold, but also highest point, pinnacle, as the stone of Nā Pohaku are perched on high, overlooking the wetlands.

wahinewai: a veiled reference to Hauwahine, the mo‘o-wahine (woman lizard-goddess) of Kawaihuanui.

nihi ka hele: to proceed with careful observance of kapu. Proceeding with care is part of the protocol of respect.

‘ānapanapa: The ‘ānapanapa is an indigenous plant that grows around Nā Pohaku, but also describes the shimmering waters of Kawaihuanui. [‘Ahahui Malama i ka Lokahi 2012]

3.5.2 He Oli no Kailua

This oli was composed by Robert Lokomaika‘iokalani Snakenberg in 1977. It was composed for three of his Hawaiian language students at Kailua High School to perform at the Hawai‘i Secondary Schools Hula Kahiko Competition in the following year. Mr. Snakenberg was inspired by his love for these students, his Kailua High alma mater, and his Kailua home (Ka‘iwakīloumoku 2016).

Aloha wale ‘oe, e Kailua
Kahi malu i ka uluniu ma ke kula.
Kakahiaka nui, uli nō ka pali
Wehe mai ke alaula, ka mālamalama.
Ke pā aheahe mai ka Moa‘e,
Lawe mai i ka ua nihi i ka pali.
Kū kilakila ‘oe, e Olomana,
E kia‘i pono i Kawaihuanui.
E ʻō mai ‘oe, e Kailua
Mai Ka‘elepulu a i Ka Mahinui.

You are indeed beloved, O Kailua,
Peaceful place in the coconut grove on the plain.
In the early morning, the pali is dark,
When the dawn breaks, all is enlightened.
When the Moa‘e trades blow gently,
It brings the rain creeping on the pali.
You stand majestic, O Olomana,
Watching carefully over Kawaihuanui.
Answer our call, O Kailua
From Ka‘elepulu to Mahinui Ridge.
[Ka‘iwakīloumoku 2019]
Section 4 Traditional and Historical Background

4.1 Pre-Contact to Early 1800s

Kailua Ahupua’a is one of the older settlements among the islands. Coring in Kawainui Marsh shows the sand bar comprising present day Kailua Town was formed around the first century AD, before the arrival of settlers. Over time this bay slowly closed off to the open sea and became a mix of salt water and fresh water, used in pre-Contact times as fishponds. These fishponds, known as Kawai Nui and Ka‘elepulu, later became primarily fresh water. Palynological analyses of the sediments in the ponds have identified a thick pollen layer in the lower sediments, attributable to a surrounding loulu (all species of native fan palms; Pritchardia) forest, which began to diminish about AD 400. The decline in pollen content over time may be attributed to the arrival of settlers and their tag-along, the rat, both of whom would have utilized the loulu seed as a food source. In addition, clearing for settlement and agriculture would have contributed to the destruction of these loulu forests. Core samples taken from the ponds show an increase of charcoal deposits through the tenth century, when Kailua appears to have been widely settled (Hammatt et al 1990:54–56).

Kamakau (1992:457) notes that one of reasons Kailua was attractive to the ali‘i was its great natural fishponds, and the complex of artificial salt water ponds between Kailua and Kāne‘ohe in the Mōkapu area; these ponds are called Halelou, Nu’upia, and Kaluapuhi.

Traditional history describes Kailua as the residence of many prominent O‘ahu ruling chiefs. There is Olopana “who with his brother Kahiki‘ula came to O‘ahu from Kahiki […] He is said to have established several heiau in Kāne‘ohe and Kailua, including Pahukini and Holomakani in the Kawainui area” (Kelly and Nakamura 1981:3). Kailua is known to have contained ten heiau or religious places of worship: 1) Alāla, 2) Hālaualolo, 3) Holomakani, 4) Ka’anahau, 5) Keikipu‘ipu‘i, 6) Kukapoki, 7) Kukuipilau, 8) Pahukini, 9) Pu‘uwanī‘ani‘a, and 10) Ulupō. Of these, Alāla Heiau is located east of the project area. Other legends speak of the fifteenth century ruler O‘ahuakākūhihewa, the famous paramount chief who ruled from Kailua among other places on O‘ahu:

The legends speak in glowing terms of the prosperity, the splendor, and the glory of Kakuhihewa’s reign. Mild yet efficient in his government, peace prevailed all over the island; agriculture and fishing furnished abundant food for the inhabitants; industry thrived and was remunerated, population and wealth increased amazingly; and the cheerful, liberal, and pleasure-loving temper of Kakuhihewa attracted to his court the bravest and wisest, as well as the brilliant and frivolous, among the aristocracy of the other islands. Brave, gay, and luxurious, versed in all the lore of the ancients of his land, a practical statesman, yet passionately fond of the pleasures of the day, wealthy, honored, and obeyed, Kakuhihewa made his court the Paris of the group, and the noblest epitaph to his memory is the sobriquet bestowed on his island by the common and spontaneous consenus of posterity—‘Oahu-a-Kakuhihewa.’ [Fornander 1996:2:273]

O‘ahuakākūhihewa built a government house called Pāmoa in the plain known as ‘Ālele, located at present Kapa‘a Street and North Kainalu Drive. This account by Kamakau expresses the successful reign of the leader:
At Alele in Kailua he [Kākuhihewa] erected a government house for himself 40 fathoms long, and 15 fathoms wide, which was named Pamoa. The main purpose of this house was for debating land divisions, claiming ancestors, genealogy registration, practice with war club, spear thrusting, astrology, designing, astronomy, konane, instruction in royal ancestral songs, royal songs, running, cliff leaping, bowling, sliding, boxing. [Kamakau in McAllister 1933:186]

In the seventeenth century Kūali‘i was born at Kalapawai in Kailua (Beckwith 1940:395; Fornander 1880:278). Kalapawai means “the water ridge” and was an early Hawaiian surfing spot. The exact location of this place is unknown (Soehren 2017). Birth rituals, including the piko cutting ceremony for the child, were performed at Alāla Heiau, located on the coastal promontory of Alāla or the hill above. The sacred drums, Hāwea and ‘Ōpuku were moved from Ho‘olonopahu and taken to Alāla at Kūali‘i’s birth for this ceremony (Thrum 1923:92). When Kūali‘i later dedicated the heiau, he saw a fire on Moloka‘i, and did not wish to go on with the procession to the heiau with the light of the fire in the sky. He talked to his kahuna, who prayed to the gods, and the fire was extinguished and “the procession was able to march at once” (Kamakau in Sterling and Summers 1978:238). In the pule or chant provided below of Kapaaahulani, Kūali‘i is “made to say of himself that he knew of Tahiti.” As Fornander explained,

_Ua ike hoi wau ia Tahiti,_
_He moku leo pahaohao wale Tahiti._
_No Tahiti kanaka i pii a luna_
_A ka iwikuamoo o ka lani_
_A luna keehi iho,_
_Nana iho ia lalo._
_Aole o Tahiti kanaka;_
_Hookahi o Tahiti kanaka, he haole._
_Me ia la he Akua,_
_Me oe la he kanaka_
_He kanaka no._

At the time when Kualii lived and ruled, (say 1675 as the central epoch of his exploits) the visits and excursions of the Hawaiians in their own canoes to foreign lands had been discontinued for many generations, and while the memories of former journeys were kept green in numerous families, yet since the days of […] no song nor saga records such journeys by the boldest and bravest of the Hawaiian heroes, until this avowal of Kualii stands forth in its solitary grandeur, awakening discussion on the following points: 1. Which was the Tahiti that Kualii visited? 2. Did he visit it in his own vessel, canoe or peleleu, or was he, like Kaiana in after years, taken away by a foreign vessel and returned by the same? [Fornander 1918-1919:5:241]
Fornander goes on to say that Hawaiians generally think of Tahiti as a foreign country, “a country outside of and beyond their own group”:

When therefore Kualii about the middle or latter part of the seventeenth century speaks of the Tahiti which he visited as being a county with a leo pahaohao (puzzling voice), he did not and could not mean any of the Central or South Polynesian Islands. Moreover, when he says that he there saw the ‘haole’—the white-skinned man—the inference is plain that it was not a Tahiti inhabited by kindreds of his own race [...] The probability, therefore, is strong that the Tahiti he refers to was either the western coast of Mexico or Manila where the Spaniards were settled and held possession. [Fornander 1918-1919:5:241]

In the eighteenth century, during Kahekili’s rule of O’ahu after he conquered the island in 1780, his chiefs lived in Kailua (Mustapha 1985:2). After Kamehameha I conquered O’ahu in 1799, he spent time going to different places helping people restore their lands from the effects of war. Kamehameha came to Kailua and worked side by side with the people to clean and restore Kawai Nui Fishpond. When Kamehameha and his warriors arrived in Kailua there were so many to feed that only the first comers got to eat the normal Hawaiian diet; “[T]he warriors and servants of Kamehameha ate the mud which had been put in the calabashes,” referring to the edible mud or lepo ʻai ʻai of Kawai Nui (Ka Naʻi Aupuni 4 September 1906 in Sterling and Summers 1978:232). When Kamehameha III came to the windward side, one of his retreats was at Alāla. He was said to have fished in the sea nearby. A story of a beached whale in Kailua has been reported in Ke Au Hou (14 April 1911). Every part of the whale was utilized for its rich meat (Appendix A).

4.1.1 The Māhele (1848)

The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—that introduced private property into Hawaiian society. In 1848, the Crown and the aliʻi received their land titles. Kuleana awards to commoners for individual parcels within the ahupuaʻa were subsequently granted in 1850. The Crown Lands were considered the private lands of the monarch, and many lands were sold or mortgaged during the reigns of Kamehameha III and IV to settle debts to foreigners. To end this practice, the Crown Lands were made inalienable in 1865, and their dispensation was regulated by a Board of Commissioners of Crown Lands, which effectively put them under the administrative control of foreign-born residents (Kameʻeleihiwa 1992:310). Before the passage of the Act of 3 January 1865, which made Crown Lands inalienable, Kamehameha III and his successors did as they pleased with the Crown Lands, selling, leasing, and mortgaging them at will (Chinen 1958:27).

In 1850, the Privy Council passed resolutions that affirmed the rights of the commoners or native tenants. To apply for fee-simple title to their lands, native tenants were required to file their claim with the Land Commission within the specified time period of February 1846 and 14 February 1848. The Kuleana Act of 1850 confirmed and protected the rights of native tenants. Under this act, the claimant was required to have two witnesses who could testify they knew the claimant and the boundaries of the land, knew that the claimant had lived on the land for a minimum of two years, and knew that no one had challenged the claim. The land also had to be surveyed.

Not everyone who was eligible to apply for kuleana lands did so and, likewise, not all claims were awarded. Some claimants failed to follow through and come before the Land Commission,
some did not produce two witnesses, and some did not get their land surveyed. Out of the potential 2,500,000 acres of Crown and Government Lands, less than 30,000 acres of land were awarded to the Native Hawaiian tenants (Chinen 1958:31).

A total of 71 Land Commission Awards (LCA) were claimed before the Board of Commissioners to Quiet Land Titles (Land Commission) in Kailua. In the Māhele records, 123 house lots are mentioned in the awards for Kailua (Waihona 'Aina 2020). Where “kahuahale,” or homes, are mentioned, these house lots are typically bounded “on all sides by upland,” indicating an overwhelmingly inland settlement pattern. Early twentieth century testimony (Kailua Library 1977:10, Solomon Mahoe interview) indicates the fishermen at the shore traded ocean fish for taro with the upland farmers, probably a long-established pattern. LCA lots in Kailua mention numerous fisheries and pools where fish would have been raised. The current study area has no kuleana LCA lots associated with it. On an early 1884 map (Figure 9), only one house is shown near the coast, in the adjacent ‘ili of ‘Ala’apapa.

At the time of the Māhele, it appears Kailua, Kāne‘ohe, and Waimānalo were considered choice locations and as such were awarded to the Crown, the royal family, and then to important ali‘i, particularly warrior chiefs for Kamehameha I. Portions of Kailua Ahupua‘a were awarded to Queen Hakalelepono Kalama, excepting individual kuleana. Within the ahupua‘a, the Crown took for itself the ‘ili of Kawaiolā, which surrounds the Olomana peaks, with a portion in Maunawili Valley, a major portion descending to the sand barrier, and another detached portion of the ‘ili located along the shoreline. Princess Victoria Kamāmalu was awarded the ‘ili of Ka‘elepulu, which has both lowland and upland portions (Kelly and Nakamura 1981:14). The LCA 7713 was awarded to Princess Victoria on 19 March 1855. In the Foreign Testimonies 7713 she had tried to claim the Kawaiolā ‘Ili where the project area is located but had no success in doing so.

In the Māhele records, 123 house lots were mentioned in the awards. This most likely does not offer a complete reflection of habitations, as virtually all of the 171 claimants probably lived within the ahupua‘a.

There were two awards granted a short mile away from the project area. With a distance of 0.716 miles southeast of the project area in the ‘ili of Alaapapa, Ka‘ōhao, Kailua Ahupua‘a, O‘ahu Island, Mahuia was awarded LCA 2657. Prior to Mahuia being awarded the LCA 2657, a Foreign Testimony was given by Nanaielua. Nanaielua had testified that two parcels of land in the ‘ili of Kaopa, Ka‘ōhao, Kailua, Oahu, belonged to Mahuia. Mahuia owned four taro patches in Ka‘ōhao. This land was given to Mahuia by the konohiki named Hema during the time of the High Chiefess Liliha. The testimony further explains the land was taken from Mahuia by the konohiki.

On 23 February 1853, Mahuia was awarded two parcels of land from LCA 2657. A. Bishop had surveyed both parcels of land. It was bordered by the sea and the konohiki’s land. The parcel of land closest to the project area was 1 acre and 462 sq ft. Mahuia had paid $5 to the Hawaiian Kingdom to obtain the said lands.

The second LCA near the project area was 0.722 miles southwest. LCA 4249B was in the ‘ili of Kaelepulu. A Foreign Testimony was given by supporter Mooluhi. Mooluhi swore that claimant Kau owned lands in the Mooaina Hoomai of the Kaelepulu ‘Ili. Mooluhi testified that six taro patches were on the said property. Apparently, another supporter for claimant Kau was a
Figure 9. Portion of the 1884 Jackson map of Kailua Bay showing a single home located in the adjacent ‘ili of Alaapapa.
person named Okena. Kau reported a letter was written by Okena, which Okena had carried to the Office of the Land Commission. The claim could not be located. Yet, the Foreign Testimony #4249B also states the land was given to Kau by a konohiki named Kahuna, during the time of Premiere Kaʻahumanu.

On 29 November 1854, Kau was awarded three parcels of land in Kaelepulu ‘Ili, Kailua Ahupua’a, O‘ahu Island. A. Bishop was responsible for surveying the land. Kau had paid a sum of $6 to the Hawaiian Kingdom for the said lands. LCA 4249B stated parcel one was a total of 58/100 of an acre, parcel two was a total of 5 and 6/100 acres, while parcel three was 5 and 88/100 acres. It has been noted in Foreign Testimony #4249B that Kau tried to claim a fishpond near his house lot. The konohiki objected to this claim, and Kau was not able to obtain the fishpond.

‘Aʻalapapa is an ‘ili located approximately where the subdivision of Lanikai now exists. ‘Aʻalapapa is also a street name which according to Hawaiian Street Names (Budnick 1989:15) should be “‘Āla‘apapa; probably means a long cloud formation”; it could also be an ancient hula or a place to speak publicly. Queen Kalama received the entire Kailua Ahupua’a in the Māhele.

4.1.2 Commercial Agriculture

For nearly 100 years following the Māhele, Kailua grew into an important area of commercial agriculture. Until the early 1900s, rice was the major crop of Kailua, replacing numerous lo‘i in the former taro lands of Maunawili. Kawai Nui, the area between the present Hāmākua Drive and the beach, and the area around Kaʻelepulu Pond provided areas for the expansion of rice.

By the early 1900s, the majority of the lo‘i in Kawai Nui marsh were converted to rice paddies, leaving little to no physical evidence of previous taro cultivation. The Reciprocity Treaty between the United States and the Kingdom of Hawaii allowed for the duty-free exportation of Hawaiian sugar to the U.S. This 1876 treaty greatly fanned the flame of the already smoldering Hawaiian export sugar industry. The duty-free export of rice was also covered under the treaty. However, it was the growing Asian population, first Chinese and later Japanese who were brought to Hawaiʻi to supply labor to the escalating export sugar industry, that provided the main impetus for the expansion of rice growing. With local consumption steadily growing and duty-free export, rice growing in Hawaiʻi had a boom period of its own. Unlike the adjacent ahupua’a of Waimānalo, Kailua’s main cash crop at this period was rice rather than sugar.

In 1880, Bowser describes rice fields in “one-fourth” of the “valley of Kawaiinui” and plans for additional rice fields in “the remainder”:

In this neighborhood, from a knoll or plateau about a quarter of a mile square on which Mr. Kahuhu has a farm, I got another magnificent view quite equal to anything I had yet seen. All around were towering peaks and lofty mountains. To my left, as I looked eastward, was the valley of the Kawaiinui, about one-fourth of which is already laid out in rice plantations. The remainder will be brought under cultivation during the coming season for the same purposes. Before me, still looking east, there is an uninterrupted view of the sea. In the bosom of the valley there is a large pond or lake celebrated for its mullet and awa. The latter fish grows here to four feet in length. Wild duck and the famous Hawaiian goose are also to be found here in abundance. Between this fish-pond of Kawaiinui and the sea there is level land about one mile and a quarter long by three-quarters of a mile in width,
covered with the most beautiful green grass I ever saw. To the right is a wide extent of plain, well grassed, where large herds of cattle and droves of horses roam at will. At the south end of the plain is a large grove of cocoa nut palms. To the north is the open sea. On this delightful morning, riding amidst such scenery and surrounded by such evidences of the increasing civilization and prosperity of the country, I feel twenty years younger than when I landed in Oahu. [Bowser 1880:408]

In this neighborhood, from a knoll or plateau about a quarter of a mile square on which Mr. Kahuhu has a farm, I got another magnificent view quite equal to anything I had yet seen. All around were towering peaks and lofty mountains. To my left, as I looked eastward, was the valley of the Kawaiinui, about one-fourth of which is already laid out in rice plantations. The remainder will be brought under cultivation during the coming season for the same purposes. Before me, still looking east, there is an uninterrupted view of the sea. In the bosom of the valley there is a large pond or lake celebrated for its mullet and awa. The latter fish grows here to four feet in length. Wild duck and the famous Hawaiian goose are also to be found here in abundance. Between this fish-pond of Kawaiinui and the sea there is level land about one mile and a quarter long by three-quarters of a mile in width, covered with the most beautiful green grass I ever saw. To the right is a wide extent of plain, well grassed, where large herds of cattle and droves of horses roam at will. At the south end of the plain is a large grove of cocoa nut palms. To the north is the open sea. On this delightful morning, riding amidst such scenery and surrounded by such evidences of the increasing civilization and prosperity of the country, I feel twenty years younger than when I landed in Oahu. [Bowser 1880:408]

Water buffalo were also used by rice farmers “at Kawaiinui Swamp and elsewhere” (Char and Char 1988:44). Despite the conversion of taro lands around Kawai Nui Marsh to rice, areas mauka of the marsh continued to be cultivated in taro as shown in an 1885 photograph (Figure 10). McAllister (1933:377) also reports the presence of “taro patches” along Hāmākua Stream in the past that almost certainly would have been converted to rice fields.

