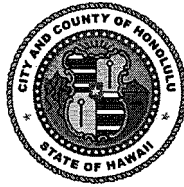


**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

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CDD-SS 25-941736

June 26, 2025

Ms. Mary Alice Evans, Director  
State of Hawaii  
Office of Planning and Sustainable Development  
P.O. Box 2359  
Honolulu, Hawaii 96804

Dear Ms. Evans:

SUBJECT: Hawaii Revised Statutes (HRS) Chapter 343 Draft Environmental Assessment – Anticipated Finding of No Significant Impact (DEA-AFNSI) for Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream Project, Tax Map Keys: Waialua Beach Road Right-of-Way; (1) 6-6-022: 001 por., 004; 6-7-001: 010 por., 014, 017; 6-7-009: 002

With this letter, the City and County of Honolulu, Department of Design and Construction transmits the *Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFNSI)* for the proposed Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream Project for review and publication in the July 8, 2025 edition of The Environmental Notice.

In addition to this letter, you will find the online Environmental Review Program (ERP) Publication Form that has been submitted through the ERP website. The online submittal includes one electric copy of the DEA-AFNSI as an Adobe Acrobat PDF file.

If you have any questions, please mail or email the contact information below.

R.M. Towill Corporation  
Attn: Jim Niermann  
2024 North King Street, Suite 200  
Honolulu, Hawaii 96819  
Email: [jimn@rmtowill.com](mailto:jimn@rmtowill.com)

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles".

Haku Milles, P.E., LEED AP  
Director

HZ:WH:bm



**From:** [dbedt.opsd.erp@hawaii.gov](mailto:dbedt.opsd.erp@hawaii.gov)  
**To:** [DBEDT OPSD Environmental Review Program](#)  
**Subject:** New online submission for The Environmental Notice  
**Date:** Monday, June 30, 2025 1:24:49 PM

---

**Action Name**

Replacement of Waialua Beach Road Bridge (Bridge No. 605) Over Ki'iki'i Stream

**Type of Document/Determination**

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

**HRS §343-5(a) Trigger(s)**

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

**Judicial district**

Waialua, O'ahu

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

Waialua Beach Road Right-of-Way; (1) 6-6-022: 001 por., 004; 6-7-001: 010 por., 014, 017; 6-7-009: 002

**Action type**

Agency

**Other required permits and approvals**

National Environmental Policy Act; Section 404 of Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, Department of Army Permit; Section 4(f) of Department of Transportation Act of 1966 Review; Section 7 of Endangered Species Act, Fish and Wildlife Coordination Act, Magnuson-Stevens Fishery Conservation and Management Act Consultation; Section 106 of National Historic Preservation Act Consultation; Chapter 6E, Hawai'i Revised Statutes (HRS), Historic Preservation Review; Coastal Zone Management Act Federal Consistency Review Consultation; Section 401 of CWA Water Quality Certification; Facility Access Plan Review; Land and Water Conservation Fund Act, Section 6(f) Consultation; National Pollution Discharge Elimination System Permits; Noise Permit; Noise Variance Permit (if nighttime construction is required); Stream Channel Alteration Permit; Chapter 343, HRS, Environmental Review Compliance; Special Management Area – Major Permit; City building, grading and erosion control permits

**Proposing/determining agency**

City and County of Honolulu, Department of Design and Construction

**Agency jurisdiction**

City and County of Honolulu

**Agency contact name**

Hui Zhang

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United States  
[Map It](#)

**Is there a consultant for this action?**

Yes

**Consultant**

R. M. Towill Corporation

**Consultant contact name**

Jim Niermann

**Consultant contact email**

[jimn@rmtowill.com](mailto:jimn@rmtowill.com)

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United States  
[Map It](#)

**Action summary**

The City and County of Honolulu, Department of Design and Construction proposes to replace the existing Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream with a new two-span concrete bridge supported by deep foundation drilled-shaft abutments and center pier. It will be located along the same alignment as the existing bridge. A temporary bypass bridge will be constructed along the mauka (inland) side of the existing bridge to maintain traffic flow throughout the period of demolition and construction. The existing bridge requires replacement because it is over 70 years old (built in 1950) and has exceeded its design lifespan and due to the removal of sediment from around the bridge's abutments and three piers from the erosive force of the stream's flow (also referred to as scour); thus, reducing the stability of the bridge's structural support system. The purpose of the proposed action is to replace the existing bridge with a new bridge that will be designed to provide greater protection against future scour damage to the bridge's abutments and center pier, improve the stream's hydraulic flow, as well as to meet current City, State and Federal design standards.

**Reasons supporting determination**

See Section 6, Determination and Findings of the Draft EA.

**Attached documents (signed agency letter & EA/EIS)**

- [WAIALUA-BRIDGE\\_DEA\\_2506301.pdf](#)
- [WAIALUA-BRIDGE\\_DEA\\_ERP-SUBMITTAL-LTR-CDD-SS-25-9417361.PDF](#)

**ADA Compliance certification (HRS §368-1.5):**

The authorized individual listed below acknowledges that they retain the responsibility for ADA compliance and are knowingly submitting documents that are unlocked, searchable, and may not be in an ADA compliant format for publication. The project files will be published without further ADA compliance changes from ERP, with the following statement included below the project summary in The Environmental Notice: "If you are experiencing any ADA compliance issues with the above project, please contact (authorized individual submitting the project at phone and/or email)."

**Action location map**

- [WAIALUA-BRIDGE-REPLACEMENT\\_PROJECT-LOCATION1.zip](#)

**Authorized individual**

Jim Niermann, AICP, LEED AP BD+C

**Authorized individual email**


[jimn@rmtowill.com](mailto:jimn@rmtowill.com)

**Authorized individual phone**

(808) 842-1133

**Authorization**

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



**DRAFT ENVIRONMENTAL ASSESSMENT**  
PREPARED IN ACCORDANCE WITH CHAPTER 343, HAWAII REVISSED STATUTES AND  
SECTION 11-200.1, HAWAII ADMINISTRATIVE RULES

# **Replacement of Waialua Beach Road Bridge (Bridge No. 605) Over Ki'iki'i Stream**

Waialua Beach Road, Waialua, Hawai'i  
Tax Map Keys: Waialua Beach Road Right-of-Way;  
(1) 6-6-022: 001 por., 004; 6-7-001: 010 por., 014, 017; 6-7-009: 002  
July 2025

Photo source: KHON2

## **AGENCY**

City and County of Honolulu  
Department of Design and Construction  
650 South King Street, 11<sup>th</sup> Floor  
Honolulu, Hawai'i 96813

## **PREPARED BY**

R. M. Towill Corporation  
2024 North King Street, Suite 200  
Honolulu, Hawai'i 96819  
Project No. 1-24498-00

# Project Summary

<b>Type of Document:</b>	Draft Environmental Assessment pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Title 11, Chapter 200.1.
<b>Environmental Assessment Review Trigger:</b>	Section 343-5(a)(1), Hawai'i Revised Statutes: Use of state or county lands or the use of state or county funds.
<b>Project Name:</b>	Replacement of Waialua Beach Road Bridge (Bridge No. 605) Over Ki'iki'i Stream
<b>Proposing Agency:</b>	City and County of Honolulu, Department of Design and Construction
<b>Determining Agency:</b>	City and County of Honolulu, Department of Design and Construction
<b>Consultant:</b>	R. M. Towill Corporation
<b>Proposed Action:</b>	<p>The City and County of Honolulu, Department of Design and Construction proposes to replace the existing Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream with a new two-span concrete bridge supported by deep foundation drilled-shaft abutments and center pier. It will be located along the same alignment as the existing bridge. A temporary bypass bridge will be constructed along the <i>mauka</i> (inland) side of the existing bridge to maintain traffic flow throughout the period of demolition and construction. The existing bridge requires replacement because it is over 70 years old (built in 1950) and has exceeded its design lifespan and due to the removal of sediment from around the bridge's abutments and three piers from the erosive force of the stream's flow (also referred to as scour); thus, reducing the stability of the bridge's structural support system. The purpose of the proposed action is to replace the existing bridge with a new bridge that will be designed to provide greater protection against future scour damage to the bridge's abutments and center pier, improve the stream's hydraulic flow, as well as to meet current City, State and Federal design standards.</p>

<b>Location:</b>	Waialua Beach Road Bridge is located on Waialua Beach Road near Waialua Elementary School in Waialua and spans Ki'iki'i Stream, Island of O'ahu, State of Hawai'i Figure 1-3)
<b>Tax Map Keys and Landowners:</b>	Waialua Beach Road Right-of-Way; (1) 6-6-022: 001 por., 004; 6-7-001: 010 por., 014, 017; 6-7-009: 002
<b>Project Area:</b>	Approximately 6.8 acres
<b>Existing Use:</b>	The existing Waialua Beach Road Bridge is a 140-foot-long by 36-foot-wide, four-span reinforced concrete tee beam structure with three piers and abutments with wingwalls.
<b>State Land Use Designation:</b>	Agricultural (Figure 5-1)
<b>County Zoning:</b>	AG-1 Restricted Agriculture (Figure 5-3)
<b>Special Management Area:</b>	Within the special management area (Figure 5-4)
<b>Flood Zone:</b>	Zone AE (west portion of project area); Zone X (east portion of the project area) (Figure 3-6)
<b>3.2-foot Sea Level Rise Exposure Area:</b>	Within the 3.2 feet of sea level rise exposure area (portion crossing Ki'iki'i Stream and temporary staging area) (Figure 3-1)
<b>Anticipated Determination:</b>	Anticipated Finding of No Significant Impact

# Table of Contents

Project Summary .....	i
Table of Contents.....	iii
Acronyms and Abbreviations .....	viii
Section 1. Introduction.....	1-1
1.1. Background .....	1-1
1.2. Purpose and Need.....	1-3
1.3. Project Location.....	1-3
1.4. Owner Information .....	1-4
1.5. Basis for the Environmental Assessment .....	1-4
1.6. Studies Contributing to Environmental Assessment.....	1-4
1.7. Anticipated Permits and Approvals.....	1-5
Section 2. Project Description .....	2-9
2.1. Temporary Bypass Bridge and Diversion Road .....	2-9
2.2. Demolition of Existing Bridge.....	2-10
2.3. New Bridge .....	2-10
2.4. Alteration of Stream Channel .....	2-11
2.5. Utilities .....	2-14
2.5.1. Utility Poles.....	2-14
2.5.2. 16-inch Board of Water Supply Water Main Line .....	2-14
2.5.3. Streetlights .....	2-14
2.5.4. Signage .....	2-15
2.6. Construction Staging Area.....	2-15
2.7. Construction Methodology .....	2-17
2.8. Project Schedule .....	2-19
2.9. Project Cost.....	2-19
Section 3. Description of Existing Environment, Potential Impacts, and Mitigation Measures .....	3-1
3.1. Air Quality .....	3-1
3.1.1. Potential Impacts and Mitigation .....	3-1
3.2. Archaeological, Historic, and Cultural Resources .....	3-2
3.2.1. Potential Impacts and Mitigation .....	3-4
3.3. Climate .....	3-6
3.3.1. Potential Impacts and Mitigation .....	3-6
3.4. Climate Change.....	3-6
3.4.1. Greenhouse Gas Emissions.....	3-7
3.4.2. Sea Level Rise .....	3-7
3.4.3. Potential Impacts and Mitigation .....	3-8
3.5. Flora and Fauna .....	3-13
3.5.1. Terrestrial Flora .....	3-13
3.5.2. Avian Fauna .....	3-13
3.5.3. Mammalian.....	3-14
3.5.4. Aquatic Fauna .....	3-14
3.5.5. Essential Fish Habitat.....	3-16

3.5.6.	Critical Habitat .....	3-16
3.5.7.	Potential Impacts and Mitigation .....	3-16
3.6.	Geology, Topography, and Soils .....	3-21
3.6.1.	Geology .....	3-21
3.6.2.	Topography .....	3-21
3.6.3.	Soils.....	3-22
3.6.4.	Potential Impacts and Mitigation .....	3-23
3.7.	Natural Hazards.....	3-27
3.7.1.	Hurricanes, Tropical Storms, and High Winds.....	3-27
3.7.2.	Flooding.....	3-27
3.7.3.	Tsunamis.....	3-27
3.7.4.	Volcanic Activity and Earthquakes .....	3-28
3.7.5.	Wildfires.....	3-28
3.7.6.	Potential Impacts and Mitigation .....	3-28
3.8.	Noise .....	3-33
3.8.1.	Potential Impacts and Mitigation .....	3-33
3.9.	Public Facilities.....	3-34
3.9.1.	Fire Protection Services .....	3-34
3.9.2.	Police Services.....	3-34
3.9.3.	Healthcare and Emergency Services .....	3-34
3.9.4.	Recreational Facilities .....	3-34
3.9.5.	Schools and Libraries.....	3-34
3.9.6.	Potential Impacts and Mitigation .....	3-35
3.10.	Socio-Economic Environment and Demographics.....	3-37
3.10.1.	Potential Impacts and Mitigation .....	3-39
3.11.	Surface Water .....	3-39
3.11.1.	Inland Waters .....	3-39
3.11.2.	Marine Waters .....	3-40
3.11.3.	Wetlands .....	3-41
3.11.4.	Jurisdictional Waters Delineation .....	3-41
3.11.5.	Potential Impacts and Mitigation .....	3-43
3.12.	Transportation and Traffic.....	3-45
3.12.1.1.	Potential Impacts and Mitigation .....	3-45
3.13.	Utilities .....	3-47
3.13.1.	Drainage.....	3-47
3.13.2.	Electrical and Telecom .....	3-47
3.13.3.	Potable Water.....	3-47
3.13.4.	Solid and Hazardous Waste.....	3-47
3.13.5.	Wastewater .....	3-48
3.13.6.	Potential Impacts and Mitigation .....	3-48
3.14.	Visual Resources.....	3-50
3.14.1.	Potential Impacts and Mitigation .....	3-50
Section 4.	Alternatives Analysis .....	4-1
4.1.	Identification of Alternatives.....	4-1
4.2.	Alternative 1 – No Action Alternative .....	4-1
4.3.	Alternative 2 – Delayed Action .....	4-2
4.4.	Alternative 3 (Preferred Alternative) – Construct a New Single-Pier Bridge.....	4-2



4.5. Alternative 4 – Construct a New Three-Pier Bridge.....	4-2
Section 5. Relationship to Policies, Plans, and Controls.....	5-1
5.1. Federal .....	5-1
5.1.1. NEPA.....	5-1
5.1.2. Section 404, CWA and Section 10, RHA .....	5-1
5.1.3. Section 7, ESA Consultation .....	5-2
5.1.4. Section 106, NHPA Consultation .....	5-2
5.2. State of Hawai‘i.....	5-3
5.2.1. Hawai‘i State Plan .....	5-3
5.2.2. Hawai‘i State Land Use Law .....	5-9
5.2.3. Hawai‘i Coastal Zone Management Program.....	5-11
5.3. City and County of Honolulu.....	5-18
5.3.1. Oahu General Plan.....	5-18
5.3.2. North Shore Sustainable Communities Plan .....	5-20
5.3.3. Waialua Town Master Plan .....	5-21
5.3.4. O‘ahu Bike Plan Update .....	5-21
5.3.5. Land Use Ordinance .....	5-22
5.3.6. Special Management Area .....	5-22
Section 6. Determination and Findings .....	6-1
6.1. Irreversible and Irretrievable Commitment of Resources .....	6-1
6.2. Significance Criteria.....	6-1
6.3. Summary of Findings and Anticipated Significance Determination .....	6-7
Section 7. Agency and Public Consultation.....	7-1
7.1. Consultation List.....	7-1
7.2. Pre-EA Consultation .....	7-3
7.3. Additional Consultation.....	7-4
7.3.1. Waialua Elementary and DOE .....	7-4
7.3.2. LWCFA, Section 6(f) Consultation .....	7-4
7.3.3. North Shore Neighborhood Board Meeting .....	7-4
Section 8. References .....	8-1

# List of Figures

Figure 1-1 - View of south side of Waialua Beach Road Bridge over Ki'iki'i Stream from southwest bank of the stream, view to northeast (CSH, 2025)	1-2
Figure 1-2 – View of east approach to Waialua Beach Road Bridge, view to west with Waialua Elementary School in distance on left side of road	1-2
Figure 1-3 – Project Location	1-7
Figure 1-4 – Regional Project Location	1-8
Figure 2-1 – Proposed Temporary Bypass Road and Bridge and New Bridge	2-12
Figure 2-2 – Proposed New Bridge and Approaches	2-13
Figure 2-3 – Proposed Construction Staging Areas	2-16
Figure 3-1 – 3.2 ft of Sea Level Rise Exposure Area	3-11
Figure 3-2 – NOAA 6 ft of Passive Flooding Scenario	3-12
Figure 3-3 – ALISH	3-24
Figure 3-4 – LSB	3-25
Figure 3-5 – Soil Types	3-26
Figure 3-6 – Flood Zones	3-31
Figure 3-7 – Tsunami Evacuation Zones	3-32
Figure 3-8 – Surface Water Resources	3-42
Figure 5-1 – State Land Use Districts	5-10
Figure 5-2 – O'ahu Bike Plan Update – Existing and Proposed Bike Facilities	5-24
Figure 5-3 – City Zoning	5-25
Figure 5-4 – SMA	5-26

# List of Tables

Table 1-1 – Landowners Within the Project Area	1-4
Table 1-2 – Anticipated Permits and Approvals	1-5
Table 3-1 – Bridge Road Elevations – Existing and New Bridge	3-9
Table 3-2 – Hydraulic Model Results for Sea Level Rise Events	3-10
Table 3-3 – Hydraulic Model Results for 100-Year Flood Events	3-29
Table 3-4 – Community Characteristics	3-38
Table 5-1 - Hawai'i State Plan Applicability to the Project	5-3
Table 7-1 – List of Consulted Agency and Public Stakeholders	7-1
Table 7-2 – Summary of Pre-EA Consultation Comments	7-5

# List of Appendices

- Appendix 1 – Preliminary 30% Design Drawings – Selected Sheets
- Appendix 2 – *Draft Archaeological Literature Review and Field Inspection to Support Consultation with the SHPD for the Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream Project, Kamananui Ahupua'a, Waialua District, O'ahu*; prepared by CSH, Inc.; dated May 2025
- Appendix 3 – *Letter Evaluation of Effect on Historic Resources (Hawai'i Revised Statutes (HRS) §6E-8 and Section 106), Ki'iki'i Stream (Waialua Beach Road) Bridge Replacement Project, Waialua Beach Road, Waialua, O'ahu, Hawai'i*, prepared by Mason, dated April 28, 2025
- Appendix 4 – *Natural Resources Assessment for Ki'iki'i Stream Bridge Replacement Project in Waialua, O'ahu*; prepared by AECOS Inc.; dated April 28, 2025
- Appendix 5 – Pre-EA Consultation Comment and Response Letters
- Appendix 6 – Waialua Elementary and Department of Education Meetings (February 14 and March 31, 2025)
- Appendix 7 – Additional Pre-EA Consultation Documentation

# Acronyms and Abbreviations

Acronym	Meaning
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
AECOS	AECOS, Inc.
ALISH	Agricultural Lands of Importance to the State of Hawai'i
BMPs	Best management practices
BWS	Honolulu Board of Water Supply
CAB	State of Hawai'i, DOH, Clean Air Branch
CATEX	Categorical Exclusion
CCDG	City and County of Honolulu, Climate Change Design Guidelines (version 1)
CDP	Census Designated Place
CFR	Code of Federal Regulations
City	City and County of Honolulu
CSH	Cultural Surveys Hawai'i, Inc.
CWA	Clean Water Act
CWB	State of Hawai'i, DOH, Clean Water Branch
CWRM	State of Hawai'i, DLNR, Commission on Water Resource Management
CZM	State of Hawai'i, OPSD Coastal Zone Management Program
DAR	State of Hawai'i, DLNR, Division of Aquatic Resources
DCAB	State of Hawai'i, DOH, Disability and Communication Access Board
DDC	City and County of Honolulu, Department of Design and Construction
DLNR	State of Hawai'i, Department of Land and Natural Resources
DOE	State of Hawai'i, Department of Education
DOFAW	State of Hawai'i, DLNR, Division of Forestry and Wildlife
DOH	State of Hawai'i, Department of Health
DOI	U.S. Department of Interior
DPP	City and County of Honolulu, Department of Planning and Permitting
DSP	State of Hawai'i, Division of State Parks
DTS	City and County of Honolulu, Department of Transportation Services
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ENV	City and County of Honolulu, Department of Environmental Services
ESA	Endangered Species Act
FEMA FIRM	Federal Emergency Management Agency, Flood Insurance Rate Map
FHWA	Federal Highway Administration
ft	feet
GHG	Greenhouse gas
HAR	Hawai'i Administrative Rules
HECO	Hawaiian Electric Company
HEER	State of Hawai'i, Department of Health, Hazard Evaluation and Emergency Response Office

**Replacement of Waialua Beach Road Bridge  
(Bridge No. 605) Over Ki'iki'i Stream**  
Draft Environmental Assessment

HFD	Honolulu Fire Department
HDOT	State of Hawai'i, Department of Transportation
HL-93	High Load-93 Design Live Loads
HPD	Honolulu Police Department
HRS	Hawai'i Revised Statutes
HTCO	Hawaiian Telecom
IRHB	State of Hawai'i, DOH, Indoor and Radiological Health Branch
LRFD	Load-and-resistance Factor Design
LRFI	Archaeological Literature Review and Field Inspection
LSB	Land Survey Bureau's Overall Productivity Rating
LUO	Land Use Ordinance
LWCF	Land and Water Conservation Fund Act
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act.
mph	Miles Per Hour
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHO	Native Hawaiian Organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NWP	Nationwide Permit
OPSD	State of Hawai'i, Office of Planning and Sustainable Development
Ph.	Phase
PIFWO	Pacific Island Fish and Wildlife Office
RHA	Rivers and Harbors Act
ROH	Revised Ordinances of Honolulu
ROW	Right-of-Way
SCAP	Stream Channel Alteration Permit
SHBIE	Hawai'i State Historic Bridge Inventory and Evaluation
SHPD	State Historic Preservation Division
SHPO	State Historic Preservation Officer
SLR-XA	Sea Level Rise Exposure Area
SMA	Special Management Area
SWPPP	Storm Water Pollution Prevention Plan
TMP	Traffic Management Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the U.S.
WSE	Water Surface Elevation
WTMP	Waialua Town Master Plan

# Section 1. Introduction

The City and County of Honolulu (City) Department of Design and Construction (DDC) proposes to replace the existing City-owned Waialua Beach Road Bridge that crosses over Ki'iki'i Stream with a new two-span concrete bridge supported by drilled-shaft abutments and a single center support pier. The project is located on portions of tax map keys (TMKs) Waialua Beach Road Right-of-Way; (1) 6-6-022: 001 por., 004; 6-7-001: 010 por., 014, 017; 6-7-009: 002, on the boundary between Hale'iwa and Waialua on the North Shore of O'ahu, Hawai'i (Figure 1-3). The project area illustrated on Figure 1-3 is approximately 6.8-acres and contains all areas that could potentially be required for project activities, including temporary access, staging and stockpiling, demolition and construction work. The new bridge will be located along the same alignment and in the same location as the existing bridge. A temporary bypass bridge and diversion road will be constructed along the *mauka* (inland) side of the existing bridge to maintain traffic flow throughout the period of demolition and construction. The proposed action will replace aging infrastructure that is over 70 years old and has reached the end of its useful lifecycle due to years of use and erosion of sediment from around the bridge's pier and abutment footings caused by stream flow (also referred to as scour). The purpose of the proposed action is to install a new bridge that prevents future scour damage to the bridge's structural support system, improves the stream's hydraulic flow, and meets current City, State and Federal design standards. For the project description, see Section 2.

## 1.1. Background

In 1950, the bridge was constructed as a 141-foot (ft) long by 38.5-ft wide four-span reinforced concrete tee beam bridge with abutment walls and three piers. The abutments are concrete breast walls with sloped wingwalls at each end. The piers are timber piles. The bridge deck is 38.5-ft wide and includes two 12-ft wide travel lanes, 2-ft wide road shoulders, and two 4-ft wide raised sidewalks.

In 2020, the State of Hawai'i Department of Transportation (HDOT) conducted a bridge scour analysis, which identified undermining of the Waialua Beach Road Bridge's west abutment and two piers, as well as severe decay of the timber piles. In March 2021, a series of slow-moving rainstorms resulted in the overflowing of rivers and streams and localized flooding, which damaged public infrastructure and private property. In response, Governor David Y. Ige issued an Emergency Proclamation to streamline permitting for emergency repairs to critical infrastructure that was impacted from the rain and flooding. Waialua Beach Road Bridge was identified as requiring emergency repairs due to further scour damage from the rainstorms. Subsequently, emergency repairs were conducted on Waialua Beach Road Bridge including the installation of concrete to fill the scour void below the west abutment and placement of riprap along the west abutment and two piers. The emergency repairs were meant as an intermediate

strategy to address the existing scour damage undermining the stability of the bridge until the permanent replacement of the existing bridge.



**Figure 1-1 - View of south side of Waialua Beach Road Bridge over Ki'iki'i Stream from southwest bank of the stream, view to northeast (CSH, 2025)**



**Figure 1-2 – View of east approach to Waialua Beach Road Bridge, view to west with Waialua Elementary School in distance on left side of road.**

## 1.2. Purpose and Need

The primary purpose of the project is to replace the existing Waialua Beach Road Bridge with a new bridge that prevents future scour damage to the bridge's structural support system and erosion of the stream bank, reduces damage from upstream debris, improves the stream's hydraulic flow by reducing the number of support piers, as well as meets current City, State and Federal design standards. The secondary purpose of the project is to widen the bridge towards the upstream (*mauka*) side to accommodate a raised curb shared-use path on the *mauka* side that connects a gap in the existing Waialua shared-use path that extends 2.5 miles from Weed Circle (to the east) to Crozier Drive (to the west) to improve safety for multimodal transportation and meet the City's Complete Streets standards.

The primary need of the project is to replace a bridge that is at the end of its design life span and to address structural deficits in the existing bridge resulting from scour damage undermining the bridge support system, which reduces the bridge's structural stability, as well as capacity to support design loads (e.g., vehicular and pedestrian traffic) and lateral forces (e.g., stream flow, wind, soil movement). In addition, vegetation and woody debris and other materials in the stream flow accumulate around the bridge piers, obstructing the waterway openings at the bridge, which results in stream bank erosion, scour damage, and potential stream flow overtopping of the bridge superstructure.

## 1.3. Project Location

The Waialua Beach Road Bridge crosses over Ki'iki'i Stream and is approximately 0.3 miles upstream from the stream's outflow to Kaiaka Bay on the boundary between Waialua and Hale'iwa on the North Shore of O'ahu, Hawai'i. The bridge is located along Waialua Beach Road, which is the primary route that brings vehicular traffic from Kamehameha Highway (the primary thoroughfare on the North Shore) to Waialua Town.

The project area is adjacent to agricultural land located to the northwest (owned by HKG A1 LLC); to the southwest by ancillary agricultural facilities (owned by Dole Food Company), vegetated riparian land (owned by the City), and Waialua Elementary School; to the northeast by fallow agricultural land (owned by Waialua Wai Villas) and residences; and to the southeast by vegetated riparian land (owned by the City) and agricultural land (owned by Dole Food Company). The project site is approximately 0.8 miles southwest of Kaiaka Bay Beach Park, 0.3 miles to the east of the Old Waialua Sugar Mill, and 1.5 miles southwest of Hale'iwa Town.



## 1.4. Owner Information

Information on the landowners within the project area include the following:

**Table 1-1 – Landowners Within the Project Area**

TMK	Owner
(1) 6-6-022: 001; (1) 6-7-001: 014, 017	Dole Food Company Hawai'i
(1) 6-6-022: 004	City and County of Honolulu
(1) 6-7-001: 010	City and County of Honolulu; State of Hawai'i
(1) 6-7-009: 002	State of Hawai'i
Waialua Beach Road right-of-way <sup>1</sup>	City and County of Honolulu
<sup>1</sup> Portion of Waialua Beach Road Bridge and roadway located within the project area	

## 1.5. Basis for the Environmental Assessment

DDC has prepared this environmental assessment (EA) because the project's design and environmental compliance phase will use county funds, and a portion of the project site is located on county lands. Projects that propose the use of state or county lands or the use of state or county funds are required to prepare an EA pursuant to Section 343-5(1), Hawai'i Revised Statutes (HRS). The purpose of the EA is to disclose and evaluate the potential adverse environmental impacts associated with the proposed project. This EA has been prepared in accordance with the requirements of Chapter 343, HRS and Section 11-200.1, Hawai'i Administrative Rules (HAR). The Draft EA analyzes the potential environmental impacts of the project and seeks public comment on environmental issues to be addressed in the Final EA. DDC is the accepting authority for the EA.

The project's construction phase will use both county and federal funds, which will trigger environmental documentation consistent with the National Environmental Policy Act (NEPA). The Draft HRS 343 EA will be the basis to initiate consultation with the Federal Highway Administration (FHWA) to determine whether a NEPA Categorical Exclusion (CATEX) or EA will be required for the proposed project. The NEPA environmental review documents will be prepared separately.

## 1.6. Studies Contributing to Environmental Assessment

The Draft EA was prepared using information from publicly available reports and information, site visits, consultation with agencies and community, and Hawai'i State and Honolulu GIS Databases (see Section 8 for the complete list of references). In addition, the following reports were prepared to assess the potential project-specific impacts to biological, historical, and cultural resources:

- *Draft Archaeological Literature Review and Field Inspection to Support Consultation with the SHPD for the Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream Project*, prepared by Cultural Surveys Hawai'i, dated May 2025
- *Evaluation of Effect on Historic Resources (HRS §6E-8 and Section 106) Ki'iki'i Stream (Waialua Beach Road) Bridge Replacement Project*, prepared by Mason, dated May 20, 2025
- *Natural Resources Assessment for Ki'iki'i Stream Bridge Replacement Project in Waialua, O'ahu*; prepared by AECOS Inc.; dated April 28, 2025

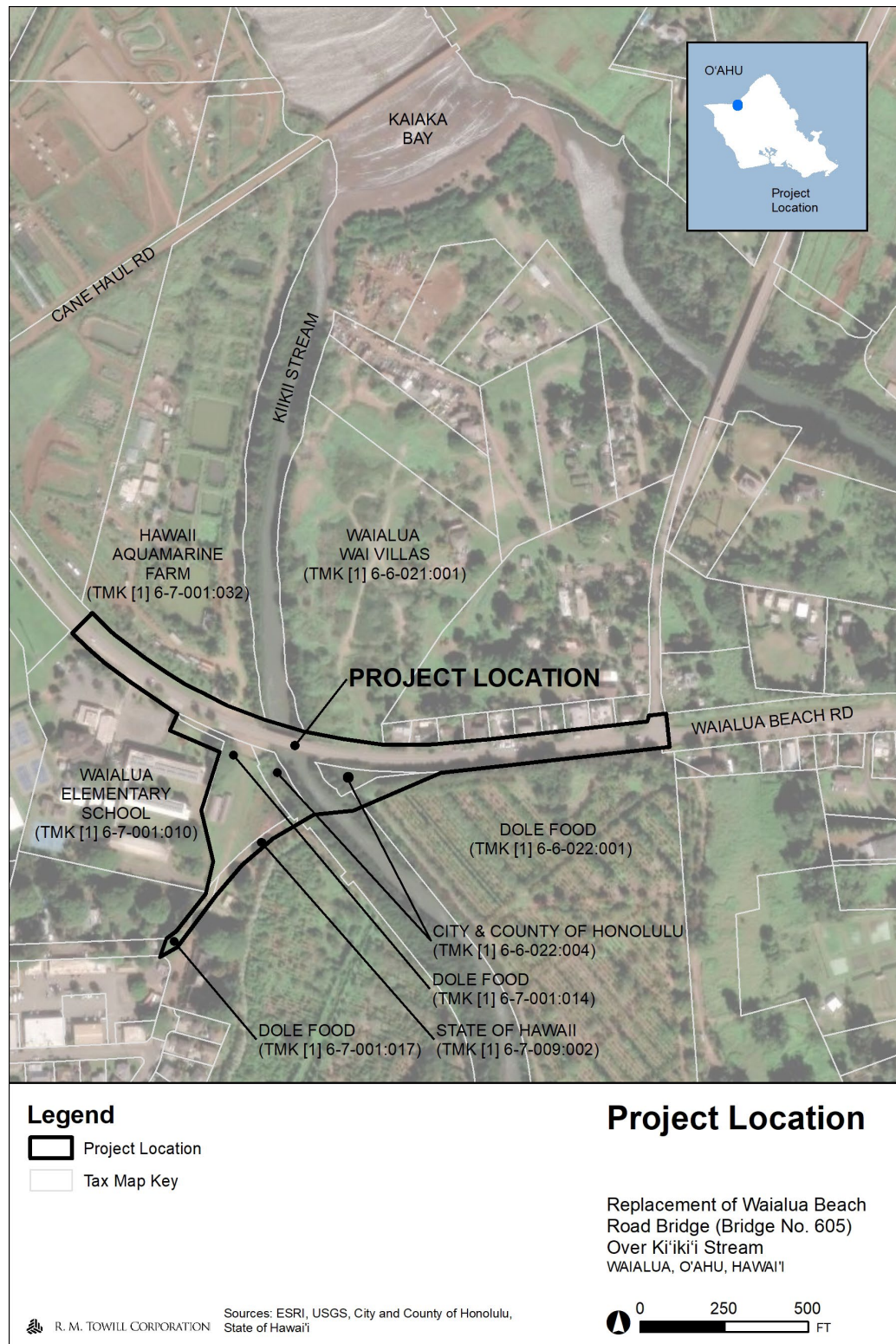
## 1.7. Anticipated Permits and Approvals

Anticipated permits and approvals include the following:

**Table 1-2 – Anticipated Permits and Approvals**

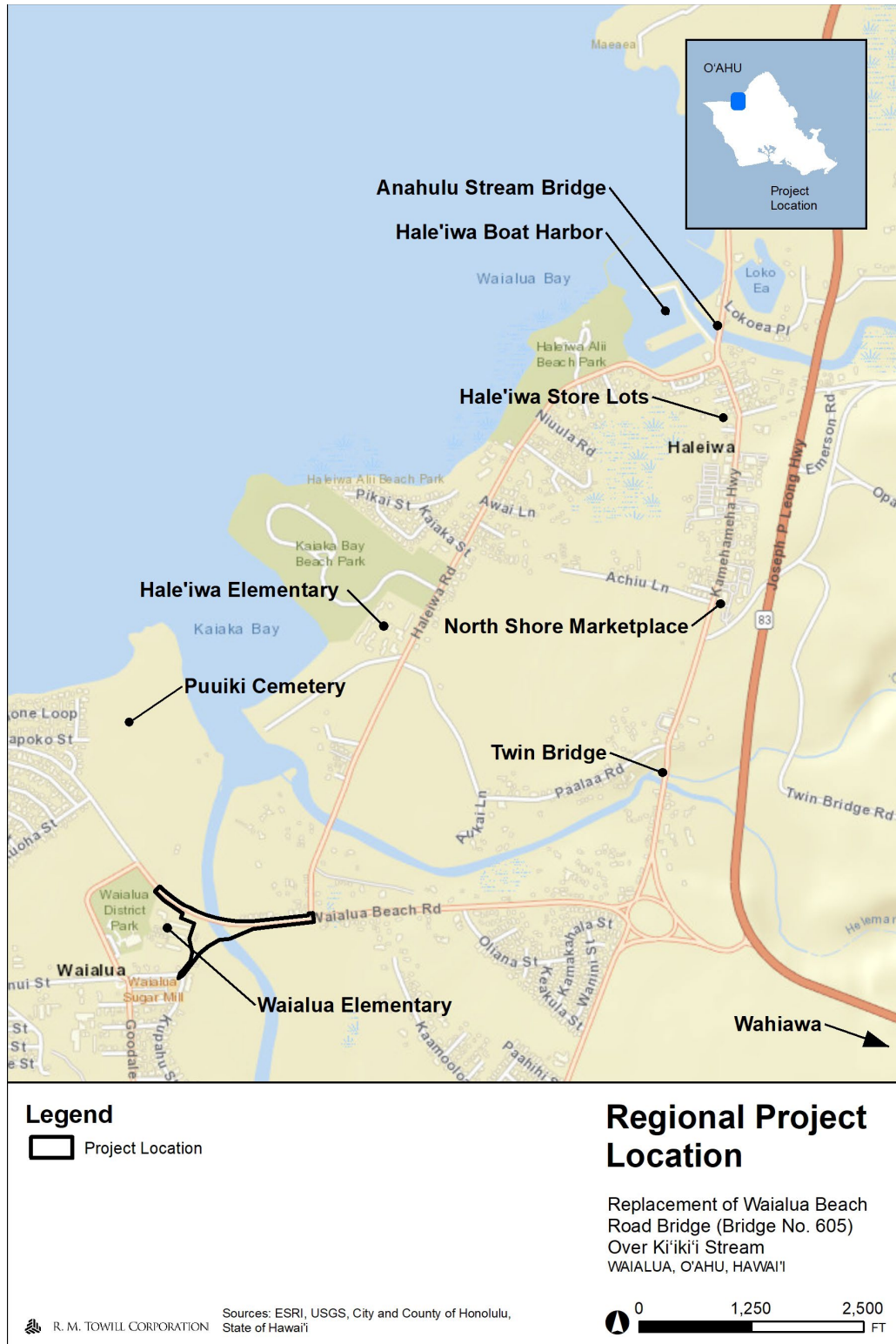
Permit or Approval	Issuing or Approving Agency
<b>Federal</b>	
National Environmental Policy Act (NEPA)	Federal Highway Administration (FHWA)
Section 404 of Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act (RHA), Department of Army Permit	U.S. Army Corps of Engineers (USACE)
Section 4(f) of Department of Transportation Act of 1966 Review	FHWA
Section 7 of Endangered Species Act (ESA), Fish and Wildlife Coordination Act, Magnuson-Stevens Fishery Conservation and Management Act Consultation	U.S. Fish and Wildlife Service (USFWS) Pacific Island Fish and Wildlife Office (PIFWO), National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), State of Hawai'i Division of Aquatic Resources (DAR)
Section 106 of National Historic Preservation Act (NHPA) Consultation	Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officer (SHPO)
<b>State</b>	
Chapter 6E, HRS, Historic Preservation Review	State DLNR, State Historic Preservation Division (SHPD)
Coastal Zone Management Act Federal Consistency Review Consultation	State Office of Planning and Sustainable Development (OPSD), Coastal Zone Management (CZM) Program
Section 401 of CWA Water Quality Certification	State Department of Health (DOH)
Facility Access Plan Review	DOH, Disability and Communication Access Board (DCAB)
Land and Water Conservation Fund Act (LWCF), Section 6(f) Consultation	State Department of Land and Natural Resources (DLNR), Department of State Parks (DSP)

National Pollution Discharge Elimination System (NPDES) Permits	DOH, Clean Water Branch (CWB)
Noise Permit	DOH, Indoor and Radiological Health Branch (IRHB)
Noise Variance Permit (if nighttime construction is required)	IRHB
Stream Channel Alteration Permit (SCAP) Permit	State DLNR, Commission on Water Resource Management (CWRM)
<b>City</b>	
Chapter 343, HRS, Environmental Review Compliance	DDC
Special Management Area – Major (SMA) Permit	City, Department of Planning and Permitting (DPP)
Building, grading and erosion control permits	DPP



**Figure 1-3 – Project Location**





**Figure 1-4 – Regional Project Location**

## Section 2. Project Description

This section summarizes the proposed action, project schedule, and cost. The proposed action involves replacing the existing Waialua Beach Road Bridge that crosses over Ki'iki'i Stream. The work will include the installation of a temporary bypass bridge and construction of a diversion road, demolition of the existing bridge, construction of the new bridge, upgrade of utilities, alteration of the stream channel, and use of construction staging areas. A description of the proposed action is provided below. See Figures 2-1, 2-2 and Appendix 1 – Preliminary 30% Design Drawings – Selected Sheets.

### 2.1. Temporary Bypass Bridge and Diversion Road

Before construction of the new bridge begins, a 230-ft long by 24-ft wide roadway temporary bypass bridge with a 5-foot-wide pedestrian walkway cantilevered on the upstream side will be installed parallel and *mauka* of the existing bridge. It will be a modular, prefabricated steel bridge with an approximately 16-ft tall truss lateral brace system. Temporary abutments, used to support the prefabricated bridge, will be installed upland on the west and east banks of Ki'iki'i Stream. The project design team are considering alternatives for no in-stream piers and use of concrete spread footing or micropiles for structural support during use of the temporary bridge. The temporary bypass bridge will be installed by either rolling it into place utilizing a launching nose or with the assistance of a crane. The temporary bypass bridge section will include two 11-ft wide travel lanes for motorists and a 5-ft separated pedestrian walkway on the *mauka* side only.

Both ends of the temporary bypass bridge will connect to diversion roads that will curve north to connect back to Waialua Beach Road.

The west diversion road will be located along the Waialua Beach Road ROW (north of Waialua Elementary School) and will occupy portions of a Dole-owned agricultural parcel (TMK [1] 6-7-001:014) and a City-owned parcel that provides maintenance access along the stream bank (TMK [1] 6-6-022:004). In front of the Waialua Elementary School, the temporary diversion road section will include two 11-ft wide travel lanes and a raised curb and asphalt walkway on the *mauka* side of the road fronting the school. As the west diversion road leaves the existing roadway and curves up to the temporary bypass bridge, the diversion road section will include a portable concrete barrier along the *makai* side to separate public traffic from the work zone, two 11-ft wide travel lanes, and a 5-ft at-grade walkway separated by “candlestick”-type curb delineators.

The west diversion road will include one temporary driveway connection to serve the adjacent properties. One driveway will connect to the Waialua Elementary School's east driveway that provides access to the back of the school campus (TMK [1] 6-7-001:010).

The east diversion road will be located along a City-owned parcel that provides maintenance access along the stream (TMK [1] 6-6-022:004), a Dole-owned parcel that is cultivated with commercial cacao trees (TMK [1] 6-6-022: 001), and the Waialua Beach Road ROW. Access to the City-owned parcel will be temporarily blocked during project construction. The east diversion road section will include two 11-ft travel lanes between portable concrete barriers and a 5-ft walkway on the *mauka* side. The 5-ft walkway will connect to the existing Waialua shared-use path.

The sections of the west and east diversion road immediately adjacent to the temporary bypass bridge will require the placement of structural fill, and an approximately 30-ft long temporary retaining wall along the south perimeter of the east diversion road, to raise the ground elevation and transition the travel way grades between the existing Waialua Beach Road and the temporary bridge.

Upon project completion, the temporary bypass bridge, diversion road and related features will be removed in entirety and the site will be restored. Permanent roadway improvements associated with the new replacement bridge are described below.

## **2.2. Demolition of Existing Bridge**

After the installation of the temporary bypass bridge and diversion road, the existing bridge will be demolished. The existing bridge superstructure, abutments, and three piers will be removed down to the stream bottom. In addition, the existing riprap located around the west abutment and piers will be removed. The project design team is evaluating the feasibility of reusing the existing riprap and installing it around the new bridge's piers and abutments as a countermeasure against scour.

## **2.3. New Bridge**

The new 181-ft long by 43-ft wide bridge will be a two-span, precast/pre-stressed concrete superstructure supported by a single center pier (comprised of three 5-ft diameter drilled shafts) and abutments (each comprised of five 5-ft diameter drilled shafts). The drilled shaft pier and abutments will provide a deep foundation for the new bridge. The new abutments will be located further upland than the existing abutments to provide a wider stream channel under the bridge. The new bridge section will be wider than existing bridge and will include a 5-ft wide raised curb sidewalk along the *makai* side, two 2-ft road shoulders, two 11-ft travel lanes, and a 9.5-ft wide raised curb shared-use path along the *mauka* side. The new bridge railings will be 3.5-ft tall

concrete railings with recessed rectangular aesthetic panels that comply with the HDOT's American Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH) 2016 safety performance criteria. The shared-use path on the bridge will tie into the existing shared-use path to the west and east to connect an approximately 600-ft gap in the existing Waialua shared-use path that extends 2.5 miles between Weed Circle (to the east) and Crozier Drive (to the west).

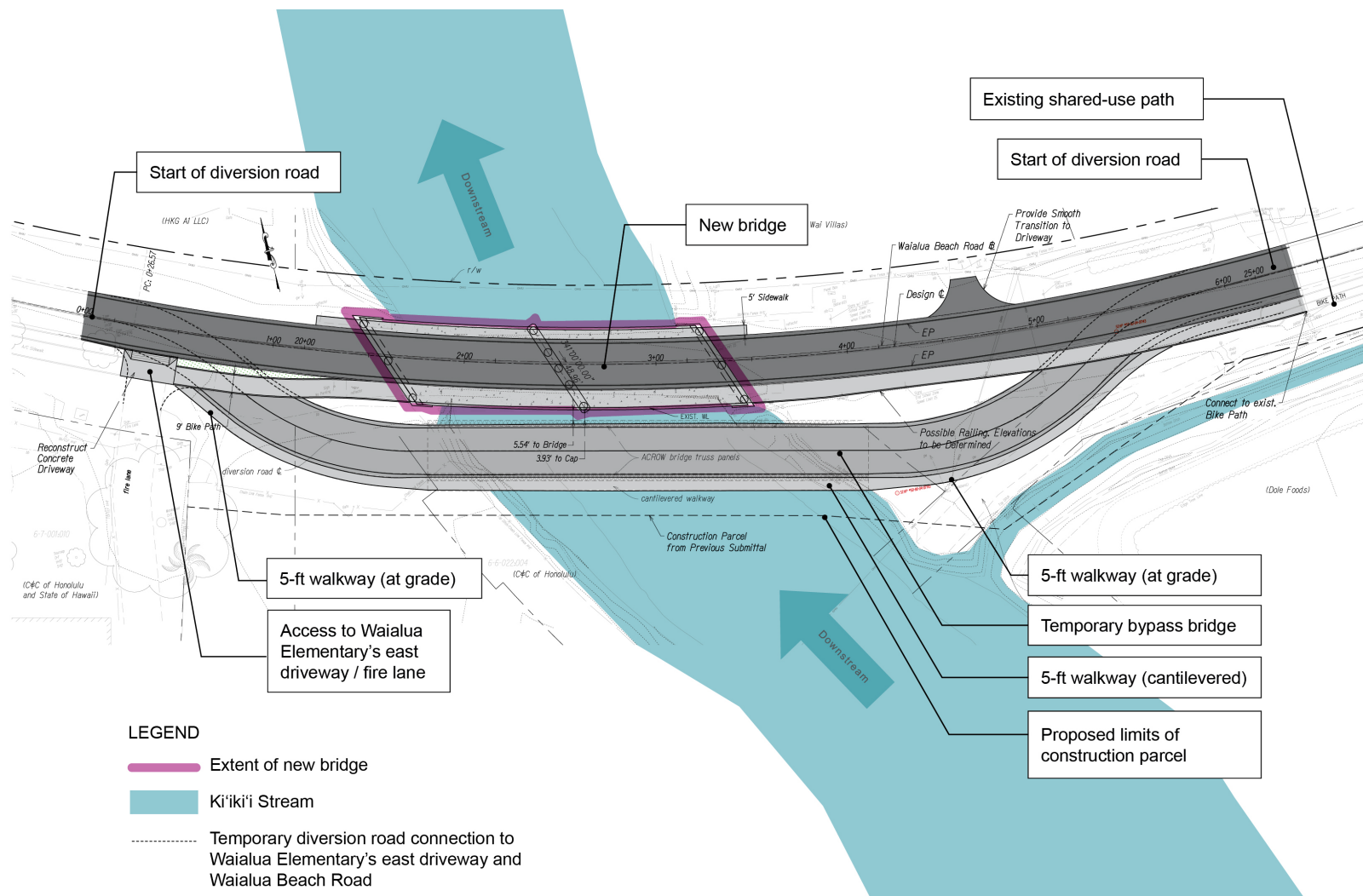
The new bridge will meet the project's purpose and need by improving flow under the bridge crossing by reducing the number of in-water piers and widening the stream channel under the bridge by shifting the abutments further upland and altering the stream embankment. In addition, the new bridge will minimize future stream bank erosion and scour damage by extending the depth of the pier and abutment footings and installing riprap along the stream embankment. The new bridge will be designed to support current AASHTO high load (HL) -93 design live loads and meet the design standards per *AASHTO Load-and-resistance Factor Design (LRFD) Bridge Design Specification, 9<sup>th</sup> Edition* (2020) and *HDOT Design Criteria for Bridge and Structures* (2014).

The new shared-use path on the bridge will also meet the project's purpose and need by installing new multimodal transportation infrastructure along Waialua Beach Road to improve comfort and safety for pedestrians and bicyclists. The segment of shared-use path over the bridge is identified as a Priority 1 project (ID no. 1-59) in the *O'ahu Bike Plan Update* (OBPU) (2019). It will be designed to meet the shared-use path design guidelines identified in the *City's Complete Streets Design Manual* (2016).

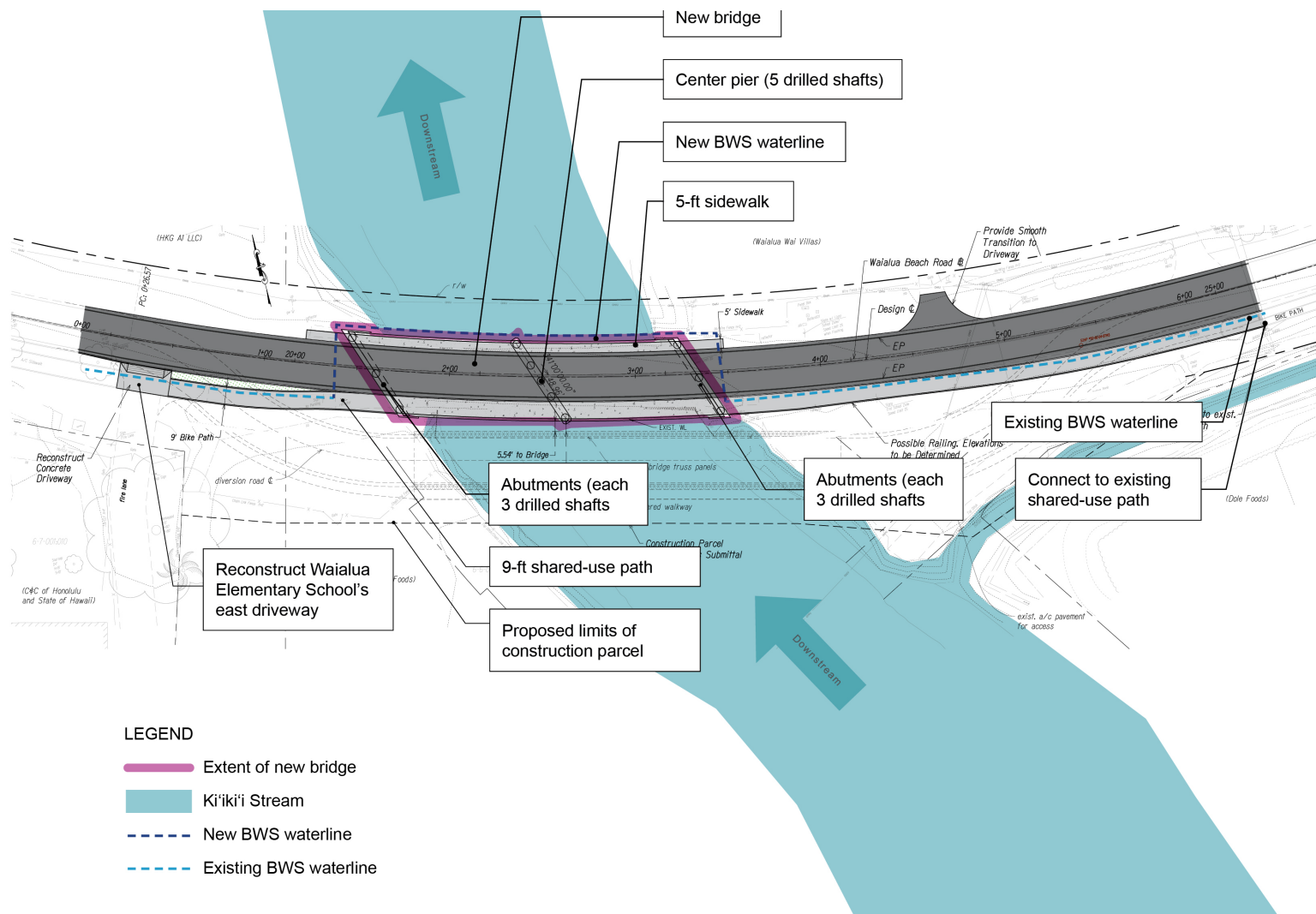
## **2.4. Alteration of Stream Channel**

After the installation of the new bridge abutments, the stream embankment will be regraded, at a 1:1 slope, to improve the stream's hydraulic flow through the channel. Grading of the embankment will stay within the ROW and City-owned parcel (TMK [1] 6-6-022:004) that provides maintenance access along the west and east banks of the stream on the *mauka* side of the bridge. Riprap will be installed around the bridge abutments and piers as a countermeasure against scour, ensuring protection against undermining and long-term erosion from stream flow. The size and depth of the riprap will be determined based on hydraulic analysis in accordance with FHWA recommendations. The riprap will extend upstream and downstream along the west and east stream embankment. Overgrown vegetation and sediment will be removed from upstream and downstream of the bridge within the ROW and City-owned parcel (TMK [1] 6-6-022:004) to further improve the stream's hydraulic flow through the channel, as well as reduce upstream water surface elevation.





**Figure 2-1 – Proposed Temporary Bypass Road and Bridge and New Bridge**



## **2.5. Utilities**

### **2.5.1. Utility Poles**

There are three utility poles located to the east of the bridge and *mauka* of Waialua Beach Road that require relocation to accommodate the location of the east diversion road. Two of the utility poles have attached lines and/or are owned by Hawaiian Telecom (HTCO) and one is owned by Hawaiian Electric (HECO). One HTCO pole will be relocated to the north of the diversion road and the other HTCO pole will be relocated south of the diversion road. The HECO pole will be relocated south of the diversion road. New overhead lines, guywires, and anchors will be installed to connect to and support the new utility poles. The existing HTCO lines that cross Ki'iki'i Stream will be rerouted to the relocated HTCO poles to keep the HTCO lines operational at all times during construction. Due to the new angle of the rerouted overhead lines that cross Ki'iki'i Stream, the HTCO pole nearest to the west side of the stream may require the anchors and guywires to be repositioned in alignment with the new angle of the overhead lines; no work is required for the utility pole itself. After construction of the new bridge, the new utility poles may remain in their new location or may be returned to their original locations. To eliminate the costs of relocating the poles, the City has requested that the new poles be allowed to remain. If HTCO and HECO allow the utility poles to remain in their new locations, the associated utility easements will be revised accordingly.

### **2.5.2. 16-inch Board of Water Supply Water Main Line**

There is an existing Board of Water Supply (BWS) 16-inch water main line ("BWS waterline") that is located along the *mauka* side of Waialua Beach Road and the existing bridge. It is attached on the upstream side of the bridge and supported by in-water piers. The new bridge will be widened on the upstream side to accommodate the new shared-use path, which will conflict with the location of the existing BWS waterline and require it to be relocated. In addition, BWS generally prefers waterlines to be attached on the downstream side of bridges to protect them from being damaged by debris carried in the stream flow during storms or other flooding events. To address these issues, the BWS waterline over the stream will be relocated to the downstream side of the new bridge and connected back on both ends to the existing BWS waterline alignment located along the *mauka* side of the Waialua Beach Road ROW. The new waterline will be connected to the downstream face of the new bridge by steel brackets and not require in-water piers.

### **2.5.3. Streetlights**

There are no streetlights on the existing bridge; however, there are streetlights along Waialua Beach Road to the east and west of the bridge. New temporary streetlights will be installed on the temporary bypass bridge and diversion road during construction. New permanent

streetlights will be installed on the new bridge to improve nighttime safety and visibility for vehicles, pedestrians, and bicyclists. Temporary and permanent street lighting will be dark skies compliant, full cutoff, 3,000K color temperature, suitable for wet locations, as well as adhere to other lighting standards for shielding and brightness to mitigate adverse impacts to Hawaiian seabirds in compliance with City, State, and Federal regulations and guidelines.

#### **2.5.4. Signage**

The existing school zone sign with flashing lights, located *makai* and to the east of the bridge, has deteriorated and will be removed. A new school zone sign with flashing lights will be temporarily located near the east diversion road. After construction, the new school zone sign will be relocated to its original location. Multiple traffic signs located *mauka* and to the west and east of the bridge will require permanent relocation or replacement to accommodate the new shared-use path. During construction, the posted travel speed along the temporary bypass bridge and diversion road will be 15 miles per hour (mph).

### **2.6. Construction Staging Area**

Construction will be undertaken in three phases:

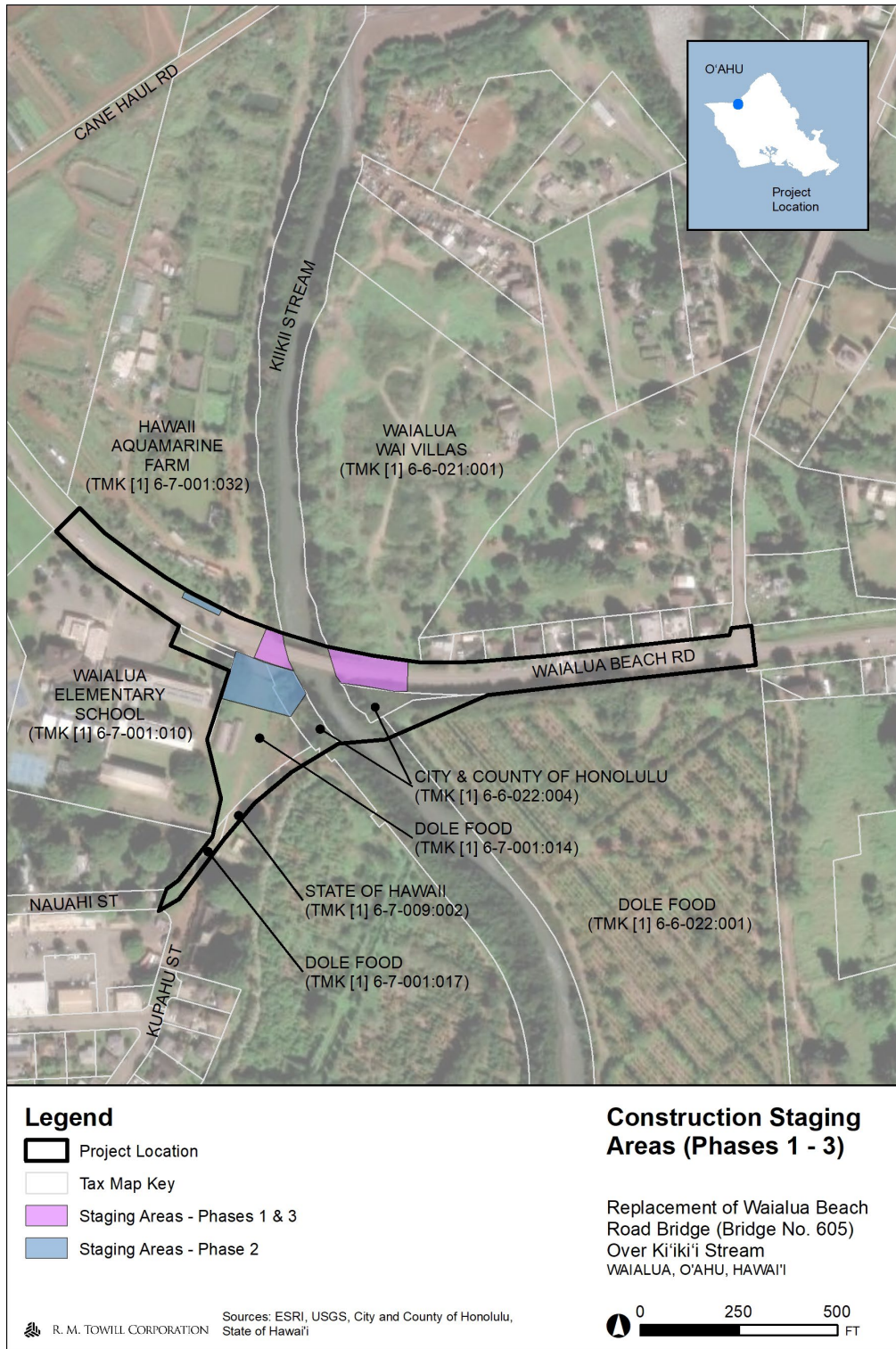
Phase 1 – Assembly and installation of the temporary bypass bridge and construction of the temporary diversion road. Approximate duration is 1 month.

Phase 2 – Demolition and construction of the permanent replacement bridge across Ki'iki'i Stream. Approximate duration is 24 months.

Phase 3 – Disassembly/removal of the temporary bypass bridge and diversion road and site restoration. Approximate duration is 1 month.

The staging area for each phase of construction are described as follows:

Phases (Ph.) 1 and 3 staging areas are the same; they will be located on portions of the *mauka* dirt lot between Waialua Elementary and Ki'iki'i Stream (City-owned TMK [1] 6-6-022:004 and Dole-owned TMKs [1] 6-7-001: 014, 017) and, if needed, the *makai* road shoulder in front of Waialua Elementary within the Waialua Beach Road ROW. If the *makai* road shoulder is utilized, that staging area will be located outside of the protective buffer surrounding the historical culvert that crosses under Waialua Beach Road in front of Waialua Elementary. For a discussion on archaeological and historical resources, see Section 3.2. For proposed construction staging locations, see Figure 2-3.



**Figure 2-3 – Proposed Construction Staging Areas**



The Ph. 1 and 3 staging area will encroach into the Waialua Elementary School's east driveway that provides access to the back of the school for staff parking and fire/emergency vehicle access. The encroachment is due to the minimum spatial requirements for staging the assembly of the temporary bypass bridge which must be assembled in the same orientation as its final alignment across Ki'iki'i Stream. As the temporary bypass bridge is assembled, it will be pushed into place (also referred to as launched). To accommodate the Ph. 1 and 3 staging area, the location of the east property fence for Waialua Elementary will be relocated further west and replaced with a temporary construction fence with dust screens. The security gate for Waialua Elementary's east driveway will be temporarily relocated south of the Ph. 1 and 3 staging area. Throughout the construction period, access to the Waialua Elementary's east driveway will remain open to staff for parking, as well as meet the Honolulu Fire Department's (HFD) requirements for minimum access width.

Ph. 2 will support the demolition of the existing bridge and construction of the new bridge. Ph. 2 staging areas will be located in two non-contiguous areas: directly adjacent to the west and east of the permanent bridge work area within the Waialua Beach Road ROW areas isolated by the temporary diversion road.

After construction, the east property fence and security gate for the Waialua Elementary's east driveway will be reinstalled and returned to preexisting conditions.

## **2.7. Construction Methodology**

The following is a summary description of the major construction phases and methodology for the proposed action.

- Site Preparation and Installation of Temporary Bypass Bridge and Road
  - Install best management practices (BMPs) and erosion control measures for the Phase 1 construction staging and work area.
  - Relocate utilities (e.g., BWS water main line, utility poles, signage).
  - Construct temporary bridge abutments. Assemble and install the temporary bypass bridge from the west side of the stream.
  - Construct the diversion road on the east and west side of the stream. Construct an approximately 30-ft long retaining wall along the south perimeter of the east diversion road to support temporary road grades. Construct driveway connections on the west diversion road to Waialua Elementary's access road and to Dole's agricultural lot.
  - Install temporary traffic signs and controls and start diverting public traffic to the bypass bridge.

- Demolition
  - Install BMPs for the Phase 2 construction staging and work areas, including BMPs for in-water work in Ki'iki'i Stream. BMPs will be installed, modified and maintained as required for the various work tasks.
  - Install temporary barriers, such as sand bags, sheet-pile cofferdams or similar barriers around the existing bridge piers, bridge abutments and channel banks to divert stream flows and allow the isolate the work areas and facilitate water pump-out to create dry working conditions for demolition activities. The stream diversion barriers will be installed and removed in sequence as bridge components are demolished.
  - Demolish the existing bridge superstructure, abutments, and pile bents (down to the stream bottom).
  - Remove vegetation and sediment upstream and downstream of the bridge.
- Construction
  - Construct drilled shafts for the abutments and center pier. Install temporary stream diversion barriers around in-water work areas as necessary to create dry working conditions for construction activities.
  - Construct concrete pilecaps and new abutment walls.
  - Install the concrete bridge deck and construct the raised sidewalks and bridge railings.
  - Regrade the stream embankments below and adjacent to the bridge.
  - Install scour countermeasures, including riprap protection on the modified stream bank and abutments.
  - Install a new BWS water main from the existing main on the *mauka* side of the ROW to the *makai* side on each end of the new bridge. Reattach the BWS water main to the *makai* side of the new bridge. Demolish the existing BWS water main and in-water piers.
  - Install new street lights on new bridge.
  - Reconstruct the roadway approaches to the new bridge, including the shared-use path on the *mauka* side of the bridge. Install road appurtenances, including signage, roadside barriers, and pavement markings).
  - Restore and stabilize the Phase 3 construction area and remove related BMPs and erosion control measures.
- Restore Traffic and Remove Temporary Bypass Bridge and Diversion Road
  - Remove temporary traffic signs, barriers and controls and restore public traffic on Waialua Beach Road and the new bridge.
  - Install Phase 3 staging and construction area BMPS.
  - Remove and disassemble the temporary bypass bridge using the west staging area.
  - Demolish and remove the east and west temporary diversion roads.

- Construct final roadway improvements on the frontage of Waialua Elementary School the and Dole agricultural lot, including the shared-use path and sidewalk, and driveway connections to Waialua Elementary’s parking/fire lane and Dole’s property.
- Post-Construction
  - Remove all BMPs and erosion control measures.
  - Restore project area to pre-existing conditions including stabilizing disturbed areas.

Construction equipment used for this project may include, but is not limited to, bulldozers, backhoes, augers, excavators, cranes, dump trucks, hydraulic rams, dewatering pumps and hoses, compactors, concrete mixers, concrete delivery and pump trucks, welders, loaders, trenchers, graders, flatbed trucks, and powered hand tools. In addition, in-stream work will include the use of floating work platforms and motorized work boats.

## 2.8. Project Schedule

The project schedule dates are subject to change based on permitting, design, and the scheduling of work activities.

Completion of Permitting and Entitlements	October 2026
Award of Construction Contract	October 2027
Start of Construction	November 2027
Completion of Construction	May 2030

## 2.9. Project Cost

The estimated construction cost for the proposed project is 16 to 20 million dollars.



## **Section 3. Description of Existing Environment, Potential Impacts, and Mitigation Measures**

This section summarizes the existing environmental setting, potential short and long-term effects of the proposed action, and associated mitigation measures. Short-term effects are from construction activities, while long-term effects continue or occur after the project is completed.

### **3.1. Air Quality**

Air quality at a given location is a function of several factors, including the quantity and type of pollutants emitted locally and regionally, as well as the dispersion rates of these pollutants. The primary factors affecting pollutant dispersion are wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and topography. Air quality is affected by stationary sources (e.g., industrial development, agricultural processing) and mobile sources (e.g., motor vehicles, farm equipment). Air quality at a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards are established by the EPA for criteria pollutants, including ozone, hydrogen sulfide, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter less than or equal to ( $\leq$ ) ten microns in diameter and  $\leq 2.5$  microns in diameter (DOH, 2015). NAAQS represents maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect public health and welfare.

DOH Clean Air Branch (CAB) is responsible for air pollution control in the state. CAB collects and monitors ambient levels of pollutants with air monitoring stations located on O‘ahu, Maui, Hawai‘i, and Kaua‘i. On O‘ahu, there are two stations located in Kapolei and two stations in Honolulu.

The potential sources of air pollution in the project vicinity include light industrial sources (e.g., businesses at the Old Waiialua Sugar Mill), mobile sources (e.g., motor vehicles), agricultural sources, and natural sources (e.g., wind-generated dust and volcanic activity). However, the local effects from these pollution sources are intermittent as the prevailing northeasterly trade winds tend to push any human-made or natural pollutants out to sea.

#### **3.1.1. Potential Impacts and Mitigation**

The proposed action will result in less than significant short-term and no anticipated long-term impacts to air quality.

During construction, there will be short-term impacts to air quality from the operation of internal combustion construction equipment, ground disturbance that can release dust, and use of personal vehicles to/from the work site. All construction activities will comply with the provisions of §11-59, *Ambient Air Quality Standards* and §11-60.1, HAR, *Air Pollution Control*. Short-term impacts will be minimized through the proper implementation of BMPs including, but not limited to, the following:

- Plan construction operations to minimize the amount of ground disturbance and dust-generating materials and activities, centralize material transfer points and onsite vehicular traffic routes, and locate potentially dusty equipment in areas of least impact.
- Provide adequate water source at the site for dust control wet-down application.
- Irrigate the construction site during periods of drought or high winds.
- Cover and/or water stockpiled soil.
- Stabilize disturbed soils as soon as possible by means of grassing, hydromulch, geofabric, or other methods of cover.
- Reduce vehicle and equipment emissions by carpooling and/or ensuring construction equipment has appropriate emissions controls and is functioning properly.
- Install dust screening around work areas.
- Control airborne, visible fugitive dust from debris being hauled away from the project site.

After construction, the air quality levels will return to normal, pre-existing conditions.

During a pre-EA consultation meeting with Waialua Elementary and State of Hawai'i Department of Education (DOE) on March 31, 2025, Waialua Elementary requested that the maximum dust control measures be installed along the campus boundary adjacent to the project's construction site to minimize potential dust impacts on students, faculty, and other staff. The maximum dust control measures (e.g., 8-ft to 10-ft high fence with dust screens and other measures) will be specified in the contractor's bid contract to ensure they are implemented. See Appendix 6 for the Waialua Elementary and DOE meeting notes.

### **3.2. Archaeological, Historic, and Cultural Resources**

Waialua Beach Road Bridge was constructed in 1950 and is a four-span concrete tee beam bridge with concrete abutment walls and pile bents. There are no apparent alterations to the bridge structure, except the addition of removable flared guardrails to the end piers. The guardrails are composed of a reinforced concrete balustrade of two horizontal rails with intermittent pairs of vertical supports common to the post-war era. The end piers are inscribed with the name and date of construction. On the southeast end post, there is a bronze dedication plaque to Howard Hisayuki Kurio, an engineer with the Territorial Department of Public Works who was fatally injured during the construction of the bridge. Kurio was a respected member of

the Wahiawa community and had a seventeen year career as a rodman with the Territorial Department of Public Works. Prior to joining the Territorial Department of Public Works, Kurio was the postmaster in Wahiawa.

The bridge was evaluated as part of the *Hawai'i State Historic Bridge Inventory and Evaluation* (SHBIE) prepared by MKE Associates LLC and Fung Associates, Inc for HDOT to inventory and evaluate historic bridges in the state. Based on the SHBIE findings, the Waialua Beach Road Bridge (bridge no. 003605001100001) is eligible for the State and National Register of Historic Places under criterion B due to its association with a significant person, Howard Hisayuki Kurio.

*A Draft Archaeological Literature Review and Field Inspection to Support Consultation with the SHPD for the Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream Project, Kamananui Ahupua'a, Waialua District, O'ahu* (LRFI) was prepared by CSH, Inc. (CSH) for the project area. The field inspection was conducted on December 26, 2024 to identify the likelihood of historic properties being present within the project area. A summary of the identified historic properties is provided below.

#### **Single Human Vertebrae ('iwi) From Imported Fill (State Inventory of Historic Places [SIHP] # 50-80-04-07143).**

The 'iwi is located within the project area, to the east of the bridge, and south of Waialua Beach Road. In 2010, the 'iwi was inadvertently encountered during probing for the existing subsurface 16-inch BWS waterline. It was located within the imported calcareous beach sand that was used as pipe bedding material for the original BWS waterline construction. No additional skeletal elements or associated cultural material was present and it was apparent that the bone was transported to the location within the construction fill during the initial construction of the waterline (1956) (Filimoehala and Rieth, 2010).

#### **Remnants of the Former Bridge and Road**

The former road alignment crossed Ki'iki'i Stream south of the existing bridge. On the west side of the stream, the road curved southward and connected to Kupahu Street. The former bridge and road were likely built between 1889 and 1901. There are two remnant features a basalt boulder with concrete mortar retaining wall on the west side of the stream and a section of old asphalt road on top of a base of large basalt boulders on the east side of the stream. CSH evaluated the features as potentially significant under criterion D (that have yielded, or may be likely to yield, information important in prehistory or history). The remnants have integrity of location (remain where they were built), integrity of materials (basalt boulders and asphalt are present), and workmanship (not outstanding, however still displaying workmanship). However, the remnants lack integrity of design (do not have the physical form or style of a road or bridge), lack integrity of setting (do not have the physical environment of a road or bridge), and lack integrity of association (no perceived link to an event, activity or person).

## Existing Bridge and Road

The bridge itself was formally evaluated as eligible to be listed on the National and Hawai'i Register of Historic Places under criterion B due to the association with Howard Hisayuki Kurio, as previously noted.

Two other features related to the creation of Waialua Beach Road include a concrete culvert crossing under the road to the west of the bridge, in front of Waialua Elementary School, and a drainage channel located to the east of the bridge and south of the road. While both of these features are likely to be more than 50 years old, neither were regarded as significant individually under Section 13-275-6, HAR, *Evaluation of significance*. Both features function as part of the existing Waialua Beach Road drainage infrastructure.

### 3.2.1. Potential Impacts and Mitigation

The existing bridge will be demolished and replaced with a new bridge. The concrete culvert to the west of the bridge and drainage channel to the east of the bridge will not be disturbed by the proposed action. The existing bridge, road, concrete culvert, and drainage channel will be evaluated and documented in a Historic Architectural Reconnaissance Level Survey (RLS) by Mason Architects (Mason). An *Evaluation of Effect on Historic Resources* was prepared by Mason for the proposed action pursuant to Section 6E-8, HRS, *Review of effect of proposed state projects* and Chapter 13-275, HAR, *Rules governing procedures for historic preservation review for governmental projects covered under Sections 6E-7 and 6E-8, HRS*, and Section 106, NHPA, 36 CFR 800 Subpart B, *The Section 106 Process*.

Based on the SHBIE findings, which determined the existing bridge is eligible for listing under criterion B, and the scope of the proposed action (e.g., demolition of the existing bridge), Mason proposes an "Effect, with proposed mitigation" finding under Section 6E HRS and Section 13-275-7, HAR, *Determining effects to significant historic properties*. Recommended mitigation under HRS 6E is architectural recordation in the form of a Historic American Engineering Record (HAER) report and photo documentation of the bridge by a HAER photographer.

Mason proposes an "Adverse effect" finding under Section 106, NHPA, 36 CFR 800.5, *Assessment of adverse effects*. Appropriate mitigation under NHPA Section 106 will be determined separately through the Section 106 consultation process with SHPO, Native Hawaiian Organizations (NHOs), and other consulted parties and documented in a Memorandum of Agreement.

The remnants of the former road on the west side of the stream will not be disturbed by the proposed action. The remnants of the former road on the east side of the stream will likely require demolition and removal to accommodate the temporary bypass bridge and diversion

road. Proposed mitigation includes further information recovery and documentation of the features prior to demolition, in consultation with SHPD.

The single human vertebrae (SIHP # 50-80-04-07143) is located in a portion of the project area where ground-disturbing activities are likely to occur. It is possible that additional isolated human remains may be present in the beach sand fill material used for the initial construction of the waterline. The project team will consult with SHPD and any identified cultural and lineal descendants to determine the appropriate next steps regarding the human skeletal remains.

Although the likelihood of undocumented archaeological historic properties being present within the project area is low, the identification of human skeletal remains within the existing waterline trench indicate a potential for encountering additional remains. Additional exposures of human skeletal remains are not expected outside of the existing waterline trench. The findings of the Archaeological Literature Review and Field Inspection (LRFI) support a program of archaeological monitoring as a sufficient form of identification. It may be more effective to examine any project-related impacts within the context of an archaeological monitoring program (AMP) rather than an Archaeological Inventory Survey (AIS) for the following reasons:

- The concern for possible additional human skeletal remains is largely focused on the imported sand bedding that cushions a 16-inch water pipe that runs the length of the highway. An AIS along this waterline would likely only address a small portion and at some risk of waterline breakage.
- Monitoring would allow for documentation of the remnants of the former road and former bridge abutments as they are exposed in the course of the work.
- Monitoring would allow better conditions for documentation of the banks of Ki'iki'i stream, which might possibly have archaeological evidence of agricultural practices (bunds or ditches, or habitations but are problematic to access owing to the very thick vegetation that also creates difficult conditions for archaeological excavation.

Thus, a program of archaeological monitoring to begin with an AMP conforming to Section 13-279-4, HAR, governing AMPs to be submitted to the SHPD for review and acceptance prior to any project-related ground disturbing work is recommended. However, the DDC will work with SHPD to determine appropriate mitigation and ensure that the project complies with HRS 6E.

During construction, in accordance with Chapter 6E, HRS and the requirements of SHPD, should any historic resources, including human skeletal and significant cultural remains, be identified during project activities: 1. work will cease in the immediate vicinity of the find; 2. the find will be protected from any additional disturbance; and 3. SHPD, will be contacted immediately at (808) 692-8015 (Main Office, O'ahu) for further instructions including the conditions under which project activities may resume. With the implementation of the above-

mentioned mitigation measures, the project is not anticipated to have a significant, long-term adverse impact on traditional or contemporary cultural/historical resources.

### **3.3. Climate**

Hale'iwa has a mild semi-tropical climate characterized by persistent trade winds, relatively constant temperatures, and moderate humidity. Cooling trade winds from the northeast prevail throughout most of the year with an average speed of three to seven mph. In the summer months, trade winds are at their strongest, and in the winter, trade winds are at their weakest. Annual relative humidity averages 70 percent. Kona winds from the southwest occasionally bring warm, humid air. Average temperatures in the project vicinity range between 64 and 83 degrees Fahrenheit with an average annual temperature of 74 degrees. The average annual rainfall is 19.6 inches (Longman, R. J., et al., 2024).

#### **3.3.1. Potential Impacts and Mitigation**

The proposed action is not anticipated to result in any significant short- or long-term impacts on the existing climate conditions of the site or surrounding region. No mitigation measures are necessary or recommended.

### **3.4. Climate Change**

Climate change and global warming are the outcome of human-generated global greenhouse gas (GHG) emissions. Human-induced climate change, including more frequent and intense extreme events, has caused widespread adverse impacts to ecosystems, people, infrastructure, and communities. Climate change impacts include the increase in the frequency and intensity of climate and weather extremes (e.g., hot extremes on land and in the ocean, heavy precipitation events, drought and fire weather). Climate impacts from slow-onset processes include sea level rise, regional decreases in precipitation, and ocean acidification (IPCC, 2022). Rising sea levels and increased intensity of storms will make developed areas near coastal areas more vulnerable to flooding, coastal erosion and sea water inundation. Chronic coastal flooding is occurring now, and over the next 30 to 70 years the flooding is expected to increase with sea level rise (SLR), impacting infrastructure and land uses located near the shoreline, including within the project area.

In 2024, the City's *Climate Change Design Guidelines (version 1)* (CCDG) was developed to improve the resilience of City buildings and infrastructure and reduce GHG emissions from City operations. The CCDG are spreadsheet-based tools that provide a three-step process for evaluating and scoping climate-related hazards exposure for City projects: 1. Climate Exposure Screening Tool ("CCDG Screening Tool"); 2. Climate Change Design Guidelines Document ("CCDG Guidelines"); and 3. Climate Change Planning, Design, and Strategy Checklist Tool

(“CCDG Checklist Tool”). In 2026, DDC will assess all new projects with the CCDG Screening Tool. In future years, all projects managed by City agencies will use the CCDG Screening Tool, and if determined necessary, will also complete the CCDG Checklist Tool. The CCDG Screening Tool was used to evaluate the proposed action and the results are discussed in the following sections.

### **3.4.1. Greenhouse Gas Emissions**

The primary sources of GHG emissions are from transportation (27 percent), electricity production (25 percent), industry (24 percent), commercial and residential (13 percent), agriculture (11 percent), and land use and forestry (13 percent) (EPA, n.d.-a). The Federal Greenhouse Gas Reporting Program (Title 40 Code of Federal Regulations Part 98) requires mandatory reporting of GHG for facilities where emissions from stationary combustion are greater than 25,000 carbon dioxide equivalent (CO<sub>2</sub>e). Land uses that are generally associated with this level of emissions include power plants, petroleum/natural gas systems, refineries and other heavy manufacturing processes. On O’ahu, there are 13 existing facilities that generate emissions near or above 25,000 CO<sub>2</sub>e including the Honolulu Program of Waste Energy Recovery (H-POWER), Campbell Industrial Park refineries, HECO generating stations, and landfills (EPA, n.d.-b). Of these facilities, the nearest to the project area is the HECO Wai’au Generating Station located in Pearl City. The primary sources of GHG within the project area are from the use of private internal combustion vehicles and equipment, including motor vehicle traffic on Waialua Beach Road, and vehicles and equipment used on agricultural, commercial and residential properties in the project vicinity.

### **3.4.2. Sea Level Rise**

The *Hawai’i Sea Level Rise Vulnerability and Adaptation Report* (adopted in 2017 [“2017 SLR Report”]; updated in 2022 [“2022 SLR Report”]) provides a state-wide assessment of Hawai’i’s vulnerability to SLR and recommendations to adapt and reduce risks associated with SLR. The 2017 and 2022 SLR Reports establish the state-wide SLR vulnerability zone (referred to as the sea level rise exposure area [SLR-XA]) based on multiple coastal flood hazards including passive flooding, annual high wave flooding, and coastal erosion. The SLR-XA identifies a future “intermediate mid-range” and “intermediate high” measure of anticipated SLR increase (in feet), that is used for planning and design purposes by government agencies and serves as the basis for the State’s SLR policy.

The 2022 SLR Report recommends that the State set a planning and policy benchmark of 4 ft of SLR by 2100 as the minimum scenario for all planning and design, and a benchmark of 6 ft of

SLR by 2100 for the planning and design of public infrastructure, such as the Waialua Beach Road Bridge, and other projects with low tolerance for risk.<sup>1</sup>

The *HDOT Bridge Adaptive Policy Regarding Sea Level Rise As It Affects State Highway Bridges* (dated May 24, 2023), establishes the procedures for identifying HDOT bridges subject to SLR, based on a benchmark of 1.1 ft of SLR by 2050 and 3.2 ft of SLR by 2100. Under this policy, if 1.1 ft of SLR-XA covers the bridge area (e.g., highway approaches and/or bridge), the SLR is assumed to inundate the bridge area. If the SLR appears to be limited to the stream area under the bridge, the project team should assume the SLR will not inundate the bridge.

The *City and County of Honolulu Actions to Address Climate Change and Sea Level Rise* Mayor's Directive No. 18-2; dated July 16, 2018, establishes policies to adapt and minimize risks from climate change and SLR in accordance with the most current versions of the City Climate Change Commission's SLR Guidance Document, Climate Change Brief, and State SLR Report. The SLR Guidance Document (adopted 2018; updated 2022) recommends the City utilize the 5.8 ft of SLR by 2100 scenario as the planning and policy benchmark for all planning and design of public infrastructure and other projects with low tolerance for risk, and that the City continue to use the 6 ft passive flooding map layer from NOAA until an updated map is available. Note that NOAA's 6-ft passive flooding layer does not account for coastal erosion or high wave runup on the North Shore and thus potentially underrepresents the effects of a 6 ft SLR scenario.

The project area is located approximately 0.25 miles from the coast. Portions of the project area are located within the 3.2 ft and 6 ft of SLR-XA scenario projections including the Ki'iki'i Stream area under the bridge, as well as a non-contiguous southeast portion of the project area on the Dole-owned property (TMK [1] 6-6-022:001) (Figure 3-1 and Figure 3-2).

### **3.4.3. Potential Impacts and Mitigation**

The proposed action will result in less than significant short-term and no anticipated long-term impacts from climate change. The project will not exacerbate conditions that contribute to climate change hazards.

During construction, short-term GHG emissions will be generated via the operation of construction vehicles/machinery with internal combustion engines, transportation of materials/goods, fueling of equipment, and travel to/from the worksite. However, these

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<sup>1</sup> The 2022 SLR Report recommendations are based on the 2022 NOAA Interagency Report: *Global and Regional Sea Level Rise Scenarios for the United States*, which establishes an intermediate SLR scenario of 3.9 feet and an intermediate-high SLR scenario of 5.9 feet for Hawai'i by 2100. (Sweet, et al., 2022)



conditions will be temporary and will cease once construction is completed. Construction-related activities will not impact or exacerbate SLR.

After construction, the bridge itself will not result in long-term increases to GHG emissions as it has no operational functions besides serving as essential transportation infrastructure. The new bridge will not expand vehicular capacity with additional travel lanes and thus, traffic patterns and GHG emissions associated with vehicular use of the bridge should remain similar to existing levels. In addition, there may be a small reduction in GHG emissions associated with an increased use of the new shared-use path by pedestrians and bicyclists.