There were multiple rice mills functioning in Kailua Ahupua‘a, one of which was located in the vicinity of the present day Castle Medical Center. “The principle landowners at this time were N.R. Rice, Wong Leong, and W.G. Irwin, the Crown and heirs of J.S. Ellis” (Ewart and Tuggle 1977:8). By 1913, Wong Leong had sold his various parcels, land, leaseholds and rice mill to N.R. Rice and by this time, only five LCAs remained with their original claimant or heirs (Ewart and Tuggle 1977:9).

By the first part of the twentieth century, rice growers in California were using more modern production methods to reduce their costs. This competition led to the rapid decline in rice farming in Hawai‘i (Kelly and Nakamura 1981:51–63) and abandonment of these marshy lands. Coulter and Chun (1937:53) also mention that the prohibition of Chinese immigration to Hawai‘i beginning in 1876 was another reason for the decline in rice cultivation. Rice was followed by truck farming of taro and western crops. The truck farming gave way to suburbanization as Kailua became the premier bedroom community for growing Honolulu.
Figure 10. Stream and *lo‘i kalo* system *mauka* of Kawainui, 1885 (Hawaiian Historical Society)
4.1.3 Ranching

Kelly and Nakamura’s history (1981:34–35) indicates Government lands amounting to 1,214 hectares (3,000 acres) were sold to 21 buyers in Kailua between the years 1849 and 1863. The largest parcel, in the ‘ili of Maunawili, went to William Jarrett in 1849. The second largest parcel was 161.7 hectares (399.5 acres) to T. Cummins in Mokulua. Both parcels were used for ranching. Other land holdings turned into ranch land in the mid-1850s included the ‘ili of Mōkapu and Oneawa (by William Sumner and J.I. Dowsett) and the ‘ili of Puanea and ‘Ōhuauli (by the son of Paula Marin, Paul F. Manini). These large land holdings were used for many years as ranch lands before becoming part of Castle’s Kaneohe Ranch. Cattle, sheep, and horses were thus allowed to roam at will through many parts of Kailua and would have destroyed many gardens and abandoned habitation areas. Kelly and Nakamura (1981:69) point out that although specific records are not available, based on tax information, it is not unreasonable to estimate that several thousand head of cattle were grazing in Kailua by 1875.

A Kaneohe Ranch report of a roundup relates that 300 cattle were driven from Maunawili to their main corrals in Oneawa. Their route was Kapa’a Road, today’s Kapa’a Quarry Road. “Cattle that strayed into Kawainui marsh were driven out of the marsh and back to the road by Japanese helpers following on foot” (Brennan and Drigot 2009:183). It has also been reported that a portion of Ulupō Heiau was used as a cattle pen in the 1900s (McAllister 1933:187).

In the early 1900s, Kaneohe Ranch (Castle Trust) eventually acquired much of the land in Kailua (Hall 1997:84). Included within this acreage were areas that had been bought, sold, let, and used as ranch land by numerous parties since the mid-1850s. The 1906 Donn map (Figure 11) shows the project area within grazing lands. A 1919 U.S. War Department map (Figure 12) shows what appear to be numerous fence lines and enclosures, probably related to ranching and dairy activities.

Kaneohe Ranch, in addition to ranching, grew pineapple and sugarcane. With the decline of rice farming around the margins of Kawai Nui, cattle stock moved onto the abandoned agricultural lands. Ranching in Kailua continues today, albeit on a drastically reduced scale, along Pu‘u o ‘Ehu ridge.

4.2 1900s

Truck farming of avocado, papaya, and western crops followed the decline of rice agriculture. The Kūkanono slopes along Kailua Road and extending toward Kawai Nui Marsh were utilized for cultivation, raising chickens, and pig farming. The Kailua Fruit Stand, owned and operated by the Nishikawa family, was the most successful of the Kūkanono truck farms (Figure 13 and Figure 14). The stand was in the location of today’s Christ Church Uniting Disciple and Presbyterians on Kailua Road. The family worked and leased the lands for 25 years until the development of the Kūkanono neighborhood (Hollier 2011).

In the 1930s, Kenzo Matsuda leased land adjacent to the old Pali Road where he and his family constructed a building that was well known in Kailua. Matsuda Store was also the family home for many years. The store was adjacent to Kawai Nui Marsh (Figure 15) just west of the current location of Castle Medical Center on today’s Ulukahiki Street. Matsuda’s Store was a general store
Figure 11. Portion of a 1906 Donn Hawaii Territory Survey map of Oahu Island, with land use (RM 2374) depicting the study area within grazing lands.
Figure 12. Portion of a 1919 U.S. Army War Department Fire Control Map, Waimanalo quadrangle depicting historic ranching activities in the vicinity of the study area
Figure 13. Kailua Fruit Stand in Kūkanono ca. 1930s (Edna Nishikawa Kimura and Some Nishikawa) (Baker 1937)
Figure 14. Nishikawa family with their truck farming equipment in Kūkanono (Wu 2013)

Figure 15. Matsuda family store and residence ca. 1930s (Hawai‘i State Archives)
that provided the local farmers with all their needs including gasoline and livestock feed (Hollier 2011).

4.2.1 Fisheries

The nearest fisheries to the project area were the government-administered Kawaiola Fishery and Alaaapapa Fishery. Southeast of Kawaiola Fishery was Alaaapapa Fishery, that makes up the western half of modern-day Kaʻōhao. Northwest of Kawaiola Fishery was Kailua Fishery owned by N.R. Rice. The 1913 Monsarrat map (Figure 16) depicts off shore fisheries’ boundaries. The information from this map shows the lands of the project area were in a resource area rich with fish.

4.2.2 Residential Development

4.2.2.1 Coconut Grove

In 1909, the Hawaiian Copra Company was established by Albert and Fred Waterhouse on the sandy area that is today bounded by Kalāheo and Oneawa streets. Over 130,000 trees were planted on 80.9 hectares (200 acres) leased from J.B. Castle in an operation that involved leveling “the sand dunes and smooth[ing] out the sand hillocks” (Hall 1997:77–78). The name Coconut Grove stuck, referring to most of the sand barrier area of Kailua. Clearly this leveling and smoothing of former dune areas had a great impact on the archaeological record of this area of Kailua.

In 1916, the Waterhouse’s copra endeavor failed and they sold their “Coconut Grove” to A.H. Rice, who planned a residential subdivision. “In 1924, Earl H. Williams, of Liberty Investment Co., acquired 200 ac (80.9 ha) from A. H. Rice and began the lot subdivision process” (Drigot and Seto 1982:36).

4.2.2.2 Lanikai

Lanikai is a housing subdivision, first built up in the 1910s and 20s, which consists of the ʻili of Kawaiola, ʻAlaʻapapa, and Mokulua. The area was also called Kaʻōhao. Clark describes how Lanikai came to be the name for the area traditionally known as Kaʻōhao:

Lanikai is the name of the residential community situated in the headlands between Kailua Bay and Waimanalo Bay. Lanikai is not a proper Hawaiian word but was devised by this community’s promoters. The name probably was intended to mean ‘royal sea’ or perhaps ‘heavenly sea,’ which in proper Hawaiian, would have been Kailani, but the words were transposed and joined as they would be in English, rather than in Hawaiian.

The land that comprised the original Lanikai tract was called Kaʻōhao, ‘the tying.’ One story about the naming of Kaʻōhao concerns a chief who played a game of kōnane with two women. The women wagered themselves against the chief’s double canoes, their contents, and the crews. The unscrupulous chief cheated and won and then led the women, tied together, to the place where his canoes were beached. Thereafter the landing was called Kaʻōhao, ‘the tying,’ because of this incident. Kaʻōhao also means a swelling, as from the accumulation of fluids in a body during sickness. Other stories are told of people from this area who suffered from such a dropsical condition, again accounting for the name Kaʻōhao. [Clark 1977:175]
Figure 16. Portion of the 1913 Monsarrat map of O‘ahu Fisheries, Kailua Bay Section showing the vicinity of the project area location
The 1928 USGS topographic map (Figure 17) depicts the area shortly after Kaʻōhao was purchased and developed by Frazier and the Trent Trust Company. Extensive roads and numerous structures were built along the Kailua coast and in Kaʻōhao. The Mid-Pacific Country Club was further southwest of the project area. A military tank is present on Puʻu Hālo directly west of Alāla Point. Popoiʻa Island known commonly as Flat Island lays north of Alāla point. The 1936 and 1943 U.S. Army War Department terrain maps (Figure 18 and Figure 19) depict the continued residential development of Kailua. The Lanikai exonym takes the place of former ʻili names Alaʻapapa and Kuailima. Located directly across the project area at Alāla Point, Lanikai Tower is identified. The lands of the project area are still undeveloped.

### 4.2.2.3 Powlison House

In the 1920s, Arthur and Anne Powlison built their house atop Alāla Ridge, just mauka of the study area known as the “Hilltop House” (Dunn 2009:245). The couple moved to Hawaiʻi in 1924 when Arthur accepted a position as superintendent of the Department of Parks and Recreation. Following a family picnic in the Kaʻōhao area, the family explored the ridge and found a heiau which sparked their vision of creating the Hilltop House. Prior to planning and construction, the Powlisons sought advice from a Native Hawaiian acquaintance, as the proposed house site sat directly in front of a shrine, Alāla shrine (Puʻuhālo), which was used by fishermen to locate the best fishing grounds (Mahoe 2009:234–239). Additionally, Alāla Heiau once stood in this area previous to building the home. Although the Native Hawaiian friend gave the Powlisons his blessing, the family was cautioned to not destroy or remove any rocks from the property, and this suggestion was honored. The Hilltop House was used by the military during World War II (WWII) as a training center and vantage point for three years. The Hilltop House is a private family residence still within the Powlison family; it was renovated in 2008 (Dunn 2009:247).

### 4.3 1950s to Present

By the 1950s, the truck farms that had flourished since the turn of the century within the bounds of present day Kailua Town were slowly replaced by housing, municipal, and retail developments. Kailua was promoted as the bedroom community for Honolulu businessmen, only “8 miles and 20 minutes” from downtown (Hall 1997:141). Residential developments were planned for more outlying areas of Kailua Town, such as Olomana, Pōhākupu, and Oneawa Hills (Hall 1997:141).

Historic maps and aerial photographs show the study area and its vicinity changing from mostly agricultural to a residential area. The 1949 Kailua Coast aerial photograph (Figure 20) shows a few more residential homes built. The 1952 USGS topographic map (Figure 21) depicts a road to the north of the project area. No structures appear to be within the project area. The 1963 Kailua Coast aerial photograph (Figure 23), the 1971 Kailua Coast aerial photograph (Figure 24), the 1978 Kailua Coast aerial photograph (Figure 25), and the 1988 Kailua Coast aerial photograph (Figure 26) reveal the progression of residential homes being built and population growth. The photos clearly indicate brush on the project area without any human inhabitants.

The 1968 USGS topographic map (Figure 22) proclaims Popoiʻa Island as a State Bird Refuge with coral reefs north of Alāla Point. Kailua Beach Park is named, which was formerly considered Kawailoa Fishery. The Kaelepulu Playground is seen near Lanikai School, although it was previously unidentified in Figure 21. Mid-Pacific Country Club remains in place southwest of the project area. The project area remains undeveloped.
Figure 17. Portion of the 1928 Mokapu USGS topographic quadrangle, showing extensive roads built along the Kailua coast and in Lanikai/Kaʻōhao as well as the development of the Mid-Pacific Country Club.
Figure 18. Portion of a 1936 U.S. Army War Department terrain map, Mokapu quadrangle, depicting study area with urban development in the vicinity and presence of Kaneapu Place
Figure 19. Portion of a 1943 U.S. Army War Department terrain map, Kailua quadrangle, depicting study area with continuing urban development in the vicinity.
Figure 20. Portion of a 1949 Kailua Coast aerial photograph (UH SOEST) depicting study area in a mostly undeveloped flat area
Figure 21. Portion of a 1952 Mokapu USGS topographic quadrangle, depicting study area
Figure 22. Portion of a 1968 Mokapu USGS topographic quadrangle, showing project area within Kailua Beach Park
Figure 23. Portion of the 1963 Kailua Coast aerial photograph (UH SOEST) showing the study area and development in the vicinity.
Figure 24. Portion of a 1971 Kailua Coast aerial photograph (UH SOEST) showing the study area
Figure 25. Portion of a 1978 Kailua Coast aerial photograph (UH SOEST) showing the study area
Figure 26. Portion of a 1988 Kailua Coast aerial photograph (UH SOEST) showing the study area.
Section 5  Previous Archaeological Research

Early archaeological surveys of the Kawailoa/Lanikai coastal area of Kailua focused on the location of traditional surface structures such as shrines and heiau. Later archaeological surveys have focused on the inadvertent discovery of human remains, mainly in Jaucas sands near the shore, and in the subsurface excavation of pre-Contact (before 1778) and early post-Contact (ca. 1778-1850) cultural deposits. The locations of previous archaeological studies and any previous identified historic properties in the coastal Kawailoa and Lanikai neighborhoods are presented in Figure 27, Figure 28, Table 1, and Table 2. A summary of the projects and historic properties are listed in Table 1 and Table 2 and a more detailed discussion of archaeological projects follow.

Historic properties include archaeological sites and historic structures listed on the Hawai‘i Register of Historic Places (HHRP) and National Register of Historic Places (NRHP). These listed sites are mainly residential houses associated with important people in the history of Kailua, or built in a particular style associated with early Hawaiian architecture.

5.1 Early Surveys in the Kawailoa area

5.1.1 SIHP # 50-80-11-378 Alāla Heiau; SIHP # 50-80-11-18 Alāla Shrine

In Thomas Thrum’s (1906:48) listing of O‘ahu heiau he mentions: “Alala […] Kailua. – Celebrated as the heiau where the ceremonies attending the birth of Kualii were performed about 1640.” This was supposedly located at the foot of the hill near the coast. However, in a later article, Thrum downgrades Alāla from a heiau to a possible shrine.

Traditions for ages past has credited the heiau of Alala […] as having the distinction of being the temple where the ceremonies attending the royal birth of Kualii, about 1640, were performed, but of which no traces of any kind now remain. […] The site to which we were directed, while convenient and appropriate for a ko‘a, or fisher-folk’s heiau, gave no evidence by stones of the vicinity, contour of the hill at the point shown, or other feature, of ever having been the location of a temple of the importance alleged. [Thrum 1915:87–88]

J. Gilbert McAllister conducted an island-wide survey of O‘ahu in 1930. The only site he physically visited in the vicinity was Site 377 Ka‘elepulu Pond, which he places “about two-thirds of a mile from the shore.”

He tried to confirm many of the heiau mentioned by Thrum. McAllister (1933:190) designated the heiau as his Site 378, as an informant pointed out the location at Alāla Point, although no remains of any heiau were noted. McAllister agreed with Thrum that if a structure had been at Alāla Point, it was more likely to have been some type of simple shrine rather than a heiau. McAllister stated, “When the site was indicated by Solomon Mahoe, my reaction was similar to that already expressed by Thrum.”