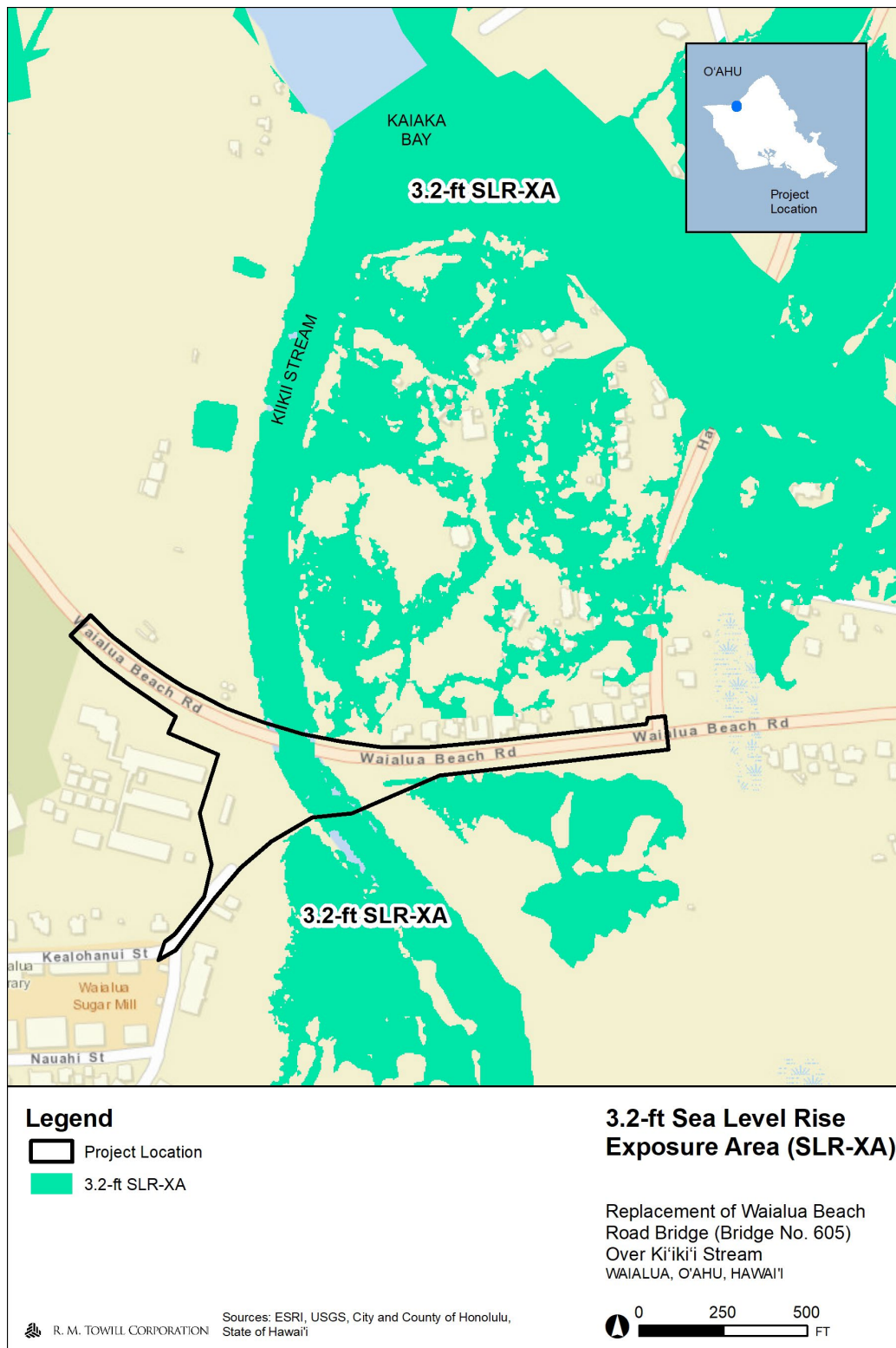
The bridge design is based on hydraulic analyses that considers SLR scenarios in accordance with State and City SLR policies. The area of Ki'iki'i Stream under the new bridge will fall within the 3.2 ft and 6 ft of SLR-XA, as well as a non-contiguous southeast portion of the project area. The WEST consultants (WEST) prepared the *Waialua Beach Road Bridge Replacement - Two-Dimensional Hydraulics Analysis Draft Report* (Hydraulics Analysis), which included hydraulic analyses considering three SLR scenarios: 1.1 ft, 3.2 ft, and 6.0 ft. A Mean Higher High Water tide condition (MHHW) water surface elevation (WSE) of 5.29 ft was assumed for the initial downstream boundary condition at the mouth of Ki'iki'i and Paukaula Streams. The depth for each SLR scenario was added to MHHW to determine the associated impacts to the new bridge. Based on the hydraulic SLR analysis, all three SLR scenarios will result in minor increases to the WSE immediately upstream of the bridge alignment including 0.01 ft (1.1 ft of SLR), 0.07 ft (3.2 ft of SLR), and 0.36 ft (6 ft of SLR) (Table 3-2). Under the three SLR scenarios, the new bridge structure itself will not be overtopped; however, the road approaches to the bridge may experience additional overtopping. The bridge road elevations in Table 3-1 refer to the east abutment deck (i.e., top of sidewalk) and low chord elevations at the downstream bridge face. The WSEs listed in Table 3-2 correspond to locations immediately upstream of the existing and proposed bridges. Note that the existing and new bridges cross the stream at the same location.

**Table 3-1 – Bridge Road Elevations – Existing and New Bridge**

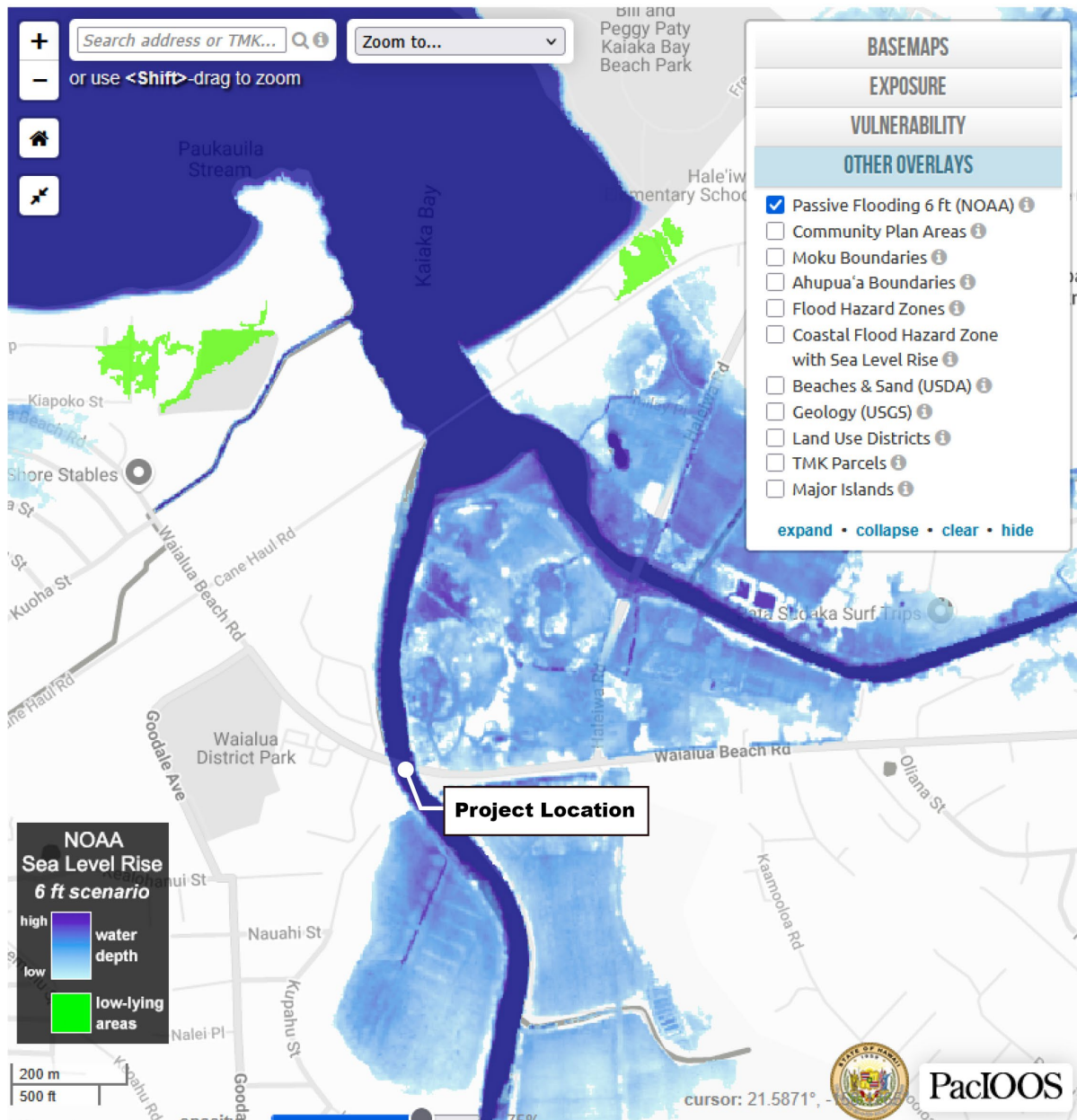
	Bridge Road Elevation	
	Deck (ft)	Low Chord (ft)
Existing Bridge	12.29	8.04
New Bridge	13.72	8.80

**Table 3-2 – Hydraulic Model Results for Sea Level Rise Events**

<b>Scenario</b>	<b>Downstream Boundary WSE (ft)</b>	<b>New Bridge WSE (Upstream Face [US]) (ft)</b>	<b>Increase in WSE (ft)</b>
100-year	5.29	13.33	
100-year & 1.1 ft of SLR	6.39	13.34	0.01
100-year & 3.2 ft of SLR	8.49	13.40	0.07
100-year & 6.0 ft of SLR	11.29	13.69	0.36



**Figure 3-1 – 3.2 ft of Sea Level Rise Exposure Area**



**Figure 3-2 – NOAA 6 ft of Passive Flooding Scenario**

### 3.5. Flora and Fauna

The *Draft Natural Resource Assessment for Ki'iki'i Stream Bridge Replacement Project in Waialua, O'ahu* (NRA), prepared by AECOS Inc. (AECOS); dated April 28, 2025 (Appendix 4), includes a survey and assessment of flora and fauna, an assessment and delineation of federal jurisdictional waters, water quality sampling, and an Essential Fish Habitat (EFH) assessment. Fieldwork for the surveys and assessments were conducted on February 6 and 11, 2025. A summary of the findings are included below.

#### 3.5.1. Terrestrial Flora

In the project area, Ki'iki'i Stream flows through a mangrove wetland dominated by red mangrove (*Rhizophora mangle*) and scattered milo trees (*Thespesia populnea*). The vegetation along Waialua Beach Road comprises either ruderal plants regularly mowed or treated with herbicide, or ornamental species that have been intentionally planted fronting residential properties. To the southeast of the project occurs an agricultural parcel currently cultivated in cacao. East of this plantation, a likely wetland dominated by 'ae'ae (*Bacopa monnieri*) and California grass (*Urochloa mutica*) is present that extends outside of the project area.

During the field survey, AECOS identified 116 species including 114 angiosperms, one fern, and one fern ally. For the complete list of plants observed in the survey area, see Appendix 4, Table 4. Among the identified species, one is an endemic, five are native indigenous (also distributed elsewhere in the Pacific), and six are early Polynesian introductions. The remaining 104 species are plants introduced to the Hawaiian Islands after 1778. The single endemic plant is a Loulou palm (*Pritchardia* sp.); however, it is planted as part of landscaping in front of Waialua Elementary and difficult to identify if this specimen is a species native to O'ahu. The indigenous species include *moa* (*Psilotum nudum*), *milo* (*Thespesia populnea*), *kou* (*Cordia subcordata*), 'ae'ae (*Bacopa monnieri*), and *pōpolo* (*Solanum americanum*). The early Polynesian introductions observed are: *kī* (*Cordyline fruticosa*), coconut palm or *niu* (*Cocos nucifera*), *honohono* (*Commelina diffusa*), banana (*Musa acuminata*), *kukui* (*Aleurites moluccana*), and yellow wood sorrel (*Oxalis corniculata*). All these species are common plants across the Hawaiian Islands.

#### 3.5.2. Avian Fauna

AECOS biologists did not observe any waterbirds during a 30-minute waterbird survey from the bridge. During the avian survey, all observed bird species were naturalized introductions to the island. For the complete list of avian species observed during the 2025 survey and other reports, see Appendix 4, Table 5.

### 3.5.3. Mammalian

AECOS biologists observed a single Small Indian mongoose (*Herpestes auropunctatus*) and a dog (*Canis lupis familiaris*). Small Indian mongoose is common in agricultural fields and alien to the Hawaiian Islands.

### 3.5.4. Aquatic Fauna

The project site is bisected by Ki'iki'i Stream, which is part of the Ki'iki'i Watershed, the largest watershed on O'ahu. Ki'iki'i Stream discharges into Kaiaka Bay approximately 0.3 miles downstream from the project site, therefore project activities have potential to effect aquatic biological conditions in both Ki'iki'i Stream and Kaiaka Bay. For a detailed description of surface water conditions in Section 3.11.

#### Ki'iki'i Stream

The turbid water of Ki'iki'i Stream made it difficult to conduct an aquatic survey of aquatic inhabitants residing below the water surface. Some fish carcasses were present beneath the bridge, attracting blackchin tilapia (*Sarotherodon melantheron*). Crabs ('*alamih*i or *Metopograpsus thukuhar*) and striped barnacles (*Balanus amphitrite*) were observed just below the waterline on the pillars beneath the bridge. For the complete list of aquatic species observed in Ki'iki'i Stream during the 2025 survey and other reports, see Appendix 4, Table 6.

In a 2016 AECOS survey, blackchin tilapia, '*ama'ama* (*Mugil cephalus*), and *aholehole* (*Kuhlia xenura*) were the most prevalent fishes encountered and numerous *hapawai* snails (*Neritina vespertina*) were observed on concrete bridge abutments. No poeciliid fishes, such as mosquito fish, rainbow guppy, and swordtail (*Gambusia affinis*, *Poecilia* hybrids, and *Xiphophorus helleri*) were observed during 2016 and 2025 surveys. These fishes are common inhabitants of O'ahu streams, but not large estuaries. Incidental sightings of a green sea turtle (*Chelonia mydas*) were made during the 2016 survey from bridge.

#### Kaiaka Bay

Kaiaka Bay is located approximately 0.3-miles downstream from the Ki'iki'i Bridge project site. It receives stream discharges from both Ki'iki'i Stream and Paukauila Stream. Kaiaka Bay has turbid water conditions with low underwater visibility, especially after significant rainfall events in the watershed. Sediment loading, discrete or chronic, is a key factor in determining the marine biota that reside in shallow benthic environments in Hawai'i. Silt bottom environments, like those of inner Kaiaka Bay, do not typically support algae, coral, or macroinvertebrate populations. The absence of these ecosystem components typically limits the utilization of such environments to micro-invertebrates, burrowing species (*Alpheus rapax*, *A. racida*, *Psilogobius mainland*, some portunid crabs like *Podophthalmus vigil*), those species that actively forage in soft bottoms (like goatfishes), and mobile predators (like jacks and sharks) to a lesser degree.

A 2014 AECOS survey assessed the benthic composition on the limestone bench along the eastern shoreline of Kaiaka Bay. It documented that no corals were observed and the coverage on the limestone bench was predominantly colonized by macroalgae as well as bare limestone, rubble, and sand pockets. The intertidal zone along the eastern shoreline of Kaiaka Bay had an abundance of black nerite (*Nerita picea* or *pipipi*), dotted periwinkle (*Littoraria pintado*), helmet urchin (*Colobocentrotus atratus* or *hā'uke'uke*), and thin-shelled rock crab (*Grapsus grapsus tenuicrustatus* or *'a'ama*).

Fishes are not abundant near shore in Kaiaka Bay. Four species are known to occur in the survey area: Hawaiian flagtail (*Kuhlia xenura*), striped mullet (*Mugil cephalus*), molly (*Poecilia* sp.), and tide pool goby (*Bathygobius* sp.). 'Ōhiki or ghost crab (*Ocypode pallidula*) is common on the sand beach of Kaiaka Bay. Kaiaka Bay may be a potential habitat for amphidromous fish but no 'o'opu nākea (*Awaous guamensis*) was seen at the time of the survey. 'O'opu nākea is known to have habitat in the Kaiaka Bay watersheds (Townscape Inc, 2018). For the complete list of aquatic species observed in Kaiaka Bay during the 2025 survey and other reports, see Appendix 4, Table 7.

### Monk Seal

In 1976, the Hawaiian monk seal was listed as an endangered species under the ESA and designated as “depleted” under the Marine Mammal Protection Act (MMPA). The project site is located outside of the terrestrial critical habitat designated for the Hawaiian monk seal.

A majority of the Hawaiian monk seal sighting information collected in Hawai'i is reported by the general public and thus is non-systematic and representative of overall seal use of the shoreline. There have been five reported sightings of monk seals from Kaiaka Bay and Kaiaka Beach Park between 2014 to 2024. A systematic monk seal count was conducted by NOAA Pacific Islands Fisheries Science Center (PIFSC) in 2000, 2001, and 2008, which did not observe any monk seals in the area.

### Sea Turtles

The green sea turtle (*Chelonia mydas*) that occurs in Hawai'i is a federally and state listed threatened species. Adult green sea turtles primarily forage on benthic macroalgae in shallow nearshore areas and on coral reefs, which may be found in Kaiaka Bay. Based on the PIFSC Marine Turtle Biology and Assessment Program (MTBAP) database, there have been 25 reports of green sea turtles nesting or basking within Kaiaka Bay and Kaiaka Bay Beach Park between 1993 and 2022. A green sea turtle was observed in Ki'iki'i Stream from the Ki'iki'i Stream Bridge during AECOS' 2016 survey. The project site is not located within the proposed critical habitat for the green sea turtle.

The hawksbill sea turtle (*Eretmochelys imbricata*) is federally listed as endangered and state listed as an endangered subspecies. Hawksbill sea turtles are much less common than green

sea turtles in Hawai‘i. Hawksbill turtles may occur in the project vicinity, though none have been observed during the various biological surveys in the area.

### **3.5.5. Essential Fish Habitat**

EFH is defined as “those waters and substrate necessary to fish(es) for spawning, breeding, fishing, or growth to maturity” and is regulated under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The project area does not include EFH. However, Kaiaka Bay, which is downstream of the project area, is designated as EFH (including water column and all bottom areas) for coral reef ecosystem, bottomfish, pelagic, and crustacean Management Unit Species (MUS) (including eggs, larvae, juvenile and adults). Of the thousands of species that are federally managed under the coral reef Fisheries Management Plans (FMP), at least 50 (specifically juvenile fish life stages) are known to occur in Kaiaka Bay, including both estuarine and marine species (AECOS, 2025). No pelagic or bottomfish MUS were observed in the Kaiaka Bay surveys. Eggs and larvae of a variety of crustacean (crabs and lobsters), reef fish, and pelagic fish species are likely transported to the general vicinity by coastal currents, which generally flow from east to west in this area. Additionally, mesoscale eddy/current systems may entrain and entrap larvae into bays (Lobel and Robinson, 1986).

### **3.5.6. Critical Habitat**

There is no federally-delineated critical habitat within the project area. No equivalent designation exists under State law.

### **3.5.7. Potential Impacts and Mitigation**

#### **Terrestrial Flora**

All observed native flora are common species that occur in abundance outside of the project area. Although no plants proposed or listed as threatened or endangered were recorded in the project area, the *loulou* palm, observed in front of Waialua Elementary, could be a listed species. The *loulou* palm is located within the school property outside of the Waialua Beach Road ROW and outside of proposed project work and staging areas, therefore no impacts to the palm are anticipated. If it is later determined that the proposed action will impact the *loulou* palm, additional effort will be made to identify the species. If found to be an endangered species, a landscape professional will be hired to determine appropriate mitigation, which could include establishing a buffer around the tree or moving the specimen to a safe location to avoid ‘take’ under the ESA.



## Avian Resources

### Waterbirds

Although there is low likelihood that one or more endemic waterbird species will frequent the project area, potential impacts to waterbird species coming into the project area during construction or later use of the proposed improvements included injury from construction-related work activities, collision with vehicular traffic and animal predation. To minimize potential impacts to waterbirds, BMPs include, but are not limited to, the following:

- Prior to construction, create an Endangered Species Awareness Training Program to inform construction workers and managers about waterbird species that may occur on-site and appropriate response when encountered. The training program should include appropriate restrictions to ensure that construction activities mitigate negative impacts to the listed bird species.
- No pets will be allowed on site.
- No feeding of birds, especially if they approach for handouts.
- Secure all food rubbish in closed trash receptacles.

In addition, PIFWO recommends the following BMPs to minimize potential impacts on waterbirds:

- In areas where waterbirds are known to be present, the contractor should post and implement reduced speed limits and inform crew of the presence of endangered species on-site.
- If water resources are located within or adjacent to the project site, incorporate BMPs regarding working in aquatic environments and avoid creating unnecessary surface water features that could serve as attractants.

### Seabirds

There is no suitable nesting habitat for seabird species in the project area. However, protected night-flying seabirds may overfly the project site during the nesting season including the Hawaiian Petrel (*Pterodroma sandwichensis*), Newell's Shearwater (*Puffinus newelli*), Band-rumped storm petrel (*Oceanodroma castro*), and Wedge-tailed Shearwater (*Ardenna pacifica*). The first three seabirds are listed under both federal and state endangered species statutes and the Wedge-tailed Shearwater is protected under the federal Migratory Bird Treaty Act (MBTA).

In the summer and fall, nocturnally flying seabirds (especially fledglings) transiting to the sea from inland locations can become disoriented by exterior lighting and can collide with manmade structures or the ground. If not killed outright, dazed or injured birds are easy targets for feral mammals.

While no suitable nesting habitat for seabird species occur within the project area and construction activities are anticipated to occur during the daytime, if any nighttime lighting is used, the following mitigation measures will be employed by the project contractor:

- If nighttime work is required, all nighttime outdoor lighting will be fully shielded and “dark sky compliant.” If floodlights are used, they will be placed on poles high enough to allow the lights to be pointed directly towards the ground. In addition, nighttime work that requires outdoor lighting will be avoided during the seabird fledging season from September 15 through December 15 as this is the period when young seabirds take their first voyage to the open sea.
- Automatic motion sensor switches and timer controls on all outdoor lighting will be installed to turn off lights when human activity is not occurring in the lighted area.
- Where fences extend above vegetation, integrate three strands of polytape into the fence to increase visibility.
- For powerlines, guywires and other cables, minimize exposure above vegetation height and vertical profile.

### Owls

The endemic Short-eared Owl or *Pueo* (*Asio flammeus sandwichensis*) is state-listed as endangered on O‘ahu only. The *pueo* is a ground-nesting species and susceptible to mammalian predation. The species is increasingly scarce on O‘ahu, but is known to utilize agricultural crop and pastureland for hunting and nesting. If a *pueo* nest is discovered, DLNR will be notified before proceeding with any activity that could disturb the nest.

### **Mammalian Resources**

One or more of the four Muridae (rats and mice) may utilize the project area. These mammalian species are introduced and deleterious to native ecosystems and the native fauna.

### Hawaiian Hoary Bat

The Hawaiian hoary bat likely overflies the project area on a seasonal basis as they are regularly recorded in the project vicinity. The removal of trees and tall vegetation may temporarily displace individual bats using the trees for roosting. However, since bats typically use multiple tree roosts, the potential disturbance is likely to be minimal. To minimize potential adverse impacts to the Hawaiian hoary bat, the project will not be permitted to cut or remove woody vegetation taller than 15 ft between June 1 and September 15, the bat pupping season.

## Aquatic Biota

State- and federally-listed endangered or threatened marine species, including the green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*) and monk seal (*Neomonachus schauinslandi*), may occur in the general project vicinity considering the distribution of these species throughout Hawai'i. A description of potential project-related impacts and BMPs for marine mammals and sea turtles is included below.

Proposed work activities that may affect marine mammals and sea turtles include the removal of existing piles and abutments and installation of new drilled shafts, which can generate in-water noise and vibrations. The effects of in-water sound levels vary with the frequency, intensity, and duration of the sound source, as well as the hearing characteristics of the affected animal, but may include physical injury, permanent hearing damage, behavior impacts (e.g., temporary threshold shifts [TTS]), temporary masked communications or acoustical environmental cues, and modified behavior ranging from attraction to avoidance. The MMPA establishes the effect thresholds for levels of harassment, which are marine mammal specific. For exposure to sounds in water, >180 dB and >190 dB are the thresholds for Level A harassment (i.e., injury and/or TTS) for cetaceans and pinnipeds, respectively. The thresholds for Level B harassment for all marine mammals in the form of TTS and other behavioral impacts are >160 dB for impulsive noises and >120 dB for continuous noises. Currently, no acoustic thresholds have been established for sea turtles. Consequently, the marine mammal thresholds must be used for sea turtles as well, with the exception that the 160 dB threshold will be applied for both impulsive and non-impulsive sources for sea turtles, under the assumption that these thresholds are likely to be conservative.

Sound typically dissipates more rapidly in shallow, turbid waters over soft substrates. Kaiaka Bay is relatively shallow, which should help attenuate any elevated noise levels resulting from the proposed action's construction activities. Based on the best available information and shallow waters of Kaiaka Bay, it is anticipated that no marine mammals or sea turtles would be exposed to project-related in-water noise levels that approach the thresholds for the onset of TTS or other physical impacts. Therefore, exposure to the project-related elevated noise is anticipated to result in no more than temporary avoidance of the immediate area, which would have insignificant effects on ESA-listed marine mammals and turtles.

To minimize other potential impacts to sea turtles, BMPs include, but are not limited to, the following:

- Prior to construction, create an Endangered Species Awareness Training Program to inform construction workers and managers about the appropriate response when a sea turtle is encountered. The training program should include appropriate restrictions to ensure that construction activities mitigate negative impacts.

- If a turtle is found within the project area, cease all mechanical and construction activities within 100 ft until the animal voluntarily leaves the area.

## **Essential Fish Habitat**

The project area does not include EFH. However, there could be prey, eggs, larvae of fishable stocks of Federally managed fisheries within the EFH of Kaiaka Bay, which is located approximately 0.3 miles downstream of the project area. Direct project impacts to marine biological resources will result from the modification of the physical environment (e.g., removal of existing piers and alteration to soft bottom habitat) and sound emissions from the installation of the drilled shafts for the new bridge. Indirect impacts to the marine environment may occur during in-water work (e.g., demolition of existing and construction of new piers and abutments) that generates suspended sediments. A description of potential direct and indirect project-related impacts and BMPs for EFH is included below.

### Physical Habitat Modification

The removal of the existing piers will be a loss of habitat; however, the installation of the new single center pier will enhance the physical complexity of the in-water environment by providing habitat and space for estuarine organisms to colonize by attaching to the hard surface substrate. In addition, juvenile fish are typically attracted to in-water structures as they provide enhanced protection from predation by improving their ability to hide.

### Suspended Sediments

In-water work activities that release sediments in Ki'iki'i Stream could flow downstream and result in changes to turbidity levels, suspended solids, DO levels, and elevated nutrient levels (inorganic and organic fertilizers carried in sediments) in Kaiaka Bay. To minimize the potential for sediment discharges from project activities and protect water quality in Ki'iki'i stream and Kaiaka Bay, BMPs will be installed around all in-water work areas to isolate work activities from the stream flow and contain silt and suspended solids. For in-water work activity BMPs, see Section 3.11.5. In addition, most of the adult and juvenile MUS that use the EFH routinely experience heavy sediment loading and turbid condition due to the long history of Kaiaka Bay receiving runoff from a highly disturbed drainage basin. Thus, any inadvertent water quality impacts to EFH resulting from the proposed work activities would be short-term and temporary.

### Acoustical Impacts

The removal of existing piers and installation of the new drilled shafts may generate in-water sound and vibration levels. In-water sound pressure waves from saw-cutting can affect fish, particularly those with a swim bladder. The extent of impact is influenced by factors such as species, fish size, physical condition, peak sound pressure and frequency, and other factors.

However, the proposed action will use an auger to install the drilled shafts, a method that generates noise and vibrations at a much lower level compared to driving piles in place. With adequate design and effective BMP implementation, the sound energy generated by installing the drilled shafts is not anticipated to be sufficient to result in permanent adverse effects to MUS or EFH species in the project area or vicinity.

## **3.6. Geology, Topography, and Soils**

### **3.6.1. Geology**

Geological resources typically consist of surface and subsurface materials and their inherent properties. Principal geologic factors affecting the ability to support structural development are seismic properties (e.g., potential for subsurface shifting, faulting, or crustal disturbance), soil stability, and topography.

The island of O'ahu was formed by two shield volcanoes: the Wai'anae volcano to the west and the Ko'olau volcano to the east (Stearns, 1985). The Ki'iki'i watershed is characterized as long, deeply incised upper reaches forming narrow valleys among hilly terrain in the middle reaches and merging to produce deep gulches (CWRM, 2021). The streams form broad alluvial fans as they reach lower elevation areas. The project site is located along the alluvial coastal plain within the lower elevation area, approximately 0.3 miles upstream from the stream's outflow to Kaiaka Bay.

### **3.6.2. Topography**

Topography is the change in elevation over the surface of a land area. An area's topography is influenced by many factors, including human activity, underlying geologic material, seismic activity, climatic conditions, and erosion.

The topography in the vicinity of the project area is typical of the coastal plain and is relatively flat with an elevation that ranges from approximately 8 ft above mean sea level (msl) to 15 ft above msl within the Waialua Beach Road ROW. The project site is located approximately 0.3 miles from Kaiaka Bay and the Pacific Ocean, so there is a gradual decline in elevation from *mauka* to *makai*.

The most notable topographic feature in the project site is the earthen channel that defines Ki'iki'i Stream, with typical top-bank elevations of approximately 8 to 9 feet above msl down to a bottom-bank water surface elevation of approximately 1 to 2 feet above msl. On the east side of the stream, an estuarine drainage channel runs parallel to the roadway, separating the ROW from the adjacent Dole-owned agricultural field, with a similar top and bottom bank elevations as the stream channel. The road elevation is generally elevated a few feet above the adjacent land

areas, resulting in a slight grade change between the travel way and connecting driveways and shoulder areas.

### **3.6.3. Soils**

The studies that classify soils in Hawai'i are summarized below.

#### **Agricultural Lands of Importance to the State of Hawai'i (ALISH)**

The ALISH classification system was established by the State of Hawai'i Department of Agriculture in 1977 to identify agriculturally important lands in the State including prime agricultural land, unique agricultural land, and other important agricultural land. The segment of Waialua Beach Road ROW directly the west of the bridge and to the southeast of the bridge are located within prime agricultural land (Figure 3-3).

#### **Land Survey Bureau's Overall Productivity Rating (LSB)**

The LSB was prepared by the University of Hawai'i in the 1960's and 1970's to inventory and evaluate the land resources in the State. Based on the soil properties, topography, and climate, a productivity rating was assigned to the land area with "A" representing the highest productivity and "E" the lowest. Portions of project area directly to the west of the bridge and to the southeast of the bridge are located within LSB A (Figure 3-4).

#### **U.S. Department of Agriculture (USDA) Soil Survey**

The USDA Soil Survey was prepared in 1972 to map the soils in the state and provide soil characteristics for use in assessing the suitability of land areas for farming, ranching, industry or community development in the State (USDA, 1972). The project site is located within the following soil types (Figure 3-5):

- Waialua silty clay (WkA), 0 to 3 percent slopes – The soil is characterized as occurring in drainageways and coastal plains. They are moderately well drained, reddish-brown silty clays or clays underlain by alluvium.
- 'Ewa silty clay loam (EmA), moderately shallow, 0 to 2 percent slopes – The soil is characterized as well-drained with a surface layer and subsoil of dark reddish-brown, friable silty clay loam and substratum of gravelly alluvium or coral limestone.
- Hale'iwa silty clay (HeA), 0 to 2 percent slopes – The soil is characterized as well-drained soils on fans and drainageways along the coastal plains. They have a subsoil and substratum that is dark brown and dark yellowish-brown silty clay.

- Māmala cobbly silty clay loam, 0 to 12 percent slopes (MnC) – The soil is characterized as having stones, mostly coral rock fragments in the surface layer and in profile. The soil and subsoil is characterized as reddish-brown silty clay loam. The soil is underlain by coral limestone and consolidated calcareous sand. Permeability is moderate and runoff is very slow to medium.

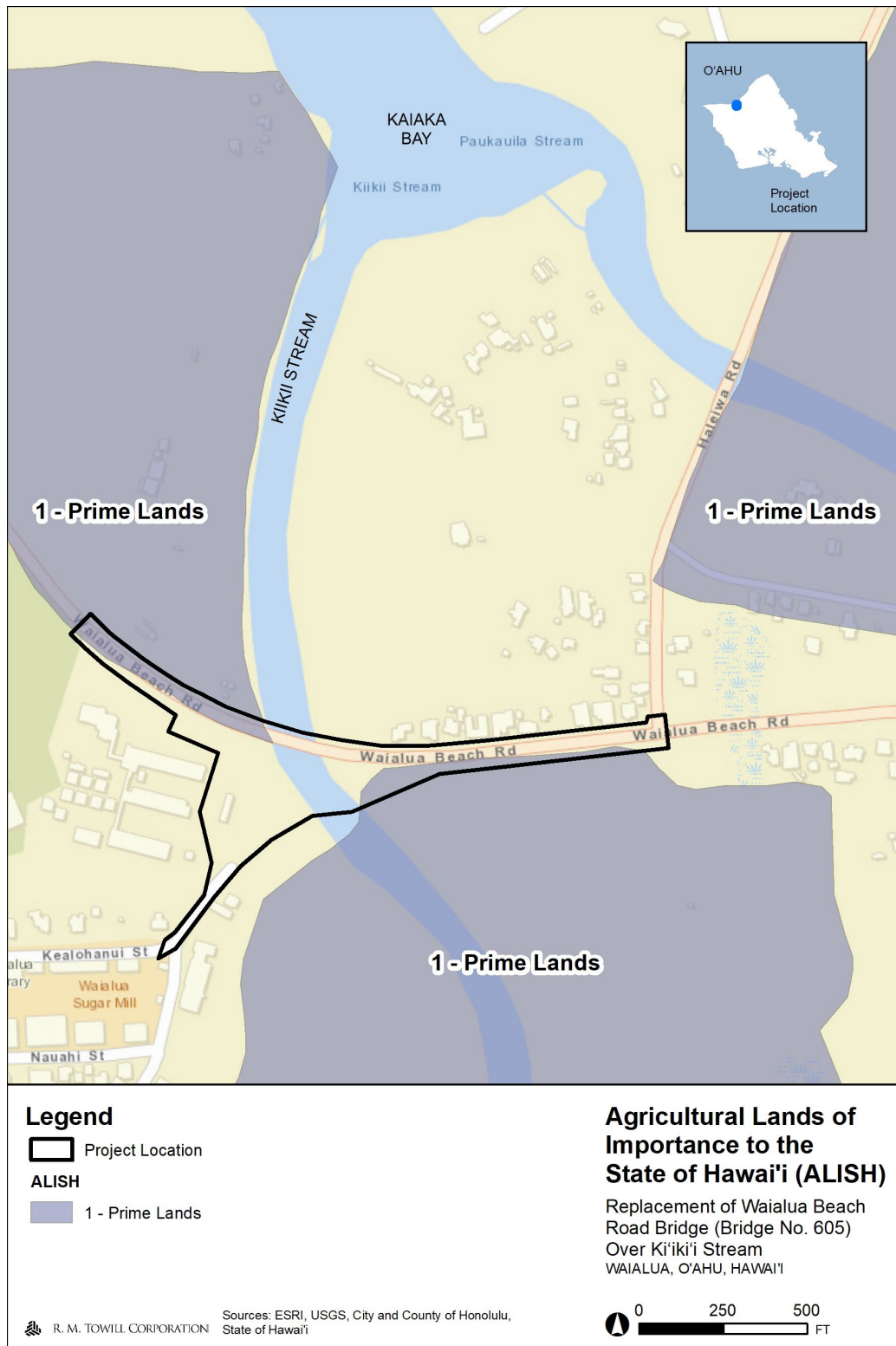
### **3.6.4. Potential Impacts and Mitigation**

The proposed action will result in less than significant short-term and no anticipated long-term impacts to geology, topography, and soils within the project area.

Ground disturbing work activities include the installation of abutments for the temporary bypass bridge, placement of structural fill to support the temporary west and east diversion roads immediately adjacent to the temporary bypass bridge, removal of existing bridge abutments and riprap, construction of new drilled shafts for piers and abutments, regrading and widening the stream banks directly below the bridge to improve stream flow, trench excavation to re-route segments of the BWS waterline, grading to transition the existing roadway into the new bridge deck surface, removal of the temporary bypass bridge abutments and diversion road fill material. These modifications will not result in significant long-term changes to the existing topography. Upon project completion, the site's topographical conditions will appear and function substantially the same as existing.

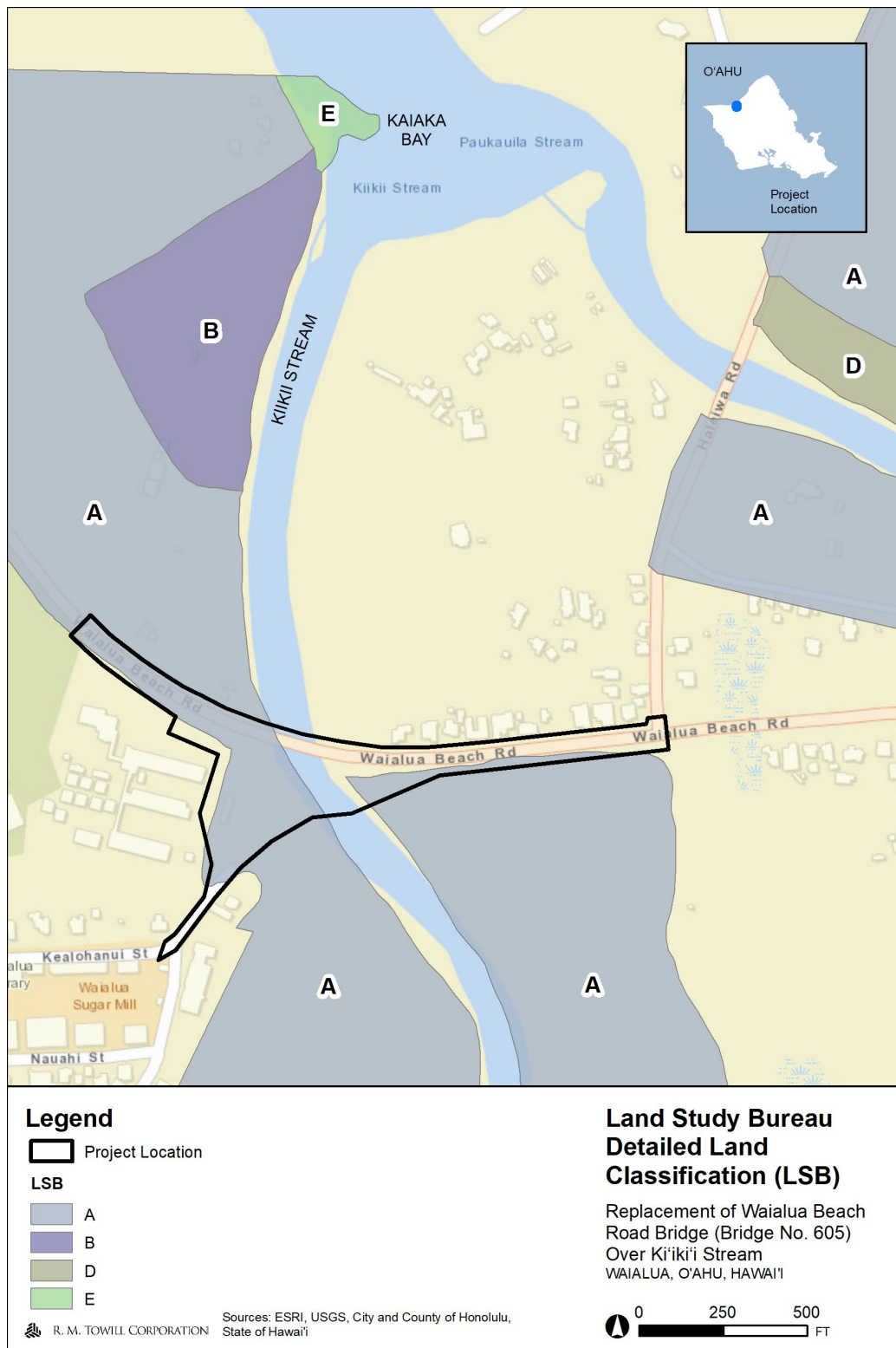
Before construction, grading, grubbing, and stockpiling permits will be obtained from the City. A NPDES permit for discharge of stormwater associated with construction activities will be obtained from DOH CWB. A Storm Water Pollution Prevention Plan (SWPPP) with BMPs will be prepared as part of the NPDES permit including perimeter controls (e.g., silt fences, filter socks, diversion swales), ground stabilization measures (e.g., tarping/covering exposed soils when work is inactive and minimizing exposure times), and dust control (e.g., watering with trucks or sprinklers, dust fences). During construction, the SWPPP will be implemented by the contractor to the maximum extent feasible. All construction activities will be conducted in compliance with dust, erosion control, and other applicable requirements of the City, State and Federal rules and regulations. For discussion on in-water work activity BMPs, see Section 3.11.5.

After construction, disturbed areas with exposed soils will be revegetated. Temporary erosion controls will remain in place until the permanent erosion controls are established, thereby minimizing any long-term potential for erosion or runoff.

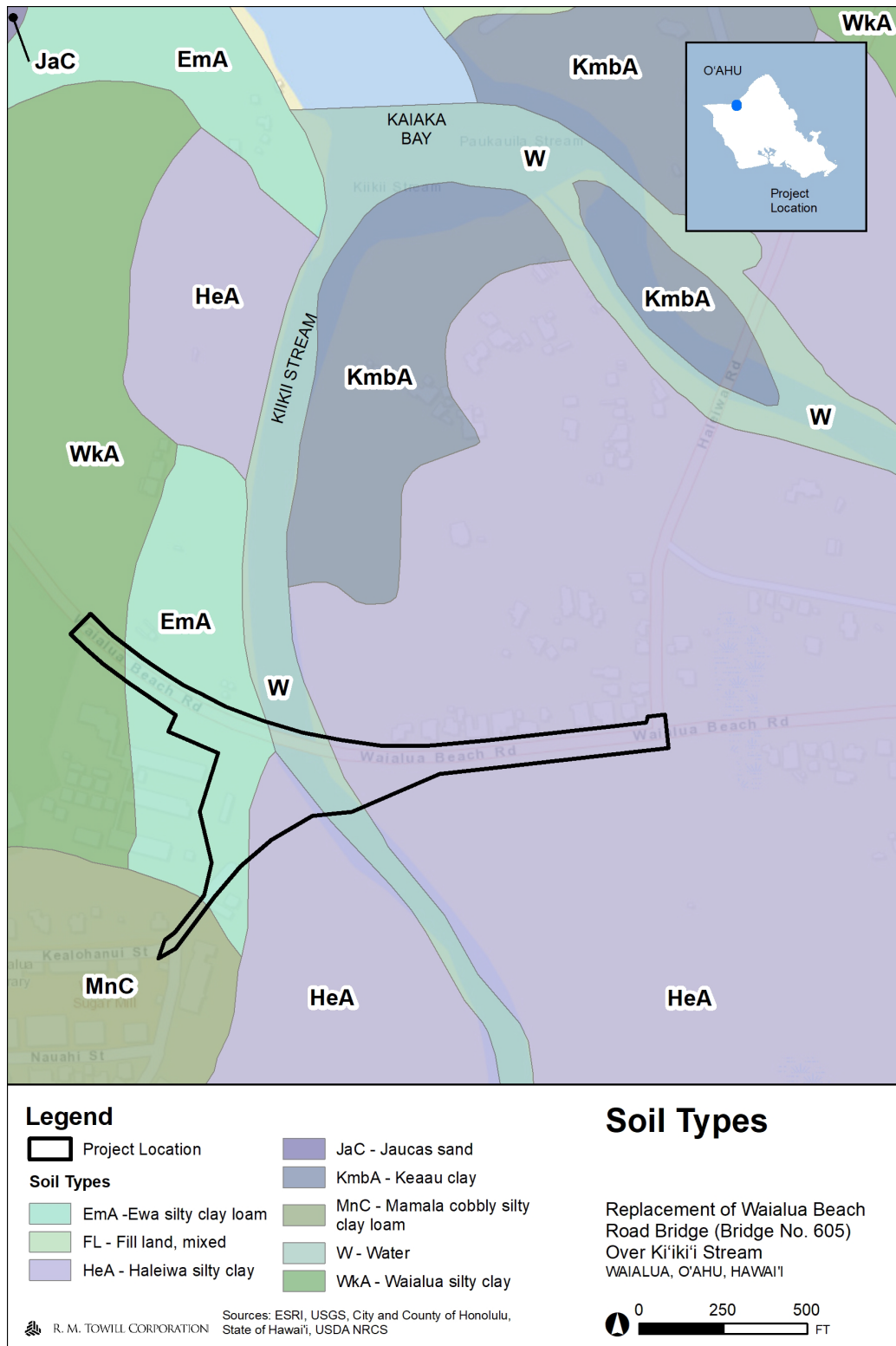


**Figure 3-3 – ALISH**





**Figure 3-4 – LSB**



**Figure 3-5 – Soil Types**

## **3.7. Natural Hazards**

O'ahu is susceptible to natural hazards including hurricanes, tropical storms, high winds, flooding and tsunami inundation, earthquakes, wildfires, and volcanic activity. A summary of natural hazards is provided below.

### **3.7.1. Hurricanes, Tropical Storms, and High Winds**

Hurricanes are characterized by strong tropical winds with sustained wind speeds greater than 74 miles per hour and by widespread heavy rains in excess of six inches. Storm surges and heavy rains may result in destructive flooding and strong winds can produce microbursts and mini-swirls (localized wind bursts that can reach speeds of greater than 200 miles per hour

Hurricanes occasionally approach the Hawaiian Islands, but rarely reach the islands with hurricane-force wind speeds. The first officially recorded hurricane in Hawaiian waters was Hurricane Hiki in August 1950. Since that time, five hurricanes have caused serious damage in Hawai'i: Nina (1957), Dot (1959), 'Iwa (1982), Estelle (1986), 'Iniki (1992), and Lane (2018). It is difficult to predict when these natural occurrences may occur, but it is reasonable to expect that future events will take place and may increase in frequency due to global climate change.

### **3.7.2. Flooding**

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 15003C0105H (effective January 19, 2011), the project area is located within a FEMA-designated floodway, as well as the following flood zones (Figure 3-6):

- Flood Zone X (west of bridge) – Area of minimal flood hazard and outside of the 1 percent annual chance floodplain.
- Flood Zone AE (directly adjacent to the west of the bridge and east of bridge) – Area of special flood hazard and 1 percent annual chance floodplains. Mandatory flood insurance is required.
- Flood Zone AE Floodway (Ki'iki'i Stream and directly adjacent lands) – Area of floodplain.

### **3.7.3. Tsunamis**

A tsunami involves the generation of a series of destructive ocean waves that can affect all shorelines. Tsunamis that affect Hawai'i typically originate from distant, seismically active areas around the Pacific, or from local, shallow undersea earthquakes, primarily near the seismically active island of Hawai'i. Tsunami waves can occur at any time with limited or no warning. The Pacific Tsunami Warning Center (PTWC) in Hawai'i issues warnings when a potential tsunami is imminent (PTWC, n.d.). The project area is located entirely within the tsunami evacuation zone

as designated by the Hawai'i State Civil Defense (Figure 3-7). Therefore, for any tsunami warning, the project site must be evacuated as the area is vulnerable to tsunami wave action and likely to be subject to inundation.

#### **3.7.4. Volcanic Activity and Earthquakes**

There are six active volcanoes in the Hawaiian Islands including Kīlauea, Mauna Loa, Hualālai, Mauna Kea, Kamaehuakanaloa (submarine volcano), and Haleakalā. A majority of earthquakes on the Hawaiian Islands occur on or around the Island of Hawai'i, where there is the highest concentration of active volcanoes. O'ahu's volcanoes are inactive and the threat of an earthquake in the site area is no greater than other locations on O'ahu.

#### **3.7.5. Wildfires**

The Hawaiian Islands are vulnerable to wildland fires, especially during the summer months due to prolonged drought and/or high winds. The greatest danger of fire is where developed, urbanized areas border densely vegetated areas. Overgrown vegetation close to homes, pockets of open space within subdivisions, and an increase of non-native high fire-intensity plants around developed areas pose increasing threats to commercial, community, environmental, and residential resources. A majority of wildfire are human-caused (intentionally or by negligence); however, wildfires are also naturally occurring events.

Within the project vicinity, the presence of unmaintained vegetation growth on undeveloped and fallow agricultural land adjacent to the ROW provides potential fire fuel loading that contributes to wildfire risk.

#### **3.7.6. Potential Impacts and Mitigation**

##### **Hurricanes, Tropical Storms, and High Winds**

The proposed action is anticipated to have a beneficial impact by improving infrastructure resiliency to hurricanes, tropical storms and high winds by constructing a deep foundation system comprised of drilled shafts, which increase the bridge's capacity to withstand lateral forces (e.g., stream flow, wind, and soil movement).

In the event of severe weather warnings during construction, the contractor will implement protocols at the various warning stages (storm advisory, warning, watch) as appropriate to ensure the safety of the work crew and the public and to secure the work site to minimize the potential for storm-related damage to materials, equipment and site conditions, and to prevent construction materials from affecting surrounding properties should a storm event occur.

## Flooding

The proposed action is anticipated to have a beneficial impact by improving the bridge's hydraulic capacity and resiliency during small flood events by reducing the number of in-water piers that can collect upstream debris, shifting the abutments further upland to widen the stream channel under the bridge, and altering the stream embankments.

The project site is located within a FEMA-designated floodway. Therefore, it is required to meet FEMA's No-Rise criteria, pursuant to 44CFR Part 60. The criterion requires that a proposed project does not increase flood levels or WSE during the 100-year flood. WEST performed hydraulic analyses to evaluate bridge design alternatives to ensure FEMA's No-Rise criteria is met. The results of these analyses revealed that a bridge length of 175-ft long with one 4-ft diameter pier will meet FEMA's No-Rise criteria. The Hydraulics Analysis also showed that the project site and a majority of the surrounding area located at, near, and approximately 0.75 miles *mauka* of where Ki'iki'i and Paukauila streams converge at Kaiaka Bay would be submerged up to a WSE of 15 ft during a 100-year flood event. Under the 100-year flood event scenario, the existing and new bridge are under pressure flow and roadway approaches would be overtopped due to flooding from both Ki'iki'i and Paukauila streams converging at Kaiaka Bay and flooding the surrounding *mauka* area. The new bridge will not increase WSEs under a 100-year flood. Since the existing bridge is under pressure flow and roadway approaches are already overtopped at the 100-year flood elevation, the new bridge will automatically be classified as a Scour Critical Bridge by FHWA and HDOT. Scour Critical Bridges are required to be inspected after large storm events, as well as every two years.

**Table 3-3 – Hydraulic Model Results for 100-Year Flood Events**

	Bridge Road Elevation <sup>1</sup>		100-Year Flood <sup>2</sup>	
	Deck	Low Chord	WSE (US) Existing / Proposed Bridge	WSE (US) Temporary Bypass Bridge
Existing Bridge	12.29	8.04	13.33	13.42
Existing Bridge & Temporary Bypass Bridge	12.91	9.40	13.23	13.51
Proposed Action	13.72	8.80	13.33	13.42
<sup>1</sup> Bridge road elevation refer to the east abutment deck (i.e., top of sidewalk) and low chord elevations at the downstream bridge face.				
<sup>2</sup> The WSE corresponds to locations immediately upstream of the existing and proposed bridges and immediately upstream of the temporary bypass bridge. Note that the existing and proposed bridges cross the stream at the same location.				

The project site is located within a Special Flood Hazard Area and Floodway and therefore will be designed and constructed to comply with the rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (CFR 44). In addition,

the project is required to obtain a floodway permit from the City and comply with all applicable development standards and other requirements pursuant to Revised Ordinances of Honolulu (ROH) Chapter 21A, *Flood Hazard Areas*.

### **Tsunami**

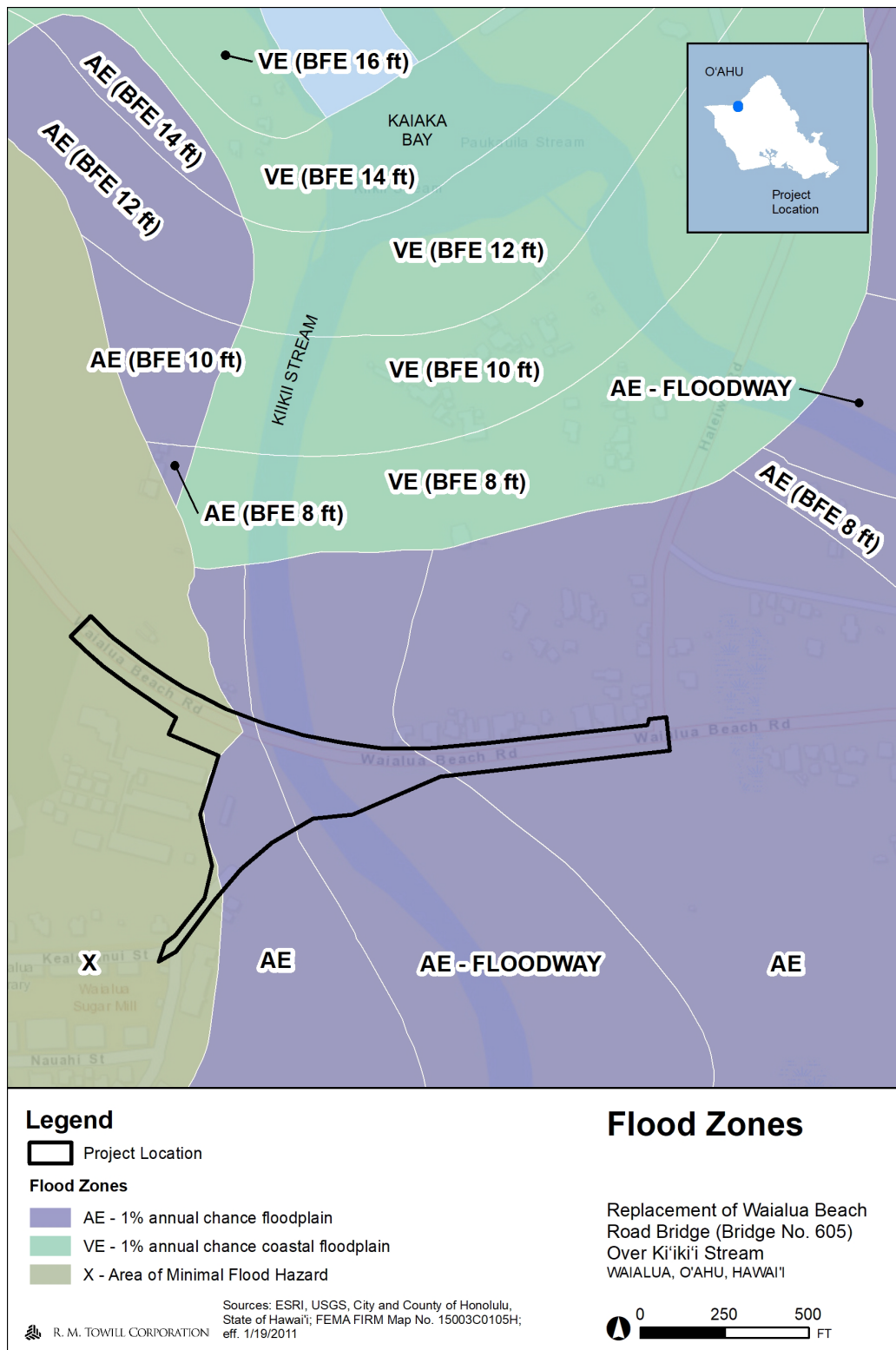
The project area is located in the tsunami evacuation zone. As such, the surrounding residential, agricultural, and Waialua Elementary will be evacuated during any tsunami warning to avoid any potential injury or loss of life. In the event of a tsunami, the PTWC will issue a tsunami warning and civil defense agencies will oversee the evacuation of areas at risk for tsunami inundation.

### **Volcanic Activity and Earthquakes**

The proposed action will not exacerbate the project site's vulnerability to volcanic activity or earthquakes since there are no active volcanoes on O'ahu. The new bridge will be constructed in accordance with the Uniform and International Building Codes and other City, State, and Federal standards, which provide minimum design criteria to address the potential for damage due to seismic disturbances.

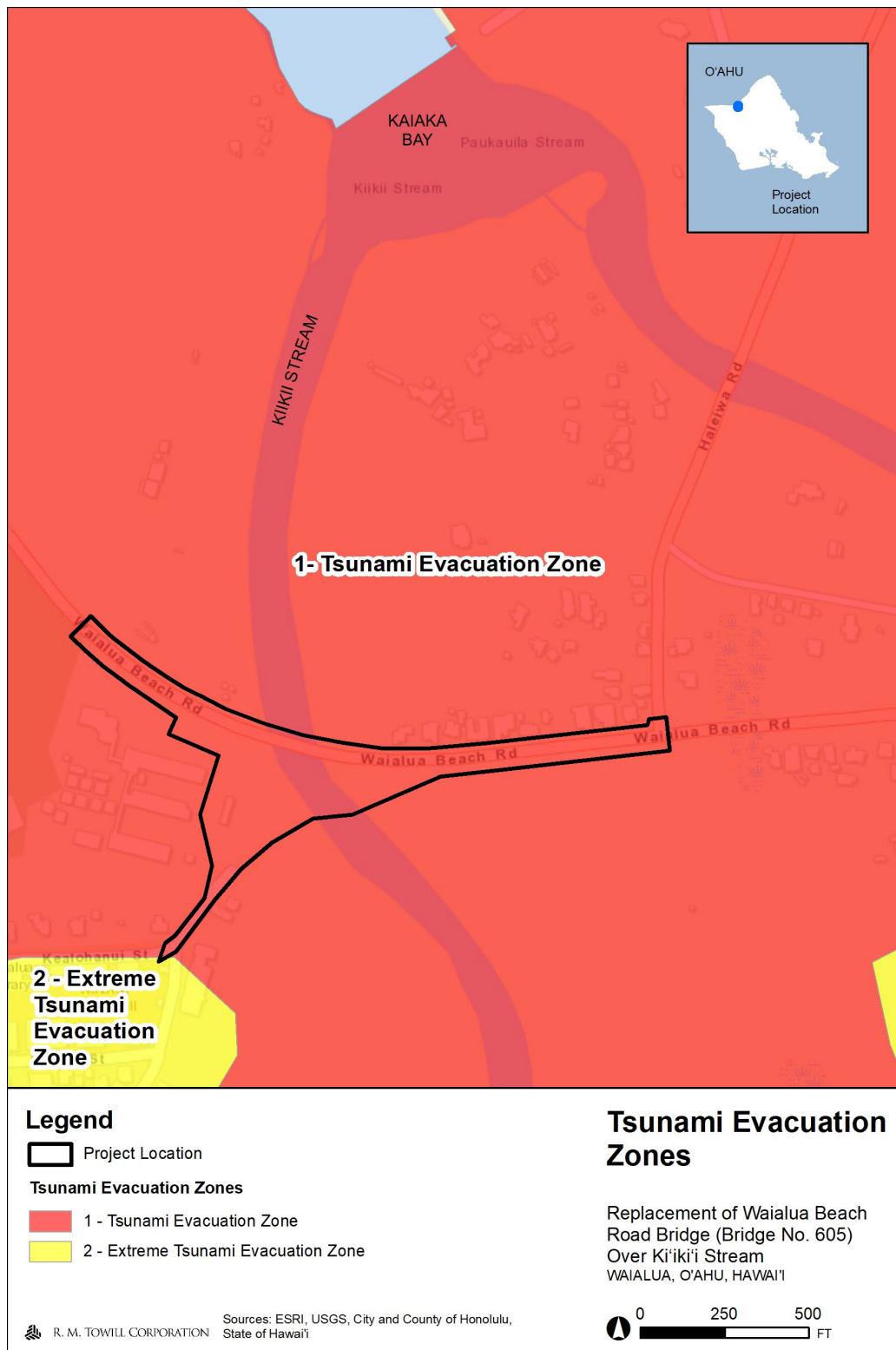
### **Wildfires**

The proposed action will not exacerbate the project site's vulnerability to wildfires as the bridge superstructure and substructure will be composed of concrete and not wood or other flammable material. Naturally occurring vegetation adjacent within the project area near the bridge will be removed during construction, thereby reducing potential wildfire fuel load. The project contractor will be required to employ good housekeeping practices at the job site to properly store, handle and dispose of flammable materials, properly dispose of waste material and prevent work site conditions that could result in increased ignition risk or fuel loading. The contractor will employ site management measures and worker instruction protocols to ensure that project activities do not result in inadvertent contact with overhead powerlines that could create an ignition source.



**Figure 3-6 – Flood Zones**





**Figure 3-7 – Tsunami Evacuation Zones**



### 3.8. Noise

The noise environment in the project vicinity is characterized as sounds generated by the adjacent Waialua Elementary School, natural environment (e.g., ocean, wind, wildlife), agricultural activities (e.g., tractors, farm equipment), residential activities and vehicular noise.

Regulation of noise on O‘ahu is administered by DOH IRHB pursuant to Section 11-46, HAR, *Community Noise Control*, which sets permissible noise levels to provide for the prevention, control, and abatement of noise pollution in the State. The regulation creates noise districts based on land use that dictate acceptable noise levels. The project area is in a Class C zoning district defined as “*all areas equivalent to lands zoned agriculture, country, industry, or similar type.*” The maximum permissible sound level in a Class C district is 70 dBA from 7:00am-10:00pm and 70 dBA from 10:00pm-7:00am.

#### 3.8.1. Potential Impacts and Mitigation

The proposed action will result in less than significant short-term and no anticipated long-term impacts to the noise environment. Construction noise may be perceived as a nuisance to nearby residences and Waialua Elementary and may affect the normal behavior of birds and other animals during noise generating work activities. However, these effects will be intermittent and temporary and will cease when work activities are complete.

Before construction, the contractor will obtain a construction noise permit from DOH IRHB for work activities during normal working hours. If the contractor determines that nighttime work is necessary, the contractor will obtain a noise variance from IRHB.

During construction, short-term impacts will be generated during mobilization and operation of heavy equipment. Work activities that will generate high levels of noise will be coordinated with Waialua Elementary to schedule them during low use school hours, school breaks or nighttime. See Appendix 6 for the Waialua Elementary and DOE meeting notes. All internal-combustion powered machinery and equipment will be equipped with mufflers and related noise attenuation technologies, as well as be maintained in good working order. Construction noise levels will comply with applicable conditions pursuant to Chapter 342F, HRS, *Noise Pollution* and § 11-46, HAR, *Community Noise Control*.

After construction, all project-related noise impacts will cease, and the noise environment will return to pre-existing conditions.

## **3.9. Public Facilities**

### **3.9.1. Fire Protection Services**

HFD has 44 fire stations. Waialua Fire Station (Station No. 14) is the closest fire station and is approximately 1 mile north of the project site.

### **3.9.2. Police Services**

The Honolulu Police Department (HPD) has four district stations including Kalihi, Kāneʻohe, Pearl City, Kapolei, and Wahiawā. There are HPD substations in Chinatown, Kahuku, Kailua, Waiʻanae, and Waikīkī. The Wahiawā Police Station is the closest police station and is approximately 10 miles southeast of the project site.

### **3.9.3. Healthcare and Emergency Services**

Wahiawā Queens Medical Hospital is the closest hospital and is approximately 9.5 miles southeast of the project site. There are also the Queen's Health Care Center and Hale'iwa Family Health Center approximately 2.2 miles northeast of the project site.

### **3.9.4. Recreational Facilities**

The recreational facilities located in the project vicinity include the following:

- Waialua District Park (0.1 miles to the west and contiguous with Waialua Elementary)
- Kaiaka Bay Park (0.3 miles to the north),
- Hale'iwa Beach Park (1.43 miles to the north),
- Waialua Bandstand Park (0.2 miles to the south), and
- Kamananui Neighborhood Park (0.6 miles to the south).

There are no Section 6(f), LWCF properties, including public parks, forests, wildlife refuges or developed recreation areas, in the project area (Appendix 7).

### **3.9.5. Schools and Libraries**

#### **Schools**

The existing Waialua Beach Road Bridge is directly adjacent to the east of Waialua Elementary School. The proposed project site will include areas within the ROW along the frontage of the school and portions of the east side of the school property will be used for staging and the

temporary bypass road. Other schools in the project vicinity include Waialua Intermediate and High School (0.7 miles to the south), and Hale'iwa Elementary (0.7 miles to the north).

### **Libraries**

Waialua Public Library is the closest library and is approximately 0.2 miles southwest of the project site.

## **3.9.6. Potential Impacts and Mitigation**

### **Fire Protection Services**

The proposed action would not result in any significant short- or long-term impacts to fire protection services.

Before demolition of the existing bridge, the temporary bypass bridge and diversion road will be installed to maintain emergency access across Ki'iki'i Stream. During the assembly/installation and disassembly/removal of the temporary bypass bridge, the construction area will encroach into Waialua Elementary's east driveway. It may be necessary to completely block the east driveway for a day or two during installation and removal of the temporary bypass bridge. If that is the case, the project design team will coordinate with Waialua Elementary to schedule the work activities during low use school hours, when school is not in session or at night. The project design team will continue to coordinate with HFD to determine whether the encroachment into the east driveway is acceptable or if design adjustments need to be made to meet minimum HFD requirements for access road width (e.g., temporarily expanding a segment of the east driveway towards the west), or if a temporary alternative fire access to the back of the school needs to be provided elsewhere.

### **Police Services**

The proposed action would result in less than significant short- and no long-term impacts to police services.

Before construction, the contractor will implement the Traffic Management Plan (TMP), which includes a public information program to communicate any impacts to traffic conditions within the project area. The TMP for the proposed action was submitted to the City and is under review. For discussion on the TMP, see Section 3.12.

During construction, additional police officers may be required to assist with vehicle movement in and out of the Waialua Elementary front parking lot to address the new traffic pattern onto the diversion road and across the temporary bypass bridge, and during the delivery of oversized equipment and project materials, such as segments of the pre-fabricated temporary truss

bridge. HPD may also receive increased calls regarding construction-related traffic; however, this would be temporary and cease with the conclusion of project construction.

### **Healthcare and Emergency Services**

The proposed action will not result any significant short- or long-term impacts to healthcare and emergency services. No additional healthcare or emergency services will be required and emergency vehicle access across Ki'iki'i Stream will remain open via the temporary bypass bridge and diversion road during construction.

### **Recreational Facilities**

The proposed action will not result in any significant short- or long-term impacts to recreational facilities. During construction, access to/from recreational facilities, including Waialua District Park which shares driveway access with Waialua Elementary, will remain open via the temporary bypass bridge and diversion road.

### **Schools and Libraries**

The proposed action will result in less than significant short-term and no anticipated long-term impacts to the school.

The proposed action will encroach into the northeast corner of the Waialua Elementary campus to accommodate the Ph. 1 and 3 staging area. During assembly/installation (Ph. 1) and disassembly/removal (Ph. 3) of the temporary bridge, the staging area may encroach into Waialua Elementary's east driveway that provides access to the rear parking lot and back of the school campus for school staff and fire and emergency service vehicles. DDC and the contractor will ensure that access to the rear of the school remains available throughout the period of construction. Should the east driveway require temporary closure, DDC and the contractor will coordinate with Waialua Elementary and the HFD to ensure that access needs are met. See discussion above regarding fire protection services.

The Ph. 1 and 3 staging areas will also occupy an informal student drop-off/pick-up area used by parents on the shoulders of the ROW. The Ph. 2 staging area will not encroach into the school campus. The west diversion road will curve north and connect to the Waialua Beach Road ROW along the frontage of Waialua Elementary, but will not infringe on vehicle movements in and out of the Waialua Elementary entrance and exit driveways.

During construction, short-term impacts will include alteration of the existing traffic pattern (e.g., diversion road and temporary bypass road), generation of noise from heavy equipment and associated work activities (e.g., demolition, grading, etc.), construction-generated dust and emissions, and temporary removal of the north and east fence along the perimeter adjacent to

the construction area. Traffic impacts will be mitigated with the implementation of a TMP and other traffic-related mitigation measures identified in Section 3.12. Construction activities that will generate high noise levels will be coordinated with Waialua Elementary and scheduled during low school use hours, nighttime, or when school is out of session to minimize potential disruptions to teachers, students and staff. Additional noise-related mitigation measures are identified in Section 3.8. The maximum dust control mitigation measures will be implemented along the shared perimeter between Waialua Elementary and the project's construction area. These measures will be included in the contractor's bid contract to ensure compliance and adherence. Additional dust control mitigation measures are identified in Section 3.6.

During the pre-EA consultation period, the project team conducted two meetings with Waialua Elementary on February 14 and March 31, 2025. DOE administrative representatives were in attendance at the second meeting. The meetings' purpose was to identify potential issues and mitigation measures which have been incorporated into this Draft EA. The meeting minutes from the two meetings are included in Appendix 6.

There are no anticipated short- or long-term impacts to libraries as access to/from the Waialua Public Library will remain open throughout the project's duration. In communication with the project team on February 12, 2024, the Waialua Public Library Librarian also raised concern about disruptions to utilities that could affect the library or the larger community (Appendix 5). There may be some short-term, intermittent interruptions to utility services during connection and disconnection of temporary bypass lines and reestablishment of permanent utility connections. Any interruptions will be of short duration and will be undertaken during non-peak times or nighttime to minimize disruption to residents, schools, businesses and others in the community. See Section 3.13 for additional discussion regarding utilities.

### **3.10. Socio-Economic Environment and Demographics**

The proposed action is located on the boundary between the Hale'iwa census designated place (CDP) and Waialua CDP. Socio-economic and demographic data for the Hale'iwa and Waialua CDPs was compiled using the U.S. Census Bureau's 2023 American Community Survey (Table 3-4) (USCB, 2023).

The racial composition of Hale'iwa and Waialua CDPs is generally similar to the City and State; however, there are minor divergences including a greater percentage of people identifying as white and Native Hawaiian or other Pacific Islander and a lesser percentage of people identifying as American Indian or Alaskan Native and Asian. The median age of Hale'iwa and Waialua CDPs is slightly older than the City and State, with a lower percentage of people under 18 years old. The percentage of owner-occupied housing is generally similar to that of the City and State. The median income in Hale'iwa and Waialua CDPs is lower than the City and State. The percentage of people in poverty in Hale'iwa CDP is lower and Waialua CDP is higher than

the City and State. The distribution of transportation of work in Hale'iwa CDP varies from the City and State including a lower percentage of people carpooling, using public transportation, and working from home; however, there is a significantly higher percentage of people commuting by walking, bicycling or other means. The distribution of transportation to work in Waialua CDP varies from the City and State including a significantly higher percentage of people driving to work alone, lower percentages of people carpooling, using public transportation, or walking, bicycling or other means, and about the same percentage of people working from home.

**Table 3-4 – Community Characteristics**

<b>2023</b>	<b>State of Hawai'i</b>	<b>City and County of Honolulu</b>	<b>Hale'iwa CDP</b>	<b>Waialua CDP</b>
Population	1,443,138	989,408	4,671	3,015
<b>Race</b>				
One race	71.8	73.7	70	66.8
Two or more races	28.2	26.3	30	33.2
<b>Race alone or in combination</b>				
White	44.3	38.8	47	49.9
Black	3.7	4.5	2.6	2.1
American Indian/Alaskan Native	2.9	2.8	1.6	1.4
Asian	57.0	61.6	53.4	56.9
Native Hawaiian/Other Pacific Island	27.1	25.1	30.9	27.2
Some Other Race	5.4	4.8	4.2	6.8
<b>Age</b>				
Median age in years	41.4	40.2	44.1	47.8
% of population under 18	20.5	20.4	17.3	16.6
% of population + 65 years	21.2	20.2	23.5	24.7
<b>Housing</b>				
Total housing units	572,042	376,177	1,570	1,242
% of owner-occupied housing units	62.4	59.1	58.0	59.3
% of renter-occupied housing units	37.6	40.9	42.0	40.7
<b>Income and Poverty</b>				
Median Household Income	\$95,322	\$103,131	\$93,977	\$84,656
% of people in poverty	10.1	9.0	6.1	11.6
<b>Commuting to Work</b>				
% by car, truck or van – alone	64.2	61.5	63.3	81.9
% by car, truck or van – carpool	15.8	15.9	11.1	6.0
% by public transportation	4.1	5.3	2.6	1.1
% by walk, bike other means	7.3	8.8	17.7	2.6
% worked at home	8.7	8.5	5.4	8.4
Source: U.S. Census Bureau, 2023 ACS 1-Year Estimates				

### **3.10.1. Potential Impacts and Mitigation**

The proposed action will result in less than significant short-term and no anticipated long-term impacts to the socio-economic and demographic composition of the project vicinity.

During construction, work activities will result in temporary economic benefits in the form of construction jobs and procurement of materials and services. Surrounding businesses may see a temporary increase in revenue from expenditures by construction personnel. There may be a temporary increase in local rental housing demand by the construction personnel. However, these economic, local housing, and demographic impacts will be temporary and will cease upon the project's completion.

In the long-term, the bridge replacement project will provide a significant benefit by preserving access on a major transportation corridor that serves residents, school children, visitors, workers, and emergency personnel, and carries myriad other goods and services critical to the social and economic well-being of the North Shore community.

## **3.11. Surface Water**

### **3.11.1. Inland Waters**

The project site is bisected by Ki'iki'i Stream, a perennial stream, which discharges into Kaiaka Bay. Ki'iki'i Stream is part of the Ki'iki'i watershed, which is the largest watershed on O'ahu, comprising a 58.4 square mile region between the Ko'olau and Wai'anae mountain ranges (CWRM, 2021). Land uses within the watershed are primarily agriculture and conservation (Parham et al., 2008). Six tributaries contribute flow to Ki'iki'i Stream (all far upstream from the project area) including North Poamoho, Poamoho, Kaukonahua (North and South Forks), Waikoloa, Mohiakea, and Haleauau. The water of Ki'iki'i Stream is characterized as often brown, murky, and turbid due to runoff in the watershed (Townscape Inc., 2018). Ki'iki'i Stream is considered a "Class 2" inland water per DOH Water Quality Standards (DOH, 2014). Class 2 inland water is defined as suitable for recreation purposes, support and propagation of aquatic life, agricultural and industrial water supplies, shipping and navigation. It is identified as a water body that does not have enough data to evaluate/determine if it is impaired or threatened pursuant to CWA Sections 303(d) and 305(b) (DOH, 2024). However, a pollution budget or total maximum daily load (TMDL) was established for Kaukonahua Stream (North and South Forks), which are tributaries to Ki'iki'i Stream (DOH and TetraTech, 2009).

Within the project area, Ki'iki'i Stream is an estuarine water body, tidally influenced, and a traditionally navigable water (TNW) (AECOS, 2025). An estuary is a partially enclosed body of water (e.g., bay, lagoon, sound, or slough) typically characterized as having brackish water, which results from the mixture of freshwater draining from land and tidally-influenced seawater from the ocean (NOAA, n.d.). The stream and adjacent wetland are confined to a levee-bound

channel, constructed to limit flooding of adjacent agricultural land (e.g., former sugar cane fields). This channelization has shaped the riparian ecology and geomorphic responses of the estuary, which is characterized as riparian vegetation (primarily mangal) confined to a narrow channel margin and temporary fluvial sediment deposits. The sediment deposits are periodically remobilized and transported to Kaiaka Bay, which has a long history of turbid water conditions occurring after significant rainfall events within the large watershed.

### **Water Quality Testing**

On February 6, 2025, AECOS collected water samples at three stations upstream (“upstream”) and downstream (“downstream”) from the project area and at the bridge (“bridge”) at low and high tides. Physical measurements and parameter testing for the water samples included temperature, salinity, conductivity, pH, dissolved oxygen (DO), chlorophyll a, salinity, turbidity, nitrate + nitrite (NO<sub>3</sub>+NO<sub>2</sub>), ammonium (NH<sub>4</sub>), total nitrogen (TN), and total phosphorus (TP). Turbidity, TN, NH<sub>4</sub>, and NO<sub>3</sub>+NO<sub>2</sub> were elevated at all three stations. DO saturation and pH values were extremely low at all three stations (Appendix 4).

#### **3.11.2. Marine Waters**

Kaiaka Bay is the closest marine waters and is located approximately 0.3 miles *makai* of the project site. Kaiaka Bay is a coastal estuary that receives stream discharges from Ki‘iki‘i and Paukauila streams. The water of Kaiaka Bay is characterized as often turbid from suspended sediments brought in by the two streams. The eastern shore of Kaiaka Bay is a relatively level limestone bench with a few pockets of sand. The bench varies in width but is around 13 ft wide and located in the intertidal zone: partially exposed at low tides and covered to a depth of about 2 ft during high tides (AECOS, 2025). The south shore of Kaiaka Bay is a sand beach of predominantly terrestrial detrital material. The beach is almost always brown from the constant deposits of silt in the bay waters. The inner bay is less than 6 ft deep and much of the bottom is covered by silt (AECOS, 2025). A fringing reef approximately 0.5 miles offshore extends between Pu‘uiki Beach to the west of Kaiaka Bay to Kaiaka Point. This reef has a shallow limestone surface with sand channels and depressions. A sand-bottom channel extends westward from the mouth of Kaiaka Bay, then northward off Pu‘uiki Beach. The channel leads to an offshore submarine canyon (AECOS, 2025).

Kaiaka Bay is considered a Class A marine water per DOH Water Quality Standards (DOH, 2014). Class A water is defined as suitable for recreational purposes and aesthetic enjoyment, as well as other uses that do not negatively impact the protection and propagation of fish, shellfish, and wildlife. Kaiaka Bay is classified as an impaired body of water by DOH as it does not meet its designated beneficial uses due to exceeding the water quality criteria for *Enterococci*, total nitrogen, nitrate-nitrite, ammonia, turbidity, and chlorophyll a (AECOS, 2025). It is listed as an impaired body of water pursuant to CWA Sections 303(d) and 305(b) and assigned a “low” priority for development of a TMDL (DOH, 2024).



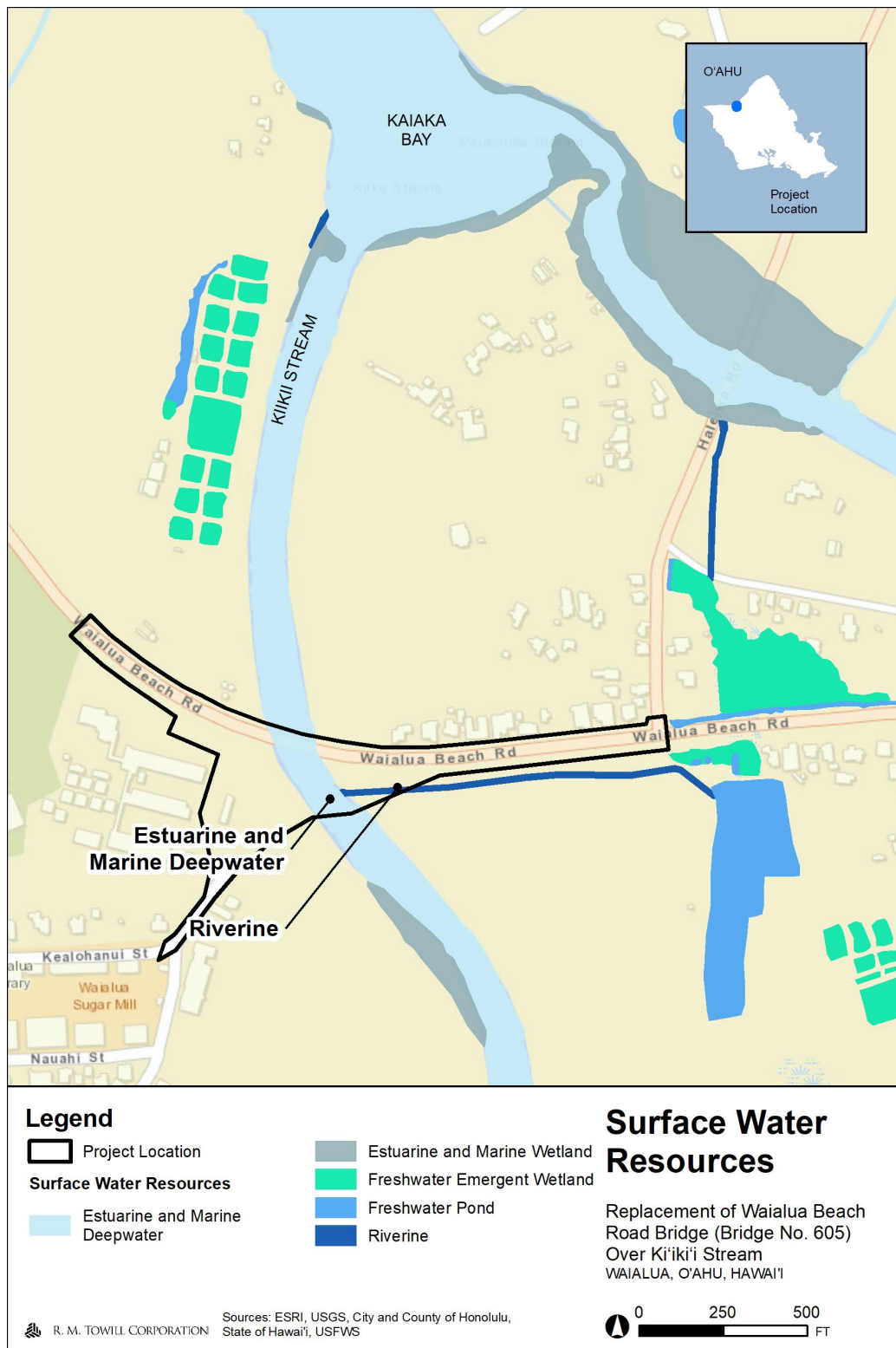
### 3.11.3. Wetlands

Within the project area, Ki'iki'i Stream and the drainage canal (southeast of the bridge on Dole's property) are estuarine bordered by mangrove wetlands (mangal). The wetland boundaries are located approximately at the base of the respective levees. Red mangrove (*Rhizophora mangle*) is the dominant species within these adjacent wetlands and Guinea grass (*Megathyrsus maximus*) and koa haole (*Leucaena leucocephala*) are the dominant species on the levees above the wetlands. The soils within the wetlands is a dark mucky mineral soil with redox features underlain by a black muck or a dark loamy sand with prominent redox features. The upland soils are a uniform sandy clay or sandy clay loam with no redox features. Within the wetlands, the soil is saturated and oxidized rhizospheres are present on living roots, and the soil is saturated and has a hydrogen sulfide odor. Other than being within the floodway (geomorphic position—a secondary indicator of wetland hydrology), the levees and beyond do not have indicators of wetland hydrology (AECOS, 2025).

### 3.11.4. Jurisdictional Waters Delineation

Waters of the U.S. (also called “jurisdictional waters”) are surface waters that are regulated under federal jurisdiction as authorized by the CWA and RHA. Jurisdictional waters include all tidal waters (also called TNWs) and a subset of streams, lakes, reservoirs, and wetlands. TNWs, under RHA, is defined as mean high water (MHW) and extends to the high tide line (HTL) under CWA. If wetlands are adjacent to TNW, CWA jurisdiction extends to the wetland/upland boundary. Wetlands are defined as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions (e.g., swamps, marshes, bogs, etc.).

On August 29, 2017, AECOS conducted a jurisdictional waters delineation (“2017 delineation”) of the stream channel and Ki'iki'i Stream floodplain between Waialua Beach Road and Farrington Highway for the Ki'iki'i Stream dredging project (AECOS, 2017). On February 6, 2025, AECOS conducted a jurisdictional waters delineation (“2025 delineation”). Ki'iki'i Stream is a TNW as it is a perennial stream with a direct surface connection to the ocean at Kaiaka Bay. In addition, AECOS confirmed that the location of the mangal wetlands bordering Ki'iki'i Stream and the drainage canal have not changed since the 2017 delineation and are essentially at the base of the respective levees.



**Figure 3-8 – Surface Water Resources**

### **3.11.5. Potential Impacts and Mitigation**

The proposed action will result in less than significant short-term and beneficial long-term impacts to inland and marine water resources.

In-water work activities include the removal of existing abutments, piers down to the stream bed, and riprap, removal of vegetation and sediment from upstream and downstream of the bridge, installation of drilled-shafts for the new abutments and center pier, regrade the stream embankment below the new bridge, and install new riprap along the new abutments, center pier, and along the embankment (upstream and downstream). In addition, the project design team is considering design alternatives for the temporary bypass bridge's abutments including the use of concrete spread footings or micropiles.