In their Sites of O‘ahu, Sterling and Summers (1978) cite the following description of the natural shrine of Alāla on the top of the hill above the coastal point:

(Site 18) Where a cement sign with ‘Lanikai’ on it stands. Looking up from this spot we saw the most extraordinary house built on and over the huge rocks. It is
Figure 27. Portion of a 1998 Mokapu Point USGS topographic quadrangle depicting previous archaeological studies in the vicinity of the study area.
Figure 28. Portion of a 1998 Mokapu Point USGS topographic quadrangle depicting previous archaeological sites in the vicinity of the study area.
Table 1. Previous archaeological studies in the vicinity of the project area

<table>
<thead>
<tr>
<th>Reference</th>
<th>Type of Investigation</th>
<th>Location</th>
<th>Results (SIHP # 50-80-11**** unless otherwise noted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAllister 1933</td>
<td>Archaeological reconnaissance survey</td>
<td>Island-wide</td>
<td>Describes 16 sites within Kailua Ahupua’a, including Ka’elepulu Fishpond (Site 377) and Alāla Heiau (Site 378); in all, eight heiau reported for Kailua</td>
</tr>
<tr>
<td>Sterling and Summers</td>
<td>Archaeological reconnaissance survey</td>
<td>Island-wide</td>
<td>Consolidates from other studies sites of Oʻahu including ko’a at Popoi’a Island (Site 16), Kanepolu Stones (Site 17), Alāla Fishing Shrine (Site 18), and Waile’a Fishing Shrine (Site 19)</td>
</tr>
<tr>
<td>Hurbett and Haun</td>
<td>Archaeological inventory survey</td>
<td>Bellows Air Force Station</td>
<td>Identified seven historic properties including a field cultivation and irrigation complex (SIHP # 50-80-15-3309), an irrigation channel (SIHP # -3311), a complex of structural features (SIHP # -3305), a large platform or heiau (SIHP # -3306); a small stone platform (SIHP # -3307); a small hearth (SIHP # -3308); and a lithic scatter on the crest of a stabilized dune surface (SIHP # -3310)</td>
</tr>
<tr>
<td>Bath and Smith 1988</td>
<td>Data recovery</td>
<td>Lanikai 8-inch water main project</td>
<td>Four human burials recovered; SIHP # -3738</td>
</tr>
<tr>
<td>Pietrusewsky 1988</td>
<td>Data recovery</td>
<td>Kailua Beach Park</td>
<td>Single burial removed, osteological analysis completed</td>
</tr>
<tr>
<td>Smith and Kawachi 1988</td>
<td>SHPD burial removal report</td>
<td>1063 Koʻohoʻō Place, Lanikai/Kaʻōhao</td>
<td>Single burial (SIHP # -3740) recovered, osteological analysis completed</td>
</tr>
<tr>
<td>Kawachi and Smith 1989</td>
<td>SHPD field check</td>
<td>Kaʻiwa Ridge, Lanikai/Kaʻōhao, TMK: [1] 4-2-002:017</td>
<td>Notes two WWII bunkers; informant asserts former ko’a or kilo i’a locations, notes possibility of caves</td>
</tr>
<tr>
<td>Reference</td>
<td>Type of Investigation</td>
<td>Location</td>
<td>Results (SIHP # 50-80-11**** unless otherwise noted)</td>
</tr>
<tr>
<td>-------------------------------</td>
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<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dye 1991</td>
<td>Burial recovery</td>
<td>1414 ‘A‘alapapa Dr, Lanikai/ Ka‘ōhao, TMK: [1] 4-3-004:005</td>
<td>Burial recovered (SIHP # -3738) (see Hammatt and Shideler 1992 for work on same project)</td>
</tr>
<tr>
<td>Orndoff and Clark 1991</td>
<td>Archaeological</td>
<td>Phase I Flood Control project, Lanikai, TMKs: [1] 4-3-001 through 005</td>
<td>No historic properties observed except for modern refuse associated with nearby residences; archaeological monitoring recommended for future ground disturbances</td>
</tr>
<tr>
<td>Hammatt and Shideler 1992</td>
<td>Burial recovery</td>
<td>1414 ‘A‘alapapa Dr, Lanikai/ Ka‘ōhao, TMK: [1] 4-3-004:005</td>
<td>Archaeological disinterment of inadvertent burial finds (three individuals) (see Dye 1991 for work on same project); SIHP # -3738 used by Bath and Smith 1988</td>
</tr>
<tr>
<td>Cleghorn 1997</td>
<td>Data recovery</td>
<td>Ku‘ukama St</td>
<td>Reports recovered human skeletal material designated SIHP # -5530</td>
</tr>
<tr>
<td>Ormsby et al. 2003</td>
<td>Archaeological</td>
<td>Kalaheo Ave, Sewer project, Kailua, TMKs: [1] 4-2-001, 019, 020; 4-4-011; 4-4-022–032</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Fong et al. 2008</td>
<td>Archaeological</td>
<td>Kalaheo Ave, from intersection of Kaluamo‘o St to Kailua Rd, TMKs: [1] 4-3-011–016, 026–030, and 069</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Tulchin and Hammatt 2009</td>
<td>Archaeological</td>
<td>Geary Residence at 136 Haokea Dr, TMK: [1] 4-3-006:023</td>
<td>Identified SIHP # -7054, a pre-Contact hearth</td>
</tr>
<tr>
<td>Groza and Hammatt 2010</td>
<td>Archaeological</td>
<td>Wana‘ao Rd/Keolu Dr</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Reference</td>
<td>Type of Investigation</td>
<td>Location</td>
<td>Results (SIHP # 50-80-11**** unless otherwise noted)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>Groza et al. 2010</td>
<td>Archaeological monitoring and burial plans</td>
<td>Mokulua Dr 8-inch water main project, Part II</td>
<td>Two sets of inadvertently discovered human remains (SIHP #s -6937 and -7032) and a cultural layer within A horizon designated as SIHP # -6967</td>
</tr>
<tr>
<td>Wilson and Spear 2011</td>
<td>Archaeological assessment (no finds AIS)</td>
<td>Approx. 7-acre Lanikai/Kaʻōhao residential property, TMKs: [1] 4-3-05:077–086</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Hammatt and Shideler 2012</td>
<td>Literature review and field inspection</td>
<td>Kailua Beach Park</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Lance and Hammatt 2012</td>
<td>Archaeological assessment</td>
<td>211 S. Kalāheo Ave, TMK: [1] 4-3-014:010</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Hawkins and Desilets 2013</td>
<td>Archaeological assessment</td>
<td>1611 Mokulua Dr, TMK: [1] 4-3-001:009</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Fechner and Cleghorn 2014</td>
<td>Archaeological assessment</td>
<td>860 Mokulua Dr, TMK: [1] 4-3-008:049</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Mcintosh and Cleghorn 2014</td>
<td>Archaeological assessment</td>
<td>1561 Mokulua Dr, TMK: [1] 4-3-003:049</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Kahahane and Cleghorn 2015</td>
<td>Archaeological assessment</td>
<td>1055 Koʻoʻohōʻō Place, TMK: [1] 4-3-006:009</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Rice and Hammatt 2016</td>
<td>Archaeological assessment</td>
<td>Lanikai Elementary School</td>
<td>No historic properties identified</td>
</tr>
<tr>
<td>Blahut et al. 2018</td>
<td>Archaeological inventory survey</td>
<td>Kawaiola Rd Drainage Improvements; TMKs: [1] 4-3-009:001 por.; 4-3-010:008 and 088</td>
<td>Identified SIHP # -8166, a subsurface cultural deposit containing a single feature of potentially late pre-Contact to post-Contact origin, containing charcoal, few basalt and coral cobbles, faunal material, and marine shell midden</td>
</tr>
</tbody>
</table>
Table 2. Summary of identified historic properties in the vicinity of the project area

<table>
<thead>
<tr>
<th>SIHP # 50-80-11****</th>
<th>Site Type/Name</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0016</td>
<td>Site 16, Koʻa at Popoiʻa Island</td>
<td>A koʻa (fishing shrine) for moi was located near the center of the island; in 1946, a tidal wave almost completely destroyed it; no walls remain though a lot of coral is laying around</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>-0017</td>
<td>Site 17, Kanepolu Stones</td>
<td>Legendary stones said to have been guards set to watch for the coming of Kanepolu, a man who was born, grew up, and died in a single day; when he arrived, he slipped on a coral stone, leaving an imprint of his leg on it, and died</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>-0018</td>
<td>Site 18, Alāla Fishing Shrine</td>
<td>In 1939, an informant described it as a natural shrine on the top of Alāla that fishermen at sea looked at and used, along with Wailea Fishing Shrine, to locate the best fishing grounds in the sea; Alāla described as not only a shrine but a fish god</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>SIHP # 50-80-11****</td>
<td>Site Type/Name</td>
<td>Description</td>
<td>Reference</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>-0019</td>
<td>Site 19, Waile‘a Fishing Shrine</td>
<td>In 1939, an informant described it as a natural shrine above “Hale aloha” that fisherman at sea looked at and used, along with Alāla Fishing Shrine, to locate the best fishing grounds in the sea; Waile‘a described as not only a shrine but a fish god</td>
<td>Sterling and Summers 1978</td>
</tr>
<tr>
<td>-0377</td>
<td>Site 377, Ka‘elepulu Fishpond</td>
<td>Formerly a freshwater pond located inland about two-thirds of a mile from shore; pond was approximately 280 acres and limited by natural contours and some earth embankments</td>
<td>McAllister 1933</td>
</tr>
<tr>
<td>-0378</td>
<td>Site 378, Alāla Heiau</td>
<td>Heiau credited as being temple where ceremonies attending the royal birth of Kualii took place ca. 1640; no traces of the heiau remain and no evidence shows a heiau of this importance was located here</td>
<td>McAllister 1933</td>
</tr>
<tr>
<td>-2025</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains at a private home</td>
<td>Clark 1980</td>
</tr>
<tr>
<td>-3738</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains in two locations dating to pre-Contact period; at least four individuals documented by Bath and Smith (1988) and at least three individuals documented by Hammatt and Shideler (1992)</td>
<td>Bath and Smith 1988; Hammatt and Shideler 1992</td>
</tr>
<tr>
<td>-3740</td>
<td>Burial site</td>
<td>Inadvertent discovery of an adult female (flexed burial) aged 40 to 45 dating to pre-Contact period, skeletal remains found in a dark yellowish brown colluvium</td>
<td>Smith and Kawachi 1988</td>
</tr>
<tr>
<td>-4222</td>
<td>Burial site</td>
<td>Inadvertent discovery of an adult female (flexed burial) aged 40 years or older, skeletal remains identified in clean white sand</td>
<td>Kawachi and Smith 1990</td>
</tr>
<tr>
<td>-5530</td>
<td>Burial site</td>
<td>Inadvertent discovery of an adult individual, skeletal remains appear to be previously disturbed, most likely during development of the subdivision</td>
<td>Cleghorn 1997</td>
</tr>
<tr>
<td>SIHP #</td>
<td>Site Type/Name</td>
<td>Description</td>
<td>Reference</td>
</tr>
<tr>
<td>-----------</td>
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</tr>
<tr>
<td>-6937</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains dating to pre-Contact period; skeletal remains associated with a single individual found in Jaucus sand, and may have been previously disturbed by a utility line</td>
<td>Groza et al. 2010</td>
</tr>
<tr>
<td>-6967</td>
<td>Subsurface cultural deposit</td>
<td>Discontinuous subsurface cultural layer with primarily pre-Contact activity; generally evidenced by a buried A horizon developed on natural Jaucas sand that pervades the area, and that contains areas enriched with pockets of indigenous Hawaiian cultural material</td>
<td>Groza et al. 2010</td>
</tr>
<tr>
<td>-7032</td>
<td>Burial site</td>
<td>Inadvertent discovery of human skeletal remains dating to pre-Contact period; skeletal remains associated with a single individual found in Jaucus sand, and may have been previously disturbed by a utility line</td>
<td>Groza et al. 2010</td>
</tr>
<tr>
<td>-7054</td>
<td>Subsurface cultural deposit</td>
<td>A hearth determined to be of pre-Contact origin; screened samples yielded fire-cracked rock, basalt flakes, water-rounded pebbles (basalt), marine shell midden, and fish bone</td>
<td>Tulchin and Hammatt 2009</td>
</tr>
<tr>
<td>-7507</td>
<td>Historic residence</td>
<td>Harold Eichelberger family beach house</td>
<td>SHPD HRHP: 14 January 2013</td>
</tr>
<tr>
<td>-8166</td>
<td>Subsurface cultural deposit</td>
<td>Single feature of potentially late pre-Contact to post-Contact origin containing charcoal, few basalt and coral cobbles, faunal material, and marine shell midden</td>
<td>Blahut et al. 2018</td>
</tr>
<tr>
<td>-8196</td>
<td>Military concrete bunker</td>
<td>Station Podmore consisting of two WWII-era concrete fire stations</td>
<td>Kawachi and Smith 1989 and Monahan 2018</td>
</tr>
<tr>
<td>-9009</td>
<td>Historic residence</td>
<td>“Hilltop house,” “Pu‘uhonua,” or “Bird Lady’s House” built by Arthur and Anne Powlison in the 1920s, constructed without removing any rock from on top of hill; used by military during WWII as a training center and vantage point</td>
<td>SHPD HRHP: 24 June 2006</td>
</tr>
</tbody>
</table>
5.1.2 Bernice Pauahi Bishop Museum Sites

In addition of Alāla Heiau and Shrine (Site 18) Bishop Museum archaeologists recorded a number of other sites near the project area, designated Sites 16, 17, 18 and 19. These are mentioned in Sterling and Summers’ *Sites of O‘ahu*, but there are no published reports for these sites.

Sterling and Summers (1978:240) note there are “Ko‘a on each of the two islands of Mokulua, off Lanikai.” One of these, the ko‘a at Popoi‘a Island, is specifically discussed:

(Site 16) Ko‘a for moi [threadfish; *Polydactylus sexfilis*] located almost in center of island. There are no walls remaining. Much coral lying around. It was nearly obliterated by tidal wave of 1946. Small overhang under which offerings were placed still visible. Louis Mahoe, informant, said that this ko‘a was used by his father, with appropriate pule [prayer], at least up to the 1920’s. [Sterling and Summers 1978:238]
The Guardian Rocks were basalt rocks commemorating the coming of Kanepolū to Kamehameha III:

(Site 17) Kane-polū (pronounced by Mahoe, Kane-p’lu) at Nawelu’s place are several large rocks. These were guards and when he came there he found them scattered about on the lot (on Kawaiulua Road, opposite Kailani camp). He had collected a few of them and these are close together now, another about 10 feet away. They are basalt. Another, which he states is now covered by earth (next door garden) is a coral rock, with the imprint of a man’s leg upon it.

The story connected with these rocks is of the time of Kamehameha III. The King was in Kailua on a fishing expedition, staying in the cave at the foot of Alala Point. […]

Kane-polū was a man who was born, grew up, and died in one day. He belonged to Kuli-ouou. The King sent for him to come to Alāla and he came […] ‘perhaps he flew, I don’t know’ […] The stones were guards set to watch for his coming. When he arrived it was getting dark, and as night fell, he slipped on the coral stone, leaving an imprint ‘of his leg’ on it, and was killed. This stone was ‘His leg’ […] ‘Where the rest of his body is, nobody knows.’ [Sterling and Summers 1978:238]

Sterling and Summers (1978:239) describe the natural shrine known as Waile‘a (Site 19) as being located “[u]p above ‘Hale aloha’ […] bold and clear against the sky line […] The beautiful homes here are built where the old native road used to be.” As previously noted in Section 3.3.1, Waile‘a was a companion shrine to Alāla. Both were probably natural bedrock outcrops high on hills used as fish locating lookout points.

5.2 Later Archaeological Surveys and Inadvertent Finds

5.2.1 Clark 1980


5.2.2 Hurlbett and Haun 1987

In 1986 Paul H. Rosendahl, Ph.D., Inc., conducted an archaeological inventory survey (AIS) at Bellows Air Force Station (Hurlbett and Haun 1987). Seven historic properties were identified including a field cultivation and irrigation complex (SIHP # 50-80-15-3309), an irrigation channel (SIHP # -3311), a complex of structural features (SIHP # -3305), a large platform or heiau (SIHP # -3306); a small stone platform (SIHP # -3307); a small hearth (SIHP # -3308); and a lithic scatter on the crest of a stabilized dune surface (SIHP # -3310).

5.2.3 Bath and Smith 1988

In 1988, during a Board of Water Supply excavation for a water main along ‘A‘alapapa Drive, at least four human burials were exposed (SIHP # -3738) (Bath and Smith 1988). Bath and Smith were called out to the site; they determined the burials were not recent and removed them.
5.2.4 Pietrusewsky 1988

In 1988, Mike Pietrusewsky prepared a forensic identification report addressing 13 fragments found on the seafloor 100 yards (300 ft) east of the boat ramp at Kailua Bay (Pietrusewsky 1988). None of the remains could be positively identified as human and some were regarded as certainly non-human in origin. Dr. Pietrusewsky (1988:2) concluded, “These remains do not appear to have any forensic or archaeological value.”

5.2.5 Smith and Kawachi 1988

In 1988, Joyce Bath, the O‘ahu Island State Archaeologist, was notified by the Medical Examiner’s office of a burial (SIHP # -3740) exposed during excavation at 1063 Ko‘oho‘o‘o Place (Smith and Kawachi 1998). Smith and Kawachi were sent out to investigate and found the skeleton had been removed and boxed. The owner of the house reported the burial to have been in a flexed position. Smith and Kawachi note the burial was in situ in colluvium.

5.2.6 Kawachi and Smith 1989

In 1989, Kawachi and Smith were sent out to perform a field check of Ka‘iwa Ridge following the call of a concerned citizen (Kawachi and Smith 1989). Kawachi and Smith hiked the ridge and the only archaeological features they identified were two WWII-era bunkers. The concerned citizen informed them the sites of the bunkers are where fishing shrines and/or fishing lookouts had been. They were also informed that burials were on the ridge, however, due to the exposed bedrock, Kawachi and Smith suggested burials in the bedrock would not be possible. They concluded any burials would likely be held within caves.

5.2.7 Kawachi and Smith 1990

In 1990, Kawachi and Smith were notified of human skeletal remains (SIHP # -4222) identified during excavation for a pool (Kawachi and Smith 1990). These remains were removed and stored at the State facility. The iwi (bones) associated with SIHP # -4222 were observed within natural marine sand. Kawachi and Smith (1990) noted no soils were encountered during the excavation and that the sand is white and very fine grained.

5.2.8 Dye 1991

In 1991, Dye was contacted and notified of human burial remains (SIHP # -3738) in sand during excavation for a house footing at TMK: [1] 4-3-004:005 (Dye 1991). Dye instructed workers to leave the remains in place and to re-cover them with sand. The next day Dye visited the site and after consultation with the O‘ahu Island Burial Council (OIBC), house architect, and owner it was determined to move the burial remains. Dye noted the burial had been in a flexed position in clean white marine sand. The remains were moved to the Historic Preservation Division.

5.2.9 Orndoff and Clark 1991

In 1991, the Bishop Museum conducted an archaeological reconnaissance survey for the Phase I Flood Control project, Lanikai, TMK: [1] 4-3-001 through 005 (Orndoff and Clark 1991). No historic properties were observed except for modern refuse associated with nearby residences. Archaeological monitoring is recommended for future ground disturbances.
5.2.10 Hammatt and Shideler 1992

In 1991, in coordination with the contractor, SHPD, and the OIBC, three burials were removed from a construction site at TMK: [1] 4-3-004:005 Kaʻōhao by CSH (Hammatt and Shideler 1992). One burial had been previously removed by the SHPD (see Dye 1991). After consultation with SHPD, it was decided to consider these burials as part of SIHP # -3738, designated a previously encountered area of sand burials on the east side of ‘A’alapapa Drive (see Bath and Smith 1988). This decision to use the same site number was admittedly somewhat arbitrary but was based on the probability of other burials remaining between the burial area described by Bath and Smith and the area of this study, and also because of the probability of close relatedness between these sets of prehistoric Hawaiian remains.