In-water work activities will require a CWA Section 404 Department of Army permit from the USACE since Ki'iki'i Stream and the adjacent drainage channel (to the southeast of the bridge) are waters of the U. S. (WOUS). It is anticipated that the proposed action will qualify for a Nationwide Permit (NWP) 14, Linear Transportation Project and will comply with all applicable NWP general conditions and mitigation measures. Under the NWP 14, the proposed action will qualify for the Blanket Section 401 Water Quality Certification (Blanket Certification) and will comply with all applicable Blanket Certification general conditions and mitigation measures. Under the NWP 14, the project will also qualify for the Hawaii Coastal Zone Management Program Federal Consistency Review Conditional Concurrence since it does not meet the conditions that would require an individual federal consistency review.

Before construction, grading, grubbing, and stockpiling permits will be obtained from the City. A NPDES permit for discharge of stormwater associated with construction activities will be obtained from CWB. A SWPPP will be prepared as part of the NPDES permit to identify potential construction-related pollutants and BMPs to prevent stormwater from discharging land-based sediment and pollutants into state waters (see soil management BMPs in Section 3.6).

During in-water or over-water work activities, water quality protection BMPs will include, but are not limited to, the following:

- Minimize turbidity and siltation from project-related work activities. Install effective in-water sediment control and silt containment devices (e.g., silt curtains down to stream bottom, mud pan around steel casing for drilled shaft) and curtail work during periods of weather-related runoff.
- Utilize material(s) placed or to be placed in-water that are free of waste metal products, organic materials, debris, and any pollutants at toxic or potentially hazardous concentrations to aquatic life.
- Dispose of all debris removed from aquatic environments at an approved upland dumping site.

- Prevent contamination (trash or debris disposal, non-native species introductions, attraction of non-native pests, etc.) of aquatic habitats from project-related activities. Implement a litter-control plan and develop a hazard analysis and critical control point plan to prevent attraction and introduction of non-native species.
- Do not stockpile project-related materials (fill, revetment rock, pipe, etc.) in the water.
- Protect underlayer fills from erosion with stones (or core-loc units) as soon after placement as practicable.
- Ensure that the in-water work activities will not permanently interfere with or become injurious to any designated uses and/or existing uses of the receiving State water.
- Install pollution control measures and BMPs that prevent water pollutants from leaving the in-water work area.
- Install debris catchment devices, under-bridge construction debris control devices (e.g., underdeck platforms, mesh netting), and BMPs to contain and prevent construction debris from entering or re-entering State waters. All construction debris and sidecast material shall be properly removed from the aquatic environment and disposed of at an upland staging site.
- Utilize in-water BMPs that are inert and not sources of pollution themselves.
- Allow unimpeded flow around the in-water work area to allow for aquatic animal migration and/or to prevent work site and downstream flooding.

All in-water work activities will be conducted in compliance with Chapter 11-54, HAR, *Water Quality Standards* and Chapter 11-55, HAR, *Water Pollution Control*, and all other applicable City, State, and Federal rules and regulations regarding water quality protection.

After construction, temporary erosion control measures will remain in place until the permanent erosion controls are established, thereby minimizing potential for erosion or runoff.

During the pre-EA consultation period, PIFWO provided an email, dated February 14, 2025, that included the following recommended standard BMPs:

- Turbidity and siltation from project-related work should be minimized and contained within the project area by silt containment devices and curtailing work during flooding or adverse tidal and weather conditions. BMPs should be maintained for the life of the construction period until turbidity and siltation within the project area is stabilized. All project construction-related debris and sediment containment devices should be removed and disposed of at an approved site.
- All project construction-related materials and equipment (dredges, vessels, backhoes, silt curtains, etc.) to be placed in an aquatic environment should be inspected for pollutants including, but not limited to; marine fouling organisms, grease, oil, etc., and cleaned to remove pollutants prior to use. Project related activities should not result in any debris disposal, non-native species introductions, or attraction of non-native pests to

the affected or adjacent aquatic or terrestrial habitats. Implementing both a litter-control plan and a Hazard Analysis and Critical Control Point plan (HACCP – see <https://www.fws.gov/policy/A1750fw1.html>) can help to prevent attraction and introduction of non-native species.

- Project construction-related materials (fill, revetment rock, pipe, etc.) should not be stockpiled in, or in close proximity to aquatic habitats and should be protected from erosion (e.g., with filter fabric, etc.), to prevent materials from being carried into waters by wind, rain, or high surf.
- Fueling of project-related vehicles and equipment should take place away from the aquatic environment and a contingency plan to control petroleum products accidentally spilled during the project should be developed. The plan should be retained on site with the person responsible for compliance with the plan. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of accidental petroleum releases.
- All deliberately exposed soil or under-layer materials used in the project near water should be protected from erosion and stabilized as soon as possible with geotextile, filter fabric or native or non-invasive vegetation matting, hydro-seeding, etc.

### **3.12. Transportation and Traffic**

The Waialua Beach Road Bridge is located on Waialua Beach Road, a City-owned roadway which is the principal route from Kamehameha Highway (the main throughfare on the North Shore) to Waialua. In the project vicinity, the roadway is characterized as a rural two-lane collector with a 25 mph speed limit. The existing bridge is approximately 140-ft long by 38.5-ft wide and includes two 4-ft wide raised walkways, 2-ft wide road shoulders, and two 11-ft wide travel lanes with 2.5-ft high concrete bridge railings. The bridge is supported by abutments on each landside end and three piers that are located within Ki'iki'i Stream.

There are bus stops for routes 83 and 521 located approximately 0.2 miles to the west at the intersection of Waialua Beach Road/Goodale Avenue and 0.3 miles to the northeast on Hale'iwa Road. There is a shared-use path for bicycles and pedestrians along the *mauka* side of the road that extends approximately 2.5 miles from Weed Circle (to the east) to Crozier Drive (to the west); however, there is an approximately 600-ft gap in the shared-use path as it transitions to and crosses over the existing bridge.

#### **3.12.1.1. Potential Impacts and Mitigation**

The proposed action will result in less than significant short-term and beneficial long-term impacts to transportation infrastructure and traffic in the project vicinity.

Transportation and traffic-related work activities include the installation of the temporary bypass bridge and diversion road *mauka* of the existing bridge, demolition of the existing bridge, construction of the new bridge, and removal of the temporary bypass bridge and diversion road.

A TMP was prepared for the proposed action and includes an assessment of the potential construction-related traffic impacts and associated management strategies including temporary traffic control, public information program, transportation operations, and monitoring. The public information program identifies the strategies for coordinating and communicating potential traffic impacts with City Department of Transportation Services (DTS), North Shore Neighborhood Board, Waiialua Elementary, HPD, and other area representatives. The TMP was submitted to DTS and is pending review and approval. Before construction, a street usage permit will be obtained from DTS for any construction-related work that may require the temporary closure of any traffic lane, sidewalk, bicycle lane, or pedestrian mall on a City street.

During construction, the TMP will be implemented and monitored to minimize potential impacts to transportation and traffic in the project area. Traffic over Ki'iki'i Stream will remain open for the majority of the project's duration. During the construction and removal of the segment where the diversion roads transition to Waiialua Beach Road, there may be a short-period of time where there will be a full bridge closure or traffic will be reduced to a single lane. If a full bridge closure is required, it will be scheduled for a few hours during the weekdays at non-peak traffic hours. If traffic is reduced to a single lane, alternate one-way movement in the one lane will be managed by flagmen. Additional police officers may be required to assist with directing vehicle movement in and out of Waiialua Elementary's front parking lot to safely facilitate the new traffic pattern onto the diversion road and across the temporary bypass bridge. The temporary bypass bridge and diversion roads will accommodate adequate turn radii for City buses, refuse trucks and emergency vehicles. It will also include a 5-ft walkway on the *mauka* side for pedestrians. Bicyclists will be required to walk their bikes on the walkway to minimize potential conflicts between bicyclists and pedestrians.

After construction, the new bridge will include two 11-ft wide travel lanes, 5-ft wide raised curb sidewalk (along the *makai* side), and new 9.5-ft wide raised curb shared-use path (along the *mauka* side) with 3.5-ft high concrete bridge railing. The new shared-use path will close the 600-ft gap in the existing shared-use path to the east and west, as well as improve traffic safety for vehicles, pedestrians, and bicycles. It is also identified as a Priority 1 project (ID no. 1-59) in the OBPU and will be designed to meet the shared-use path design guidelines identified in the *City's Complete Streets Design Manual* (2016).

### **3.13. Utilities**

#### **3.13.1. Drainage**

The section of Waialua Beach Road within the project area does not have any City-owned stormwater infrastructure (CCH, n.d.-a), with the exception of a concrete culvert that crosses Waialua Beach Road in front of the school to carry drainage from the south side of the road to the north side and into a drainage swale that discharges into the stream. Generally, stormwater runoff sheetflows from the road and into the unpaved shoulder areas. On the bridge, the downstream curb has drain outlets that discharge directly to the stream below.

#### **3.13.2. Electrical and Telecom**

HECO provides electrical service and HTCO and Charter provide telecom services on O'ahu. There is a line of utility poles along the *makai* side of the Waialua Beach Road that are attached with electrical and telecom overhead lines. The electrical and telecom overhead lines cross over Waialua Beach Road to the east of the bridge and connect to three utility poles located *mauka* of the road. The HTCO overhead utility lines crosses from the east side to the west side of the stream, over Ki'iki'i Stream and *mauka* of the bridge, to connect with existing utility poles that head southwest towards Kealohanui Street and Kupahu Street. The HECO overhead line that crosses over Waialua Beach Road consists of a single overhead guy wire that is used to support the HECO pole line on the *makai* side of Waialua Beach Road. The overhead guy wire is attached to a HECO guy pole and the guy pole is dead ended to an anchor.

#### **3.13.3. Potable Water**

BWS manages municipal water resources and distribution systems on Oahu. There is an existing 16-inch BWS waterline that is located on the *mauka* side of Waialua Beach Road and spans Ki'iki'i Stream directly *mauka* of the existing bridge. It is supported by in-water piers and horizontal bracing that attach to the *mauka* side of the existing bridge.

#### **3.13.4. Solid and Hazardous Waste**

The City Department of Environmental Services (ENV) manages the Waiamanalo Gulch Sanitary Landfill (WGSL), convenience centers, transfer stations, and green waste composting facility. H-POWER is owned by the City and operated by Covanta. The Kawaihoa-Haleiwa transfer station is located north of Haleiwa Town, approximately 4 miles away from the project site. The Wahiawa convenience center is located in Wahiawa, approximately 8 miles away from the project site.

There are no DOH Hazardous Evaluation and Emergency Response Office (HEER) reported hazardous waste incidents or sites located within the project area (HEER, n.d.).

### **3.13.5. Wastewater**

ENV manages the municipal wastewater treatment plants, pump stations, force mains, and gravity sewers. There is no City-owned wastewater infrastructure within or near the project area (CCH, n.d.-b).

### **3.13.6. Potential Impacts and Mitigation**

#### **Drainage**

The proposed action will result in less than significant short- and long-term impacts to public drainage infrastructure. The project team is assessing design options to manage drainage. One design alternative is to install drain openings along the curbs of the bridge that discharge directly to the stream (similar to existing conditions). Another design alternative is to design the bridge to drain stormwater longitudinally off of the bridge, flow into a catch basin or vegetated swale to capture sediments and debris carried in runoff, then discharge to the stream. For discussion on construction-related stormwater runoff, erosion mitigation, and water quality protection, see Sections 3.6 and 3.11.

#### **Electrical and Telecom**

The proposed action will result in less than significant short-term and no long-term impacts to electrical and telecom infrastructure. Before construction, the three utility poles located to the east of the bridge and *mauka* of Waialua Beach Road will be removed. Three new utility poles and associated overhead lines, guywires, and anchors will be installed to the north and south of the east diversion road alignment. The existing overhead HTCO lines will be attached to the new HTCO poles on the east side of the stream and rerouted across Ki'iki'i Stream to connect the existing HTCO pole on the west side of the stream. Due to the new angle of the rerouted overhead HTCO lines that cross Ki'iki'i Stream, the existing HTCO pole nearest to the west side of the stream may require the guy wires and anchors to be repositioned to align with the new orientation of the overhead lines. After construction of the new bridge, the three utility poles located *mauka* of Waialua Beach Road may remain in their new locations or may be relocated to their original locations. To eliminate the costs of relocating the poles, The City has requested that the new poles be allowed to remain. If HTCO and HECO allow the utility poles to remain in their new locations, the associated utility easements will be revised accordingly.

The project design team will coordinate with agencies and entities that have electrical and telecom utilities that will be affected by the project (including Hawaiian Electric, Hawai'i Telecom, Spectrum to minimize any potential impacts to utility services. There may be some short-term, intermittent interruptions to utility services during connection and disconnection of temporary bypass lines and reestablishment of permanent utility connections. Any interruptions



will be of short duration and will be undertaken during non-peak times or nighttime to minimize disruption to residents, schools, businesses and others in the community.

### **Potable Water**

The proposed action will result in less than significant short-term and no long-term impacts to potable water infrastructure. Before demolition of the existing bridge, the existing 16-inch BWS waterline will be detached from the existing bridge and attached to the temporary bypass bridge. After the new bridge is constructed, a new segment of 16-inch waterline will be installed on the downstream (*makai*) side of the bridge, to comply with BWS design requirements, and reconnected to the existing BWS waterline located along the *mauka* side of Waialua Beach Road (Section 2.5.2). There will be a short-duration water outage while the new BWS waterline is connected on both sides to the existing BWS waterline. Any interruptions will be of short-duration and will be undertaken during non-peak times to minimize disruption to residents, schools, businesses and others in the community. After the new BWS waterline segment is connected to the water system, the old BWS waterline and support piers will be demolished.

### **Solid and Hazardous Waste**

The proposed action will result in less than significant short-term and no long-term impacts to solid and hazardous waste management.

Work activities will generate green waste from removal of vegetation, solid waste from construction and demolition debris from expended materials, and potentially hazardous waste from the use of petroleum-based products, concrete paints, cleaning solvents, tar and other construction materials.

During construction, the contractor will manage and dispose of construction-related debris in accordance with City and State regulations. In addition, the contractor will implement BMPs to minimize the potential for accidental release of hazardous materials that may include, but are not limited to, the following:

- Conduct a daily inspection to ensure proper storage, handling and disposal of materials onsite.
- Provide regular preventative maintenance for all onsite vehicles, as well as monitor for petroleum or oil leakage. Petroleum products shall be stored in tightly sealed and clearly marked containers. Any asphalt substances used onsite shall be applied according to the manufacturer's instructions.
- Discharge washout water from the concrete truck drums only at designated sites provided with containment systems. Do not discharge washout water to the roadway drainage system or waters of the U.S.

- Store all materials onsite in a neat, orderly manner in their appropriate containers, and if possible, under a roof or other enclosure. Store only enough products as is required to do the job. Products shall be kept in their original containers with the original manufacturer's label. A product shall be used up completely before disposing of the container.

Work activities will comply with all applicable State laws and regulations regarding the management and disposal of hazardous and solid waste (including construction debris) as documented in the *Solid and Hazardous Waste Branch Standard Comments* and pursuant to Chapter 342H, HRS, *Solid Waste Pollution* and Chapter 342I, HRS, *Special Wastes Recycling*, Chapters 11-260.1 to 11-279.1, HAR, *Hazardous Waste Management* and Chapter 11-58.1, HAR, *Solid Waste Management Control*. After construction, all construction-related potentially hazardous materials will be removed from the project site and disposed of at a facility approved for handling construction waste, such as the PVT C&D Landfill.

### 3.14. Visual Resources

The project site is not located within a view corridor identified in the *North Shore Sustainable Communities Plan* (2011) (NSSCP). The visual resources downstream of the bridge are characterized by dense shrubs and trees lining both sides of Ki'iki'i Stream and overhead powerlines approximately 5-10 ft *makai* of the bridge. There are no views of Kaiaka Bay from the bridge. Upstream of the bridge is similarly characterized by dense shrubs and trees along the stream, overhead powerlines spanning the stream approximately 100 ft *mauka*, and distant views of the Wai'anae mountain range. Visual resources in the west portion of the project area are characterized by the Waialua Elementary campus and agricultural lands. Visual resources in the east portion of the project area are characterized by residential areas and agricultural lands. The bridge over Ki'iki'i Stream itself is a feature within the visual landscape, and though it contributes to the accustomed visual setting, it is utilitarian in appearance and does not possess a unique or notable architectural aesthetic.

#### 3.14.1. Potential Impacts and Mitigation

The proposed action will result in less than significant short-term and long-term impacts to visual resources in the project vicinity.

All major construction activities will temporarily impact visual resources including the installation of the temporary bypass bridge and diversion road, installation of lighting on the temporary bypass bridge, demolition of existing bridge, construction of the new bridge, removal of the temporary bypass bridge and diversion road, and installation of new street lighting on the bridge.

Before construction, work areas located adjacent to Waialua Elementary School will be

enclosed by construction fencing with dust screens, which will also provide visual screening of the active work site, stockpiled materials, heavy equipment, and staging areas. Overgrown vegetation located directly upstream, downstream, and under the bridge will be removed to provide construction access and to improve the stream hydraulics. One street tree located directly to the west of Waialua Elementary's east driveway will be removed to accommodate the west diversion road.

After construction, all construction-related fencing, materials, and heavy equipment will be removed. Any disturbed areas will be revegetated to preexisting conditions. The new bridge will be visually similar to the existing bridge with concrete railings; however, the bridge section will be wider to accommodate a shared-use path on the *mauka* side, as well as new street lighting for vehicular and pedestrian safety. Temporary and permanent street lighting will be dark skies compliant, full cutoff, 3,000K color temperature, suitable for wet locations, as well as adhere to other lighting standards for shielding and brightness to mitigate adverse impacts to Hawaiian seabirds in compliance with City, State, and Federal regulations and guidelines.

## Section 4. Alternatives Analysis

This section summarizes the alternatives and associated impacts considered for the proposed action.

### 4.1. Identification of Alternatives

Several alternatives were evaluated during the design and planning phase for the proposed action, including the following:

- Alternative 1 – No action alternative
- Alternative 2 – Delayed action
- Alternative 3 (Preferred Alternative) – Construct new single-pier bridge
- Alternative 4 – Construct a new three-pier bridge (similar to existing bridge)

As part of the project alternative screening process, alternatives were analyzed to identify the least environmentally damaging practicable alternative. The following sections include a description of each alternative considered and criteria used to determine whether the alternative meets the project's purpose and need.

### 4.2. Alternative 1 – No Action Alternative

State legislation requires that a “no action” alternative be considered to serve as a baseline against which potential actions can be measured. The no action alternative is to not replace the Waialua Beach Road Bridge. Under this alternative, project costs and the potential for adverse construction-related environmental impacts would be avoided, but the existing Waialua Beach Road Bridge would continue to operate as-is with no improvements until some inevitable time in the future when it would have to be closed for safety. The no action alternative would further perpetuate risks to essential public transportation infrastructure by neglecting to address structural deficiencies resulting from decades of undermining of the bridge's abutments and piers by the erosive action of stream flow. In addition, the bridge's three pier support system creates maintenance and operation challenges as the piers catch upstream vegetation and woody debris, clogging the stream's flow under the bridge, which can further exacerbate scouring along the stream embankment and bridge abutments and piers. The existing bridge is also over 70 years old and has reached its useful lifespan due to decades of exposure to the harsh coastal environment. Without the proposed action, the existing bridge would continue to degrade, even with continued maintenance, and pose a risk due to undermining of the bridge's support system. This alternative would therefore not meet the project purpose and need of providing modern, reliable public transportation infrastructure for residents, community, and visitors and for this reason was rejected from further consideration.

### **4.3. Alternative 2 – Delayed Action**

The delayed action alternative would postpone the replacement of Waialua Beach Road Bridge to an unspecified future date. Under this alternative, environmental impacts resulting from construction work activities would be delayed, but are anticipated to be generally the same as with the preferred alternative for the project. It is also reasonable to expect that costs would be higher due to inflation or cost escalation and other factors, resulting in ultimately higher project costs if the action is delayed. The delayed action alternative would also fail to address the deteriorating condition of the existing bridge and its increasing vulnerability to storms and flood events. Delaying the response to these conditions poses an unnecessary risk to critical public transportation infrastructure and safety and the well-being of the North Shore community. This alternative would therefore not meet the project's purpose and need and was eliminated from further consideration.

### **4.4. Alternative 3 (Preferred Alternative) – Construct a New Single-Pier Bridge**

Alternative 3, the preferred alternative, would address the project's purpose and need by replacing the existing bridge with a new bridge that is supported by a single center pier and abutments with deep drilled shaft foundations. The stream embankment will be regraded and installed with riprap upstream and downstream of the bridge to improve the stream's hydraulics under the bridge. Riprap will also be installed around the bridge's center pier as a countermeasure against scour damage and long-term erosion from the stream flow. The bridge section will be widened to accommodate a shared-use path on the *mauka* side to connect to the existing shared-use path to the west and east of the bridge. New streetlights will be installed to improve nighttime visibility for vehicles, pedestrians, and bicyclists. This is the preferred alternative as it would result in needed improvements to the bridge's substructure and superstructure, as well as designed to support current AASHTO HL-93 design live loads, meet the design standards per *AASHTO LRFD Bridge Design Specification, 9<sup>th</sup> Edition*, and *HDOT Design Criteria for Bridge and Structures*. For these reasons, it was selected as the proposed action for the project.

### **4.5. Alternative 4 – Construct a New Three-Pier Bridge**

Alternative 4 would replace with existing bridge with a new bridge that would be supported by three piers and abutments, similar to the existing bridge. However, one of the City's priority goals for the project design was to reduce the number of piers in the stream in order to minimize upstream vegetation and debris from collecting around the piers and clogging the stream's flow under the bridge, as well as to minimize maintenance of the stream channel. This alternative would therefore not meet the project's purpose and need and was eliminated from further consideration.

## **Section 5. Relationship to Policies, Plans, and Controls**

This section summarizes the Federal, State, and City policies, plans, and controls that are established to guide development in a manner that enhances the environment and quality of life. The proposed action's relationship to applicable policies, plans, and controls for the region are summarized below.

### **5.1. Federal**

The project's construction phase will use both City and Federal FHWA funds, which will trigger environmental documentation consistent with the National Environmental Policy Act (NEPA) and compliance with cross-cutting Federal authorities and requirements. The project's lead Federal agency is FHWA, state agency is HDOT, and local agency is DDC.

#### **5.1.1. NEPA**

NEPA establishes a national environmental policy and framework that directs Federal agencies to evaluate the potential environmental impacts of a proposed action. The lead Federal agency cooperates with other City, State, and Federal agencies and coordinates public input during the environmental review process to ensure that environmental protections and other issues are identified and adequately addressed. There are three NEPA classes of action: Environmental Impact Statement (EIS), EA and CATEX.

#### **Discussion:**

The proposed construction costs will utilize Federal FHWA funds and thus, will need to meet NEPA environmental review requirements. After the publication of the HRS 343 Draft EA, DDC will initiate consultation with FHWA to determine whether a NEPA EA or CATEX is required. Subsequently, DDC will coordinate with FHWA to prepare and file the required NEPA environmental review document, as well as other agency coordination and public consultation for the proposed action.

#### **5.1.2. Section 404, CWA and Section 10, RHA**

Section 404, CWA regulates the discharge of dredged or fill material into WOUS. Section 10, RHA regulates the construction of any structure in or over any navigable WOUS. In Hawai'i, Section 404, CWA and Section 10, RHA are administered by the USACE. There are two

USACE permits (also referred to as Department of Army Permit): Individual or General (also referred to as NWP) permits.

**Discussion:**

The proposed action will require a Department of Army permit for the work activities within WOUS. The proposed action will likely fall under the NWP 14, Linear Transportation. The NWP 14 application will be submitted to USACE after the completion of the HRS 343 EA process.

**5.1.3. Section 7, ESA Consultation**

Section 7, ESA requires that federal actions do not result in adverse impacts to endangered or threatened species or critical habitats. The lead Federal agency is required to conduct consultations with USFWS PIFWO, as well as NMFS. Other related Federal requirements include:

- Fish and Wildlife Coordination Act – Requires lead Federal agency to conduct consultation with USFWS PIFWO, NMFS, and DAR and other relevant Federal and State agencies when a Federal action proposes modifications to freshwater or marine WOUS.
- Magnuson-Stevens Fishery Conservation and Management Act – Requires lead Federal agency to conduct EFH consultation with NMFS to determine whether a Federal action may adversely affect EFH.

**Discussion:**

The lead Federal agency, DOT and the City will undertake Section 7, ESA, Fish and Wildlife Coordination Act, and EFH for the Magnuson-Stevens Fishery Conservation and Management Act consultation for the project with USFWS PIFWO, NMFS, and DAR. The consultation process and outcomes will be documented and included in the NEPA administrative record. For a discussion on flora and fauna resources, see Section 3.5.

**5.1.4. Section 106, NHPA Consultation**

Section 106, NHPA requires that federal agencies consider the effect of the proposed action on any historic properties (e.g., district, site, building, structure or object) that is included or eligible for inclusion in the NRHP. Section 106, NHPA is administered by the U.S. Department of Interior (DOI), National Park Service (NPS), and Advisory Council on Historic Preservation (ACHP). At the State level, the State Historic Preservation Officer administers the NHPA.

## Discussion:

The lead Federal agency, DOT and the City will undertake Section 106, NHPA consultation for the project with NHOs, consulting parties, and SHPO. The consultation process and outcomes will be documented and included in the NEPA administrative record. For discussion on archaeological and cultural resources, see Section 3.2.

## 5.2. State of Hawai‘i

### 5.2.1. Hawai‘i State Plan

The Hawai‘i State Plan (adopted in 1978; revised 1986) is codified under Chapter 226, HRS, *Hawai‘i State Planning Act*. It provides a long-range comprehensive plan that identifies goals, objectives, policies, priority guidelines, and implementation mechanisms. A discussion of the proposed action’s consistency with the Hawai‘i State Plan is provided below.

**Table 5-1 - Hawai‘i State Plan Applicability to the Project**

Hawai‘i State Plan Objectives, Policies, and Priority Guidelines	Applicability to the Project
<b>Objectives and Policies</b>	
§226-5 Objective and policies for population	Not Applicable
§226-6 Objectives and policies for the economy--in general	Not Applicable
§226-7 Objectives and policies for the economy-- agriculture	Not Applicable
§226-8 Objective and policies for the economy--visitor industry	Not Applicable
§226-9 Objective and policies for the economy--federal expenditures.	Not Applicable
§226-10 Objective and policies for the economy--potential growth activities	Not Applicable
§226-10.5 Objectives and policies for the economy--information industry	Not Applicable
§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources. <i>(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:</i> (1) <i>Prudent use of Hawaii's land-based, shoreline, and marine resources.</i> (2) <i>Effective protection of Hawaii's unique and fragile environmental resources.</i> <i>(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:</i> (3) <i>Take into account the physical attributes of areas when planning and designing activities and facilities.</i> (8) <i>Pursue compatible relationships among activities, facilities, and natural resources.</i>	<b>Applicable</b>



Hawai'i State Plan Objectives, Policies, and Priority Guidelines	Applicability to the Project
<p><i>(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.</i></p> <p><b>Discussion:</b> The proposed action will improve the hydraulic flow of Ki'iki'i Stream through the stream channel under the bridge and minimize the potential for scour damage to undermine the bridge substructure. In addition, by reducing the number of in-stream piers from three (existing) to one (new), the new bridge will minimize the quantity of upstream vegetation and woody debris that can get caught on the piers and clog the stream channel. The new bridge will create a more compatible relationship with activities, facilities and natural resources by adding a shared-use path on the <i>mauka</i> side for pedestrians and bicyclists to safely cross the Ki'iki'i Stream. The shared-use path will also promote increased accessibility by eliminating a gap in the regional shared-use path system for public recreation. For discussion on potential impacts and mitigation measures, see Section 3.</p>	
<p>§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources.</p> <p><i>(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.</i></p> <p><i>(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:</i></p> <p><i>(1) Promote the preservation and restoration of significant natural and historic resources.</i></p> <p><i>(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.</i></p> <p><i>(5) Encourage the design of developments and activities that complement the natural beauty of the islands.</i></p> <p><b>Discussion:</b> Several historic and cultural resources occur within the project area, including the existing Waialua Beach Road Bridge itself, as well as remnants of the original, early 1900's road infrastructure and skeletal human remains. The project will preserve and protect these historic resources through consultation with SHPD and recognized native Hawaiian lineal and cultural descendants, documentation and other measures as determined to be appropriate through consultation. See Section 3.2 for further discussion about historic resources. The new bridge will provide essential transportation infrastructure to facilitate</p>	<p><b>Applicable</b></p>

Hawai'i State Plan Objectives, Policies, and Priority Guidelines	Applicability to the Project
public access to residences, schools, businesses, recreational facilities, open spaces and activities that complement the natural beauty of the island.	
<p>§226-13 Objectives and policies for the physical environment--land, air, and water quality</p> <p><i>(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:</i></p> <p><i>(2) Promote the proper management of Hawaii's land and water resources.</i></p> <p><i>(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.</i></p> <p><i>(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.</i></p> <p><i>(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.</i></p> <p><i>(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.</i></p> <p><b>Discussion:</b></p> <p>The project mitigation commitments include construction BMPs to minimize potential impacts to land, air and water quality, including measures for erosion control, management of construction-generated dust and emissions, and water quality protection. Noise attenuation practices during construction, as well as coordinated scheduling of activities that generate loud noise (demolition, heavy equipment operations) with nearby Waialua Elementary School to minimize disruptions to school operations, will help maintain aural quality levels. The mitigation measures are being further developed with public input to ensure the well-being of area residents and the larger North Shore community. See Sections 3.1 Air Quality, 3.6 Geology, Topography, and Soils, Topography and Soils, and 3.8 Noise.</p> <p>The proposed action is a required to address structural deficiencies in the existing bridge, which is over 70 years old and has reached the end of its useful lifecycle. The new bridge will be designed to meet current City, State, and Federal design standards and ensure that essential public bridge infrastructure is designed to better withstand erosion, flooding, tsunamis, seismic activities and other hazards, and continues to safely provide access across Ki'iki'i Stream for community members, residents, and visitors. For discussion on potential impacts and mitigation measures, see Section 3.</p>	<b>Applicable</b>
§226-14 Objective and policies for facility systems--in general	<b>Applicable</b>

Hawai'i State Plan Objectives, Policies, and Priority Guidelines	Applicability to the Project
<p><i>(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, sustainable development, climate change adaptation, sea level rise adaptation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.</i></p> <p><i>(b) To achieve the general facility systems objective, it shall be the policy of this State to:</i></p> <ul style="list-style-type: none"> <li><i>(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.</i></li> <li><i>(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.</i></li> <li><i>(5) Identify existing and planned state facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards.</i></li> <li><i>(6) Assess a range of options to mitigate the impacts of sea level rise to existing and planned state facilities.</i></li> </ul> <p><b>Discussion:</b></p> <p>During the pre-EA consultation period, the project team contacted and gathered input from City, State and Federal agencies regarding applicable planning documents, standards and regulations for water, transportation, sustainable development, climate change adaptation, sea level rise adaptation, waste disposal, and energy and telecommunication systems. Relevant pre-EA comments received were used to revise the project design and scope and are documented in this Draft EA and Section 7, Agency and Public Consultation.</p> <p>The project design was modified based on public and agency input to include an 9.5-ft wide shared-use path, which eliminates a gap in the regional shared-use path system and addresses a community priority for a safe pedestrian and bicycle transportation network on the North Shore.</p> <p>The project is designed in compliance with State and City policies related to SLR and flooding impacts, including hydraulic analysis to meet 1.1, 3.2 and 6 ft of SLR scenarios. The bridge is designed to reduce the number of in-stream piers to promote better hydraulic performance, particularly during flood conditions, and will use deep drilled shafts for greater resiliency against flood, erosion and seismic forces.</p>	
§226-15 Objectives and policies for facility systems--solid and liquid wastes	Not Applicable
§226-16 Objective and policies for facility systems--water	Not Applicable
§226-17 Objectives and policies for facility systems—transportation	<b>Applicable</b>

Hawai'i State Plan Objectives, Policies, and Priority Guidelines	Applicability to the Project
<p><i>(a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:</i></p> <p><i>(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.</i></p> <p><i>(b) To achieve the transportation objectives, it shall be the policy of this State to:</i></p> <p><i>(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;</i></p> <p><i>(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;</i></p> <p><i>(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;</i></p> <p><i>(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;</i></p> <p><i>(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;</i></p> <p><i>(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.</i></p> <p><b>Discussion:</b></p> <p>The proposed action is being coordinated with City, State, and Federal agencies through the design and environmental review process (Section 7, Agency and Public Consultation). In addition, the use of federal funds will trigger federal NEPA environmental review (or CATEX) and cross-cutter consultation requirements.</p> <p>The proposed action supports the transportation objectives by replacing the existing, structurally deficient bridge with a new bridge that will be more resilient in the face of changing environmental conditions in order to continue to provide reliable service for the existing and future development needs of the community. The new bridge over Kiikii Stream will be widened to include a shared-use path that will eliminate a gap in the regional shared-use path system, which will encourage safe active multi-modal transportation by walking and biking. The shared-use path was added to the bridge design based on agency and public input to meet the needs of the North Shore community.</p>	
§226-18 Objectives and policies for facility systems--energy	Not Applicable
§226-18.5 Objectives and policies for facility systems--telecommunications	Not Applicable
§226-19 Objectives and policies for socio-cultural advancement--housing	Not Applicable
§226-20 Objectives and policies for socio-cultural advancement--health	Not Applicable

Hawai'i State Plan Objectives, Policies, and Priority Guidelines	Applicability to the Project
§226-21 Objective and policies for socio-cultural advancement--education	Not Applicable
§226-22 Objective and policies for socio-cultural advancement--social services	Not Applicable
§226-23 Objective and policies for socio-cultural advancement--leisure	Not Applicable
§226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being	Not Applicable
§226-25 Objective and policies for socio-cultural advancement--culture	Not Applicable
§226-26 Objectives and policies for socio-cultural advancement--public safety	Not Applicable
§226-27 Objectives and policies for socio-cultural advancement--government	Not Applicable
Priority Guidelines	
§226-102 Overall Direction	Not Applicable
§226-103 Economic priority guidelines	Not Applicable
§226-104 Population growth and land resources priority guidelines	Not Applicable
§226-105 Crime and criminal justice	Not Applicable
§226-106 Affordable housing	Not Applicable
§226-107 Quality education	Not Applicable
§226-108 Sustainability	Not Applicable
<p>§226-109 Climate change adaptation priority guidelines</p> <p><i>Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:</i></p> <p><i>(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;</i></p> <p><b>Discussion:</b></p> <p>The proposed action was evaluated using the City's CCDG Screening Tool to assess its exposure to climate-related hazards. The bridge design is based on hydraulic analysis of the 100-year flood under SLR scenarios of 1.1 ft, 3.2 ft, and 6.0 ft increase by 2100, in compliance with State and City SLR policies. The bridge is designed with deep, drilled shafts in the abutments and center pier to provide enhanced resiliency against erosional, hydraulic and seismic forces, see Section 3.4.</p>	Applicable

## 5.2.2. Hawai'i State Land Use Law

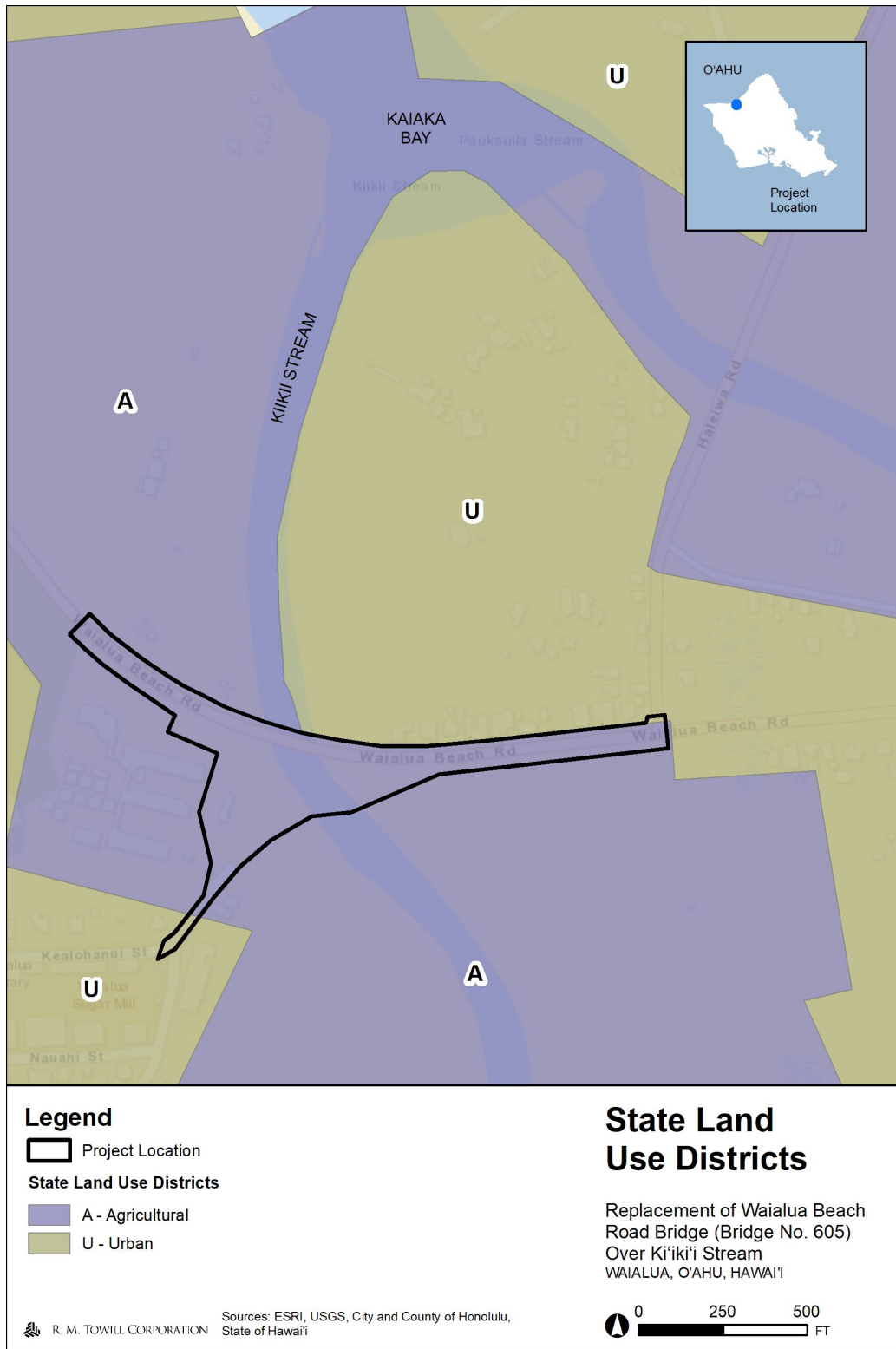
The State Land Use Commission classifies all lands in the State of Hawai'i into one of four land use designations: Urban, Rural, Agricultural, and Conservation. The project site and all planned improvements, including the temporary diversion road and bypass bridge, are located in the State Land Use Agricultural District (Figure 5-1). The majority of TMK parcel (1) 6-7-001: 017, (Kealohanui Road and Kupahu Street), which potentially could provide secondary access to the back of Waialua Elementary and to the Ph. 1 and 3 construction staging area on Parcel (1) 6-7-001: 014, is located in the State Land Use Urban District.

Public roadways are an allowed use within the agricultural districts per Section 205-4.5, HRS, *Permissible uses within the agricultural districts*, which states the following:

*(a) Within the agricultural district, all lands with soil classified by the land study bureau's detailed land classification as overall (master) productivity rating class A or B shall be restricted to the following permitted uses:*

*(7) Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures;*

**Discussion:** The proposed action is a public roadway, which is an allowed use within the State Land Use Agricultural and Urban Districts. No changes are proposed to the State Land Use District designation.



**Figure 5-1 – State Land Use Districts**

### 5.2.3. Hawai'i Coastal Zone Management Program

The CZM reviews federal actions that may affect any coastal use or resource to ensure the proposed actions are consistent with the state policies pursuant to Chapter 205A, HRS, *Coastal Zone Management* (also referred to as CZMA federal consistency review). The CZM area encompasses the entire State.

The replacement of the bridge and roadway repairs within the ROW, installation/repair of public pedestrian/bicycle facilities, and lighting, fixtures, and equipment to establish compliance with current standards at existing public facilities are not considered "development" pursuant to Chapter 205a-22, HRS, *Definitions*, which states the following:

*"Development":*

*(2) Does not include the following:*

*(B) Repair or maintenance of roads and highways within existing rights-of-way;*

*(C) Routine maintenance dredging of existing streams, channels, and drainage ways;*

*(D) Repair and maintenance of underground utility lines, including but not limited to water, sewer, power, and telephone and minor appurtenant structures such as pad mounted transformers and sewer pump stations;*

*(F) Repair, maintenance, or interior alterations to existing structures;*

*(G) Demolition or removal of structures, except those structures located on any historic site as designated in national or state registers;*

*(Q) Installation, maintenance, repair, and replacement of public pedestrian and bicycle facilities, including sidewalks, paths, bikeways, crosswalks, stairs, ramps, traffic control barriers, signs, signals, and associated improvements;*

*(T) Installation, maintenance, repair, and replacement of lighting, fixtures, and equipment to establish compliance with current standards at existing public facilities;*

The temporary bypass road, diversion road, and Ph.1 and 3 staging areas are considered "development". The following discussions address the applicability of the project to the ten CZM objectives and policies.

#### Recreational Resources

*Objective: Provide coastal recreational opportunities accessible to the public.*

*(A) Improve coordination and funding of coastal recreational planning and management; and*

*(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*

*(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*

*(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable*



*monetary compensation to the State for recreation when replacement is not feasible or desirable;*

*(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*

*(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*

*(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*

*(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*

*(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*

*(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.*

## **Discussion:**

The proposed action is essential public bridge infrastructure that provides vehicular, pedestrian, and bicycle access across Ki'iki'i Stream and to coastal resources with significant recreational value located further west including Mokulē'ia Beach and Ka'ena Point. The new bridge will include a shared-use path for pedestrians and bicyclists that is curb-separated from vehicles. The shared-use path will address the existing gap in the 2.5 mile shared-use path from Weed Circle (to the east) to Crozier Drive (to the west) and improve safe public access for active modes of transportation.

During construction, a temporary bypass bridge and diversion road will be installed to ensure continued traffic flow through the corridor during demolition and construction of the new bridge. The contractor will implement BMPs to minimize impacts from stormwater runoff, construction-generated dust, soil erosion and other construction activities to Ki'iki'i Stream, Kaiaka Bay, and other sensitive environmental resources. For discussion on potential impacts and mitigation measures, see Section 3.

### **Historic Resources**

*Objective: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

*(A) Identify and analyze significant archaeological resources;*

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

## **Discussion:**

The proposed action involves the replacement of the existing Waialua Beach Road Bridge, which was formally evaluated as eligible to be listed on the National and Hawai'i Register of Historic Places under criterion B. However, the existing bridge is over 70 years old and has exceeded its useful lifespan, as well as has scour damage undermining the bridge's structural support system; and therefore, it is required to replace the existing bridge to ensure the safety of critical transportation infrastructure. Waialua Beach Road and an associated concrete culvert located in front of Waialua Elementary are being evaluated together with the bridge as part of the historic roadway system constructed in the early 1950s. Other identified historic resources include a single human vertebrae within beach sand fill that was transported to the current location (to the east of the bridge and *mauka* of the road) during the initial construction of the BWS waterline in 1956, and remnants of the original bridge and road. Potential impacts and mitigation measures to archaeological and historical resources are included in Section 3.2.

### *Scenic and Open Space Resources*

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

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

## **Discussion:**

The project is not located within a significant view plane or important "panoramic" view, as identified on the North Shore Sustainable Communities Plan. There will be short-term construction-related impacts to visual resources directly surrounding the project site from construction fencing, stockpiled materials, heavy equipment/trucks, and staging areas. In addition, dense vegetation located directly upstream, downstream, and under the bridge will be removed to improve the stream's hydraulic flow. One street tree located directly west of the Waialua Elementary's east driveway will be removed to accommodate the west diversion road. The new concrete bridge has a similar utilitarian design as the existing bridge and, although the new bridge will be wider to accommodate the new shared-use path on the *mauka* side, it will

appear generally the same as the existing bridge. After construction, the project area will return more or less to preexisting conditions. For discussion on visual resources, see Section 3.14.

#### Coastal Ecosystems

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

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

#### **Discussion:**

The proposed action is located approximately 0.3 miles *mauka* of Kaiaka Bay. Kaiaka Bay has turbid water conditions with low underwater visibility with a silt bottom in the inner bay. State- and federally-listed endangered or threatened marine species, including the green sea turtle, hawksbill sea turtle and monk seal may occur in the general project vicinity. BMPs to minimize potential impacts to green sea turtles, hawksbill sea turtles and monk seals are included in Section 3.5.7. While the project area does not include EFH, there could be prey, eggs, larvae of fishable stocks of Federally managed fisheries within the EFH of Kaiaka Bay, which is located 0.3 miles downstream of the project area. BMPs to minimize potential impacts to Federally managed fisheries within the EFH of Kaiaka Bay are included in Section 3.5.7.

During construction, stormwater runoff, construction-generated dust, soil erosion, and in- and over-water construction activities could result in adverse impacts on estuarine waters of Ki'iki'i Stream and Kaiaka Bay. BMPs will be implemented during construction to minimize water quality impacts to Ki'iki'i Stream and downstream Kaiaka Bay. The new bridge will be designed to direct stormwater drainage either through drainage openings in the bridge curbing to discharge into the stream, as is done on the current bridge, or laterally along the length of the bridge and into catch basins or vegetated swales in the approach road shoulders before discharging into the stream. For discussion on surface water resources, see Section 3.11.

### Economic Uses

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

- (A) Concentrate coastal dependent development in appropriate areas;*
- (B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*
- (C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
  - (i) Use of presently designated locations is not feasible;*
  - (ii) Adverse environmental effects are minimized; and*
  - (iii) The development is important to the State's economy.**

### **Discussion:**

The proposed action is not a coastal-dependent development. It is an essential public bridge infrastructure that provides access to residences, schools, parks, businesses, and other land uses important for the State's economy and the North Shore Community.

### Coastal Hazards

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

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

### **Discussion:**

The proposed action is not anticipated to exacerbate hazards from tsunami, storm waves, subsidence, and pollution. The bridge replacement will have beneficial impacts for reducing stream flooding and erosion. The proposed action will improve the bridge's hydraulic capacity and resiliency to increases in the stream's water surface profile and flow during small flood events by reducing the number of in-water piers (from three existing to one proposed) that can collect upstream debris and by shifting the bridge abutments further upland to widen the stream channel under the bridge. In addition, the stream embankments will be regraded, and

overgrown vegetation will be removed to improve stream flow through the channel. The project is located within a Special Flood Hazard Area and Floodway and will comply with the NFIP CFR44, as well as obtain a floodway permit from the City. For discussion on natural hazards, see Section 3.7.

#### Managing Development

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

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

#### **Discussion:**

Public participation in the planning and review process will be facilitated through the Chapter 343, HRS, *Environmental Review Process*. Pre-EA consultation was conducted before the publication of this Draft EA, which included requesting input on the proposed action via letters to agencies, elected officials, community organizations, and residents. Twenty-one comment letters were received. The pre-EA comment and response letters are included in Appendix 5. During the pre-EA consultation period, the project team held two meetings (February 14 and March 31, 2025) with Waialua Elementary to identify issues and discuss potential mitigation measures. DOE attended the second meeting. The meeting notes are included in Appendix 6. Concurrent with the publication of this Draft EA, a second notification letter and request for input will be sent via letters to agencies and public stakeholders. During the Draft EA public review period, the project team will attend the North Shore Neighborhood Board meeting to present the project and collect additional input that will be used to further inform project design and the development of mitigation measures to minimized impacts to the environment and community.

In addition to the EA process, the project also requires an SMA Permit from the City. The SMA permitting process, which includes a public hearing by the City Department of Planning and Permitting as well as three City Council hearings, will provide another opportunity for agencies and the public to have input on the project.

#### Public Participation

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

- (A) Promote public involvement in coastal zone management processes;*
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and*

*organizations concerned with coastal issues, developments, and government activities; and*

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

**Discussion:**

Public participation in the planning and design of the proposed action will be facilitated through the State's environmental review process, pursuant to Chapter 343, HRS, and the City's SMA Permit process, as discussed above. For discussion on the public participation, see Section 7.

**Beach Protection**

*Objective: Protect beaches for public use and recreation.*

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

**Discussion:**

The proposed action is located 0.3 miles *mauka* of Kaiaka Bay and does not interfere with natural shoreline processes or minimize loss of improvements due to erosion.

**Marine Resources**

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

*Policies:*

- (A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- (B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*
- (C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*

- (D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and*
- (E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

## **Discussion:**

The proposed action does not involve development of marine and coastal resources. However, the project site is located along Ki'iki'i Stream, approximately 0.3 miles upstream from the stream's outflow to Kaiaka Bay. The contractor will implement BMPs during construction to minimize impacts from stormwater runoff, construction-generated dust, soil erosion and other construction activities to protect the water quality in Ki'iki'i Stream, which ultimately discharges to Kaiaka Bay. For discussion on surface water resources, see Section 3.11.

## **5.3. City and County of Honolulu**

### **5.3.1. Oahu General Plan**

The *O'ahu General Plan* (General Plan), adopted in 1977 and last amended in 2022, identifies long-range social, economic, environmental and design objectives and policies for the population of O'ahu. The proposed action is consistent with the following General Plan objectives and policies.

#### *V. Transportation and Utilities*

*Objective A: To create a multi-modal transportation system that moves people and goods safely, efficiently, and at a reasonable cost and minimizes fossil fuel consumption and greenhouse gas emissions; serves all users, including limited income, elderly, and disabled populations; and is integrated with existing and planned development.*

*Policy 6: Support the development of transportation plans, programs, and facilities that are based on Complete Streets features. Maintain and improve road, bicycle, pedestrian, and micro-mobility facilities in existing communities to eliminate unsafe conditions.*

*Policy 7: Design street networks to incorporate greater roadway and pathway connectivity.*

*Policy 9: Consider environmental, social, cultural, and climate change and natural hazard impacts, as well as construction and operating costs, as important factors in planning transportation system improvements.*

*Policy 11: Enhance pedestrian-friendly and bicycle-friendly travel via public and private programs and improvements.*

*Objective D: To maintain transportation and utility systems which support O'ahu as a*

*desirable place to live and visit.*

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

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

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

## **Discussion:**

The proposed action represents the use of public resources to ensure the improvement of transportation systems/utilities and address structural deficiencies in the existing bridge's substructural support system that has degraded due to undermining of the piers and abutments from the erosive action of the stream flow.

The proposed action includes expanding the existing 4-ft wide sidewalks to a 5-ft wide sidewalk on the *makai* side and a 9.5-ft wide shared-use path on the *mauka* side. The new shared-use path segment on the bridge will transition and connect to the existing shared-use path to the west and east of the bridge and close an approximately 600-ft gap in the 2.5 mile shared-use path that extends from Weed Circle to Crozier Drive. The shared-use path will provide curb-separated, safe travel lane for pedestrians and bicyclists. Improving safety for pedestrians and bicyclists over the bridge is particularly important as the corridor is used by Hale'iwa students traveling to/from Waialua Intermediate and High School.

The impacts of the proposed action, including social, cultural, economic, environmental, and sea level rise were analyzed as part of the HRS Chapter 343 environmental review. For discussion on potential impacts and mitigation measures, see Section 3.

## **VII. Physical Development and Urban Design**

*Objective B: To plan and prepare for the long-term physical impacts of climate change.*

*Policy 1: Integrate climate change adaptation into the planning, design, and construction of all significant improvements to and development of the built environment.*

## **Discussion:**

The potential hazards related to climate change were evaluated using the CCDG Screening Tool and Hawai'i SLR Viewer. For discussion on climate change impacts, see Section 3.4.

## **XI. Government Operations and Fiscal Management**

*Objective A: To promote increased efficiency, effectiveness, and responsiveness in the*



*provision of government services by the City and County of Honolulu.*

*Policy 3: Ensure that government attitudes, actions, and services are sensitive to community needs and concerns, and held accountable to the public trust.*

## **Discussion:**

Community needs and concerns were solicited during the pre-EA consultation period for this Draft EA. Twenty-one comment letters were received from the community, agencies, elected officials and other stakeholders. The pre-EA comment and response letters are included in Appendix 5. A subsequent request for input will be mailed to the community, agencies, elected officials and other stakeholders during the Draft EA public review period. In addition, the DDC participated in meetings with Waialua Elementary School and DOE personnel to receive input on the project and collaborate on mitigation measures to meet the needs and concerns of the school. The meeting notes are included in Appendix 6.

### **5.3.2. North Shore Sustainable Communities Plan**

The *North Shore Sustainable Communities Plan* (NSSCP), approved in 2011 and currently undergoing an update, identifies policies for future land use in the NSSCP area. The proposed action is consistent with the following NSSCP objectives and policies.

#### *3.6.2.3 Guidelines – Waialua Country Town*

- *Provide pedestrian and bicycle access between surrounding residential neighborhoods and Waialua’s commercial core*

#### *4.1.5 Policies – Public Facilities and Infrastructure Policies and Guidelines*

- *Support a multi-modal transportation system to reduce automobile dependency. Provide more opportunities and support facilities for convenient and safe alternative modes of transportation, including bus, pedestrian and bicycle travel, and other modes of personal transportation.*

#### *4.1.6 Guidelines – Public Facilities and Infrastructure Policies and Guidelines*

- *Emphasize accessibility from residential streets to bus routes, parks, schools and commercial centers. Design roadways to facilitate the use of alternative transportation forms, including bicycle and pedestrian travel, and personal motorized devices.*
- *Create a regional pedestrian/bikeway system linking the parks, schools and town centers in Hale‘iwa and Waialua with outlying communities, as shown in Exhibits 4.1 and 4.2.*
- *Coordinate bikeway development with responsible State and City agencies and private landowners to ensure that safety, liability, and a mixture of use issues are adequately addressed.*

## **Discussion:**

The proposed action will construct a 5-ft wide walkway on the *makai* side and 9.5-ft wide shared-use path on the *mauka* side of the bridge to provide multi-modal transportation infrastructure that supports convenient and safe alternative modes of transportation for bicyclists and pedestrians across Ki'iki'i Stream. The segment of shared-use path on the bridge will close a gap in the existing Waialua shared-use path that extends 2.5 miles between Weed Circle and Crozier Drive. The inclusion of the shared-use path was determined in coordination with DTS, Waialua Elementary, DOE, and other agencies consulted during the pre-EA consultation period.

### **5.3.3. Waialua Town Master Plan**

The *Waialua Town Master Plan* (WTMP), approved in 2005, identifies plans and implementation measures to guide future physical and economic development activities in Waialua Town. The WTMP focuses on the Waialua Town Center, which is located by the former Mill Camp (south of Waialua Elementary and Waialua District Park).

## **Discussion:**

While the WTMP does not identify any transportation measures directly related to Waialua Beach Road Bridge, the proposed action will support the overall vision for Waialua Town by replacing the existing bridge with one that addresses current structural deficiencies in the bridge's substructural support system, as well as meets current design standards to continue to provide safe public access for vehicles, pedestrians and bicyclists over Ki'iki'i Stream and to/from Waialua Town for residents, visitors and the greater community.

### **5.3.4. O'ahu Bike Plan Update**

The OBPU, approved in 2012 and updated in 2019, identifies specific projects, policies and programs to "expand bicycle ridership and provide a network of safe, comfortable bikeways attractive to users of all ages and abilities." The OBPU identifies the installation of a shared-use path over Waialua Beach Road Bridge to close a 600-ft gap in the 2.5-mile long Waialua shared-use path as a 'Priority 1' project (ID no. 1-59) (Figure 5-2). 'Priority 1' designated projects were determined based on a set of criteria including public input, safety, demand, connectivity, and equity. The OBPU describes shared-use paths as a "two-way facility that is physically separated from motor vehicle traffic and used by bicycles and pedestrians, and other non-motorized users."

## **Discussion:**

The proposed action will support the OBPU by completing the shared-use path over Waialua Beach Road Bridge, which is identified as a 'Priority 1' project. The new shared-use path will

improve safety for pedestrians, bicyclists and other forms of non-motorized transportation over the bridge to connect to the existing shared-use path to the west and east. It will be designed to meet the shared-use path design guidelines identified in the *City's Complete Streets Design Manual* (2016).

### **5.3.5. Land Use Ordinance**

The land uses within the City jurisdiction are regulated under Revised Ordinances of Honolulu (ROH), Chapter 21, *Land Use Ordinance* (LUO). The purpose of the LUO is to regulate land use in an orderly manner consistent with adopted land use policies and development plans, as well as support public health, safety and welfare. The proposed bridge replacement and temporary bypass bridge and diversion road is located in AG-1, Restricted Agriculture zoning district. The purpose of the AG-1 district is to “conserve and protect important agricultural lands for the performance of agricultural functions by permitting only those uses that perpetuate the retention of these lands in the production of food, feed, forage, fiber crops, and horticultural plants. Only accessory agribusiness activities that meet the above intent shall be permitted in this district.” The majority of TMK parcel (1) 6-7-001: 017, (Kealohanui Road and Kupahu Street), which potentially could provide secondary access to the back of Waialua Elementary and to the Ph. 1 and 3 construction staging area on Parcel (1) 6-7-001: 014 is located in R-5, Residential zoning district. Public uses and structures are a permitted use in all City zoning districts pursuant to LUO Table 21-3, *Master Use Table*.

#### **Discussion:**

The proposed action is a public structure that serves public uses. The proposed action will replace existing public road infrastructure within the ROW, which serves to provide public access over Ki'iki'i Stream. The project will not adversely impact the purpose of the AG-1 zoning district to preserve agricultural lands.

### **5.3.6. Special Management Area**

The City has designated areas in proximity to the shoreline and certain inland areas as being within the SMA. Areas within the SMA are designated sensitive environments that are protected in accordance with the State's CZM policies, as identified in ROH Chapter 25, Special Management Areas. The project site is located within the SMA.

#### **Discussion:**

The replacement of the bridge and roadway repairs within the ROW, installation/repair of public pedestrian/bicycle facilities, and lighting, fixtures, and equipment to establish compliance with

current standards at existing public facilities are not considered “development” pursuant to ROH Section 25-1.3, *Definitions*, which states the following:

*Development. Any of the uses, activities, or operations on land, or in or under water, that occur within the special management area, as follows.*

*(2) Development does not include the following:*

*(C) Repair or maintenance of roads and highways within existing rights-of-way;*

*(D) Routine maintenance dredging of existing streams, channels, or drainageways;*

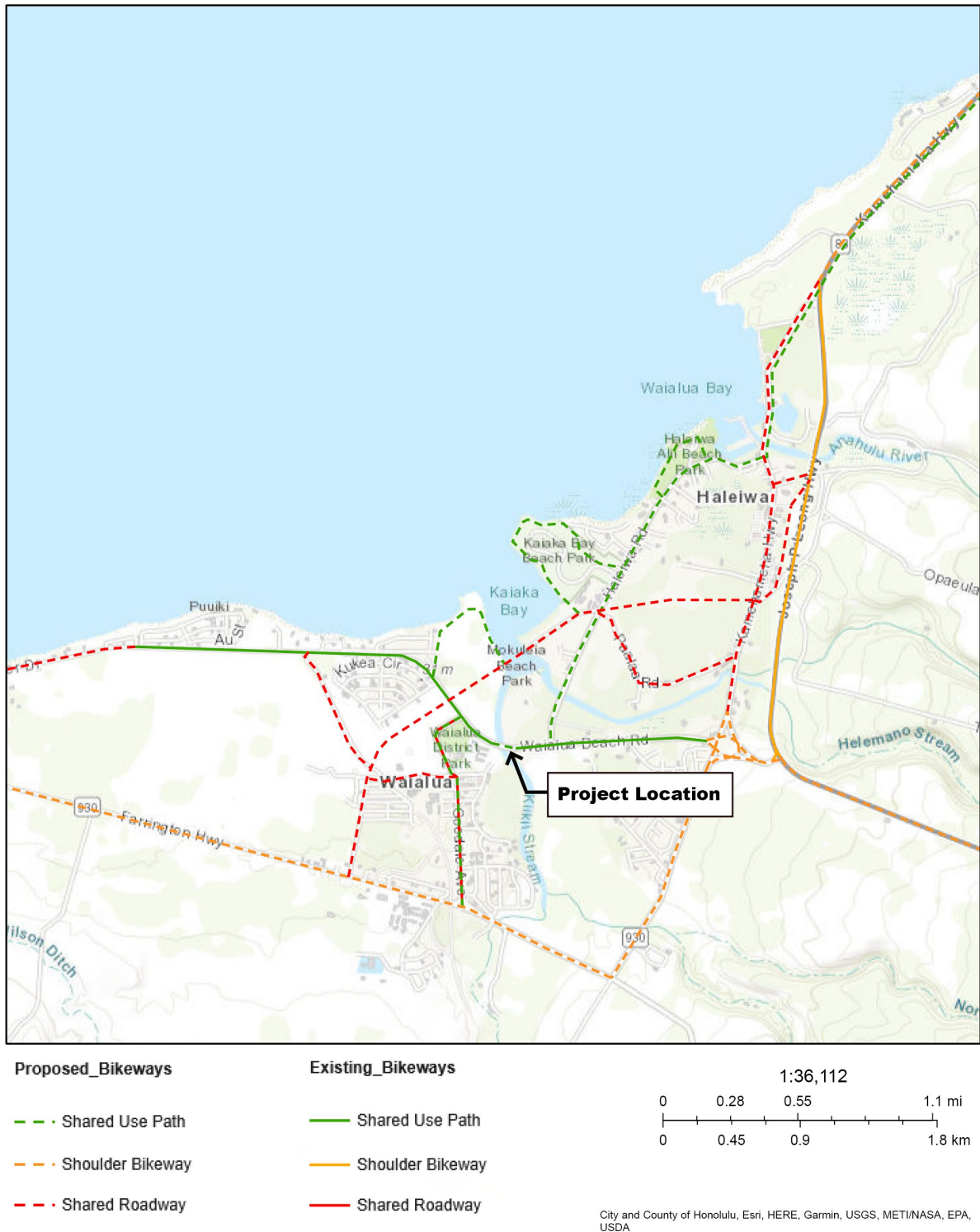
*(E) The repair and maintenance of underground utility lines, including but not limited to water, sewer, power, or telephone lines, or minor appurtenant structures, such as pad mounted transformers and sewer pump stations;*

*(G) Repair, maintenance, or interior alterations to existing structures;*

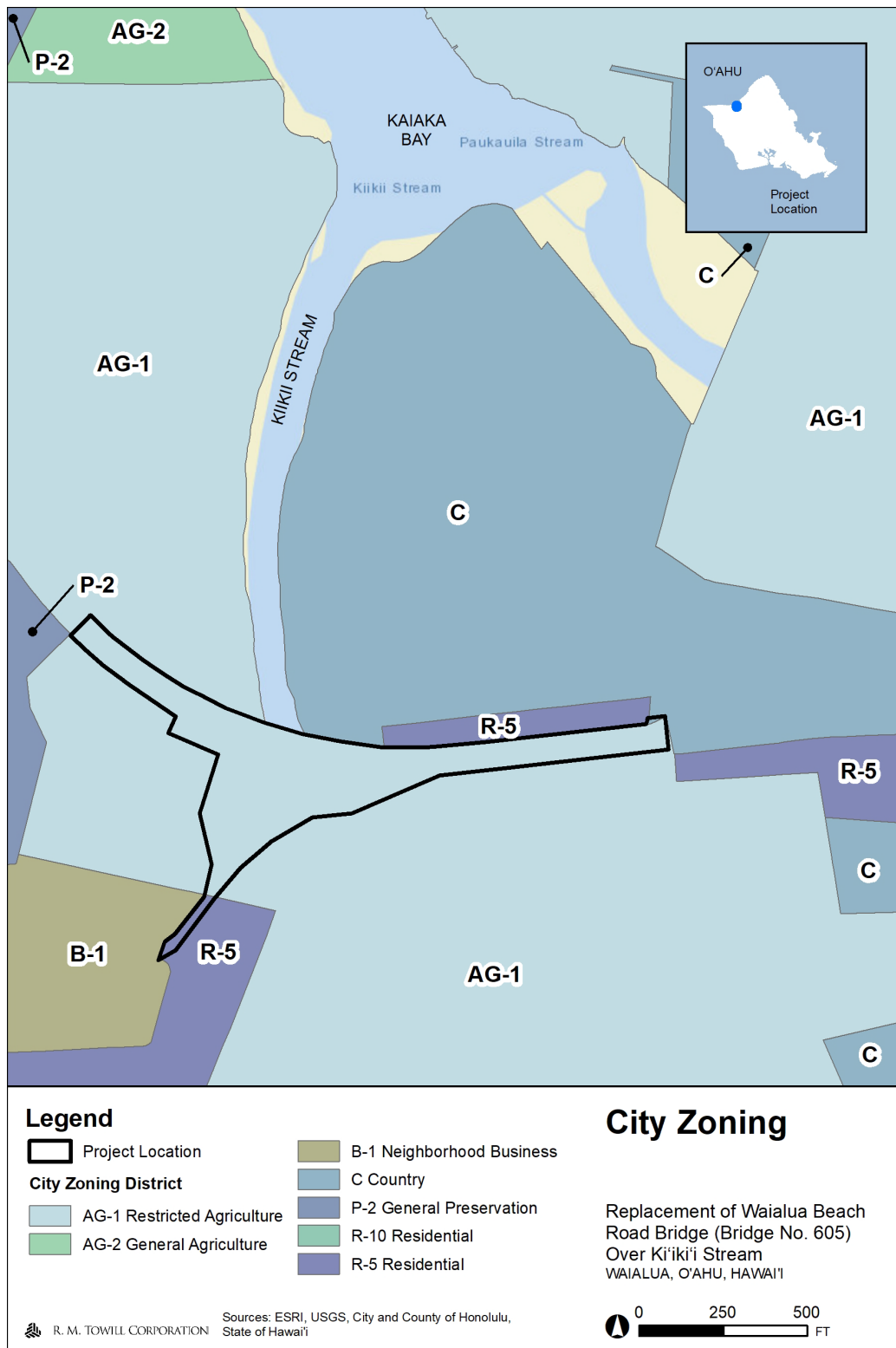
*(H) Demolition or removal of structures, except for structures located on any historic site as designated in national or State registers;*

*(M) Installation of underground utility lines and appurtenant aboveground fixtures less than 4 feet in height along existing corridors;*

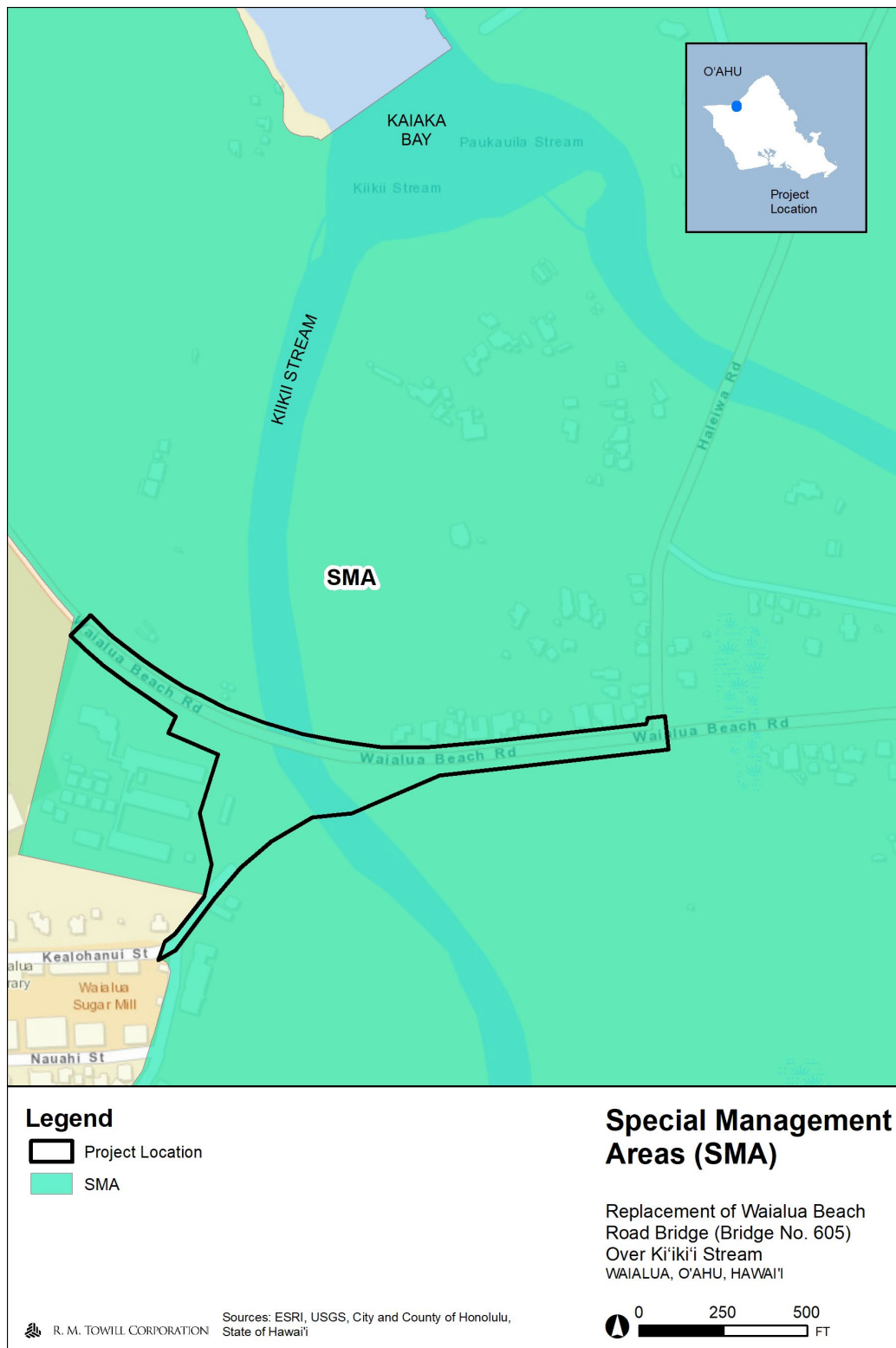
A SMA major permit will be required for the temporary bypass road, diversion road, and Ph.1 and 3 staging areas, which are considered “development” and have a valuation or fair market value that exceeds \$500,000.



**Figure 5-2 – O‘ahu Bike Plan Update – Existing and Proposed Bike Facilities**



**Figure 5-3 – City Zoning**



**Figure 5-4 – SMA**

## Section 6. Determination and Findings

This section summarizes the findings that support that anticipated determination.

### 6.1. Irreversible and Irretrievable Commitment of Resources

The proposed action will result in the irretrievable commitment of resources expended for construction and demolition activities. Financial resources, piping, and fuels used to power construction equipment and vehicles will be an irreversible and irretrievable commitment of resources. Labor required for planning, design, and construction will be irretrievable, once used.

Less than significant impacts on short-term resource use in the project area is expected due to construction activities. The proposed action will require the commitment of natural resources such as aggregate for concrete and petroleum products to fuel construction equipment and produce piping. However, the amount of resources needed will not represent a significant commitment of resources. Therefore, short-term impacts on resource use in the project area due to construction activities will be considered less than significant. No significant adverse long-term, secondary, or cumulative impacts resulting from an irretrievable commitment of resource use are anticipated.

### 6.2. Significance Criteria

The significance criteria establishes an evaluation framework to determine if an action shall have a significant effect on the environment, pursuant to Chapter 11-200.1-12, HAR, *Significance Criteria*. If a proposed action meets any one of the thirteen criteria, it is determined to have a significant impact on the environment. The proposed action's evaluation under the significance criteria is included below.

#### 1. Irrevocably commit a natural, cultural, or historic resource:

The proposed action will not irrevocably commit a natural, cultural, or historic resource.

A Natural Resource Assessment was prepared by AECOS for the proposed action. Below is a brief summary of the findings. For discussion on flora and fauna, see Section 3.5.

Flora – No plants proposed or listed as threatened or endangered were recorded in the project area; however, one *loulou* palm was observed in front of Waialua Elementary as part of the school landscaping. The *loulou* palm could be a listed species. The *loulou* palm is located on school property outside of the ROW and project area and is not expected to be impacted by the project. If the *loulou* palm will be impacted by the proposed action, additional effort will be made



to identify the species. If it is an endangered species, a landscape professional will move the specimen to a safe location to avoid “take” under the ESA.

**Avian Species** – No waterbirds were observed during the waterbird survey, and it is unlikely that an endemic waterbird species may frequent the project area. All birds observed during the avian survey were naturalized introductions to the islands. There is no suitable nesting habitat for seabird species in the project area. However, protected seabirds may overfly the project site during the nesting season. No nesting areas for *pueos* were observed. However, they are known to utilize agricultural crop and pastureland for hunting and nesting. BMPs to minimize potential impacts to waterbirds, seabirds or *pueos* are included in Section 3.5.7.

**Mammalian Species** – A single Indian mongoose and a dog were observed in the project area. The Indian mongoose is an alien species to the Hawaiian Islands. No nesting areas for the Hawaiian hoary bat were observed. However, they likely overfly the project area on a seasonal basis. BMPs to minimize potential impacts to Hawaiian hoary bats are included in Section 3.5.7.

**Ki'iki'i Stream and Kaiaka Bay** – During a 2016 biological survey from the bridge, an incidental sighting of a green sea turtle was made in Ki'iki'i Stream. State- and federally-listed endangered or threatened marine species, including the green sea turtle, hawksbill sea turtle and monk seal are known to occur in Kaiaka Bay and may occur in general project vicinity via Ki'iki'i Stream. BMPs to minimize potential impacts to green sea turtles, hawksbill sea turtles and monk seals are included in Section 3.5.7.

**EFH** – The project area does not include EFH. However, there could be prey, eggs, larvae of fishable stocks of Federally managed fisheries within the EFH of Kaiaka Bay, which is located 0.3 miles downstream of the project area. There is no federally-delineated critical habitat within the project area. BMPs to minimize potential project-related water quality impacts to Federally managed fisheries within the EFH of Kaiaka Bay are included in Section 3.5.7.

A LRFI was prepared by CSH for the project area and an *Evaluation of Effect on Historic Resources* was prepared by Mason for the proposed action. A summary of the identified historic properties is provided below.

**Single Human Vertebrae ('iwi) From Imported Fill (SIHP # 50-80-04-07143)** – In 2010, the 'iwi was inadvertently encountered during probing for the subsurface BWS waterline. The 'iwi was located within beach sand fill material that was transported to the current location during the initial construction of the waterline in 1956.

**Remnants of the Former Bridge and Road** – There are two remnant features of the former bridge and road that crossed south of the existing alignment. There is a basalt boulder with concrete mortar retaining wall on the west side of the stream and a section of old asphalt road on top of a base of large basalt boulders on the east side of the stream.

Existing Bridge and Road – The bridge itself was formally evaluated as eligible to be listed on the National and Hawai'i Register of Historic Places under criterion B. Two other related features to the creation of Waialua Beach Road include a concrete culvert crossing under the road to the west of the bridge and a drainage channel located to the east of the bridge and south of the road.

Potential impacts and mitigation measures for archaeological and historical resources are included in Section 3.2. Although the existing bridge will be demolished by the project, the recommended historic documentation, including an Historic Architecture RLS and HAER archival photographs, will preserve a visual and narrative history of the bridge.

## **2. Curtail the range of beneficial uses of the environment:**

The proposed action will not curtail the range of beneficial uses of the environment as no permanent changes are proposed to the current use of the land parcels located within and surrounding the project site and the replacement bridge will continue the existing roadway infrastructure use within the ROW. The proposed action will prevent further scour damage to the abutments and piers, erosion of the stream bank, improve stream hydraulics under the bridge, as well as update the bridge design to meet current City, State, and Federal standards.

Construction-related impacts (e.g., noise, air quality, traffic) will be temporary and will cease upon the project's completion. Disturbed soils will be stabilized with vegetation, paved surface, or other permanent BMP to minimize the potential for soil erosion and release of sediments into Ki'iki'i Stream. For discussion on potential impacts and mitigation measures, see Section 3.

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

The proposed action will not conflict with the State's environmental policies or long-term environmental goals established by law. The proposed action is consistent with the environmental policies, goals, and guidelines as documented in Section 5, Relationship to Policies, Plans, and Controls and pursuant to Chapter 344, HRS, *State Environmental Policy*. Potential sources of adverse short- or long-term impacts have been identified and appropriate BMPs and other mitigation measures have been developed to either mitigate or minimize potential impacts to negligible levels, see Section 3, Description of Existing Environment, Potential Impacts, and Mitigation Measures.

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

The proposed action will not have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State. The proposed action will have short-

term economic impacts resulting from the creation of new construction jobs, procurement of materials, as well as surrounding businesses may see a temporary increase in revenue from expenditures by construction personnel. There may be a temporary increase in local housing demand from the construction personnel. All construction-related impacts will be temporary and will cease upon the project's completion. The bridge will not adversely impact or curtail cultural practices. The disposition of the known 'iwi within the project area, and any 'iwi discovered during project activities, will be determined in consultation with and as directed by recognized native Hawaiian lineal and cultural descendants and SHPD. The proposed action will result in beneficial impacts to socio-economic welfare and cultural practices by ensuring that essential public transportation infrastructure continues to provide safe, multimodal access over Ki'iki'i Stream for residents, visitors and others traveling between Waialua and the rest of O'ahu.

**5. Have a substantial adverse effect on public health:**

The proposed action will not have a substantial adverse effect on public health. The proposed action will be developed in accordance with City, State, and Federal rules and regulations governing public health and safety. During construction, temporary impacts to air quality, noise, and generation of stormwater runoff will be mitigated through the implementation of BMPs and will cease upon the project's completion. For discussion on potential impacts and mitigation measures, see Section 3, Description of Existing Environment, Potential Impacts, and Mitigation Measures. Based on pre-EA consultation input from Waialua Elementary and DOE, during construction, additional mitigation measures will be installed along the shared perimeter between Waialua Elementary and the construction work area to minimize public health impacts to teachers, students and staff. For the Waialua Elementary and DOE meeting notes, see Appendix 6.

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

The proposed action will not result in adverse secondary impacts, such as population changes, or increase the intensity of use for public facilities. The new bridge will not expand vehicular capacity with additional travel lanes and thus, traffic patterns and GHG emissions associated with vehicular use of the bridge should remain similar to existing levels. In addition, there may be a small reduction in GHG emissions associated with an increased use of the new shared-use path by pedestrians and bicyclists.

**7. Involve a substantial degradation of environmental quality:**

The proposed action will not involve a substantial degradation of environmental quality. Potential sources of adverse short- or long-term impacts have been identified and appropriate BMPs and other mitigation measures will be implemented to either mitigate or minimize potential impacts to negligible levels, see Section 3, Description of Existing Environment,

Potential Impacts, and Mitigation Measures. The proposed action will be developed in accordance with City, State, and Federal rules and regulations governing environmental quality.

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

The proposed action will not be individually limited but cumulatively have substantial adverse effect on the environment or involve a commitment for larger actions as the project is a self-contained action and is not part of additional and/or related actions. The proposed action will not expand vehicular capacity with additional travel lanes and will maintain the existing vehicular travel patterns. The proposed action will address existing structural deficiencies in the bridge's substructural support system, improve stream hydraulics under the bridge, reduce erosion of the stream embankment, and meet current City, State, and Federal bridge design standards.

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

The proposed action will not have a substantial adverse effect on a rare, threatened, or endangered species or their habitat. BMPs identified in the Natural Resource Assessment and provided by PIFWO will be implemented to the maximum extent feasible to minimize potential impacts to rare, threatened, or endangered species that may occur in the project vicinity. For discussion on flora and fauna, see Section 3.5.

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

The proposed action will not have a substantial adverse effect on air or water quality or ambient noise levels. Construction activities for the proposed action could potentially impact air, water quality, and ambient noise levels at the project site; however, these impacts will be temporary and are not anticipated to be significant. All construction activities will comply with applicable regulations and the project contractor will be required to implement mitigation measures/BMPs in accordance with regulatory and permit requirements and as identified in this EA. Following completion of construction activities, the proposed action will not have any significant impacts on air, water quality, or ambient noise levels at the project site.

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

The proposed action is located within an environmentally sensitive area as it crosses over Ki'iki'i Stream and is approximately 0.3 miles *mauka* of the stream's outflow to Kaiaka Bay. The project is also located within a tsunami zone, flood plain and SLR exposure area. However, the new

bridge will not have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area. The replacement of the existing bridge is required as it is an essential public roadway that provides public access across Ki'iki'i Stream for transit between Waialua and the rest of O'ahu. The new bridge is being designed to improve infrastructure resiliency to hurricanes, tropical storms and high winds by constructing a deep foundation system comprised of drilled shafts, which will increase the bridge's capacity to withstand lateral forces from stream flow, wind, and soil movement while improving hydraulic flow under the bridge within the stream channel. Potential sources of adverse short- or long-term environmental impacts have been identified and appropriate BMPs and mitigation measures have been developed to either minimize or eliminate potential impacts to negligible levels, see Section 3, Description of Existing Environment, Potential Impacts, and Mitigation Measures. The proposed action will be developed in accordance with City, State, and Federal rules and regulations for the protection of environmentally sensitive areas.

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

The proposed action will not have a substantial adverse effect on scenic vistas and view planes, during day or night, identified in county or state plans or studies. During construction, short-term visual impacts include the presence of the active work areas, construction equipment, staging areas, and stockpiled materials. The shared perimeter between Waialua Elementary and construction work site will have dust screens installed on the construction fencing to provide dust and visual screening. After construction, all construction-related fencing, materials, and heavy equipment will be removed and disturbed areas will be stabilized by revegetation, paving, or other permanent BMP. Post-construction street lighting will adhere to current lighting standards for shielding and brightness to mitigate adverse impacts to Hawaiian seabirds in compliance with City, State, and Federal regulations and guidelines. For a discussion on visual resources, see Section 3.14.

**13. Require substantial energy consumption or emit substantial greenhouse gases:**

Construction activities will not require substantial energy consumption. Construction activities that will generate GHGs include the operation of fossil-fuel internal combustion equipment, machinery, and vehicles, as well as electricity supplied to the project site by either an existing power connection or portable generator. The use of energy for the project's construction activities is not expected to be significantly greater than that used for the development of similar projects. Project-generated GHG will be temporary.

### **6.3. Summary of Findings and Anticipated Significance Determination**

It has been preliminarily determined that the proposed action will have no significant adverse impact to environmental, social, cultural, or economic impacts pursuant to Chapter 343, HRS, *Environmental Impact Statement* and Chapter 11-200.1-13, HAR, *Significance Criteria*. All anticipated impacts will be temporary, will not adversely impact the environmental quality of the area, and will cease upon the project's completion. Therefore, the proposed action has a determination of an anticipated finding of no significant impact and, preliminarily, that an Environmental Impact Statement will not be required.

## Section 7. Agency and Public Consultation

This section summarizes consultation with agencies, organizations, elected officials, and individuals that were contacted during the preparation of this EA.

### 7.1. Consultation List

A list of the agencies, organizations, elected officials, and individuals that have been and will be contacted during the preparation of this EA is included below.