5.2.11 Cleghorn 1997

In 1997, Cleghorn reported human skeletal remains were inadvertently discovered on 7 January 1997, in a hand-excavated trench at 159 Ku'ukama Street, west of the current study area. The remains were determined to represent at least one adult individual. While archaeological evidence was lacking to determine the burial’s ethnicity, archival research suggested the remains were likely Native Hawaiian and older than 50 years. The remains were assigned SIHP # -5530.

5.2.12 Ormsby et al. 2003

In 2003, Ormsby et al. reported on archaeological monitoring conducted between 14 December 1999 and 29 August 2000 for the Kalāheo Avenue Sewer project, approximately 222 m (0.14 miles) from the current project area (Ormsby et al. 2003). They reported no human remains or cultural resource sites were encountered during the course of monitoring.

5.2.13 Fong et al. 2008

In 2008, Fong et al. reported on archaeological monitoring conducted between May 2005 and March 2007 for the Kalāheo Avenue Reconstructed Sewer project, west of the current project area (Fong et al. 2008). Historically significant finds included several historic glass bottles, cultural sediments, a charcoal accumulation associated with a cultural layer, and a possible hearth. No human skeletal remains were encountered during the course of monitoring.

5.2.14 Tulchin and Hammatt 2009

In 2009, CSH archaeologists conducted an inventory survey for the renovation of an existing residential building (Tulchin and Hammatt 2009). Associated ground disturbance was limited to the rerouting of an existing subsurface electric line. This involved the excavation of a single trench connecting a HECO utility box to a new electric meter and utility box located at the eastern end of an existing residential building. A hearth (SIHP # -7054) was identified in natural Jaucas sand and determined to be of pre-Contact origin and associated with the former indigenous Hawaiian habitation of the Kaʻōhao area, utilized specifically for food preparation.

5.2.15 Groza and Hammatt 2010

In 2008 and 2009, CSH archaeologists monitored for the Wanaʻao Road/Keolu Drive Reconstructed Sewer (Job No. W2-06) project, TMKs: [1] 4-2-001, 002 (Groza and Hammatt 2010). No historic properties were identified as a result of the project’s monitoring program. Disturbance to the project area’s subsurface deposits is the result of filling and reconfiguring
Kaʻelepulu Pond prior to the construction of the Enchanted Lakes subdivision during the early 1960s. Subsurface stratigraphy shows evidence of extensive earthmoving activities and importation of fill sediments into the project area. The project area’s subsurface deposits were also disturbed during previous utility installation.

5.2.16 Groza et al. 2010

In 2007 and 2008, CSH archaeologists monitored the Mōkulua Drive 8-inch Water Main, Part II project, TMKs: [1] 4-2-002, 4-3-001, 003–009 (Groza et al. 2010). Two sets of inadvertently discovered human remains were encountered during subsurface excavations associated with this project. The first set of remains (SIHP # -6937) was encountered during excavation fronting 971 Mokulua Drive near the intersection with Kaiolena Drive (TMK: [1] 4-3-007:014). The second set of remains (SIHP # -7032) was encountered during excavation fronting 122 Lanipō Drive near the intersection with ‘Aʻalapapa Drive (TMK: [1] 4-3-003:056). A cultural layer (SIHP # -6967) was also observed during monitoring. Findings within the cultural layer included a possible ‘ulu maika (game stone), a possible sling stone, a grinding stone, 15 fire pit features, and one historic trash pit.

5.2.17 Wilson and Spear 2011

In 2010, Scientific Consultant Services, Inc. archaeologists conducted an inventory survey for a residential property at TMKs: [1] 4-3-005:077–086 (Wilson and Spear 2011). No historic properties were identified. Wilson and Spear noted there is only about a 20-cm thick layer of sediment above the bedrock in the upslope areas. Due to negative historic properties findings, the AIS results were presented in an archaeological assessment (AA) report.

5.2.18 Hammatt and Shideler 2012

In 2012, CSH conducted a literature review and field inspection encompassing nearly all of Kailua Beach Park east of Kaʻelepulu Stream (Hammatt and Shideler 2012). No surface archaeological historic properties were identified. However, as Kailua has been a place of habitation for nearly a thousand years, and due to the proximity of burial finds in the area, archaeological monitoring and/or an inventory survey were recommended.

5.2.19 Lance and Hammatt 2012

In 2011, CSH archaeologists conducted an AIS for the Rosenberg Residence at 211 S. Kalāheo Avenue, Kailua Ahupuaʻa, TMK: [1] 4-3-014:010 (Lance and Hammatt 2012). The observed and documented stratigraphy consisted of modern A horizon/graded sand layer overlying naturally deposited Jaucas sand. No historic properties were identified. Due to negative historic properties findings, the AIS results were presented in an AA report.

5.2.20 Hawkins and Desilets 2013

In 2013, Garcia and Associates conducted an AIS for 1611 Mokulua Drive, TMK: [1] 4-3-001:009 (Hawkins and Desilets 2013). No historic properties were identified.

5.2.21 Fechner and Cleghorn 2014

In 2014, Pacific Legacy, Inc., conducted an AIS for a property on 860 Mokulua Drive, TMK: [1] 4-3-008:049 (Fechner and Cleghorn 2014). No historic properties were identified.
5.2.22 McIntosh and Cleghorn 2014

In 2014, Pacific Legacy, Inc., conducted an AIS for a property on 1561 Mokulua Drive, TMK: [1] 4-3-003:049 (McIntosh and Cleghorn 2014). No historic properties were identified.

5.2.23 Kahahane and Cleghorn 2015

In 2015, Pacific Legacy, Inc. archaeologists conducted an AIS for a proposed pool located at 1055 Koʻoʻoʻo Place, TMK: [1] 4-3-006:099 (Kahahane and Cleghorn 2015). Observed and documented stratigraphy consisted of clay loam that contains modern construction debris overlying three layers of natural clay loam and clay. No historic properties were identified. Due to negative historic properties findings, the AIS results were presented in an AA report.

5.2.24 Rice and Hammatt 2016

In 2016, CSH conducted an AIS for the Lanikai Elementary School Cafeteria project (Rice and Hammatt 2016). Three test excavations were conducted. Observed stratigraphy consisted of imported sand fill, imported landscape fill, reworked natural Ewa silty clay loam, natural in situ Ewa silty clay loam, and decomposing coral shelf. No historic properties were identified. Due to negative historic properties findings, the AIS results were presented in an AA report.

5.2.25 Blahut et al. 2018

In 2017, CSH conducted and AIS for the Kawailoa Road Drainage Improvements project just west of the current study area (Blahut et al. 2018). Four test excavations were conducted. The general observed stratigraphy consisted of fill material overlying naturally deposited alluvial clay and naturally deposited Jaucas sand. One historic property was identified, SIHP # -8166, a subsurface cultural deposit consisting of a single feature containing charcoal, few basalt and coral cobbles, faunal material, and marine shell midden.

5.2.26 Monahan 2018

In 2018, TCP Hawaiʻi, LLC, conducted an AIS for Kaʻiwa Ridge (Lanikai Pillboxes Trail) (Monahan 2018). One historic property was identified including Station Podmore which consists of two WWII-era concrete fire stations (SIHP # -8196).

5.2.27 Vernon et al. 2018

In 2015, Pacific Consulting Services, Inc., conducted archaeological monitoring at 979 Mokulua Drive, TMK: [1] 4-3-007:015 (Vernon et al. 2018). One previously identified historic property was identified including a buried A horizon (SIHP # -6967) containing sparse floral and faunal remains, one piece of fire cracked basalt, and one piece of coral.
Section 6  Community Consultation

6.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the ahupua’a of Kailua. CSH initiated its outreach effort in November 2019 through letters, email, telephone calls, and in-person contact. CSH completed the community consultation in December 2019.

6.2 Community Contact Letter

Letters (Figure 29 to Figure 32) along with a map, an aerial photograph, and floor plans of the project were mailed with the following text:

At the request of Gerald Park Urban Planner, Cultural Surveys Hawai‘i, Inc. (CSH) is conducting a Cultural Impact Assessment (CIA) for the proposed Kailua Ocean Safety Building Project, Kailua Ahupua’a, Ko‘olaupoko District, O‘ahu Island, Tax Map Key (TMK):[1] 4-3-009:002. The facility is proposed at the southern end of Kailua Beach Park mauka of Mokulua Street. The site was formerly a turnaround and off-street parking area for overflow beach traffic. The project area is depicted on a portion of the 1998 Mokapu Point U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1) and a 2016 aerial photograph (Figure 2).

Proposed Construction

The Department of Design and Construction, City and County of Honolulu, proposes to construct a District Operations Base Station (“DOBS”) for the Department of Emergency Services Ocean Safety and Lifeguard Services Division at Kailua Beach.

A rectangular-shaped structure (60’-0” L X 28’-0” W) with a floor area of 1,680 square feet and a height of 14’-7”, measured from existing grade to top of roof is proposed. The interior space will be separated equally into office/storage and a garage. Two offices, a restroom/shower, and storage room occupy the northern half of the building. A garage, equipment repair/maintenance area, and equipment storage are on the southern half (Figure 3-Figure 5).

The structure will be erected on a poured in place concrete slab on concrete spread footings. The exterior walls will be constructed of cement masonry unit (CMU, otherwise known as hollow tile) and will support timber framing for a hip roof. The framing will be covered with timber decking topped with asphalt shingles. Wood lap siding will adorn the ridge area under roof.

Eight regular parking stalls and one handicap accessible stall will be provided. All stalls will be uncovered and double loaded at a maneuvering area on the north. A 4’-0” high CMU wall will screen parked vehicles and back of house functions from Mokulua Street.
Cultural Surveys Hawai‘i, Inc.
Archaeological and Cultural Impact Studies
Hallett H. Hammatt, Ph.D., President

P.O. Box 1114
Kailua, Hawai‘i 96734
Ph: (808) 262-9972
Fax: (808) 262-4950

Job code: KAILUA 90
kpratt@culturalsurveys.com
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November 2019

Aloha mai Kākou,

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Eight regular parking stalls and one handicap accessible stall will be provided. All stalls will be uncovered and double loaded at a maneuvering area on the north. A 4'-0" high CMU wall will screen parked vehicles and back of house functions from Mokulua Street.

Purpose of the CIA
The purpose of this CIA is to gather information about the project area and its surroundings through research and interviews with individuals knowledgeable about this area in order to assess potential impacts to the cultural resources, cultural practices, and beliefs identified as a result of the planned project. We are seeking your kōkua (assistance) and guidance regarding the following aspects of our study:

---

Figure 29. Community consultation letter, page one

CIA for the Kailua Ocean Safety Building Project, Kailua, Ko‘olaupoko, O‘ahu

TMK: [1] 4-3-009:002
KAILUA 90- Kailua Ocean Safety Building Project

Page 2

- General history as well as present and past land use of the project area
- Knowledge of cultural sites which may be impacted by future development of the project area—for example, historic and archaeological sites, as well as burials
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as mo'olelo and traditional uses
- Referrals of kūpuna or elders and kama'aina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua'a lands
- Any other cultural concerns the community might have related to Hawaiian or other ethnic cultural practices within or in the vicinity of the project area

Alternatively, a written statement may be acceptable in place of an in-person interview. If needed, we are able to send an open-ended questionnaire to provide some guidance. If you wish to participate in this study, with your permission, we would like to include your name in the CIA to recognize your contributions and acknowledge your assistance in our research effort. Please contact Kamalu Pratt if you are interested. I am also available by phone at (808) 262-9972.

Mahalo nui loa,

Kamalu Pratt
Cultural Researcher
KAILUA 90- Kailua Ocean Safety Building Project

Figure 31. Community consultation letter, page three

Figure 1. Portions of the 1998 Mokapu point USGS 7.5-minute topographic quadrangles showing the project area
Figure 2. Aerial photograph showing the project area (ESRI Aerial Imagery)
Purpose of the CIA

The purpose of this CIA is to gather information about the project area and its surroundings through research and interviews with individuals knowledgeable about this area in order to assess potential impacts to the cultural resources, cultural practices, and beliefs identified as a result of the planned project. We are seeking your kōkua (assistance) and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area
- Knowledge of cultural sites which may be impacted by future development of the project area—for example, historic and archaeological sites, as well as burials
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as mo‘olelo and traditional uses
- Referrals of kūpuna or elders and kamaʻaina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua‘a lands
- Any other cultural concerns the community might have related to Hawaiian or other ethnic cultural practices within or in the vicinity of the project area

In most cases, two or three attempts were made to contact individuals, organizations, and agencies. Community outreach letters were sent to 73 individuals or groups, five responded, and two of these kamaʻaina and/or kūpuna met with CSH for more in-depth interviews. The results of the community consultation process are presented in Table 3.

6.3 Community Contact Table

Table 3 contains the names, affiliations, dates of contact, and comments from NHOs, individuals, organizations, and agencies contacted for this project. Results are presented below in alphabetical order.

Table 3. Community contacts and response

<table>
<thead>
<tr>
<th>Name (Individual, Organization)</th>
<th>Affiliation</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>de Silva, Mapuana and Kīhei</td>
<td>Cultural descendant; <em>Kumu Hula</em> (Hālau Mōhala ‘Ilima)</td>
<td>Letter and figures sent via USPS 12 November 2019 CSH mailed and emailed letters and figures regarding proposed Kailua Ocean Safety Building to Māpuana and Kīhei de Silva in November 2019</td>
</tr>
</tbody>
</table>
Kihei de Silva emailed CSH with comments regarding the current project on 5 December 2019:

*My daughter Kapalai ‘ula de Silva wrote a mele for Alâla that we (Hâlau Mohala ‘Ilima) performed at last year’s Merrie Monarch Festival. I’ve attached a pdf of the ‘fact sheet’ that I submitted to the MM judges as an explanation of that mele. The document contains (mostly in its footnotes) my nûpepa [newspaper] research of Alâla and its surroundings; feel free to cite any of this—with, of course, proper credit. To echo the sentiments of Melody MacKenzie, with whom you have already communicated, I know of no burials there or of any extant cultural sites (except for the heiau itself), but the deep significance of Alâla in our mele and mo ‘olelo requires a very careful approach to any construction work there. I would definitely recommend an AIS before any such work commences.*

Kihei de Silva emailed CSH a PDF with his extensive research of the Ka‘ōhao Ahupua’a (refer to section 6.5.2)

<table>
<thead>
<tr>
<th>Name (Individual, Organization)</th>
<th>Affiliation</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harms, Cosette</td>
<td>Kama‘āina; family home is the hilltop house in Lanikai</td>
<td>Letter and figures sent via USPS 12 November 2019 On 17 December 2019, CSH met with Ms. Cosette Harms, a member of the Lanikai community at her home</td>
</tr>
<tr>
<td>Lee, Herb</td>
<td>Ho‘olaulima iā Kawainui (The Helping Hands of Kūali‘i); Executive Director of Pacific American Foundation</td>
<td>Letter and figures sent via email 12pNovember 2019 On 16 December 2019, CSH met with Mr. Herb Lee at the Pacific American Foundation (PAF) to discuss the Kailua Ocean Safety Project and to share his ‘ike of Lanikai Beach Park in the ahupua’a of Kailua.</td>
</tr>
<tr>
<td>Name (Individual, Organization)</td>
<td>Affiliation</td>
<td>Correspondence</td>
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<tr>
<td>---------------------------------</td>
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<td>----------------</td>
</tr>
</tbody>
</table>
| Mackenzie, Melody               | Cultural descendant of the Kailua Ahupua‘a and a member of Kailua Kau a Ho‘oilo | Letter and figures sent via USPS 12 November 2019  
Ms. Mackenzie replied on 3 December 2019:  
*I am responding to the letter you sent last month regarding the Cultural Impact Assessment (CIA) for the proposed Kailua Ocean Safety Building Project in Kailua. I live on Kaneapu Place, very near the proposed building project. I am a cultural descendant of the Kailua Ahupua’a and a member of Kailua Kau a Ho‘oilo, which, over the last decade, has cared for and been consulted on issues relating to iwi kūpuna in our ahupua’a. My family has lived on Kaneapu Place for four generations and my family ties to Kailua go back several more generations. Having said all of this, however, I am not aware of any specific cultural practices associated with the area that the Ocean Safety Building will be built in. I am generally aware of the significance of Pu‘u Hālō and the importance of Alāla. And it is not unlikely that there were iwi kūpuna resting in the area—although whether they survived the building of the road and other construction over the years is another question. I believe that the person who could give you the best information, because he has done much research on the Kailua Ahupua’a and on Kaʻōhao, and because his family also has very strong roots in Kailua and Kaʻōhao going back generations, is Kīhei deSilva. I am copying him on this email and hope that you will seek his advice and knowledge.* |
6.4 Kamaʻāina Interviews

The authors and researchers of this report extend our deep appreciation to everyone who took the time to speak and share their manaʻo and ʻike with CSH whether in interviews or brief consultations. We request that if these interviews are used in future documents, the words of contributors be reproduced accurately and in no way altered, and that if large excerpts from interviews are used, report preparers obtain the express written consent of the interviewee/s.

6.4.1 Herb Lee

On 16 December 2019, CSH met with Mr. Herb Lee at the Pacific American Foundation (PAF) to discuss the Kailua Ocean Safety project and to share his ʻike of Lanikai Beach Park in the ahupuaʻa of Kailua. Mr. Lee serves as both President and CEO for PAF. PAF are the stewards of the Waikalua Loko Fishpond. He stated that hard efforts have been made by community members, school groups, and public and private partners to restore the fishpond. Mr. Lee shared his experiences with sea level rise at Waikalua Loko Fishpond (Herb pointed to aerial photo of pond site).

We own the fishpond over here, on this side of Kāneʻohe Bay and we’ve been restoring the pond for 25 years. I never ever saw the water go over the wall, but it completely went over the wall in May of 2016, and then it happened again in June, July, then November. So this year [2019] we had a King Tide event. It didn’t go over the wall, but every year it’s fluctuating. We’ve already experienced King Tides over the last four years now, which we’ve never seen before. I think that it’s important for both residents and scientists to pay attention to King Tides, which primarily happens during the summertime and fall months.

Mr. Lee has been a resident of Kailua since 1995. He shared that in 2015, the Lanikai Elementary Charter School was changed to Kaʻōhao School. He also shared challenges faced by the Lanikai community, noting that, “Over the years there has been a lot of concern by residents of losing their property. People are just trying to fortify their properties, but I don’t think the laws
address engineering solutions for this kind of level of sea rise.” He explained the projected figures for the sea level rise are thought to increase by a meter in a hundred years. However, the refined figures project the ocean to rise by a meter by 2050. Mr. Lee explained the Lanikai community is low lying and highly exposed.

Mr. Lee accounts for the dangers of the sea level rise and stressed the importance of finding a proper location for the proposed project. He noted that PAF has worked closely with Dr. Charles “Chip” Fletcher, the Associate Dean for Academic Affairs and Professor for the Department of Earth Sciences at the School of Ocean and Earth Science (SOEST) at the University of Hawai‘i at Mānoa, for many years. Dr. Fletcher was an advisor to the development of PAF’s curriculum called Kai E’E on sea level rise and tsunamis in 2013 in partnership with the Pacific Tsunami Museum and the University of Alaska Fairbanks. Mr. Lee explained,

He taught us about the blue line to determine where the water levels are going to be based on all of the data they’ve been able to collect regarding the changes of the shoreline. The blue line is a projection of what the shoreline could look like in 50 to approximately a hundred years. Dr. Fletcher is considered one of the most renowned scientists in sea level rise.

Mr. Lee suggested that developers of the Kailua Ocean Safety Building project work in cooperation with Dr. Fletcher to find an appropriate location for the construction of the facility. Mr. Lee raised a concern about hazards of visitor growth and leaps in the recreational use of Lanikai Beach Park. He stated that, “Having proper ocean safety education is paramount because you are dealing with a high volume of people within a three-mile stretch of beach. This involves the park as well as shorelines.”

6.4.2 Cosette Harms

On 17 December 2019, CSH met with Ms. Cosette Harms, a member of the Lanikai community, at her home (Figure 33), the famous Powlison House, which was constructed by her grandparents, Anne and Arthur Powlison in the 1930s. She is a third-generation descendant to live in the famous home.

Ms. Harms shared the historical events of the Powlison house. On 7 December 1941, Japanese planes flew from Kaneohe Navy Base (present-day Kaneohe Marine Corps Base) to bomb Bellows Air Force Station. Ms. Harms’ grandmother, Anne Powlison, stood on the top floor of their home and locked eyes with a Japanese pilot. She had seen the planes passing by her window while her two daughters witnessed the planes circling the surrounding area. That same day United States military personnel utilized the Powlison home as a watch tower for threats of invasion as well as for communication purposes. Afterward, the Pillbox Hike would be constructed at a higher elevation for military use. The military occupied the home from April 1942 to April 1945, later returning the home to the Powlisons.

The Powlison House was constructed on the hill in front of Alāla Heiau near the project area. Ms. Harms describes the geography where the Powlison house was built and the stones surrounding the area.

The sacred stones are the wingtips of Ka‘iwa Ridge [Figure 34], the ‘iwa [Frigate of man-of-war bird; Fregata minor palmerstoni] bird that borders and backs up the Lanikai community or Ka‘ōhao is Alāla. Not Alālā, but Alāla. Alālā is a crow or a
Figure 33. Lanikai Beach viewed from the Powlison home, view to northwest
Figure 34. Kaʻiwa Ridge viewed from the Powlison home, view to southeast
blackbird. Alāla means ‘awakening,’ so it faces the sunrise and the dawn. Then Wailea is the other one [rock], at the other end […] Fishing heiau both of them.

Ms. Harms explains the significance of Alāla Heiau, “There would be ceremonies up here relating to fishing, or people would put offerings on them and go out fishing hoping for good luck.” She then spoke of the revitalization of traditional cultural practices conducted near her home and the project area:

Back in the 70s when there was a renaissance of Hawaiiana, Hawaiian history, and story, somebody must have been teaching about them (Alāla rock) [Figure 35], because sometimes we would wake up in the morning and there would be a big papaya sitting up there, or a taro root, or once a can of pork and beans, sitting on the rock. And my mother watched the guy climb on the rock and place the papaya, And then he went down, jumped on a fishing boat and went fishing. So she left the papaya there and then much later fed it to the birds.

Ms. Harms recalls several other traditional cultural practices exercised on Kailua Beach. One of the practices was called hukilau (a seine). It was organized by Native Hawaiian families including the Mahoes and Kalamas. A man named Mr. Gramberg owned a boat and would lay the nets out in a semicircle. Families along the beach would pull (huki) the nets to shore. A wide variety of fish was caught including sea turtles. During those days, Ms. Harms said turtles were eaten. Spearfishing and pole fishing were amongst other traditional activities practiced at Kailua Beach. Ms. Harms shares stories of Solomon “Solo” Kalapawai Mahoe. He was an esteemed free diver and had deep roots in the Ka‘ōhao Ahupua‘a. Ms. Harms stated that Solo would dive down and not come up unless he had a lobster in each hand. Ms. Harms has possession of Solo’s goggles fashioned by the man himself. She expressed that in the earlier years the community was mindful of harvesting and the conservation of resources. She said, “it was never taking more than what they [the community] planned to eat.”

Ms. Harms described the cultural practice of picking limu (seaweed). She highlighted that limu would be broken off from the tips, rather than being uprooted from the rocks. This pivotal gathering technique would ensure the blooming of limu to continue its growth cycle. As time passed, Ms. Harms has seen carelessness toward the environment. This was one cause of the decline of limu at Lanikai Beach. In addition to human intervention, climate change, warmer oceans, and sea-level rise were contributing factors to the loss of limu. Ms. Harms outlines one role of limu in the ecosystem:

There used to be a lot of limu or seaweed that would wash ashore after a storm. Big waves would rip it off the reef and it would pile up on the beach. It would be really thick, over ankle-deep, and it would smell bad. There would be all these flies, but people wouldn’t clean it up. It would stay on the beach and eventually rot. The sand would bury it, cover it over, and all that seaweed would just stay there. But it has a natural glue. It’s sticky and it made the beaches stronger so that there was less beach erosion because of the layers of seaweed that would eventually coat the beaches and then be covered with sand and decompose into the sand. It just made the beaches stronger. Later [presently], if an event like that would happen, they would take a bulldozer, they would clean it all up to become fertilizer inland, but then the
Figure 35. Alāla rock or Alāla point located outside the Powlison house, view to southwest
beach wouldn’t have it [limu] and the sand wouldn’t have that glue. This is a part
of why the beach is disappearing.

Ms. Harms remembers growing up with little to no homes near the proposed project area. She
knew of fishing huts from old photographs, which were used by fishermen. Ms. Harms commented
that Kailua was used for agriculture. She recalled that before the development of the Lanikai
community, there were watermelon farms located in the vicinity of the project area. Parts of Kailua
were once used to grow banana patches, papaya groves, and dairy farms with cows. Ms. Harms
remembers Kailua Beach Park as a big open area. She said the invasive ironwood trees have
encroached on the beach. Ms. Harms also remembers a Methodist Church called Camp Kailani
located near the surrounding area. She recalls a concession stand near the small river of Kailua
Beach Park.

Ms. Harms has seen many changes in the Lanikai and Kailua communities. There has been a
huge increase of visitors. Ms. Harms does, however, applaud the actions of the Department of
Land and Natural Resources (DLNR) concerning the conservation of the Mokulua Islands. DLNR
now issues a limited number of permits to kayak rental companies. Prior to the implementation of
these regulations, an enormous volume of visitors ventured to both Mokulua Islands and Flat
Island. She stated,

Before that crack down commercial activity on there would be 50 double kayaks
going out from the one kayak company and 50 double kayaks from another
company. That’s 200 people. On Flat Island they would have to stack umm up
[kayaks] on each other, or they could not fit.

Ms. Harms recalled witnessing a dangerous situation offshore from Lanikai Beach Park,

A couple had gone to Flat Island with a kayak. There’s a little beach that sticks out
on the left side of the island, you can see where it’s whiter. It’s submerged right
now because the tide is high, but when the tide is low its exposed sand. They pulled
their kayak up on that little beach and went for a hike around the island. Well, the
tide was coming in, the wind was blowing like today [high-speed winds]. Sure
enough, as the tide came in over the beach, lifting their boat and it drifted away. So
there goes their boat across the bay drifting with the wind and they’re stranded on
the island and its 7 in the morning.

Ms. Harms proceeded to contact the Ocean Safety Division by phone. An official explained to
Ms. Harms that lifeguards were not on duty until 9 am. Since the pair were not in immediate
danger, it was not considered an urgent scenario to send authorities to the distressed couple. Her
biggest concern regarding the Kailua Ocean Safety Building project is to make education on ocean
safety and information readily available to the public.

6.5 Written Testimony
6.5.1 Melody K. MacKenzie

CSH mailed a letter and figures regarding the proposed Kailua Ocean Safety Building to Ms.
Melody MacKenzie. CSH was contacted via email on 3 December 2019 by Ms. MacKenzie, a
resident of Kailua, regarding the proposed Kailua Ocean Safety Building project:
I am responding to the letter you sent last month regarding the Cultural Impact Assessment (CIA) for the proposed Kailua Ocean Safety Building Project in Kailua.

I am a cultural descendant of the Kailua Ahupua’a and a member of Kailua Kaua Ho’oiolo, which, over the last decade, has cared for and been consulted on issues relating to iwi kūpuna in our ahupua’a. My family has lived on Kaneapu Place for four generations and my family ties to Kailua go back several more generations.

Having said all of this, however, I am not aware of any specific cultural practices associated with the area that the Ocean Safety Building will be built in. I am generally aware of the significance of Pu’u Hālō and the importance of Alāla. And it is not unlikely that there were iwi kūpuna resting in the area - although whether they survived the building of the road and other construction over the years is another question.

I believe that the person who could give you the best information, because he has done much research on the Kailua Ahupua’a and on Ka‘ōhao, and because his family also has very strong roots in Kailua and Ka‘ōhao going back generations, is Kihei deSilva. I am copying him on this email and hope that you will seek his advice and knowledge.

Please let me know if there is more that I can do.

6.5.2 Kihei de Silva

CSH mailed and emailed letters and figures regarding the proposed Kailua Ocean Safety Building to Māpuana and Kihei de Silva in November 2019. Māpuana and Kihei de Silva are both kama‘āina and cultural descendants of Kailua Ahupua’a. Māpuana de Silva is also the kumu hula (teacher of traditional Hawaiian dance) of Hālau Mōhala ‘Ilima.

Kihei de Silva emailed CSH with comments regarding the current project on 5 December 2019:

My daughter Kapalai‘ula de Silva wrote a mele for Alāla that we (Hālau Mohala ‘Ilima) performed at last year’s Merrie Monarch Festival. I’ve attached a pdf of the ‘fact sheet’ that I submitted to the MM judges as an explanation of that mele. The document contains (mostly in its footnotes) my nūpepa [newspaper] research of Alāla and its surroundings; feel free to cite any of this—with, of course, proper credit. To echo the sentiments of Melody MacKenzie, with whom you have already communicated, I know of no burials there or of any extant cultural sites (except for the heiau itself), but the deep significance of Alāla in our mele and mo‘olelo requires a very careful approach to any construction work there. I would definitely recommend an AIS before any such work commences.

Kihei de Silva emailed CSH a PDF with his extensive research of the Ka‘ōhao Ahupua’a. CSH has summarized the PDF:

On 5 December 2019, Mr. Kihei de Silva responded to a request sent by CSH seeking out community members with knowledge about Kailua in response to the proposed Kailua Ocean Safety Building project. Mr. de Silva provided an extensive document that exhibits the essence of...
Kailua, which embodies the knowledge of “ʻilima noho papa,” or the generations upon generations of Kailua descendants who still live on the lands of their birth.

Mr. de Silva and the rest of his ʻohana are all prominent Native Hawaiian cultural practitioners, kumu hula, historians, researchers, caretakers of iwi kūpuna, and the ʻilima noho papa of Kailua. “Ka Lae ʻo Alāła” is a mele composed by Kapalaiʻula de Silva, daughter of Mr. Kīhei de Silva and wife, Kumu Hula Māpuana de Silva. The document provided to CSH by Mr. de Silva contained the lyrics and translations as well as a synopsis of the mele which was danced at the 2019 Merrie Monarch Hula Festival by Hālau Mōhala ʻIlima.

Mr. de Silva described “Ka Lae ʻo Alāła” as a mele that “is a net of inoa ʻāina [place names] that helps to order our world and hold it in place” (de Silva 2019:1) adding that “Alāla, for reasons simple and profound, is the piko of this net” (de Silva 2019:1). Within this mele, like the many other compositions that the de Silva ʻOhana has composed for Kailua, traditional place names of Kailua are woven and intertwined, each place name like a delicate ʻilima (small to large native shrubs bearing yellow, orange, greenish, or dull-red flowers) blossom being strung into a lei. This beautiful mele is presented below:

**Ka Lae o Alāła**

Composed by: Kapalaiʻula de Silva
Translated by: Kīhei de Silva

A ka lae ʻo Alāła
At Alāła point

Ka ʻilima noho kahakai
Is the ʻilima noho kahakai

Hoa no ka lau pāʻu
Companion of the lau pāʻu

(I) kākua no Hiʻiaka
Worn by Hiʻiaka

Akāka wale Kualoa
Kualoa is clearly visible

Kua kapu o ke Koʻolau
Sacred back of the Koʻolau

Pili mai Mokukapu
Mokukapu draws close

ʻAu Mokumanu i ke kai
Mokumanu swims in the sea

Kai heʻe nalu o Popoiʻa
Popoiʻa is a sea for surfing

Kuʻu ipo haʻa lewa
My lover who dances, swaying

Walea i ke onaona
Immersed in the fragrance

Līpoa ʻaʻala o ka uka
Of sweet līpoa on the shore

Kau mai nei ka haliʻa
Sweetly comes the memory

ʻIlī nehe o nā Mokulua
The rustling pebbles of Mokulua

Hone ana Kaiʻōlena
Kaiʻōlena singing softly

Kai kui pua hala
A sea for stringing lei hala

Na wai e ʻoke ke aloha
Who can deny affection
No Ka‘iwa kīkaha o luna  For Ka‘iwa soaring above
Me Wailea ‘oni mālie  With gently swaying Wailea
Nā kia‘i o ku‘u ‘āina  They are guardians of my ‘āina
Ha‘ina ku‘u lei hiehie  Tell the refrain: my elegant lei
No Alāla i ka ‘ehukai  For Alāla in the sea spray
No ka lei ‘āpiki ko‘u ho‘ohihi  For the lei ‘āpiki is my affection

“Ka Lae ‘o Alāla,” is another mele that expanded the repertoire of “place-name stuffed mele” (de Silva 2019:1) within the de Silva ‘Ohana. These mele from the de Silva ‘Ohana include “Hanohano Wailea,” “Māpuna ka Hala o Kailua,” “Mokulua,” “Hiehie Olomana,” and “Ho‘opuka e ka Lā i Kai o Mālei.”

Mr. de Silva explains one of the significances to Alāla, linking it to Kūali‘i, who was a ruling chief of Kailua. Mr. de Silva incorporates the source of Kamakau’s writing, saying that

Aole au i kamaaina i Kailua – ma loko o ke mele, a ka poe kahiko, a ma na pule Wanana-muahaikupuna; a malaila, ua kamaaina au. [Ka Nupepa Kuokoa 7 October 1865]
I am not native to Kailua, but I have kama‘āina knowledge [of Kailua] because of the mele, pule, and genealogies of the ancients. [Kamakau in de Silva 2019:2, 8]

Within the mele referenced by both Kamakau and Mr. de Silva, is confirmation that the sacred ceremony of a piko cutting ceremony was conducted at Alāla for Kūali‘i. The sacred drums of Kūkaniloko, ‘Ōpuku and Hāwea were used in the ceremony, and Kaho‘owahaokalani, the grandfather of Kūali‘i, was the one to cut the piko cord of Kūali‘i. Mr. de Silva includes the text:

Ina e looa ia oe ke mele [“Pau o Puna”], Penei …
O Kualii ke ali‘i o Kailua
I waiha i Waiomuku ka honua
I Waikakulu i Ouli ke kuakoko
Mo ka piko i Alaala

...
Ina e looa ia oe ke mele hoohalikelike, aia ma Kumuuli, a ma Kumahakea, aia ma ke kumu loam ai, ua haiia malaila o Kailua ka aina i hanau ai o Kualii.

...
Ina i looa ia oe ke mele a Kamoeau...O Kualii ke Alii o Kailua, o Kalapawai kahi i hanau ai, o Alala ka Haiau [sic] i moku ai ka piko. A malaila i kani ai o Opuku a me Hāwea...O Ka-hoowahaokalani ke Alii o Kailua, ke kupunakane o Kualii, ka mea nana i oki ka piko. [Nupepa Kuokoa 7 October 1865]

If you are aware of the mele [“Pau o Puna”], then you will know that it goes like this:
…Kūali‘i is the ali‘i of Kailua
At Waiha at Waiomuku was the sudden onset
At Waikakulu at Ouli were the birth pains
Cut was the at Alāla
If you are aware of the similarities to be found in the mele of the Kumuuli and Kumahakea, there in that ancient source is mention of Kailua, the land in which Kūaliʻi was born.

If you are aware of the mele composed by Kamoeau…you will know that Kualiʻi was the aliʻi of Kailua, that Kalapawai is the place where he was born, that Alāla is the heiau where his piko was cut, and the Ōpuku and Hāwea were sounded there. Kahoʻowahaokalani, the aliʻi of Kailua who was the grandfather of Kūaliʻi was the one who cut the piko. [de Silva 2019:2, 9]

The connection of Alāla to Kūaliʻi, to the de Silva ‘Ohana is like a long kaula or cordage that is connecting at each piko. Mr. de Silva shared that from his wife Māpuana de Silva’s side of the family is the connection and tie to Kūaliʻi, using the ‘ōlelo no‘eau “E kolo ana ke ēwe i ke ēwe: the navel cord creeps to the navel cord” (de Silva 2019:3). Mr. de Silva shares the genealogy of the Kailewa line. Kailewa is “to be understood as Ka-i-lewa, the one who was suspended, the one who dangles” (de Silva 2019:3). One kupuna of the ‘ohana, Sally Wood Naluai, shared that Kailewa “is another name for the aliʻi who, in his advanced years, was carried in a net through which his legs dangled. This aliʻi was Kūaliʻi, and Kailewa was the name taken by one line of his many descendants” (de Silva 2019:3).