**Table 7-1 – List of Consulted Agency and Public Stakeholders**

Agency and Public Stakeholders	Pre-EA Letter Mailed	Comment Received
<b>Federal</b>		
NOAA Fisheries Directorate	X	
NOAA Pacific Islands Fisheries Science Center	X	
NOAA Pacific Islands Regional Office	X	
USFWS Pacific Islands Fish and Wildlife Office	X	X
U.S. DOT, FAA, Honolulu Airports District Office	X	
U.S. DOT, Federal Transit Administration, Region 9	X	
U.S. DOT, Federal Highways Administration	X	
U.S. EPA, Pacific Islands Contact Office, Region 9	X	
<b>State</b>		
Department of Accounting and General Services	X	X
Department of Agriculture	X	
Department of Business, Economic Development and Tourism	X	
Department of Defense	X	
Department of Education	X	X
Department of Hawaiian Home Lands	X	
Department of Transportation	X	
DLNR Board of Land and Natural Resources	X	
DLNR Commission on Water Resource Management	X	
DLNR Division of Aquatic Resources	X	
DLNR Division of Boating and Ocean Recreation	X	X
DLNR Division of Forestry and Wildlife, Statewide Branch	X	
DLNR Division of State Parks	X	
DLNR Engineering Division	X	X
DLNR Land Division	X	X
DLNR Office of Conservation & Coastal Lands	X	X
DLNR State Historic Preservation Division	X	
DOH	X	

DOH Clean Water Branch	X	
DOH Disability and Communication Access Board	X	X
DOH Safe Drinking Water Branch	X	
DOH Solid and Hazardous Waste Branch	X	X
DOH Wastewater Branch	X	
Hawai'i Army National Guard	X	
Hawai'i State Library, Hawai'i Documents Center	X	
Office of Hawaiian Affairs	X	
Office of Planning & Sustainable Development	X	X
Waialua Elementary School	X	X
Waialua Public Library	X	X
<b>City and County of Honolulu</b>		
Honolulu City Council	X	
Department of Design & Construction, Mechanical & Engineering Division	X	X
Department Environmental Services	X	
Department of Facility Maintenance	X	
Department of Parks and Recreation	X	
Department of Planning & Permitting	X	X
Department of Transportation Services	X	X
Honolulu Authority for Rapid Transportation	X	
Honolulu Board of Water Supply	X	
Honolulu Fire Department	X	X
Honolulu Police Department	X	X
O'ahu Invasive Species Committee	X	
<b>Non-Government Organization</b>		
Friends of Waialua Town	X	
Hale'iwa Waialua Historical Society	X	
Hawai'i Gas	X	X
Hawai'i Wildfire Management Organization	X	
Hawaiian Electric Company, Inc.	X	X
Hawaiian Telcom	X	
Historic Hawai'i Foundation	X	
North Shore Outdoor Circle	X	
Rotary Club of Wahiawā-Waialua, District 5000	X	
Spectrum	X	X
Surfrider Foundation O'ahu Chapter	X	
The Nature Conservancy	X	
Waialua Community Association	X	
Waialua Hawaiian Civic Club	X	
<b>Elected Officials</b>		
Mayor Rick Blangiardi	X	
State Representative Sean Quinlan, House District 47	X	



State Senator Brenton Awa, Senate District 23	X	
Governor Josh Green, M.D.	X	
Lieutenant Governor Sylvia Luke	X	
U. S. Senator Mazie Hirono	X	
U. S. Senator Brian Schatz	X	
U. S. Congressman Ed Case, District 1	X	
U. S. Congresswoman Jill Tokuda, District 2	X	
Chair Kathleen Pahinui, North Shore Neighborhood Board No. 27	X	
<b>Adjacent Residents</b>		
Blubass LLC	X	
Dole Food Co Inc.	X	X
HKG A1, LLC	X	
Puuiki LLC	X	
Waialua Wai Villas	X	
Current Resident, 66-437 Waialua Beach Rd	X	
Current Resident, 66-429 Waialua Beach Rd	X	
Current Resident, 66-411 Waialua Beach Rd	X	
Current Resident, 66-405 Waialua Beach Rd	X	
Current Resident, 66-395 Waialua Beach Rd	X	
Current Resident, 66-383 Waialua Beach Rd	X	
Current Resident, 66-851 Hale'iwa Rd	X	
Current Resident, 66-834 Hale'iwa Rd	X	
Current Resident, 66-802 Hale'iwa Rd Unit A	X	
Current Resident, 66-826 Hale'iwa Rd	X	
Current Resident, 66-350 Waialua Beach Road	X	
Current Resident, 66-324 Waialua Beach Road	X	
Current Resident, 66-318 Waialua Beach Road	X	

## 7.2. Pre-EA Consultation

Two pre-EA consultation letters were mailed to agencies, organizations and individuals to provide notification for the preparation of the Draft EA and request input regarding the proposed action. The first consultation letter was dated January 17, 2025. Subsequently, many of the letters mailed to adjacent residents were returned due to invalid addresses. In response, a second consultation letter, dated February 6, 2025, was mailed to adjacent residents. In total, twenty-one comment letters were received. A summary of the comments received and the corresponding Draft EA section(s) where the comment is addressed is included in Table 7-2. The early consultation comment and response letters are included in Appendix 5.

## **7.3. Additional Consultation**

### **7.3.1. Waialua Elementary and DOE**

The project team held two meetings with Waialua Elementary on February 14 and March 31, 2025. DOE attended the second meeting. The purpose of the meetings were to identify potential issues with the proposed action and school operations, as well as discuss mitigation measures. The meeting notes are included in Appendix 6.

### **7.3.2. LWCFA, Section 6(f) Consultation**

The State Division of State Parks in an email, dated December 3, 2024, confirmed that there are no LWCFA Section 6(f) protected properties including public parks, forests, wildlife refuges or developed recreation areas, in the project area (Appendix 7).

### **7.3.3. North Shore Neighborhood Board Meeting**

The project team will present the proposed action to the North Shore Neighborhood Board on July 22, 2025. The purpose of the presentation is to provide the public with an overview of the proposed action, gather input, respond to questions, and notify the community of the Draft EA publication and 30-day public comment period.

**Table 7-2 – Summary of Pre-EA Consultation Comments**

Agency and Public Stakeholders	Summary of Pre-EA Consultation Comments	Comment Addressed in Draft EA Section(s)
<b>Federal</b>		
USFWS Pacific Islands Fish and Wildlife Office	Recommends using the USFWS Information for Planning and Consultation online portal to obtain official species lists, designated critical habitat, and avoidance and minimization measures to consider in the general project design.	3.5, 3.6, 3.11
<b>State</b>		
Department of Accounting and General Services	No comments	N/A
Department of Education	Requests early consultation with the Waialua Elementary administration to identify and minimize any potential effects on pedestrian and vehicular traffic that may impact school operations.	3.9.5
DLNR Division of Boating and Ocean Recreation	No objections.	N/A
DLNR Engineering Division	Provides the following comments: <ul style="list-style-type: none"> <li>Rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR) are in effect when a development falls within a Special Flood Hazard Area. Local community flood ordinances may stipulate higher standards that can be more restrictive and take precedence over minimum NFIP standards.</li> <li>Should research the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified in FEMA's Flood Insurance Rate Maps.</li> </ul>	3.7.2
DLNR Land Division	No comments.	N/A
DLNR Office of Conservation & Coastal Lands	No comments.	N/A

Agency and Public Stakeholders	Summary of Pre-EA Consultation Comments	Comment Addressed in Draft EA Section(s)
DOH Disability and Communication Access Board	No comments.	N/A
DOH Solid and Hazardous Waste Branch	Provides standard comments related to the management of hazardous water and solid waste and regulation of underground storage tanks.	3.13.4
Office of Planning & Sustainable Development	<p>Provides the following comments:</p> <ul style="list-style-type: none"> <li>• Draft EA should include a list of all required permits and approvals. It should also include detailed maps and diagrams indicating actions taken within and along the banks of Ki'iki'i Stream, proximity to coastal resources, and land use boundaries.</li> <li>• If federal permits or approvals are required, please consult Coastal Zone Management (CZM) office on applicable rules and regulations on a CZMA federal consistency review.</li> <li>• Draft EA should include an assessment as to how the proposed project conforms to each of the CZM objectives and supporting policies set forth in Section 205A-1, HRS, as amended.</li> <li>• Recommend consulting with DPP on the applicability of SMA Use Permitting.</li> <li>• Draft EA should include mitigation measures for the protection of the nearshore coastal ecosystem and maintenance of water quality from stormwater runoff, erosion and other construction-related impacts pursuant to Section 11-200.1-18(d)(8), HAR.</li> <li>• Draft EA should include an examination of the potential vulnerability of the bridge and roadway to sea level rise.</li> </ul>	1.7, 3.4, 3.6, 3.7.2, 5.2.3, 5.3.6
Waialua Elementary School	<p>[comments via video call] Provides the following comments:</p> <ul style="list-style-type: none"> <li>• Should maintain two lanes of traffic with uninterrupted flow on Waialua Beach Road;</li> <li>• Should accommodate safe travel for bicycles;</li> <li>• Should maintain access to the fire/service road along the east boundary of the school campus; and</li> <li>• Should maintain access to the main entrance driveways to the front parking lots and school drop-off/pick-up area.</li> <li>• Should not impact existing playground.</li> </ul>	3.6, 3.9.5, 3.12, 3.14

Agency and Public Stakeholders	Summary of Pre-EA Consultation Comments	Comment Addressed in Draft EA Section(s)
Waialua Public Library	[comments via phone call] Requests information on what the potential disruptions to utility services and road access will be during construction.	3.13
<b>City and County of Honolulu</b>		
Department of Design & Construction, Mechanical & Engineering Division	Requests the inclusion of new streetlights or provisions for future street lighting (e.g., underground electrical service) along the new bridge.	3.5, 3.14
Department of Planning & Permitting	<p>Provides the following comments:</p> <ul style="list-style-type: none"> <li>Requires SMA permit for “development” in areas outside of the State ROW (e.g., temporary by-pass bridge, stockpiling areas, etc).</li> <li>Draft EA should include discussion on the project’s conformance with the North Shore Sustainable Communities Plan and 2005 Waialua Master Plan, specifically how the proposed bridge and roadway improvements will be designed to encourage bicycle/pedestrian modes of transportation.</li> </ul>	5.3.2, 5.3.3, 5.3.6
Department of Transportation Services	<p>Provides the following comments:</p> <ul style="list-style-type: none"> <li>Waialua Beach Road Bridge and immediately adjacent areas are the only gap in the Waialua Beach Road shared-use path that extends approximately 2.5 miles from Weed Circle to Crozier Drive. Project should include construction of a shared-use path on the mauka side that connects to the existing shared-use path on each side of the bridge. The shared-use path and sidewalk should be designed in accordance with the Honolulu Complete Streets Design Manual.</li> <li>Temporary Bypass Bridge shall provide accessibility for pedestrians and cyclists.</li> <li>A street usage permit from DTS should be obtained for any construction-related work that may require the temporary closure of any traffic lane, sidewalk, bicycle lane, or pedestrian mall on a City street.</li> <li>The area representatives, neighborhood board, businesses, emergency personnel, O’ahu Transit Services, Inc, etc. should be kept apprised of the details and status throughout the project and the impacts that the Project may have on adjoining local street area network.</li> </ul>	1.7, 2.1, 2.3, 3.12

Agency and Public Stakeholders	Summary of Pre-EA Consultation Comments	Comment Addressed in Draft EA Section(s)
	<ul style="list-style-type: none"> <li>• The project site is in the immediate vicinity of bus stops and should coordinate roadway improvements with DTS Transportation Mobility Division.</li> <li>• Project plans should be reviewed and approved by DCAB to ensure full compliance with ADA requirements.</li> <li>• The project is federally funded and must comply with federal requirements including NEPA.</li> </ul>	
Honolulu Fire Department	Requires that all fire apparatus access roads remain open for the project's duration.	3.9.1
Honolulu Police Department	Recommends the contractor work with the neighborhood board and DTS to communicate info re: road closures, alternate routes, and other issues that may affect vehicular and pedestrian traffic during construction.	3.9.2
<b>Non-Government Organization</b>		
Hawai'i Gas	No comments.	N/A
Hawaiian Electric Company, Inc.	No objections, but continued access to existing HECO infrastructure will be necessary for maintenance.	N/A
Spectrum	Requests information on if the project will affect two HECO poles (No. 32 and 33) along the bridge? Spectrum fiber and coax cables are attached to these poles.	3.13.2
<b>Adjacent Residents</b>		
Dole Food Co Inc.	Requests information on the timing of the project as it encroaches onto Dole's property.	2.8

## Section 8. References

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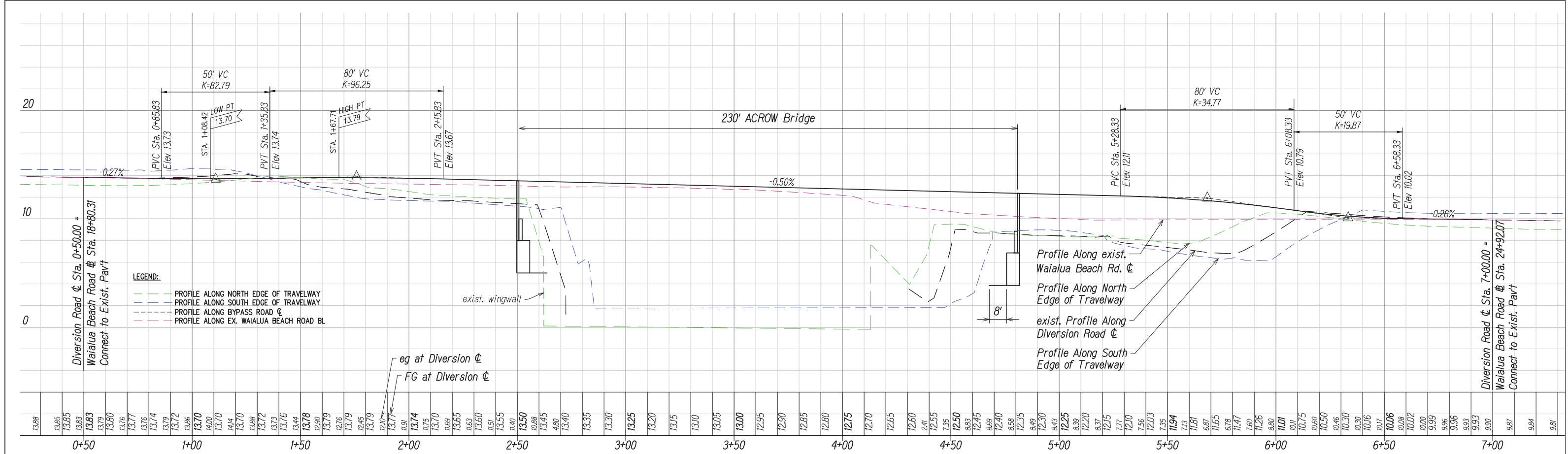
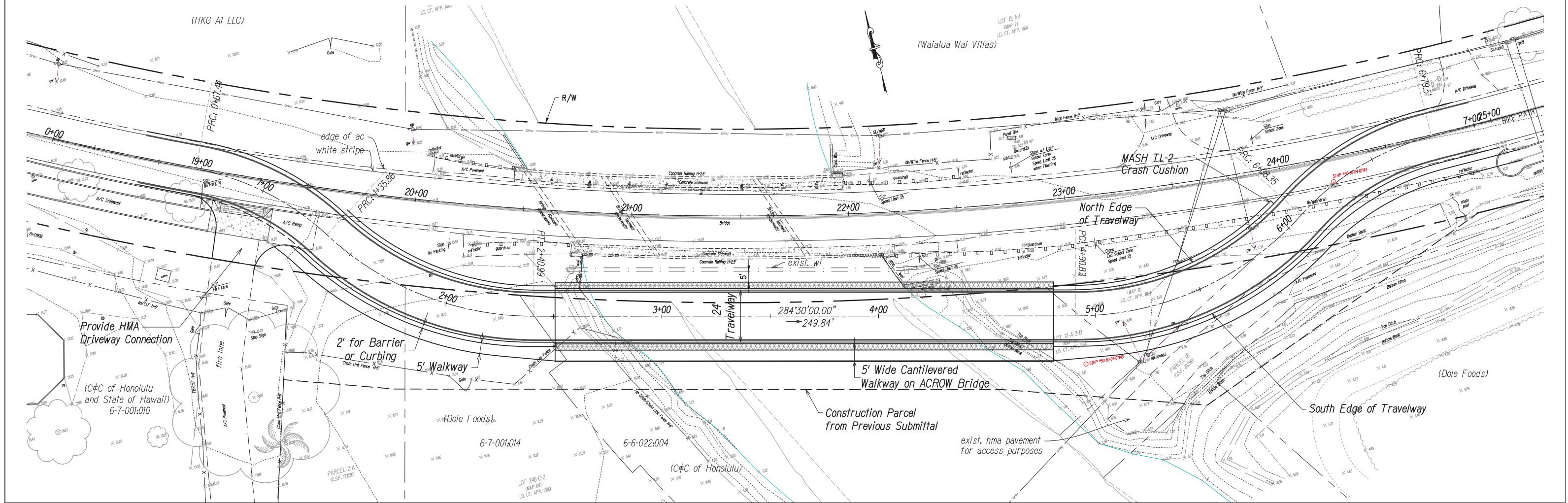
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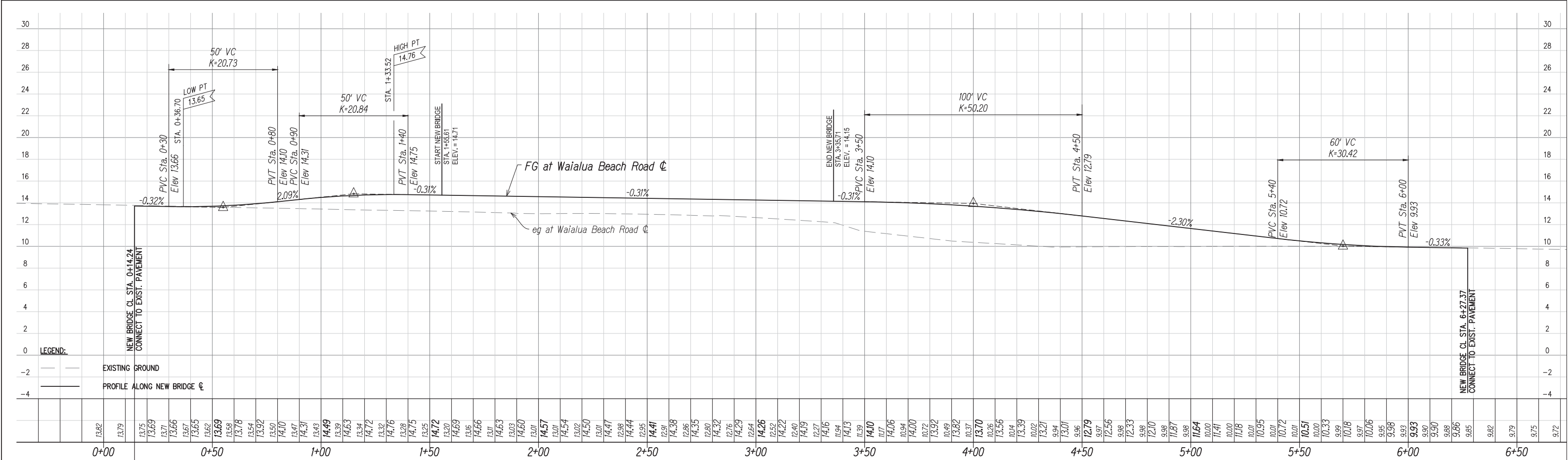
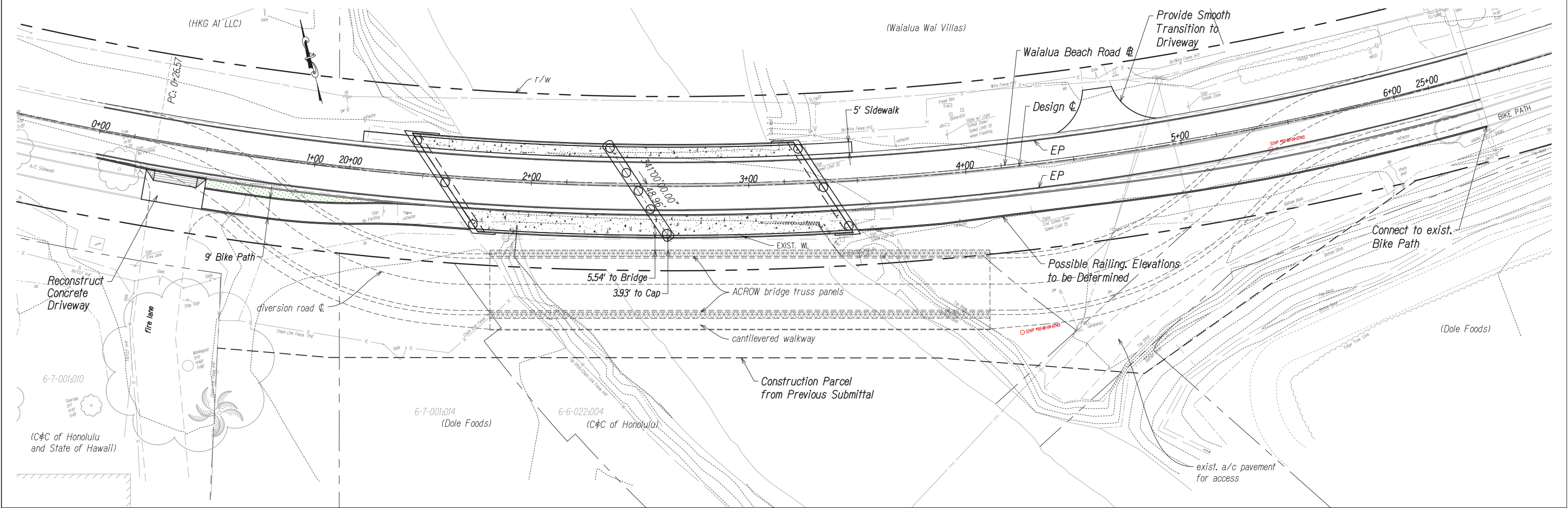


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# Appendix 1

Preliminary 30% Design Drawings – Selected Sheets





## Appendix 2

*Draft Archaeological Literature Review and Field Inspection to Support Consultation with the SHPD for the Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream Project, Kamananui Ahupua'a, Waialua District, O'ahu; prepared by CSH, Inc.; dated May 2025*



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**Draft**

**Archaeological Literature Review and Field Inspection  
To Support Consultation with the SHPD  
for the Replacement of Waialua Beach Road Bridge  
(Bridge No. 605) over Ki'iki'i Stream Project,  
Kamananui Ahupua'a, Waialua District, O'ahu  
TMKs: (1) 6-6-021:999 (Waialua Beach Road),  
6-6-022:001 por., 6-6-022:004 por.,  
6-6-022:999 (Waialua Beach Road),  
6-7-001:010 por., 6-7-001:014,  
6-7-001:017 por. (Kealohanui Street),  
6-7-001:999 (Waialua Beach Road), and  
6-7-009:002 (Kealohanui Street)**

Prepared for  
R.M. Towill Corporation  
on behalf of the  
City and County of Honolulu, Department of Design and Construction (DDC)

Prepared by  
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(Job Code: KAMANANUI 12)

May 2025

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## Management Summary

<b>Reference</b>	Archaeological Literature Review and Field Inspection To Support Consultation with the SHPD for the Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream Project, Kamananui Ahupua'a, Waialua District, O'ahu, TMKs: (1) 6-6-021:999 (Waialua Beach Road), 6-6-022:001 por., 6-6-022:004 por., 6-6-022:999 (Waialua Beach Road), 6-7-001:010 por., 6-7-001:014, 6-7-001:017 por. (Kealohanui Street), 6-7-001:999 (Waialua Beach Road), and 6-7-009:002 (Kealohanui Street) (Shideler and Hammatt 2025)
<b>Date</b>	May 2025
<b>Project Number(s)</b>	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: KAMANANUI 12
<b>Investigation Permit Number</b>	CSH completed the fieldwork component of this study under archaeological fieldwork permit number 24-30, issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-13-282.
<b>Agencies</b>	SHPD, City and County of Honolulu, Department of Design and Construction (DDC)
<b>Land Jurisdiction</b>	The project involves the following TMK designations with the indicated state, City and County and private land jurisdictions: 6-6-021:999 (Waialua Beach Road) = City and County of Honolulu 6-6-022:001 por. = Dole Foods Co. Inc. 6-6-022:004 por. = City and County of Honolulu 6-6-022:999 (Waialua Beach Road) = City and County of Honolulu 6-7-001:010 por. = City and County of Honolulu and State of Hawai'i 6-7-001:014 = Dole Foods Co. Inc. 6-7-001:017 por. (Kealohanui Street) = Dole Foods Co. Inc. 6-7-001:999 (Waialua Beach Road) = City and County of Honolulu 6-7-009:002 (Kealohanui Street) = State of Hawai'i
<b>Project Proponent</b>	DDC
<b>Project Funding</b>	City and County of Honolulu
<b>Project Location</b>	The Replacement of Waialua Beach Road Bridge over Ki'iki'i Stream project is in coastal Kamananui Ahupua'a, Waialua District on the Island of O'ahu TMKs: (1) 6-6-021:999 (Waialua Beach Road), 6-6-022:001 por., 6-6-022:001 por., 6-6-022:004 por., 6-6-022:999 (Waialua Beach Road), 6-7-001:010 por., 6-7-001:014, 6-7-001:017 por. (Kealohanui Street), 6-7-001:999 (Waialua Beach Road), and 6-7-009:002 (Kealohanui Street). The project is a strip of land along Waialua Beach Road on both sides of, and including, the present (1950) Waialua Beach Road Bridge-Kiikii Stream. The project area is depicted on a portion of a 1999 Haleiwa U.S. Geological Survey (USGS) 7.5-minute series

	topographic quadrangle map (Figure 1), tax map plats (Figure 2 through Figure 5), and a 2023 aerial photograph (Figure 6).
<b>Natural and Built Environment</b>	The project area focuses on a portion of Waialua Beach Road that spans Ki'iki'i Stream, approximately 1.0 km inland (south) of Kaiaka Bay on the central north shore of O'ahu at an elevation of approximately 5 m above mean sea level. According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils include Ewa silty clay loam, moderately shallow, 0 to 2% slopes (EmA) on the west side of the bridge and Haleiwa silty clay, 0 to 2% slopes (HeA) to the east and south of the bridge. Mean annual rainfall is approximately 783 mm (30.8 inches) (Giambelluca et al. 2013) which is marginal at best for non-irrigated agriculture. The project area spans perennial Ki'iki'i Stream.
<b>Project Description and Related Disturbance</b>	The City and County of Honolulu, DDC propose to replace the Ki'iki'i Stream Bridge. The bridge has exceeded its useful service lifespan, and the replacement of the bridge will address safety concerns and restore the bridge utility providing the community with access to and from Waialua Town across the Ki'iki'i Stream. During the demolition of the existing bridge a temporary bypass road will be constructed on the <i>mauka</i> (toward the uplands) side of the Waialua Beach Road to enable thoroughfare along either end of the Waialua Beach Road.
<b>Project Acreage</b>	The project area is approximately 7.025 acres (2.84 hectares).
<b>Historic Preservation Regulatory Context</b>	This is a state/municipal "governmental" (DDC) project needing review under Hawai'i Revised Statutes (HRS) §6E-8 and HAR §13-13-275.  Funding from the U.S. Federal Highway Administration (FHWA) may trigger Section 106 consultation of the National Historic Preservation Act (NHPA).
<b>Document Purpose</b>	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 environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-276.
<b>Summary of Historical Background Research</b>	The relatively small coastal area around the mouths of Kaukonahua (Ki'iki'i), Paukauila, and Anahulu rivers was well populated in traditional Hawaiian times (Figure 10). The pattern of western-style land grants (as opposed to more organic-shaped Land Commission Awards [LCAs] conforming to traditional land holdings) obscures the traditional Hawaiian land use pattern (Figure 11 and Figure 12) but it seems clear the eastern portion of the project area (between the of Kaukonahua [Ki'iki'i] and Paukauila streams) was an area of intensive and extensive cultivation (Figure 12) and probably had been for decades. The 1943



	<p>map (Figure 20), however, suggests the areas of greatest agricultural effort were in fact east of the present project area.</p> <p>Most of the project area was under intensive Waialua Agricultural Company sugarcane cultivation for many decades (Figure 22 and Figure 26) that likely removed any archaeological traces that have been present.</p>
<b>LCA Data</b>	<p>No LCAs were awarded in Kamananui Ahupua'a. This study posits that the pattern of relatively small grants on the east side of Ki'iki'i Stream extending into the east side of the present project area reflects a pattern of wet land cultivation that is likely to pre-date the grants.</p>
<b>Summary of Previous Archaeological Research</b>	<p>Previous archaeological studies in the vicinity are depicted in Figure 29 and summarized in Table 2. Previously identified historic properties in the vicinity are located on Figure 30 and summarized in Table 3.</p> <p>Two archaeological studies (Filimoehala and Rieth 2010 and Filimoehala and Rieth 2015) have been previously conducted within portions of the project area.</p> <p>One historic property consisting of a single human cervical vertebra within imported fill (designated Stat Inventory of Historic Places (SIHP) # 50-80-04-07143) has been identified in the project area (Filimoehala and Rieth 2010 and Vitousek 2010).</p> <p>The earlier Filimoehala and Rieth study (2010:36) notes, "The presence of the single human cervical vertebra does suggest the possibility that additional isolated human remains may be present in the modern construction fill."</p> <p>The later Filimoehala and Rieth study of the dredging of Ki'iki'i Stream in the immediate vicinity opines, "However, if dredging activities will impact the stream banks an archaeological inventory survey may be warranted for these areas" (Filimoehala and Rieth 2015:23).</p>
<b>Fieldwork Effort</b>	<p>A brief field inspection of the project area was conducted by CSH archaeologist David W. Shideler, M.A., on 26 December 2024. The field inspection was completed to identify the likelihood of historic properties being present within the project area. Photographs taken of the project area and a track log are provided.</p> <p>Two remnant archaeological features are documented that are believed to relate to the former bridge and adjacent road sections, a basalt boulder with concrete mortar retaining wall on the west side of the stream and an old asphalt road exposure on an abutment base of large basalt boulders (understood as supporting the former main road from ca. 1901 to 1951) on the east bank of Ki'iki'i Stream. It seems likely there is a similar large basalt boulder abutment on the west side of the stream, but this was not seen due to the thick mangrove growth in that vicinity, or the western abutment may have been lost to erosion.</p> <p>The major aspect of the present road/bridge is the (1952) bridge itself which has been formally evaluated as eligible to be listed on the National/Hawai'i Register (see Appendix B), with specific reference to Criterion B and its association with</p>

	<p>the civil engineer Howard Kurio who was fatally injured there and who is commemorated in a plaque on the bridge. Two other features related to the creation of Waialua Beach Road were documented, a concrete culvert and what is seemingly just a drainage ditch on the south side of the road. While both these features were believed to be more than 50 years old, evaluation in the field suggested neither were significant individually under (HAR §13-275-6[b]) Criteria a through e.</p> <p>The indicated area of the (2010) re-burial of a single human vertebrae (understood as SIHP # 50-80-04-07143) was examined but no evidence of this re-burial was observed on the surface (as expected).</p> <p>With the exception of the possibility of “additional isolated human remains [that] may be present in the modern construction fill” (Filimoehala and Rieth 2010:36), the prospect of significant subsurface cultural deposits in the project area was evaluated in the field as being low.</p>
<b>Summary and Predictive Model</b>	<p>Somewhat surprisingly given that the project area straddles a major perennial stream and is relatively close (1.0 km) to the coast, the project area appears to have a relatively low level of archaeological concern.</p> <p>An issue is the identification of human skeletal remains (one vertebrae) in sand fill deposits imported into the project area as part of a prior construction project. As noted in the reporting of the find: “The presence of the single human cervical vertebra does suggest the possibility that additional isolated human remains may be present in the modern construction fill” (Filimoehala and Rieth 2010:36).</p> <p>Filimoehala and Rieth (2015) carried out an additional project within the present study area for a Ki'iki'i Stream dredging project and concluded, “if dredging activities will impact the stream banks an archaeological inventory survey may be warranted for these areas” (Filimoehala and Rieth 2015:23). The rationale for consideration of an archaeological inventory survey (AIS) is less than clear. At a staging area portion of their project area approximately 1.1 km to the south of the present project area (where they explicitly recommend an AIS), the justification is that:</p> <p style="padding-left: 40px;">Though it is unlikely that any archaeological sites are preserved on the surface or as subsurface deposits this cannot be said with certainty until a survey is completed. In particular, many plantation-era infrastructural elements have gained historical significance during the last 20 years (that is, they have reached the 50 year threshold for significance) and the SHPD has been diligent in ensuring their proper documentation. [Filimoehala and Rieth 2015:23]</p>

<b>HRS §6E-8 Historic Preservation Review Steps</b>	<p>Following the discovery of human skeletal remains (one vertebrae in an imported fill deposit) designated SIHP # 50-80-04-07143 the study notes, “The presence of the single human cervical vertebra does suggest the possibility that additional isolated human remains may be present in the modern construction fill” (Filimoehala and Rieth 2010:36).</p> <p>The present study documents that potential historic properties—particularly associated with a former road and bridge along the southeast margin of the property that existed from at least as early as 1901 (Figure 12) and was still extant as late as 1951 (Figure 22)—are extant within the project area.</p> <p>The existing 1952 bridge has been formally evaluated as eligible to be listed on the National/Hawai'i Register (see Appendix B), with specific reference to Criterion B and its association with the civil engineer Howard Kurio who was fatally injured there.</p> <p>Thus, a determination as per HAR §13-275-7(a)(2) of “Effect with proposed mitigation” would appear to be warranted. Consultation with both the SHPD architecture and archaeology branches regarding appropriate mitigation is recommended.</p> <p>It is recommended that an architectural historian document the Waialua Beach Road Bridge- Ki'iki'i Stream and Waialua Beach Road and its subfeatures. It is also recommended that the former road and bridge remnants also be assessed.</p> <p>The previously documented human skeletal remains within the imported sand fill associated with the existing water line was preserved in place and may be within the boundaries of project-related ground disturbance and/or the temporary roadway for the temporary replacement bridge. It is recommended that the project consult with SHPD's Archaeology Branch and History and Culture Branch to determine appropriate next steps regarding the human skeletal remains.</p> <p>Although the likelihood of undocumented archaeological historic properties being present within the project area is low, the identification of human skeletal remains within the existing water line trench suggest an identification effort will be required. Additional exposures of human skeletal remains are not expected outside the existing water line trench. The findings of this literature review and field inspection (LRFI) support a program of archaeological monitoring as a sufficient form of identification, however, it is possible an archaeological inventory survey may be required by the SHPD.</p>
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# Table of Contents

<b>Management Summary .....</b>	<b>i</b>
<b>Section 1 Introduction .....</b>	<b>1</b>
1.1 Project Background .....	1
1.2 Document Purpose .....	1
1.3 Environmental Setting .....	9
1.3.1 Natural Environment.....	9
1.3.2 Built Environment .....	12
<b>Section 2 Methods .....</b>	<b>13</b>
2.1 Field Methods .....	13
2.2 Research Methods.....	13
<b>Section 3 Historical Background Research .....</b>	<b>14</b>
3.1 Traditional Accounts .....	14
3.1.1 Legends.....	14
3.1.2 Sayings.....	15
3.1.3 Trails.....	15
3.2 Early Historic Period .....	15
3.3 Early to Mid-1800s .....	17
3.4 Māhele of 1848 .....	21
3.5 Mid- to Late 1800s.....	23
3.5.1 General Developments.....	23
3.5.2 Rice Cultivation .....	26
3.5.3 The OR&L .....	27
3.5.4 Sugar at Waialua in the Nineteenth Century.....	27
3.6 English Language Newspaper references to “Kamananui” (1852-1905) .....	28
3.7 1900s and Contemporary Land Use.....	29
<b>Section 4 Previous Archaeological Research .....</b>	<b>48</b>
4.1 Early Studies .....	48
4.1.1 Thrum .....	48
4.1.2 McAllister 1933 .....	48
4.1.3 Handy 1940.....	53
4.2 Modern Archaeological Studies in the Vicinity.....	53
4.2.1 Yent 1981.....	62
4.2.2 Collins and Jourdane 2002.....	62
4.2.3 Davis 2002 .....	62
4.2.4 Buffum et al. 2004 .....	62
4.2.5 Moore et al. 2004.....	63
4.2.6 Hammatt and Shideler 2006a.....	63
4.2.7 Hammatt and Shideler 2006b .....	63
4.2.8 Monahan et al. 2007.....	64
4.2.9 Yorck et al. 2007.....	64
4.2.10 Groza and Hammatt 2008 .....	64
4.2.11 Moore and Kennedy 2008.....	64
4.2.12 Filimoe hala and Rieth 2010.....	64
4.2.13 Vitousek 2010.....	65

4.2.14 Filimoehala 2012 .....	65
4.2.15 Beauchan and Kennedy 2012 .....	65
4.2.16 Filimoehala and Rieth 2015 .....	67
4.2.17 Mintmier and Collins 2018 .....	67
4.2.18 Vernon and Gosser 2020.....	67
4.2.19 Merrin et al. 2023 .....	67
4.2.20 Vernon and Gosser 2023.....	68
<b>Section 5 Field Inspection Results .....</b>	<b>69</b>
5.1 Overview of Fieldwork.....	69
<b>Section 6 Summary and Recommendations .....</b>	<b>87</b>
6.1 Summary of Historic Properties .....	87
6.1.1 SIHP # 50-80-04-07143.....	87
6.1.2 Remnants of the Former Road and Bridge .....	87
6.1.3 Present Road and Bridge.....	88
6.2 Recommendations.....	88
<b>Section 7 References Cited .....</b>	<b>90</b>
<b>Appendix A English Language Newspaper Articles referencing “Kamananui”</b>	
<b>1852-1905 .....</b>	<b>98</b>
<b>Appendix B Bridge Summary (from Hawaii State Historic Bridge Inventory &amp;</b>	
<b>Evaluation, MKE Associates LLC, Fung Associates, Inc. 2013:4-27).....</b>	<b>106</b>

## List of Figures

Figure 1. Portion of a 1999 Haleiwa USGS 7.5-minute topographic quadrangle map showing the project area.....	2
Figure 2. TMK: (1) 6-6-021 showing the northeast portion of the project area; note this plat also depicts the pre-1952 road crossing of the stream in the southwest corner of the project area (Hawai‘i TMK Service 2024) .....	3
Figure 3. TMK: (1) 6-6-022 showing the southeast portion of the project area; note this plat also depicts the pre-1952 road crossing of the stream in the southwest corner of the project area (Hawai‘i TMK Service 2024) .....	4
Figure 4. TMK: (1) 6-7-001 showing the west portion of the project area; note this plat also depicts the pre-1952 road crossing of the stream in the southwest corner of the project area (Hawai‘i TMK Service 2024) .....	5
Figure 5. TMK: (1) 6-7-009 showing the southwest portion of the project area (Hawai‘i TMK Service 2024) .....	6
Figure 6. 2023 aerial photograph showing the project area (Google Earth 2023).....	7
Figure 7. Project area map (courtesy of client).....	8
Figure 8. Overlay of <i>Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii</i> (Foote et al. 1972), indicating soil types within and surrounding the project area (USDA SSURGO 2001) on a portion of a 1999 Haleiwa USGS topographic quadrangle.....	10
Figure 9. Portion of the Rockwood map of Leeward Trails of ca. 1810 (‘Ī‘ī 1959:96) showing the project area .....	16
Figure 10. Portion of Coulter’s (1931:18) reconstruction of the density and distribution of the population of O‘ahu in 1853 .....	18
Figure 11. Portion of the 1889 Emerson map of Mokuleia and Maile Grants (RM 1533) showing the relationship to the project area .....	24
Figure 12. Portion of 1901 W.A. Wall map of the Waialua Agricultural Company Lands (RM 2054) at Kamananui and Mokuleia showing the project area .....	25
Figure 13. Portion of the 1906 Donn Hawaii Territory Survey map of O‘ahu with land use (RM 2374) showing the project area .....	31
Figure 14. Portion of a 1913 U.S. Army map of O‘ahu showing project area as largely surrounded by sugarcane fields; the former Government road is shown along the south side of the project area .....	32
Figure 15. Portion of a 1919 U.S. Army War Department fire control map, Waialua quadrangle, showing the project area.....	33
Figure 16. Portion of the 1925 Evans map of O‘ahu Forest Reserves (RM 2988) showing the project area.....	34
Figure 17. Portion of a 1929 Haleiwa USGS topographic quadrangle showing the project area.....	35
Figure 18. Portion of a 1935 Land Court Application 1089 Map 001 showing the project area.....	36
Figure 19. Portion of a 1935 U.S. Army War Department terrain map, Haleiwa quadrangle, showing the project area .....	37
Figure 20. Portion of a 1943 U.S. Army War Department terrain map, Haleiwa quadrangle, showing the project area .....	38

Figure 21. Portion of a 1946 Territory of Hawaii Airport Division Haleiwa map showing the project area.....	40
Figure 22. 1951 USGS aerial photograph of Kamananui (UH MAGIS) showing the project area as largely in sugarcane fields of the Waialua Agricultural Company.....	41
Figure 23. Portion of a 1953 Haleiwa USGS topographic quadrangle, showing the project area.....	42
Figure 24. 1956 “as-built” Suburban Water System plans (upper map) show that a 16-inch Class “150” Cement-Lined Pipe was planned from “Weed” Junction to Goodale Avenue and (lower map) that near “Kiikii Bridge” the water line was anticipated to be adjacent to the south side of Waialua Beach Road .....	43
Figure 25. Portion of a 1960 Haleiwa USGS topographic quadrangle, showing the project area and newly constructed Waialua Beach Road; the former Government road spur appears abandoned and the old bridge is no longer extant .....	44
Figure 26. 1965 USDA aerial photograph of Kamananui showing the project area (UH MAGIS) .....	45
Figure 27. 1977 USGS Orthophotoquad aerial photograph, Haleiwa quadrangle, showing the project area.....	46
Figure 28. Portions of the 1998 Kaena, Waianae, and Schofield Barracks, and 1999 Haleiwa USGS topographic quadrangles showing the locations of McAllister (1933) sites within Kamananui Ahupua‘a in relation to the project area .....	49
Figure 29. Previous archaeological studies in the vicinity of the project area on a 1999 Haleiwa USGS topographic quadrangle base map .....	54
Figure 30. Previously identified historic properties in the vicinity of the project area on a 1999 Haleiwa USGS topographic quadrangle base map .....	59
Figure 31. “Waterline probe excavation in which human vertebra was encountered (view north)” (from Filimoehala and Rieth 2010:35, no human skeletal remains depicted).....	66
Figure 32. “Project area with the location of inadvertent find indicated” (from Filimoehala and Rieth 2010:34).....	66
Figure 33. Archaeologist’s track log showing the general location and orientation of the following photographs on a Google Earth 2023 aerial photograph base map .....	70
Figure 34. Key showing the general location and orientation of the following photographs on a on a Google Earth 2023 aerial photograph base map .....	71
Figure 35. Photo A: View from the northwest corner of the project area (Waialua Elementary School at upper right), view to southeast.....	72
Figure 36. Photo B: Culvert (passing under Waialua Beach Road) opening on northeast side of Waialua Beach Road, view to southeast.....	72
Figure 37. Photo C: Companion culvert opening just east of exit of Waialua Elementary School (Waialua Beach Road in background), view to northwest .....	73
Figure 38. Photo D: Approach to northwest corner of Ki‘iki‘i Bridge from the northwest (note two women fishing and crabbing at right of center), view to east-southeast .....	73
Figure 39. Photo E: View of northeast corner of Ki‘iki‘i Bridge, view to northwest .....	74
Figure 40. Photo F: View back toward Ki‘iki‘i Bridge (Waialua Elementary School in center background), view to west .....	74
Figure 41. Photo G: View of the east end of the project area at intersection of Waialua Beach Road and Hale‘iwa Road (at right foreground), view to west .....	75

Figure 42. Photo H: South side of eastern project area where it widens to the south, view to west .....	75
Figure 43. Photo I: Approaching eastern south side of Ki'iki'i Bridge, view to west.....	76
Figure 44. Photo J: At southeast corner of Ki'iki'i Bridge showing parallel pipeline on utility trestle on south side, view to northwest.....	76
Figure 45. Photo K: "In Memory" plaque on the southeast corner of the Ki'iki'i Bridge, view to southwest.....	78
Figure 46. Photo L: Close-up of "In Memory" plaque on the southeast corner of the Ki'iki'i Bridge, view to southwest.....	78
Figure 47. Photo M: View off the southwest corner of the Ki'iki'i Bridge (note women crabbing and fishing), view to east-northeast .....	79
Figure 48. Photo N: Southwest end of project area (Waialua District Park at lower right), view (toward bridge) to east-southeast .....	79
Figure 49. Photo O: View of the west portion of the project area where it widens to the south into Waialua District Park (foreground, Waialua Elementary School at upper right), view to east-southeast .....	80
Figure 50. Photo P: View of project area crossing northern portion of Waialua Elementary School (parking lot), view to east .....	80
Figure 51. Photo Q: View of southwestern extension of project area into eastern Waialua Elementary School, view to south .....	81
Figure 52. Photo R: View of southwestern extension of project area into eastern Waialua Elementary School, view to north.....	81
Figure 53. Photo S: View of the south end of property on west side of Ki'iki'i Stream (at right) understood as including a north portion of Kealohanui Street (Waialua Elementary School at upper left), view to northeast.....	82
Figure 54. Photo T: View from the south end of the project area understood as Kealohanui Street (Waialua Beach Road barely visible in center background), view to northeast.....	82
Figure 55. Photo U: Basalt boulder with concrete mortar retaining wall (understood as supporting the former main road from 1901 to 1951) in the southwest portion of project area, view to northwest .....	83
Figure 56. Photo V: General view of thick mangrove growth along Ki'iki'i Stream southeast of the bridge, view to northwest .....	83
Figure 57. Photo W: General view of the south side of Ki'iki'i Bridge from the southwest bank of the stream, view to northeast .....	84
Figure 58. Photo X: Old asphalt road exposure on an abutment base of large basalt boulders (understood as supporting the former main road from ca. 1901 to 1951) on the east bank of Ki'iki'i Stream, view to northeast .....	84
Figure 59. Photo Y: General view of eastern southern expansion of project area in a cacao field, view to west.....	85
Figure 60. Photo Z: General view of ditch on south side of Waialua Beach Road east of bridge, view to northeast.....	85
Figure 61. Photo A1: Approximate location of re-buried human vertebrae (at location of backpack at center) at a dirt road east of Ki'iki'i Stream and south of Waialua Beach Road .....	86



## **List of Tables**

Table 1. Land claims at Kamananui Ahupua'a (none of which was seemingly awarded).....	22
Table 2. Previous archaeological studies in the vicinity of the project area.....	55
Table 3. Previously identified historic properties in the vicinity of the project area.....	60

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## Section 1 Introduction

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### 1.1 Project Background

At the request of R.M. Towill Corporation and on behalf of the City and County of Honolulu, Department of Design and Construction (DDC) Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this literature review and field inspection (LRFI) report for the Replacement of Waialua Beach Road Bridge over Ki‘iki‘i Stream project. The project is in coastal Kamananui Ahupua‘a, Waialua District on the central north shore of O‘ahu including Tax Map Key (TMK) designations: (1) 6-6-021:999 (Waialua Beach Road), 6-6-022:001 por., 6-6-022:004 por., 6-6-022:999 (Waialua Beach Road), 6-7-001:010 por., 6-7-001:014, 6-7-001:017 por. (Kealohanui Street), 6-7-001:999 (Waialua Beach Road), and 6-7-009:002 (Kealohanui Street). The project is a strip of land along Waialua Beach Road on both sides of, and including, the present (1950) “Waialua Beach Road Bridge-Kiikii Stream.” The project area is depicted on a portion of a 1999 Haleiwa U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangle (Figure 1), tax map plats (Figure 2 through Figure 5), and a 2023 aerial photograph (Figure 6). A project area map (courtesy of client) is provided in Figure 7. The project area is approximately 7.025 acres (2.84 hectares).