Along with the genealogical connection that Alāla has to the de Silva ‘Ohana, Mr. de Silva also shared other resources that showcase the importance of Alāla and its role to those of Kailua. In one such resource, Mr. de Silva shared that

Kailua old-timers born in the mid-to-late 1800s and interviewed in the 1950s remember Alāla point as a favorite camping and fishing site for Kamehameha III (Nawelu in Sterling and Summers, Sites of Oahu, Honolulu: Bishop Museum Press, 1962:238)

[…] as the site of a now-concealed cave that ran from the point to the current Mid-Pacific Country Club and that serves as a ‘place of refuge in times of trouble.’ (Charles Kamanu Sr., Solo Mahoe Jr., and Nawelu in Sites of Oʻahu, 238)

[...] the place to which flew a mysterious man named Kanepolu who ‘was born, grew up, and died in one day’ [...] and as one of a pair of koʻa (rock or coral shrines)—the other at Wailea point—where native lawaiʻa [fishing] would locate the best fishing grounds in the Kaʻūhao fishery and conduct ceremonies to ensure its continued abundance. (Kailua i ke Oho o ka Malanai, Kailua: Kailua Historical Society, 2009:214)

[de Silva 2019:4]

Mr. de Silva explained imagery of Kailua by using names familiar to those of post-colonial Kailua and the names recognized by the ‘ilima noho papa.

It overlooks Kailua Beach Park (Kawaiola, Kalapawai). It presides over the yellow kayak landing at ‘Flat Island’ (Popoi’a). It salutes the stream of segue tourists and rent-a-bikers at the entrance to Lahinakae [Lanikai] itself (Kaʻūhao). And that
Lahnakae that, in turn, is home to Lahnakae Beach (Kaiʻōlena), the ‘pillboxes’ (Kaʻiwa), ‘Smith’s Point’ (Wailea), and the ‘Twin Islands/Mokes’ (Nā Mokulua). [de Silva 2019:1]

One of the prominent things emphasized in the resources above is the relationship the people of Kailua had to the sea. Aliʻala is not only a heiau, but also considered a fishing site and koʻa. The people of Kailua used to gather limu līpoa (Dictyopteris plagiogramma and D. australis), a type of seaweed that showcased a unique aroma and taste. Mr. de Silva explained that “The beaches of Kailua and Kaʻōhao were once famous for the limu līpoa that was easily gathered on the inner reef shallows of the bay and that washed ashore in dark, fragrant masses during stormy weather”([de Silva 2019:12).

Mr. de Silva shared about the abundance of limu līpoa by referencing a moʻolelo by Kekoʻowai:

_I ka hiki ana mai i ka hale, ua hoi mai ka poe lawaiʻa a me ka poe luu līpoa, noho ihola no iwaho o ke kahua maniania kuku ka umele poi, lomilomi ka pua oio, me ka pepe omaka o Kailua, o ka hanu paoa ae o ka līpoa pakela ua make i ka ono._  

[Ka Nupepa Kuokoa 7 June 1923]

When we returned to the house, so too did the fishermen and limu gathers; we sat outside on the maniania [Name of a species of grass, soft and smooth] grass lawn, set up the poi bowl, prepared the ‘ō‘io [Albula Vulpes] fingerlings and crushed ‘ōmaka [Belted wrasse fish]of Kailua; the overwhelming fragrance of līpoa left me swooning with hunger. [de Silva 2019:12]

As a malihini (foreigner) to Kailua, Kekoʻowai was enchanted by the land and was overcome with emotion at his memory of the līpoa. Kekoʻowai even composed a mele for his love and for the hosts who introduced him to Kailua.

_Auhea wale oe e ka līpoa, _

_Please respond to me, o līpoa_

_E ke oho laulii o ka ehukai, _

_Tiny-leaf fronds of the sea spray_

_Akahī au a ike maka _

_For I have just now seen, first hand_

_Laula o ke kula o Alele _

_The breadth of the plain of ‘Ālele_

Throughout the remainder of the document, Mr. de Silva indicates the other place names of Kailua, along with moʻolelo and manaʻo, showing the value of knowing such names for the identity of the kānaka to the mana of the ‘āina. Some of these place names include Popoiʻa, which connects us to fishing traditions where kānaka lawaiʻa (fishermen) would offer fish left on the shrine on the island; to Kaiʻōlena where sea water was mixed with ʻōlena (turmeric) and used for ceremonial purposes; to Wailea, a point that divides Kaʻōhao and Waimānalo, a neighboring ahupuaʻa, which gets its meaning from Lea, the goddess of canoe-makers, mother of Kailua voyaging chief, Kaulu, as well as the goddess of the ʻōhiʻa lehua (Metrosideros macropus, M. collina subsp. polymorpha) forest and poʻe hula (dancers).

As Mr. de Silva stated before, Alāla is the piko of the net, the center that connects and links all strands together. And like this piko, it is therefore no wonder that “Ka Lae ʻo Alāla” is composed by a descendant of Kūaliʻi to honor the beauty of Alāla, the piko that moved the “Kūaliʻi” forward into yet another noho papa generation. A net that contains his ‘āina and holds it in place. A net that
is cast, by an ēwe (navel string) of an ēwe, into the face of put-to-sleep in the name of reawakening” (de Silva 2019:3).

Regarding the proposed project, Mr. de Silva strongly recommended an archaeological inventory survey be conducted before any work commences. Mr. de Silva mentioned he knows of no burials or any extant cultural sites within the project area, except for Alāla Heiau. Mr. de Silva suggested construction commence with caution as the significance of Alāla is still revered and honored amongst the ʻilima noho papa.
Section 7  Traditional Cultural Practices

Timothy R. Pauketat succinctly describes the importance of traditions, especially in regards to the active manifestation of one’s culture or aspects thereof. According to Pauketat,

> People have always had traditions, practiced traditions, resisted traditions, or created traditions . . . Power, plurality, and human agency are all a part of how traditions come about. Traditions do not simply exist without people and their struggles involved every step of the way. [Pauketat 2001:1]

It is understood that traditional practices are developed within the group, in this case, within the Hawaiian culture. These traditions are meant to mark or represent aspects of Hawaiian culture that have been practiced since ancient times. As with most human constructs, traditions are evolving and prone to change resulting from multiple influences, including modernization as well as other cultures. It is well known that within Hawai‘i, a “broader “local” multicultural perspective exists” (Kawelu 2015:3) While this “local” multicultural culture is deservedly celebrated, it must be noted that it has often come into contact with “traditional Hawaiian culture.” This contact between cultures and traditions has undoubtedly resulted in numerous cultural entanglements. These cultural entanglements have prompted questions regarding the legitimacy of newly evolved traditional practices. The influences of “local” culture are well noted throughout this section, and understood to represent survivance or “the active sense of presence, the continuance of native stories, not a mere reaction, or a survivable name. Native survivance stories are renunciations of dominance, tragedy and victimry” (Vizenor 1999:vii). Acknowledgement of these “local” influences help to inform nuanced understandings of entanglement and of a “living [Hawaiian] contemporary culture” (Kawelu 2015:3). This section strives to articulate traditional Hawaiian cultural practices as were practiced within the ahupua‘a in ancient times, and the aspects of these traditional practices that continue to be practiced today; however, this section also challenges “tropes of authenticity” (Cipolla 2013), and acknowledges the multicultural influences and entanglements that may “change” or “create” a tradition.

This section integrates information from Sections 3–6 in examining cultural resources and practices identified within or in proximity of the project area in the broader context of the encompassing Kailua landscape. Excerpts from interviews are incorporated throughout this section where applicable.

7.1 Hawaiian Habitation and Agriculture

During the estimated 1,000 to 1,200 years since initial Polynesian settlement (Kirch 2010:128), the sand barrier that forms the shore at Kailua Bay has provided a desirable location for residences with a sunny, dry beach area. The well-watered interior lands, including the two marsh/pond areas of Ka‘elepulu and Kawai Nui and the many springs and streams of Maunawili, provided bountiful agricultural and resource gathering areas. During the fifteenth and sixteenth centuries, Kailua, O‘ahu was the center of a large royal complex with ample playgrounds for sports and physical training, and recreation (Sterling and Summers 1978:231–232). Supporting this large complex was a most bountiful garden hinterland where fish, fowl, and vegetables were plentiful (Sterling and Summers 1978:227–228).
Historic documents from the early nineteenth century are amongst the first written observations of the Kailua environment; the region was notably inundated. However, this did not prove to be an impediment, rather it opened a range of options for early settlers of the area (Abbott 1992:8). Inhabitants of the ahupua’a were responsible for engineering irrigation systems that could in turn increase local agricultural productivity. The modification of freshwater resources was not limited to Kailua and Ko’olaupoko Moku; sometime after AD 1100, complex agricultural irrigation systems were developed across the island chain. Labor for such large-scale or intensive agricultural or construction projects was provided by the maka’āinana. Continued work upon and cultivation of the land further strengthened the notion of Kailua as an ‘āina momona (abundant land).

According to LCA documents, 171 claims were made for Kailua Ahupua’a. A small number of coastal kuleana could be found in the Ka‘ōhao/Lanikai area. The remaining claims were in the Kailua town area and into Maunawili. Kailua, Kāne‘ohe, and Waimānalo were considered choice locations for ali‘i and these areas were awarded to the Crown. The valuation of the Kailua area was largely attributable to the availability of natural resources. These natural resources were carefully guarded by konohiki. According to Kamakau, the konohiki was the agent or representative of a landholding chief; later, the term included the chief himself (Kamakau 1976:151).

An unnamed konohiki is notably mentioned within an account by Keko’owai. Keko’owai detailed early aspects of aloha ‘āina (love of the land or of one’s country) work occurring within Kailua Ahupua’a. The communal cleaning of the Kawai Nui loko (pond) in which the people harvested some fish for their own use is particularly salient.

Notions of communal or shared interests were altered with the Organic Acts of 1845 and 1846. This legislation initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown and the ali‘i received their land titles. Kailua Ahupua’a was awarded to Queen Hakalelepono Kalama. Ali‘i did not specify in claims what their lands were used for, however, it appears maka’āinana lands were used for habitation and cultivation, specifically for kalo (taro).

The production (and consumption) of kalo or taro was vitally important to Kailua Ahupua’a. The reliance upon this staple crop is evidenced by the remnants of terraces and/or pond fields, ‘auwai (water channels), and earthen and stacked-stone berms within the ahupua’a. Dryland and irrigated agricultural features have been found in Maunawili and along the margins of Kawai Nui Marsh.

A large number of lo‘i kalo have been identified within LCA records. Approximately 157 cultivated lo‘i kalo were claimed as kuleana; within the claims, numerous references were made to possible lo‘i as well as the boundaries of cultivated lo‘i that were not claimed. Both physical and documentary evidence attest to the importance of kalo to communities of Native Hawaiians living in Kailua during the mid-nineteenth century.

Besides the observed contributions to stamina and health, kalo was also a revered staple food, believed to have derived from the first-born son of Wākea and Papa.

[…] the supreme god Kane ‘in the form of Wakea (a form associated with the earth) produced two sequential offspring: the first became kalo (taro) plant, the second became Hāloa, the ancestor of man […] thus, in kinship terms, the taro is the elder
brother and the senior branch of the family tree, mankind belongs to the junior branch, stemming from the younger brother.’ [Trask 2012:75]

A portion of Kailua Ahupua’a was also used for coconut cultivation called Kula o ‘Ālele (Coconut Grove). Ultimately the coconut cultivation business failed and the land was subdivided then sold for home sites. Some of the coconut trees still exist today.

7.2 Nā Wahi Pana

There exist a myriad of cultural sites or wahi pana for Koʻolaupoko Moku; however, for the ahupua’a of Kailua, ‘ili of Ka‘ōhao, the islets and ridges were of particular importance. Currently, Ka‘ōhao is known as the entrance to Lanikai, a housing complex. Mr. de Silva also provided ample information concerning Popoi’a. A fishing shrine was located on the island and later destroyed by a tsunami. Mr. de Silva has supplied an abundance of information regarding the wahi pana near the proposed project area.

Popoi’a. John Clark’s Hawai‘i Place Names provides the best one-stop gloss for this wahi pana: ‘[An] island (4 acres), Kailua, O‘ahu. Low, flat limestone island one-quarter mile off Kailua Beach Park. Part of the Hawai‘i State Seabird Sanctuary and nesting site during the summer months for wedge-tailed shearwaters. Also known as Flat Island. Lit., fish rot. The name probably refers to offerings of fish that were left at a fishing shrine on the island. The shrine was destroyed by the tsunami of April 1, 1946’ (John H. K. Clark, Hawai‘i Place Names: Shores, Beaches, and Surf Sites, Honolulu: University of Hawai‘i Press, 2002; 304).

Although Clark (following Pukui, Place Names, 189) implies that the name is derived from the words popopo (rot, decay) + i’a (fish), it has also been explained to us as the balled-up droppings (pōpō) of the fish-eating shearwaters that nest by the hundreds in the island’s limestone pockets (Lokomaika‘i Snakenberg, personal communication, 1980). Louis Mahoe’s memory of a ledge under which his father placed fish offerings ‘at least up to the 1920s’ seems to give more credence to the former explanation (Sites, 238).

The offshore island of Mokulua is home to the kōlea or plover, a favored food of Hawaiians. Bird hunters often traveled to Mokulua by canoe or boat to catch these plovers. Today the island is a State Bird Sanctuary. Mr. de Silva has provided information regarding the Mokulua Islands.

(Nā) Mokulua. Hawai‘i Place Names (249) again provides the best single summary: ‘Islands (24.1 acres, 225 feet high), Kailua, O‘ahu. Collective name for two islands approximately threequarters of a mile off Wailea Point in Lanikai. Both are part of the Hawai‘i State Seabird Sanctuary and primary nesting sites for wedge-tailed shearwaters and Bulwer’s petrels. The calcareous sand beach in the lee of Moku Nui, the larger island, is a popular landing site for boaters, kayakers, and surfers. Both islands are also known as the Mokulues, Mokes, and Twin Islands. The larger island is also known as Big Moke, Moku Nui, and Two Humps. The smaller island is also known as Baby Moke, Moku Iki, and One Hump. Lit., two islands.’

Although Clark identifies the separate islands by the more authentic-sounding inoa Moku Nui and Moku Iki (Large Island and Small Island), these names are not to be
found in our nūpepa and older land documents and should thus be used with caution and disclaimer. Jiro Tanabe, when asked if he knew of older, individual names for the two islands, says that they have been forgotten (personal communication, 1983). [de Silva 2019:13]

Mr. de Silva added that “Nā Mokulua” appears in three previous de Silva family songs (“Mokulua,” “Hanohano Wailea,” and “Hiehie Olomana”). The name also appears in the mele “Ka Lae o Alālā.” He further explains

‘Nā Mokulua’ appears in three previous de Silva family songs (‘Mokulua,’ ‘Hanohano Wailea,’ and ‘Hiehie Olomana’) where it is used for its paired, male-female, symbolism; the two islands are in pilikua-piliialo relationship; they are husband and wife, the two that are one. The name appears in ‘Ka Lae o Alālā’ for much the same mom-and-dad reason, and the ‘ʻili nehe’ phrase that accompanies it is an echo of a line (‘A walea i ka nehe o ka ‘iliʻili’ – At ease, absorbed in the clatter of ‘iliʻili) from the actual dad’s ‘Mokulua.’ The literal reference, in both, is to the ‘iliʻili beach on the smaller of the two islands; the beach faces Ka‘ōhao, and its rustling, ‘ili nehe sounds are the source of great comfort and tranquility for the change-beleaguered listener. [de Silva 2019:13]

Mr. de Silva also discussed Kaʻiwa Ridge which divides Kaʻōhao from Kaʻelepulu. He noted that Sterling and Summers reported that the ridge was named for a chiefess of Kailua who was the object of the konohiki Ahiki’s deep affection. To be closer to the Kaʻiwa, Ahiki rose up and pulled himself away from his brother peaks (Olomana and Pākuʻi) (Sterling and Summers 1978:239). He added that the story of Kaʻiwa and Ahiki is the subject of the third verse of the mele “Hanohano Wailea”: “Halakau ‘o Kaʻiwa i luna lilo / Neʻe mai ‘o Ahiki i ke kualono” (de Silva 2019:14).

Mr. de Silva noted that Wailea Point is the boundary marker dividing Kaʻōhao from Waimānalo Ahupua’a. He added that Wailea Point was a place for spotting fish and where offerings were made to a stone god of the same name (Sterling and Summers 1978:239). He noted Pukui’s definition of Wailea which means “water of Lea” (Pukui et. al. 1974:224) which refers to the goddess of canoe-makers (Pukui and Elbert 1986:239). He added that Lea is also known as Hinauluʻōhi’a, a female goddess of the ‘ōhi’a lehua forests, the mother of Kailua’s voyaging chief Kaulu, and a guardian goddess of po’e hula (Beckwith 1970:17, 563) (de Silva 2019:14).

7.3 Marine and Freshwater Resources

The connection between land and sea was well understood by those living within the ahupua’a. The boundaries of the ahupua’a also included inshore fisheries, shore-side salt sources, and potable springs (Hommon 2013:13). Both seashore and ocean provided physical and spiritual sustenance (NOAA 2017) for the people of Kailua. According to Malo, the ocean was divided into smaller divisions, stretching from ae kai (strip of the beach over which waves ran after they had broken) to moana (ocean) (Malo 1951:25–26). Resources were extracted by the people of Kailua within these various zones.

In pre-Contact times, Kailua Ahupua’a was an attractive area for ali‘i because of its accessibility to natural fishponds. The 450-acre Kawai Nui Loko was famous for awa (Piper methysticum), a variety of ‘o’opu subspecies, ‘ama’ama (mullet), jacks, barracuda lizard fish, and
various types of *limu*. In recent years, environmental pollution and invasive species such as tilapia have plagued the *loko*.

The many waters of Kailua, both *wai* and *kai*, remain culturally and spiritually significant. While *wai* may be the physical manifestation of Kāne on earth, *kai* is an ever-present reminder of an “elder geography” (Osorio 2014:4). The ocean functions as a reminder of the *kūpuna* and of Kahiki (the ancient homeland for Olopana),

 [...] whose antecedents are found in the darkness of Pō, whose homeland encompasses the vastness of the liquid desert now known as the Pacific, and whose traditional ports of call and safe havens lie scattered among what Hau‘ofa calls the sea of islands. [Osorio 2014:5]

Early Polynesians were believed to have established settlements in windward O‘ahu beginning sometime in the fourth century; Kawai Nui may have been utilized by these early settlers. For Polynesians,

Their was a large world in which peoples and cultures moved and mingled, unhindered by boundaries of the kind erected much later by imperial powers. From one island to another they sailed to trade and to marry, thereby expanding social networks for greater flows of wealth. They traveled to visit relatives in a wide variety of natural and cultural surroundings, to quench their thirst for adventure, and even to fight and dominate. [Hau‘ofa 1994:153–154]

Kailua Beach Park is a 30-acre public park located on the eastern portion of Kailua Bay; Kailua Beach is located to the northwest of the project area. Freshwater enters the sea at Kailua Beach Park. A *muliwai* (river) is located in the middle of the park that drains into the bay; this *wahi pana* marks the second location where the waters of Kawai Nui enter the sea.

Mr. de Silva reports that *limu līpoa* was in abundance at both Kailua and Ka‘ōhao beach. He has extracted this information from the *Nupepa Kuokoa* written by Samuel Keko‘owai.

Līpoa. ‘Bladelike, branched, brown seaweeds with conspicuous midrib on blade, unique aroma and flavor; highly prized on all islands’ (*Dictionary*, 208). The beaches of Kailua and Ka‘ōhao were once famous for the limu līpoa that was easily gathered on the inner reef shallows of the bay and that washed ashore in dark, fragrant masses during stormy weather. Samuel Keko‘owai, visiting the Solomona (Solomon Mahoe) family at its Kalapawai home in Kawailoa-lele (the Kailua Beach portion of the larger ‘ili ‘āina of Kawailoa), waxed eloquent over the līpoa that he enjoyed there:

I ka hiki ana mai i ka hale, ua hoi mai ka poe lawai’a a me ka poe luu līpoa, noho iho la no iwaho o ke kahua maniania kuku ku ka umeku poi, lomilomi ka pua oio, me ka pepe omaka o Kailua, o ka hanu paoa ae o ka līpoa pakela ua make i ka ono. (When we returned to the house, so too did the fishermen and limu gatherers; we sat outside on the maniania grass lawn, set up the poi bowl, prepared the ‘ō’io fingerlings and crushed ‘omaka of Kailua; the overwhelming fragrance of līpoa left me swooning with hunger. [Keko‘owai, “Kailua Alo Lahilahi,” *Nupepa Kuokoa*, June 7. 1923; translations by Kīhei de Sliva]
In the interview with Ms. Harms she explained the gathering of *limu* was common at Lanikai Beach when she was a child. She emphasized that *limu* should never be ripped off from the roots from the rocks. They were instead broken off by the tips to ensure regrowth of the plants. However, due to many factors including climate change, the regrowth of *limu* has rapidly declined. In addition to this information, Ms. Harms reiterated that human intervention by directly removing *limu* from the beaches has caused sand erosion. Ms. Harms affirmed that in traditional times *limu* would wash ashore attracting flies. People would purposefully leave the *limu* to naturally rot on the sand. Ms. Harms asserted that *limu* had naturally produced a type of glue. The layers of *limu* combined with sand held the earth in place. However, with modern methods of land management, the *limu* is now removed from the sand and used as inland fertilizer. Consequently, these actions have led to mass erosion.

All the interviews with community members conducted by CSH for this project concluded fishing was a gathering activity done at Lanikai Beach and Kailua Beach. Both beaches were known for their fisheries in traditional times. Mr. de Silva has written about the fishery of Popoi‘a citing Linda Gallano. Below is an account of the different types of fish and sea life found in the fishery.

Popoi‘a was once at the heart of an abundant fishery: Nūpepa announcements of 1879 threaten to prosecute its unauthorized use by lawai‘a (‘Hoolaha Papa,’ *Nupepa Kuokoa*, August 9, 23, and 30, 1879). The territorial legislature sought to similarly protect it in 1917 (‘Na Hana o ka Ahaolelo Kuloko,’ Nupepa Kuokoa, April 6, 1917). Samuel Keko‘owai described it, in 1923, as ‘ailana i ke alo o ka piko’ – an island in the tastiest, alopiko portion of the ‘fish’ that is the ahuupua‘a of Kailua. And the Mahoe family, even as late as the 1960s, remembers the Popoi‘a fishery as a place for turtles, lobster, squid, and ‘a lot of moi, mullet, weke, kūmū, āwewe, āholehole, lai, ‘ō‘io, kākū, [and] ‘a‘awa’ (Linda Mahoe Gallano, “Fishing Kailua Bay,” *Kailua*, 237–239). [de Silva 2019:12]

Diving was a prominent activity at Lanikai Beach. Mr. de Silva, and Ms. Harms have all commented about an eminent diver named Solomon Mahoe. Mr. Mahoe was a free diver well known in the Kailua community. Several generations of ancestry linked him to Ka‘ōhao. Ms. Harms remarked, Mr. Mahoe would not come to the surface of the ocean unless a lobster was held in each of his hands. This act hints at the abundance of lobsters in the vicinity.

Ms. Harms recalled that the *hukilau* or seine (a traditional fishing practice) was a normal activity on Kailua Beach for gathering marine resources. She mentioned two Native Hawaiian families named the Mahoes and Kalamas would facilitate the activity. A man named Mr. Gramberg owned a boat. He would lay the nets out at sea, while the families along the shore would pull the big net onshore. The catch of the day was divided appropriately amongst participants, while the rest of the fish were thrown back to sea to repopulate. Ms. Harms attested that the eating of turtles was an acceptable practice during those times.

### 7.4 Religious Practices

Kailua was home to ten *heiau*: 1) Alāa, 2) Hālualalo, 3) Holomakani, 4) Ka‘anahau, 5) Keikipu‘ipu‘i, 6) Kukapoki, 7) Kukuipilau, 8) Pahukini, 9) Pu‘uwānī‘ani‘a, and 10) Ulupō. Of
these, Alāla Heiau was once located at the similarly named point or promontory at the entrance to Kaʻōhao/Lanikai.

Mr. de Silva described Alāla Heiau, noting that the mele “Ka Lae ‘o Alāla takes its name from the heiau below and around which, centuries later, the Powlisons built their house.” Ms. Harms, granddaughter of Anne and Arthur Powlison, mentioned that “there would be ceremonies up here relating to fishing, or people would put offerings on them and go out fishing hoping for good luck.” She recalled that “sometimes we would wake up in the morning and there would be a big papaya sitting up there, or a taro root, or once a can of pork and beans, sitting on the rock. And my mother watched the guy climb on the rock and place the papaya.”

Mr. de Silva explained that a purification ceremony was practiced at present day Lanikai Beach. The original name of Lanikai Beach was Kaiʻōlena. The name Kaiʻōlena may be broken into two words kai and ʻōlena. Kai means sea or sea water. ʻōlena means turmeric, which originates from India, later becoming a medicinally used type of ginger in Polynesia. The combination of both words was linked to the sources found by Mr. de Silva in the below paragraph:

Kaiʻōlena. Sea-water mixed with ʻōlena and used for ceremonial purification. The name belongs to the section of beach and ocean ma’ai of Lanikai Park and accessible from the Kaiʻōlena St. right of-way. The name may refer, in part, to the ʻōlena-colored sand and water of our reef-protected strand and to the healing properties that some of the old-timers attributed to the ocean here (Jiro Tanabe, personal communication, 1983). [de Silva 2019:13]

This ritual of purification is further explained by Pukui and Elbert’s knowledge displayed in Nānā I Ke Kumu: Volume I. They state, “Probably no ritual of Hawaii’s past has merged with Christian sacramentals with less conflict than has pī kai. For the use of water in symbolic purification is universal” (Pukui and Elbert 1972:179). Pukui and Elbert continue to describe the meaning of pī kai and the use of ʻōlena in this religious practice.

pī kai - a ritual sprinkling with sea water or other salted water to purify an area or person from spiritual contamination and remove kapus (taboos) and harmful influences.

sea salt water used in pī kai

In Hawaii’s pre-Christian era, fresh water, sea water and even coconut water were all used ceremonially. When the water of purification (wai huikala) had sea salt in it and was sprinkled, then the ceremony was basically pī kai. ʻōlena or limu kala (sea moss) might be added to the water. Hala leaves, symbolic of cleansing, might be among the ritual objects. Kahuna or layman might conduct the ceremony. Such were the variations on the pī kai theme.

Pī kai was done when heiaus or specific altars were dedicated, at the dedication of a house or newly made canoe, after contact with a corpse, and sometimes after menstruation or childbirth or contact with a menstruating woman. [Pukui and Elbert 1972:179–180]

In the document that Mr. de Silva provided to CSH, he acknowledged the religious practices at Alāla Point near the proposed project area. A special ceremony for the high ranking aliʻi took place
at Alāla Heiau. Mr. de Silva cites Pukui’s information from the book *Nānā i ke Kumu: Volume I* regarding the cultural practice of cord cutting.

Piko cutting. Called *mō ka piko* and *ʻoki (i) ka piko*, the act involves the cutting and tying-off of the new-born’s umbilical cord between the placenta and what will become the child’s belly button. Pukui explains that this act was accomplished, in older days, with a bamboo knife and a length of ‘olonā cordage. [Mary Kawena Pukui, *Nana i ke Kumu*, v.1, Honolulu: Hui Hanai, 1979; 183.]

In a commoner family, the midwife might wield the knife and tie the cord without ceremony. In the aliʻi household, the degree of ritual might depend on sex and status of the baby. A firstborn child rated more ceremony than later babies. According to Malo, “if the child was a girl, its navel string was cut in the house, but if a boy, it was carried to the heiau, there to have the navel string cut in a ceremonial fashion…For this high-born child, a kahuna cut the cord, and the ‘ceremonious fashion’ meant offerings to the gods and chanted prayers. [de Silva 2019:8]

Mr. de Silva then sources David Malo for a different account of the religious practice of cord cutting. The major difference between these accounts, explained by Mr. de Silva, was Malo insisted the cord was tied prior to its cutting, while Pukui simply describes the process of cutting the umbilical cord.

As Pukui notes above, David Malo’s Hawaiian Antiquities provides a detailed account of what the ahakai for Kūaliʻi might have entailed; for example:

When the cord had first been tied with *olonā*, the *kahuna*, having taken the bamboo (knife), offered prayer, supplicating the gods of heaven and earth and the king’s *kaai* gods, whose images were standing there. The articles constituting the offering, or *mohai*, were lying before the king, a pig, cocoanuts, and a robe of *tapa*. The king listened intently to the prayer of the kahuna, and at the right moment, as the kahuna was about to sever the cord, he took the offerings in his hands and lifted them up…[David Malo, *Hawaiian Antiquities*, Honolulu: Bishop Museum Press, 1976; 136–7; de Silva 2009:9]

Mr. de Silva described a religious practice found in the Hawaiian news outlet *Nupepa Kuokoa*. A special ritual was done for the goddess Haumea. Haumea was thought to be an equivalence to that of Papa, the wife of Wakea. Haumea was also the mother of goddess Pele. According to Beckwith, “Myths told of Haumea center about themes concerned with food supply for the life of man and marriage and birth for the increase of the family stock” (Beckwith 1970:278–279). Mr. de Silva has translated information from the story of *Makalei ka Laau Pii Ona a ka I’a*:

Samuel Kekoʻowai, in a March 31, 1922, installment of his moʻolelo ‘Makalei ka Laau Pii Ona a ka I’a,’ tells of grandmother Niʻulaʻa’s instructions to her grandson Kahinihiniʻula with regard to preparing an ‘anae aloalolena’ as an offering to Haumea, and how to send up, with this spine-snapped fish, a prayer that will allow the boy to rise to the status of aliʻi and become a favorite of those who then ruled Kailua:

He pa no Kailua ka pali o Lualualei A wall for Kailua is Lualualei cliff
I alaia ka ino i kai o Alaala la, e Blocked is the storm seaward of Alāla
E ala!… Awake!


7.5 Burials

The project area is situated within the sand berm of Kailua which was utilized as a settlement area by indigenous Hawaiians. As with other near-shore sandy areas in Hawai‘i, this portion of Kailua was also used extensively for burial of the dead. Previous archaeological research has revealed six inadvertent finds of human skeletal remains within Lanikai/Kaʻohao and more than 15 reports of inadvertent finds of human skeletal remains from the sand berm of Kailua.

According to Mr. de Silva, “I know of no burials there or of any extant cultural sites (except for the heiau itself).” Ms. McKenzie stated, “it is not unlikely that there were iwi kūpuna resting in the area—although whether they survived the building of the road and other construction over the years is another question.”
Section 8  Summary and Recommendations

CSH undertook this CIA at the request of Gerald Park Urban Planner, on behalf of the City and County of Honolulu Department of Design and Construction. The research broadly covered the entire ahupua'a of Kailua.

8.1 Results of Background Research

Background research for this study yielded the following results, presented in approximate chronological order:

1. Kailua Ahupua’a is the largest valley on the windward side of O‘ahu, and the largest ahupua’a of the moku Ko‘olauapoko (approximately 15 km by 11 km). The name Kailua, meaning “two seas,” apparently refers to the two large inland waters, Kawai Nui Pond and Ka‘elepulu Pond (Pukui et al. 1974:69; Quebral et al. 1992:14).

2. Kawai Nui Marsh was traditionally known as Kawai Nui Loko or the big freshwater pond. Kawai Nui Marsh is a celebrated, noted, and legendary place in Hawaiian traditions. The legends of Kawelo, Kahalaopuna, Keaomelemele, and the menelhune all refer to Kawai Nui, as does the history of the ruling chiefs Kūali‘i and Olopana. The marsh was the home of the mo‘o Hauwhine and the wish-fulfilling tree, Mākālei. The demi-goddess Hi‘iaka and her companion Wahine-oma‘o visited, and Kawai Nui’s fame is related in numerous chants (Drigot and Seto 1982:84–96).

3. Ka‘elepulu Pond is a large marsh pond which was formerly an embayment. In legend, Paku‘i, a famous runner, was delegated by Haumea to tend the Ka‘elepulu fishpond. Another legend associated with Ka‘elepulu tells of the runner Uluanui of O‘ahu: it was said that he could carry a fish from Ka‘elepulu pond in Kailua, traverse the island by way of Waialua, and bring the fish—still alive and wriggling—into Waikīkī (Malo 1951:220).

4. Kawailoa is an ‘ili located in the ahupua’a of Kailua. In the Māhele, Kamehameha III claimed this land for himself and his heirs. Kawailoa consists of two portions, one going up to the peak of Olomana from Kalaniana‘ole Highway and the other just outside Lanikai along the beach. In the upper portion is found the present women’s prison in the old facilities formerly known as the Kawailoa Girls’ School (SIHP # 50-80-11-1361). The project area is located within the ‘ili of Kawailoa.

5. The traditional name of the area now known as Lanikai is Ka‘ōhao. The name Ka‘ōhao comes from the tale about “the tying”—the tying of two women by Hāuna, kahu to high chief Lonoikamakahiki of Hawai‘i Island after the women were beaten at a game of kō‘nane (Fornander 1916-1917:4:314–315).

6. Traditional history describes Kailua as the residence of many prominent O‘ahu ruling chiefs. Olopana is said to have “established several heiaus in Kāne‘ohe and Kailua, including Pahukini and Holomakani in the Kawaiinui area” (Kelly and Nakamura 1981:3). Fifteenth century ruler Oahu-a-Kākuhihewa built a government house called
Pāmoa in the plain known as ‘Ālele (McAllister 1933:185–186). In the seventeenth century, Kūali‘i was born at Kalapawai in Kailua (Beckwith 1940:395; Fornander 1880:278). In the eighteenth century, Kahekili and his chiefs lived in Kailua after he conquered the island in 1780 (Mustapha 1985:2). After Kamehameha I conquered O‘ahu in 1799, he came to Kailua and worked side by side with the people to clean and restore Kawai Nui Fishpond. When Kamehameha III came to the windward side, one of his retreats was at Alāla.

7. Kailua is known to have contained ten heiau: 1) Alāla, 2) Hālualolo, 3) Holomakani, 4) Ka‘anahau, 5) Keikipu‘ipu‘i, 6) Kukapoki, 7) Kukuipilau, 8) Pahukini, 9) Pu‘uwāni‘ani‘a, and 10) Ulupō. Of these, Alāla Heiau is located east of the project area. Birth rituals, including the piko (navel) cutting ceremony for the child, were performed at Alāla Heiau. The sacred drums, Hāwea and ‘Ōpuku, were moved from Ho‘olonopahu and taken to Alāla at Kūali‘i’s birth for this ceremony (Thrum 1923:92).

8. A total of 71 Land Commission Awards were claimed before the Board of Commissioners to Quiet Land Titles (Land Commission) in Kailua. In the Māhele records, 123 house lots are mentioned in the awards for Kailua (Waihona ‘Aina 2020). Where “kahuahale,” or house, are mentioned, these house lots are typically bounded “on all sides by upland,” indicating an overwhelmingly inland settlement pattern. Early twentieth century testimony (Kailua Library 1977:10, Solomon Mahoe interview) indicates the fishermen at the shore traded ocean fish for taro with the upland farmers, probably a long-established pattern. LCA lots in Kailua mention numerous fisheries and pools where fish would have been raised. The current study area has no kuleana LCA lots associated with it.

9. For nearly 100 years following the Māhele, Kailua grew into an important area of commercial agriculture. In the early 1900s, rice was the major crop of Kailua, replacing numerous lo‘i (irrigated terrace) in the former taro lands of Maunawili. Kawai Nui, the area between the present Hāmākua Drive and the beach, and the area around Ka‘elepulu Pond provided areas for the expansion of rice. Multiple rice mills were functioning in Kailua Ahupua‘a, one of which was located in the vicinity of the present day Castle Medical Center. Taro was followed by truck farming of rice and western crops.

10. In the early 1900s, Kaneohe Ranch (Castle Trust) eventually acquired much of the land in Kailua (Hall 1997:84). Included within this acreage were areas that had been bought, sold, leased, and used as ranch land by numerous parties since the mid-1850s. Kaneohe Ranch, in addition to ranching, grew pineapple and sugarcane. With the decline of rice farming around the margins of Kawai Nui, cattle stock moved onto the abandoned agricultural lands. Ranching in Kailua continues today, albeit on a drastically reduced scale, along Pu‘u o ‘Ehu ridge.

11. The nearest fisheries to the project area were the government-administered Kawailoa Fishery and Alaapapa Fishery. Southeast of Kawailoa Fishery was Alaapapa Fishery,
that makes up the western half of modern-day Kaʻōhao. Northwest of Kawailoa Fishery was Kailua Fishery owned by N.R. Rice.

12. Truck farming of avocado, papaya, and western crops followed the decline of rice agriculture. The Kūkanono slopes along Kailua Road and extending toward Kawai Nui Marsh were utilized for cultivation, raising chickens, and pig farming. The Kailua Fruit Stand, owned and operated by the Nishikawa family, was the most successful of the Kūkanono truck farms. The stand was in the location of today’s Christ Church Uniting Disciple and Presbyterians on Kailua Road. The family worked and leased the lands for 25 years until the development of the Kūkanono neighborhood (Hollier 2011).

13. Lanikai is a housing subdivision, first built up in the 1910s and 1920s, which consists of the ‘ili of Kawailoa, Alaʻapapa, and Mokulua. The area was traditionally called Kaʻōhao. Clark noted, “Lanikai is not a proper Hawaiian word but was devised by this community’s promoters. The name probably was intended to mean ‘royal sea’ or perhaps ‘heavenly sea,’ which in proper Hawaiian, would have been Kailani, but the words were transposed and joined as they would be in English, rather than in Hawaiian” (Clark 1977:175).

14. In 1920s, Arthur and Anne Powlison built their house atop of Alāla Heiau, just mauka of the study area (Dunn 2009:245). The house sits directly in front of Alāla shrine (Puʻuhālo), which was used by fishermen to locate the best fishing grounds (Mahoe 2009:234–239). Alāla Heiau once stood in this area but was long destroyed by this time. The Hilltop House was used by the military during WWII as a training center and vantage point for three years. The Hilltop House is a private family residence still within the Powlison family; it was renovated in 2008 (Dunn 2009:247).

15. By the 1950s, the truck farms were slowly replaced by housing, municipal, and retail developments. Kailua was promoted as the bedroom community for Honolulu businessmen, only “8 miles and 20 minutes” from downtown (Hall 1997:141). Residential developments were planned for more outlying areas of Kailua Town, such as Olomana, Pōhākupu, and Oneawa Hills (Hall 1997:141).

8.2 Results of Community Consultations

CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 73 individuals or groups; five responded, two provided written testimony, and two of these kamaʻāina and/or kūpuna met with CSH for more in-depth interview. Consultation was received from community members as follows:

1. Herb Lee, Executive Director of the Pacific American Foundation
2. Cosette Harms, resident of Kailua
3. Melody MacKenzie, cultural descendant of the Kailua Ahupua’a and a member of Kailua Kau a Hoʻoilo
4. Kīhei de Silva, cultural descendant of the Kailua Ahupua’a and kamaʻāina
8.3 Impacts and Recommendations

Based on information gathered from the community consultation, participants voiced and framed their concerns in a cultural context.

1. Cosette Harms noted the significance of Alāla Heiau, “There would be ceremonies up here relating to fishing, or people would put offerings on them and go out fishing hoping for good luck.” She recalled, “sometimes we would wake up in the morning and there would be a big papaya sitting up there, or a taro root, or once a can of pork and beans, sitting on the rock. And my mother watched the guy climb on the rock and place the papaya, And then he went down, jumped on a fishing boat and went fishing.”

2. Ms. Harms recalled traditional cultural practices exercised on Kailua Beach including the traditional fishing technique known as hukilau and gathering limu. She knew of fishing huts from old photographs, which were used by fishermen.

3. Ms. Harms also noted that Kailua was used for agriculture. She recalled that before the development of the Lanikai community, there were watermelon farms located in the vicinity of the project area. Parts of Kailua were once used to grow banana patches, papaya groves, and dairy farms with cows.

4. Melody MacKenzie stated she is “not aware of any specific cultural practices associated with the area that the Ocean Safety Building will be built in,” however, she mentioned “the significance of Pu‘u Hālō and the importance of Alāla,” adding “it is not unlikely that there were iwi kūpuna resting in the area - although whether they survived the building of the road and other construction over the years is another question.”

5. Mr. de Silva mentioned he knows of no burials or any extant cultural sites within the project area, except for Alāla Heiau. He noted that the sacred ceremony of a piko cutting ceremony was conducted at Alāla Heiau for Kūali‘i. He also noted that Alāla is not only a heiau, but also considered a fishing site and ko’a. Alāla point was also a favorite camping and fishing site for Kamehameha III (Nawelu in Sterling and Summers, Sites of Oahu, Honolulu: Bishop Museum Press, 1962:238)

6. Mr. de Silva stated that the people of Kailua used to gather limu līpōa, a type of seaweed that showcased a unique aroma and taste. He explained that “The beaches of Kailua and Ka‘ōhao were once famous for the limu līpoa that was easily gathered on the inner reef shallows of the bay and that washed ashore in dark, fragrant masses during stormy weather”([de Silva 2019:12].

7. Mr. de Silva suggested construction commence with caution as the significance of Alāla is still revered and honored amongst the ‘ilima noho papa. He recommended an Archaeological Inventory Survey (AIS) be conducted before “any such work commences.”

8. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. In the event that iwi kūpuna are
identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.

9. In the event that ʻiwi kūpuna and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.
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Ola Kini O Kailua I Ka I’a Nui He “Palaoa Pae.”

I kahi la kalae o keia mau pule aku la, ua pae mai la he kohola kino nui puipui ma Kailua nei ma ka lae o Alaala ma ka huli makani, me he la i kipa mai no ka honi ana i ke onaona lau lipoa o Oneawa, a loaa aku la i na poe lawaia ua ili i ka hapapa. Ua pau aku na kane, na wahine ame na keiki no ke ka’ipuu ana i na poke io momona, a iloko no o ke kai ua pau i ka lole a maemae, o kekahhi mau poke i’o kelekele ua laweia e hanai i na Kepani me na Pake, ua loaa he 20 dala ma ke kuai ana ia lakou. O ke koena iho o na poke i’o ua hiu ia i ke kupa me ka palai, a he ono hoi kau me ka miki poi. Ina pela hou mai ua i’a nui hou, ai ono loa ko Kailua mau kini, pohekeheke maikai kikala. Hemo.

Me ke aloha nui i ke Kapena ame na alii kipakipa o Ke Au Hou, ke kaomi malie nei ka peni hulu koloa a ke keiki o Kapaa i ka uhiwai. Mahalo nui loa.

Kiu Hanu Mea Hou.
Waipii-o-Oneawa, Kailua.
Oahu, Apr. 14, 1911.

Translation:

Ke Au Hou. 19 April 1911.
The Multitudes of Kailua Supported By the Large Fish, A Stranded Humpback Whale.

On one clear day of these past weeks, a large bodied, plump Humpbacked whale beached at the cape of “Alaala” at the side facing the wind, as though it were visiting to smell the soft fragrance of the brown seaweed leaves of Oneawa. The fishers obtained that stranded inheritance at the shoal. All the men, women, and children congregated for the dividing of the slices of rich meat, and the butchering and cleaning was completed within the ocean. Some of the fatty meat slices were brought to be cared for by the Japanese and the Chinese. 20 dollars were earned for selling to them. The remainder of the meat slices were combined with soups and fried, and it was indeed very delicious with the sour poi, pounded taro. If indeed a large fish like that returns again, the multitudes of Kailua’s people will feast and their hips will be nicely plump. Satisfied.

With great love to the captain and the hospitable chiefs of Ke Au Hou, the Hawaiian duck feathered pen is pressing down upon the uhiwai paper (TN: uhiwai is a special type of kapa, a bark cloth.) With great appreciation.

Spying Evanescent News.

“Waipii-o-Oneawa,” Kailua,
O’ahu, 14 April 1911.
Appendix B  Māhele Records

LCA #2657 for Awardee Mahuia Kailua, Koolaupoko, Oahu
Figures of LCA #2657 for Awardee Mahuia Kailua, Koolaupoko, Oahu
Number 2657 Mahuia    Kailua, Koolaupoko, Oahu

Apana 1. He moo iloko o Kuaihina, Kaopa, Kailua, Oahu.

E hoomaka ma ke kihi Hikina, e hele ana Hema 78½° Kom. i 2.6 kh ma ka palena no Kailikakio, Malaila aku Ak. 8° Kom. i 1.22 kh. ma ka palena no Puhì, Malaila aku Ak. 70° Hi i 1.45 kh. ma ke Konohiki, Malaila aku Ak. 12° Kom. i 1.31 kh. Malaila aku 68° Hi. i 0.30 kh. Malaila aku Ak. 15° Kom. i 2.22 kh. Malaila aku, Ak. 76° Hi. i 150 kh ma ko Konohiki, Malaila aku Hema 9.00 Hi. i 5.00 kh. ma ka palena o Puheke a hiki i kahi i hoomaka’i [hoomakaaï]. He eka 1, me 2 60/100 kh. huinaha.

Apana 2. He pahale ma Alapapa, Kaohao, Kailua.

E hoomaka ma ke kihi komohana, e hele ana Hema 42° Hi. i 1.60 hk. ma ka palena kula o Konohiki, Malaila aku Ak. 48° Hi. i 2.55 kh. Malaila aku Ak. 55° Kom. i 2.10 kh. ma kaha kai. Malaila aku Hema 37 ½ Kom. i 2.60 kh. a hiki i ka hoomaka ana. He 4 41/100 kh. huinaha.

Pau loa 1 Eka 7 kh. huinaha. A. Bishop Mea Ana
Uku pau loa $5.00

W. L. Lee
G. M. Robertson
J. K. Smith

Honolulu Feberuari 23. 1856  J. Kekualahao

Translations provided by CSH:

Section 1. There is a narrow strip of land within Kuaihina, Kaopa, Kailua, Oahu

Beginning at the Eastern corner, traveling South 78½° West to 2.6 [kaulahao (171.6 ft)] at the border of Kailikakio, Thence North 8° West to 1.22 [kaulahao (80.52 ft)] at the border of Puhì, Thence North 70° East to 1.45 [kaulahao (95.7 ft)] was the Konohiki, Thence North 12° West to 1.31 [kaulahao (86.46 ft)]. Thence 68° East to 0.30 [kaulahao (19.8 ft)] Thence North 15° to 2.22 [kaulahao (19.8 ft)]. Thence, North 76° East to [kaulahao (9,900 ft)] was the Konohiki, Thence South 9.00 to East 5.00 [kaulahao (330 ft)] at the border of Puheke to the starting point. One acre 1 and 2 60/100 [kaulahao] square

Section 2. A court yard at Alapapa, Kaohao, Kailua.

Beginning at the Western corner, traveling South 42° to East 1.60 [kaulahao (105.6ft)] at the border plains of Konohiki, Thence North 48° to East 2.55 [kaulahao (168.3ft)] Thence North 55° to West 2.10 [kaulahao (138.6 ft)] at the
seaside. Thence South 37 ½ West 2.60 [kaulahao (171.6 ft)] to the beginning.
4 41/100 [kaulahao (291.06 ft)] square

Entire Amount Paid $5.00

W. L. Lee
G. M. Robertson
J. K. Smith

Honolulu, February 23, 1856. J. Kekualahao
Foreign Testimony #2657 for Claimant Mahuia Kailua, Koolaupoko, Oahu

Nanua sworn say I know the land of Mahuia. It is in Kailua in the ol of Kualima and consists of 1, two patches, and house lot in Kaaiaio.

N°1 is bounded
by the two land of Puei.

N°2 House lot in Kaaiaio is bounded
by Upland

Claimant had his land from Keina in the time of Lueka and had in peace till recently. It has now been taken from him by the konohiki.
Figures of LCA #4249B for Awardee Kau Kailua, Koolaupoko, Oahu
Transcriptions provided by CSH (Foreign Testimony #2657 for Claimant Mahuia Kailua, Koolaupoko, Oahu):

No 2657  Mahuia Claimant

Nanaielua sworn say I know the land of Mahuia, It is in Kailua in the ili of Kuailima and consists of 4 taro patches and house lot in Kaohao

No. 1 is bounded

M.  by the taro land of Puhi.

No. 2 House lot in Kaopa is bounded

M.  by Upland
K.  “ “
M.  “ “ Sea beach.
K.  “ “ Upland.

Claimant had his land from Hema in the time of Liliha and had in peace till recently. It has now been taken from him by the Konohiki.
LCA #4249B for Awardee Kau Kailua, Koolaupoko, Oahu
Transcriptions provided by CSH (LCA #4249B for Awardee Kau Kailua, Koolaupoko, Oahu):

Helu 4249 B Kau
Kailua, Koolaupoko, Oahu

Apana 1. He Pahale ma Kaelepulu, Kailua, Koolaupoko, Oahu. Hoomaka ana ma ke kihi Hikina, Hema, a moe aku

Akau 2°½ Komohana 230 pauku pili ia Konohiki
Hema 84°½ Komohana 250 “ “ “
Hema 2°½ Hikina 230 “ “ “
Akau 84°½ Hikina 250” “ i kahi i hoomaka ai 57/100 Eka

Asa Hepu Meaana


He 5°6/100 kh. huinaha


Pau loa [*] Eka 5 88/100 kh huinaha

A Bishop Meaana

Ma Kela aoao na Kii

Uku pau loa $6.00

W. L. Lee
G. M. Robertson
J. K. Smith
J. Kekualahao

Honolulu Novemaba 29, 1854

Translations provided by CSH:

Section 1. A courtyard at Kaelepulu, Kailua, Koolaupoko, Oahu. Beginning at the Eastern corner, South, and laying diagonally

North 2°½ West 230 land section smaller than a mo‘o pertaining to Konohiki
South 84°½ West 250 " " " from the starting point 57/100 Acre

Asa Hepu Surveyor

Section 2. A land parcel at Kaluapulu a land section in Kaelepulu. Beginning at the Western corner, traveling North 68° to East 1.37 [kaulahao (90.42 ft)] by sea. Thence, South 20°½ East 1.26 [kaulahao (83.16 ft)] was the Konohiki. Thence, North 76°½ To East 1.54 [kaulahao (101.64 ft)]. Thence, South 14°½ to West 2.78 [kaulahao (183.48 ft)]. Thence, South 42°½ to West 0.95 [kaulahao (62.7 ft)]. Thence, North 58½ to West 1.00 [kaulahao (66 ft)]. Thence, North 20° to East 1.00 [kaulahao (66 ft)]. Thence, North 28° East at the beginning.

5°6/100 [kaulahao (333.96 ft)] square

Section 3. Ka moe Homai ili o Kaelepulu Beginning at the Northern corner, traveling South 88° to West 1.90 [kaulahao (125.4 ft)] by the stream. Thence, South 40° to East 6.80 [kaulahao (448.8 ft)] at the boundary of Mahoe. Thence, North 54° to East 1.18 [kaulahao (77.88 ft)]. to the Konohiki. Thence, North 43° to West 2.90 [kaulahao (191.4 ft)] to the Kanakanui. Thence, North 26° to West 3.24 [kaulahao (213.84 ft)] from the starting point. Total [*] Acre 5 88/100 [kaulahao (388.08 ft)] square

A Bishop Surveyor

Located on the other Page are images

Uku pau loa $6.00

W. L. Lee
G. M. Robertson
J. K. Smith
J. Kekualahao

Honolulu November 29, 1854
Foreign Testimony #4249B for Claimant Kau Kailua, Koolaupoko, Oahu

Claimant swear that his claim was written by China for the Land Commission. China also writes a letter saying that he wrote and carried to the office of the Land Commission.

The claim of Kau.

Nukuhiʻu argues says, I know the land in Kailua, in the isle of Waiʻalae, a Morana Norman and consists of 8 tanes or tates and lune lot.

No. 1 is bounded:
  N. by the land of Naha
  E. by the land of Hanaakama
  S. by the land of Hanaakama
  W. by a creek

No. 2 is bounded:
  N. by the land
  E. by the land
  S. by a creek
  W. by a creek

Claimant had his land from Nukuhiʻu in the time of Nahaakama, and has had it in peace to this time. Now claims a fish pond by his house but the tide whelle objects to his having it. It is doubtful whether claim can sustain his claim to the fish pond.
Transcriptions provided by CSH (Foreign Testimony #4249B for Claimant Kau Kailua, Koolaupoko, Oahu):

No. 4249B Kau Claimant  Claim not found
Claimant swear that his claim was written by Okena for the Land Commission. Okena also writes a letter saying that he wrote and carried to the office of the Land Commission the claim of Kau.

Mooluhi sworn says I know the land in Kailua, in the ili of Kaelepulu a Mooaina Hoomai and consist of 6 taro patches and house lot.

No. 1 is bounded
M.   by the taro land of Mahoe
K.   " Creek.
M.   " the land of Kamakanui.
K.   " Fishpond " Kaelepulu

No. 2 is bounded
M.   by a Creek
K.   Upland
M.   "
K.   "

Claimant had his land from Kahuna in the time of Kaahumanu and has had it in peace to this time. Kau claims a fish pond by his house lot the Konohiki objects to his having it. It is doubtful whether Kau can sustain his claim to the fishpond.