The project involves the following TMK designations with the indicated state, City and County and private land jurisdictions:

- 6-6-021:999 (Waialua Beach Road) = City and County of Honolulu
- 6-6-022:001 por. = Dole Foods Company Inc.
- 6-6-022:004 por. = City and County of Honolulu
- 6-6-022:999 (Waialua Beach Road) = City and County of Honolulu
- 6-7-001:010 por. = City and County of Honolulu and State of Hawai‘i
- 6-7-001:014 = Dole Foods Company Inc.
- 6-7-001:017 por. (Kealohanui Street) = Dole Foods Company Inc.
- 6-7-001:999 (Waialua Beach Road) = City and County of Honolulu
- 6-7-009:002 (Kealohanui Street) = State of Hawai‘i

DDC proposes to replace the Ki‘iki‘i Stream Bridge. The bridge has exceeded its useful service lifespan, and the replacement of the bridge will address safety concerns and restore the bridge utility providing the community with access to and from Waialua Town across the Ki‘iki‘i Stream. During the demolition of the existing bridge a temporary bypass road will be constructed on the *mauka* (inland) side of the Waialua Beach Road to enable thoroughfare along either end of the Waialua Beach Road.

### 1.2 Document Purpose

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

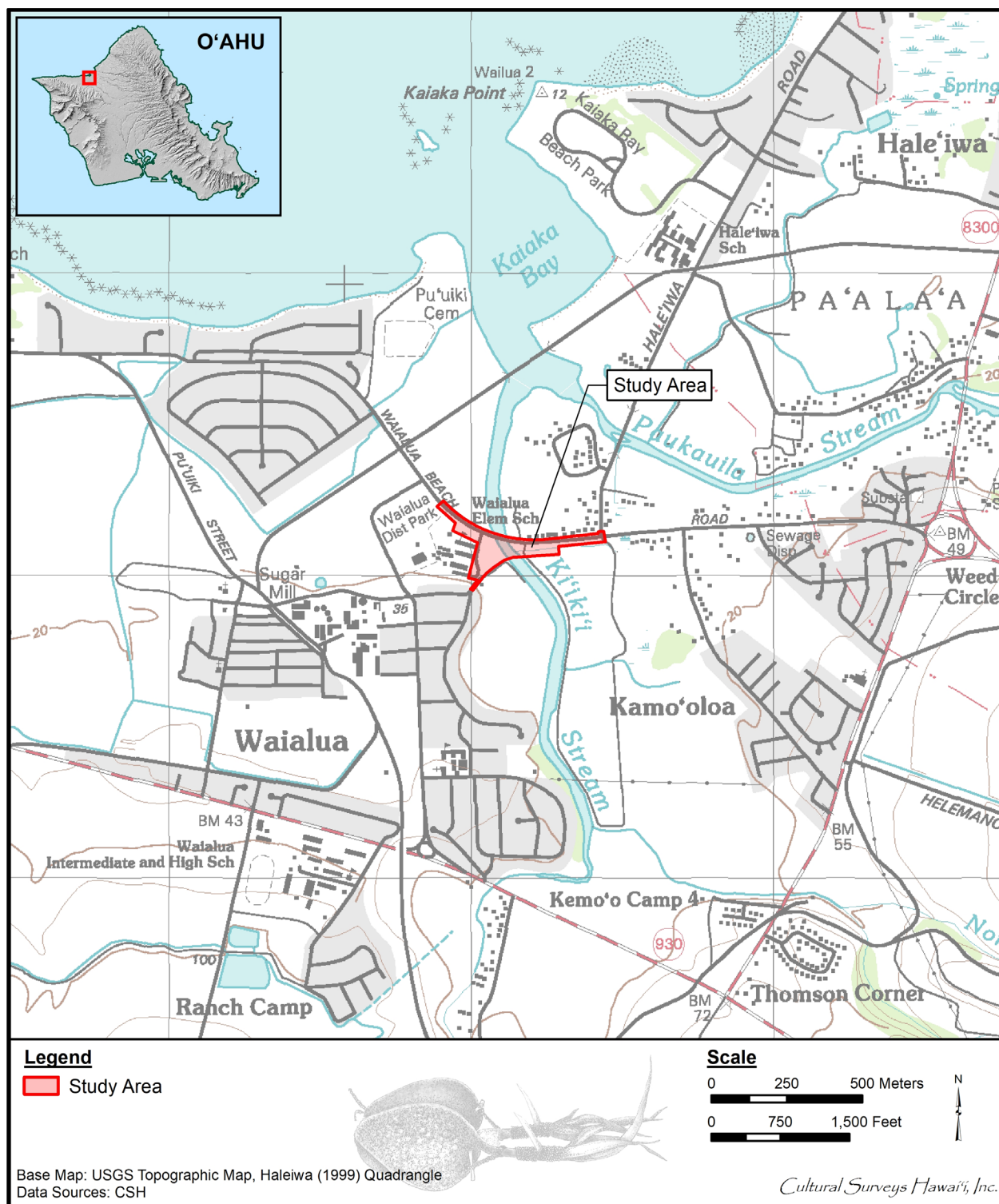


Figure 1. Portion of a 1999 Haleiwa USGS 7.5-minute topographic quadrangle map showing the project area

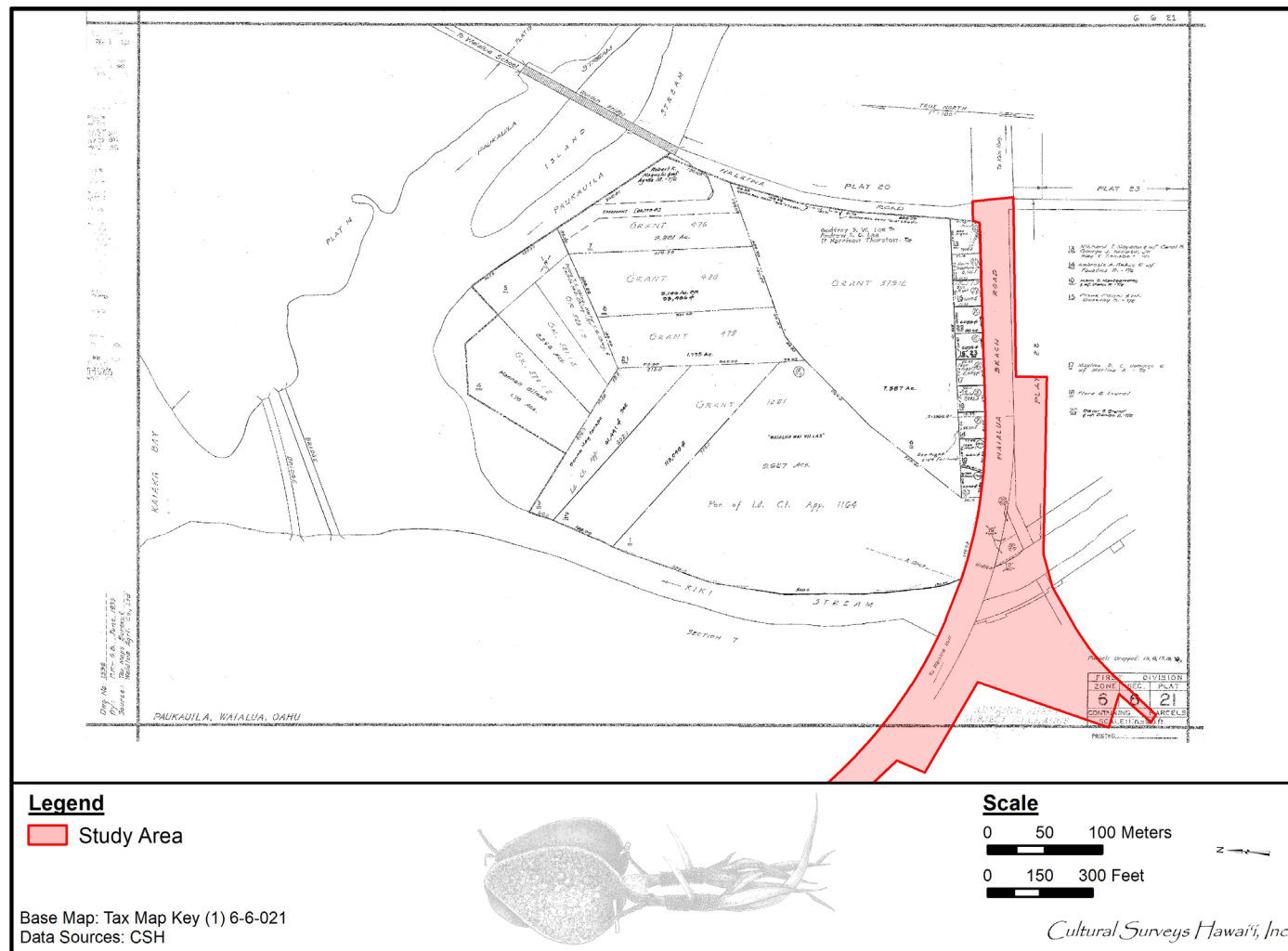


Figure 2. TMK: (1) 6-6-021 showing the northeast portion of the project area; note this plat also depicts the pre-1952 road crossing of the stream in the southwest corner of the project area (Hawai'i TMK Service 2024)

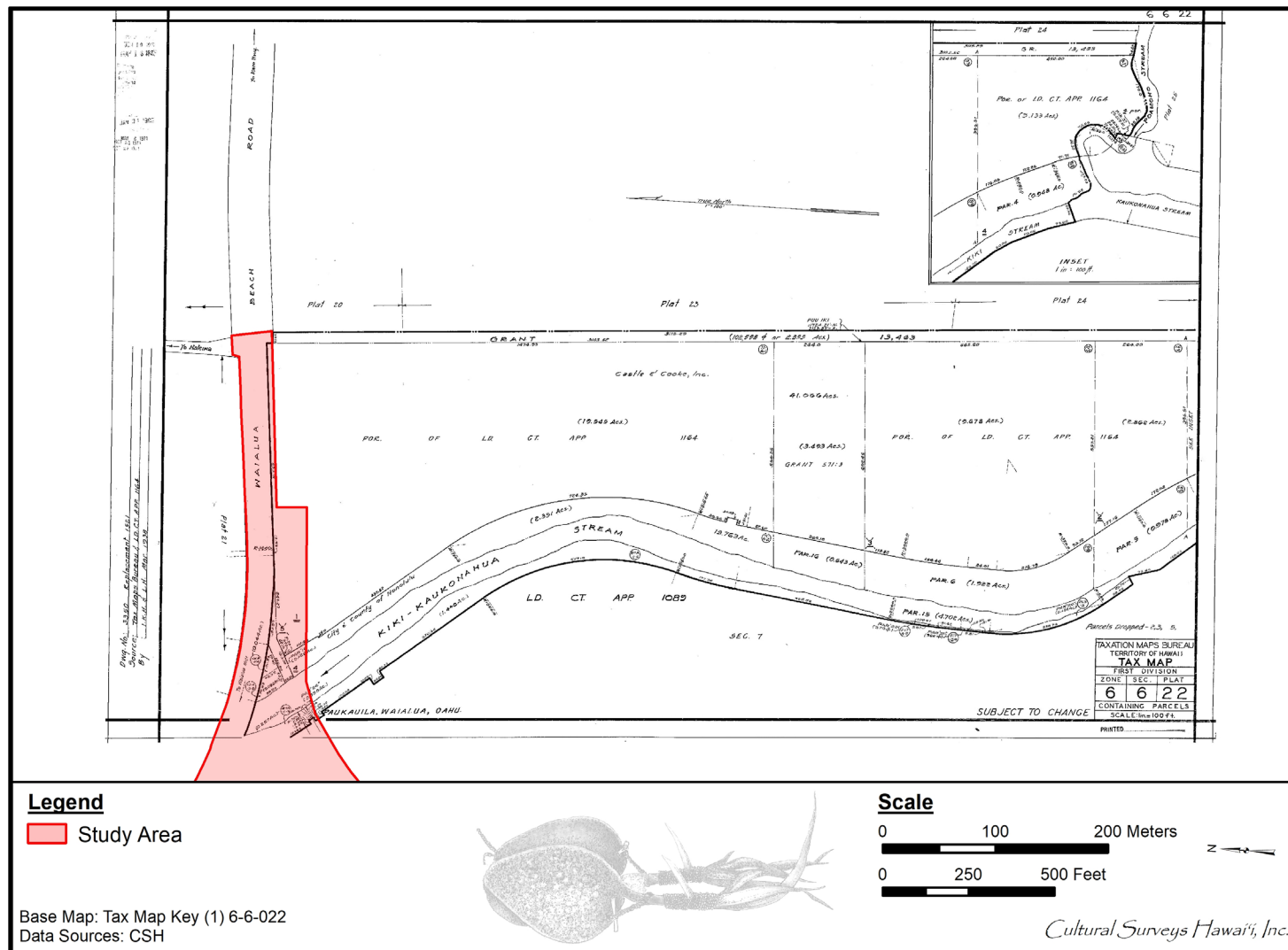


Figure 3. TMK: (1) 6-6-022 showing the southeast portion of the project area; note this plat also depicts the pre-1952 road crossing of the stream in the southwest corner of the project area (Hawai'i TMK Service 2024)

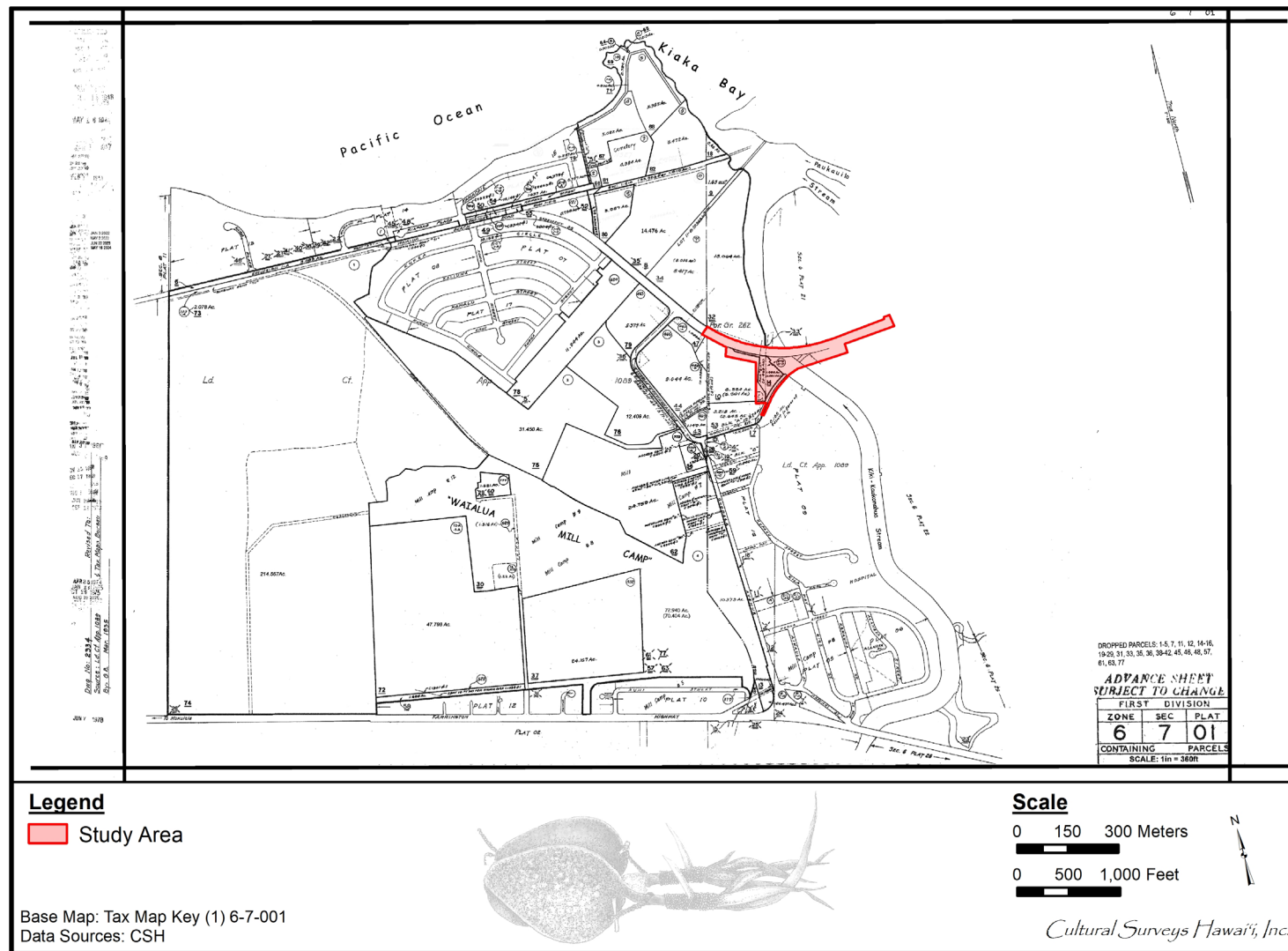


Figure 4. TMK: (1) 6-7-001 showing the west portion of the project area; note this plat also depicts the pre-1952 road crossing of the stream in the southwest corner of the project area (Hawai'i TMK Service 2024)

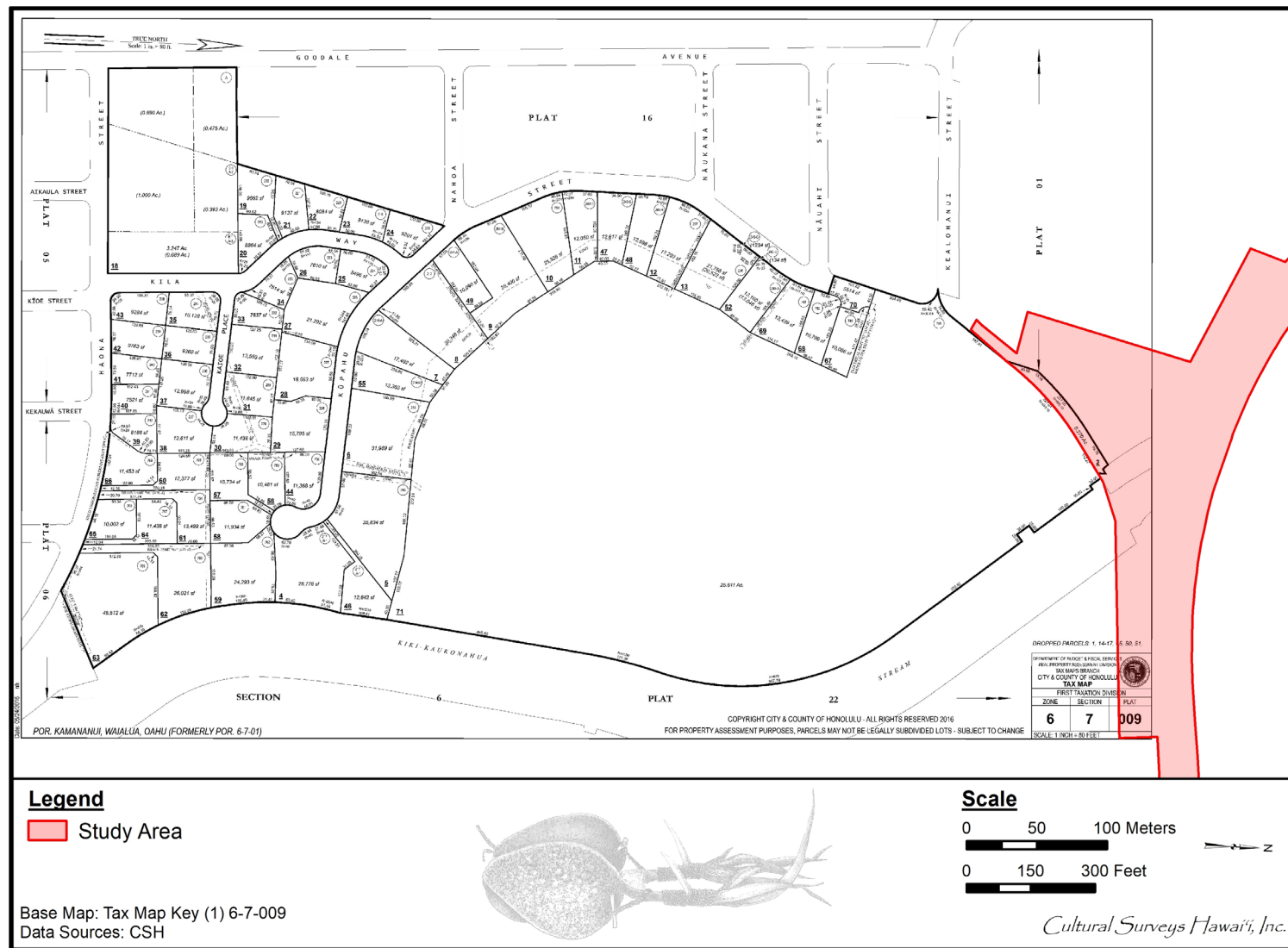


Figure 5. TMK: (1) 6-7-009 showing the southwest portion of the project area (Hawai'i TMK Service 2024)



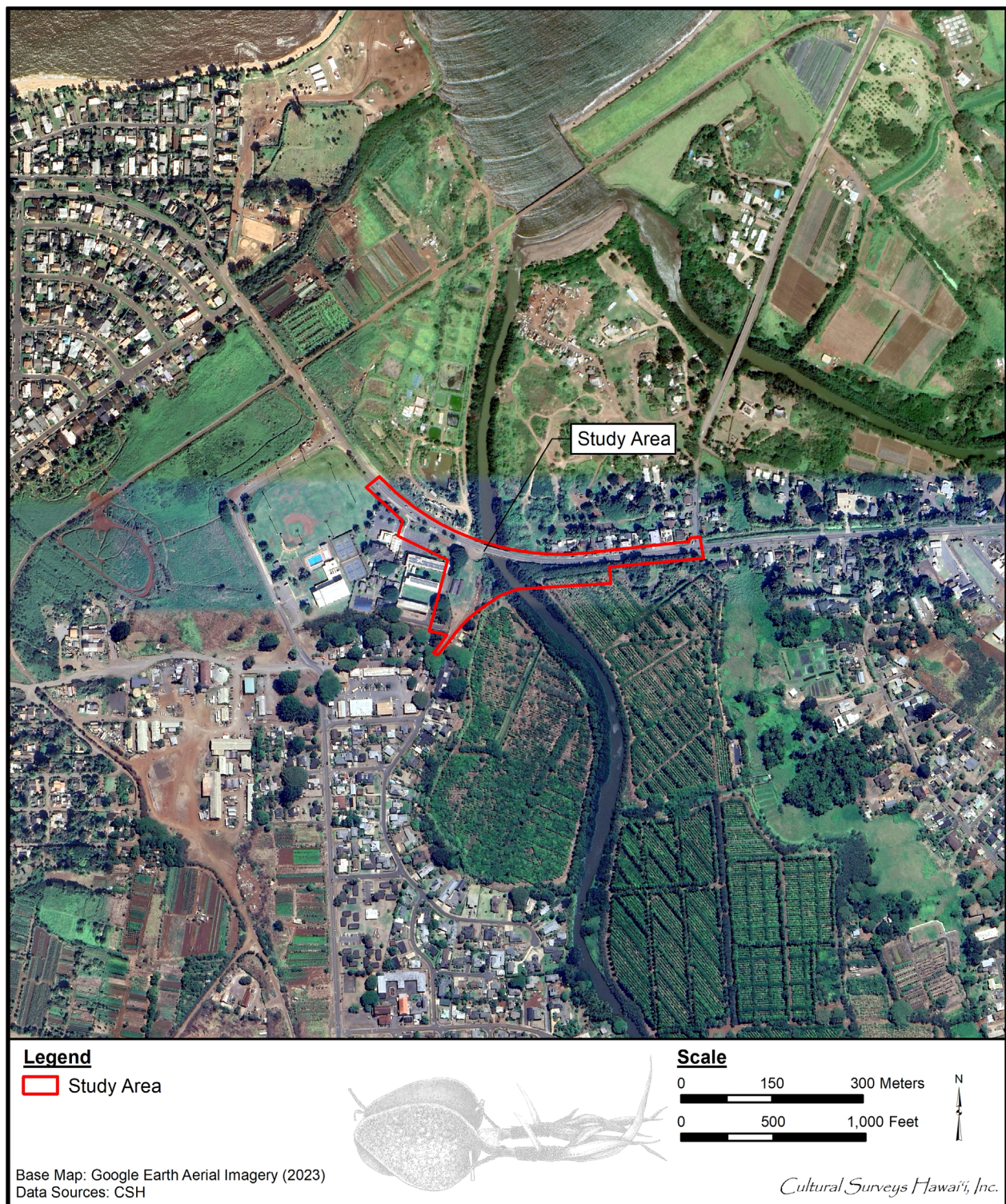


Figure 6. 2023 aerial photograph showing the project area (Google Earth 2023)



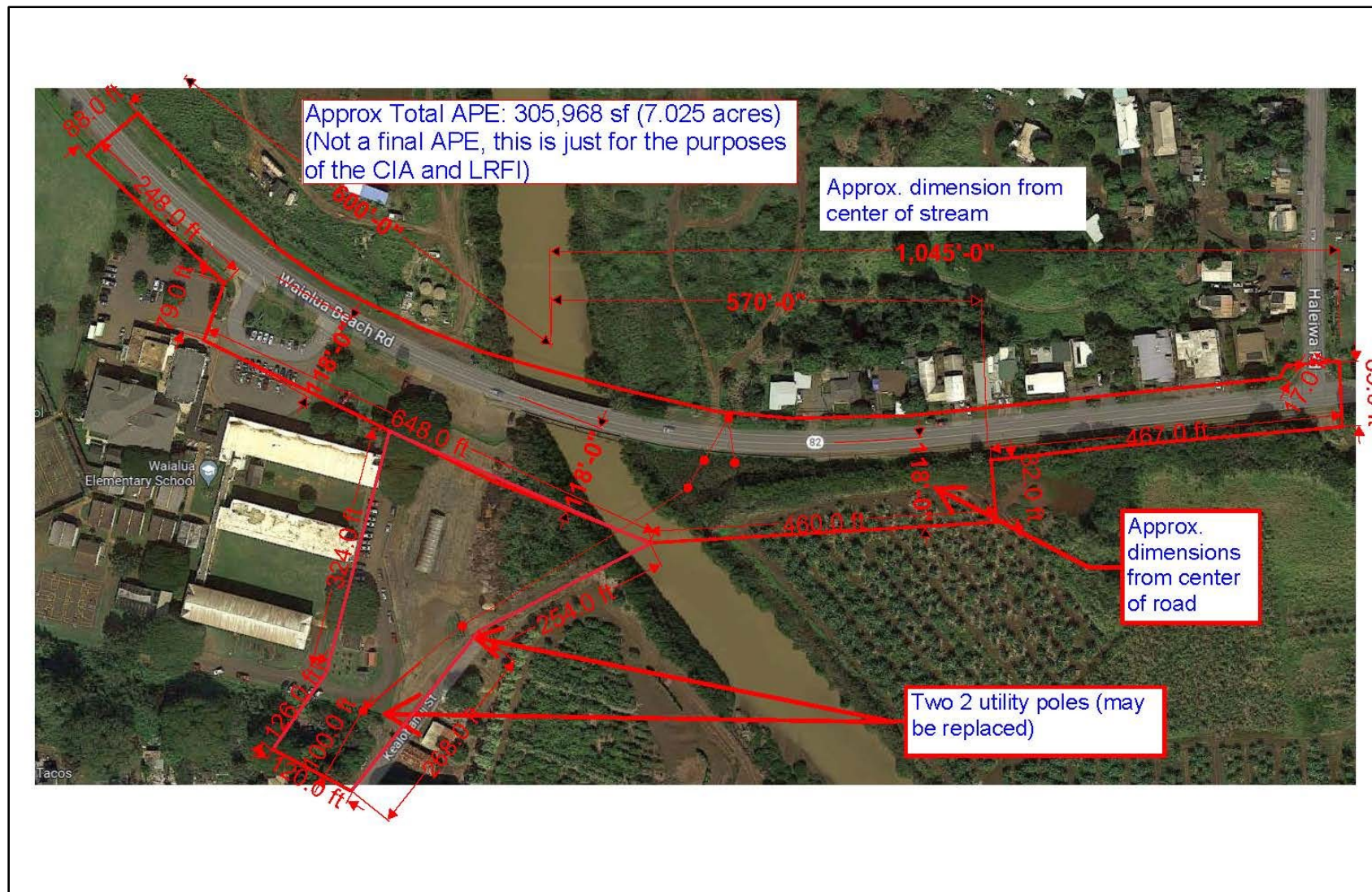


Figure 7. Project area map (courtesy of client)

support the project's historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per Hawai'i Administrative Rules (HAR) §13-276.

## 1.3 Environmental Setting

### 1.3.1 Natural Environment

The project area spans Ki'iki'i Stream, approximately 1.0 km inland (south) of Kaiaka Bay on the central north shore of O'ahu at an elevation of approximately 5 m above mean sea level.

#### Nā Lepo (Soils)

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils include Ewa silty clay loam, moderately shallow, 0 to 2% slopes (EmA) on the west side of the bridge and Haleiwa silty clay, 0 to 2% slopes (HeA) to the east and south of the bridge (Figure 8).

Ewa series soils are described as:

[...] consists of well-drained soils in basins and on alluvial fans on the islands of Maui and Oahu. These Soils developed in alluvium derived from basic igneous rock. They are nearly level to moderately sloping. [...]

These soils are used for sugarcane, truck crops, and pasture. The natural vegetation consists of fingergrass, kiawe, koa haole, klu, and uhaloa. [Foote et al. 1972:29]

EmA soils are further described as having a “depth to coral limestone is 20 to 50 inches. Runoff is very slow and the erosion hazard is no more than slight” (Foote et al. 1972:29).

Haleiwa series soils are described as:

well-drained soils on fans and in drainageways along the coastal plains. These soils are on the islands of Oahu and Molokai. They developed in alluvium derived from basic igneous material. They are nearly level to strongly sloping. [...]

These soils are used for sugarcane, truck crops, and pasture. The natural vegetation consists of koa haole, lantana, guava, Christmas berry, bermudagrass, and fingergrass. [Foote et al. 1972:33]

HeA soils are further described as: “occurs as large areas on alluvial fans or as long, narrow areas in drainageways. [...] Permeability is moderate. Runoff is very slow, and the erosion hazard is no more than slight” (Foote et al. 1972:33).

#### Nā Ua (Rains)

Mean annual rainfall is approximately 783 mm (30.8 inches) (Giambelluca et al. 2013) which is marginal at best for non-irrigated agriculture.

Rains of Kamananui Ahupua'a include the Nā'ulu and Pō'aipuni. The Nā'ulu rain was associated with the uplands of Kemo'o and with Waialua generally in the following accounts:

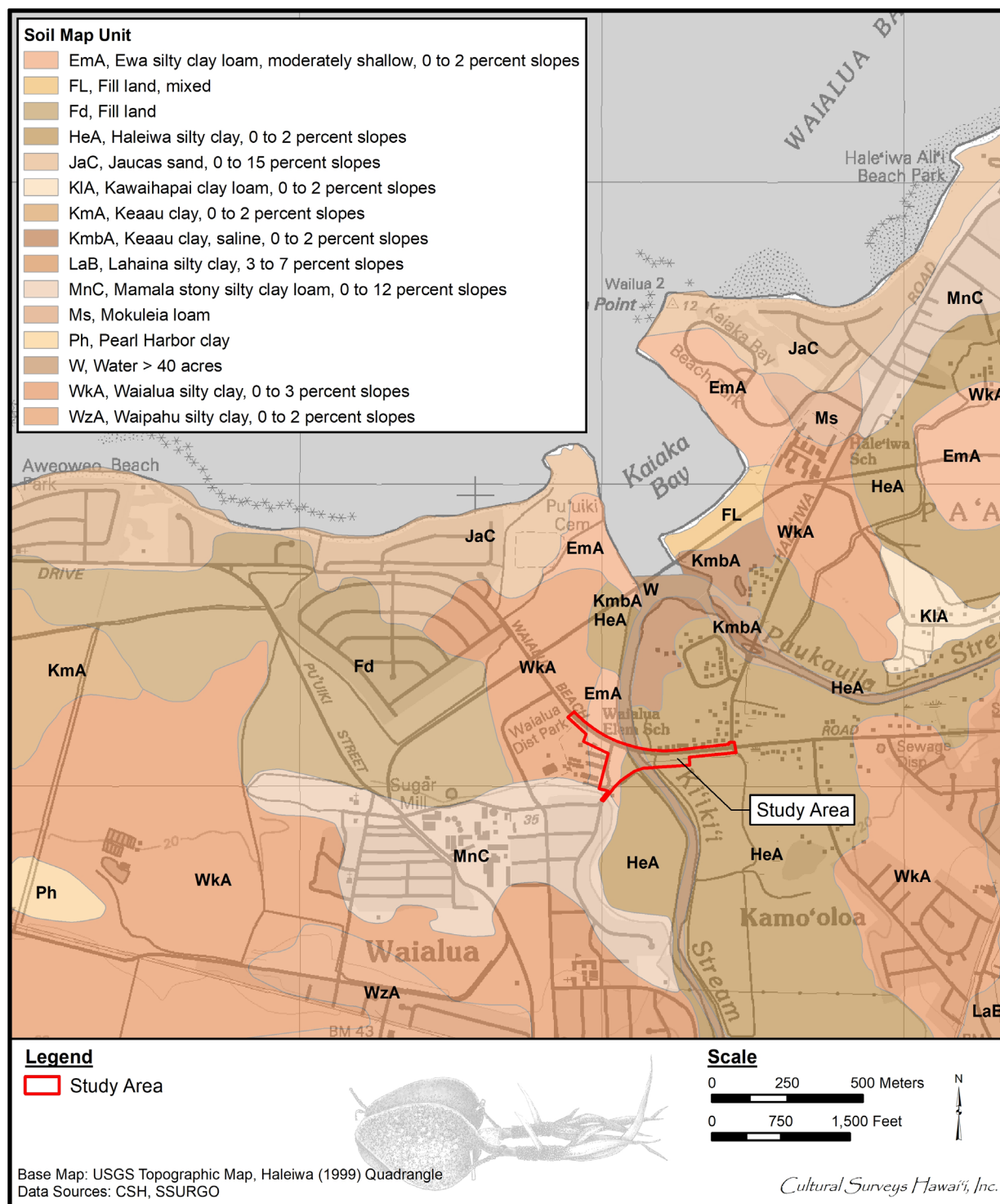


Figure 8. Overlay of *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (USDA SSURGO 2001) on a portion of a 1999 Haleiwa USGS topographic quadrangle

## Rain of Kemo'o, O'ahu

34. *Ana 'ole ka ua o Kamaoha e*  
*I ka hone a'e a Ka'opua la*  
*A ka ua Nā'ulu i ke kula e*  
*Ike kula aku o Kemo'o la*  
*Kohu 'ole ka ua o Halemano e*

The rain of Kamaoha is immeasurable  
 Murmuring sweetly at Ka'opua  
 The Nā'ulu showers on the plains  
 The plains of Kemo'o  
 The rain of Halemano resembles no other

From a chant for Keaopolohiwa. Hawaiian source: Kanoho. English trans. by author.  
 Additional source: 'Pā ka leo' 30-3i. [Akana and Gonzalez 2015:196]

## Rain of Waialua, O'ahu

41. *'A'ole wahi ho'ohalahala 'ana*  
*A ka ua Nā'ulu i ke kula*  
*He like wale no a mai Ka'ena a Waialua*  
*Pili pono akula ka la*

Having nothing to criticize  
 The Nā'ulu rain on the plains  
 From Ka'ena to Waialua it is the same  
 The sun clings tightly

From a mele ho'aeae, or love chant. Hawaiian source: Pukui, *Na Mele Welo* 80. English trans. by author. *Note: The line 'He like wale no a mai Ka'ena a Waialua' is similar to the traditional saying, 'Like no Ka'ena me Waialua,' meaning 'Ka'ena and Waialua are one' (Pukui, 'Ōlelo 215). Ka'ena Point is in the district of Waialua.* [Akana and Gonzalez 2015:196, 197]

The Pō'aipuni rain was also associated with the uplands of Kemo'o:

## Rain of Waialua, O'ahu

25. *Ku'u kane mai ka ua Līlīlehua o*  
*Waialua*  
*Mai ka ua Pō'aipuni o Kemo'o*  
*Nānā aku 'o ka lā la'ila'i o Ka'ena*  
*Auē ku'u kane e*

My dear husband from the Līlīlehua  
 rain of Waialua  
 From the Pō'aipuni rain of Kemo'o  
 Behold, the still sun of Ka'ena  
 Pity for my dear husband!

From a *kanikau*, or lament, for J. Henry. Hawaiian source: Kahinawe, 'Ka hope.' English trans. by author. [Akana and Gonzalez 2015:196, 160]

Pō'aipuni. Rain associated with Kemo'o, O'ahu [...], 'Pō'ai puni' means "to encircle." [Akana and Gonzalez 2015:236]

Nā Makani (Winds)

In the traditional story *The Wind Gourd of La'amaomao*, Pāka'a and his son Kūapāka'a are descendants of the wind goddess La'amaomao whose traditional home was in a gourd that also contained all the sacred winds of Hawai'i. La'amaomao controlled and called forth the winds by chanting their names (Nakuina 1992). Pāka'a's chant traces the winds of O'ahu but passes quickly across Kamananui:

The wind of Ka'ena turns in two directions,  
 Hinakokea is of Mokulē'ia,  
 The winds of Waialua blow,  
 Moving silently at the cape of Ka'ena,  
 Pu'u-ka'ala blows at Ka'ala,



Kehau is of Kapo,  
 The sea wind blows hard,  
 Malualua comes from the northeast,  
 Peapueo is of Kaunala,  
 Ahamanu is of Kahuku [Nakuina 1992:51]

<i>Nihi mai ka Waikoloa</i>	The cold north wind edges along,
<i>Alo i ke kula o Kalena</i>	Passing over the plains of Kalena,
<i>Ke hui nei o Kalena</i>	Kalena grows chill
<i>He pana Kūkaniloko</i>	And famed Kūkaniloko throbs

[Manu 2002:41]

### *Nā Kahawai (Streams)*

Ki'iki'i Stream that bisects the project area is a permanent stream fed by Poamoho Stream and Kaukonahua Stream tributaries to the south and flows into Kaiaka Bay approximately 1.0 km to the north.

The Commission on Water Resource Management (and Rivers, Trails and Conservation Assistance Program (1990:25) evaluated Ki'iki'i Stream as having a "Moderate" Aquatic Resource ranking, a "Substantial" Riparian Resource ranking, and an "Outstanding" Recreational Resource ranking. The Cultural Resource ranking was unassigned due to unknown resources.

Paukauila Stream is another perennial stream that lies just 500 m to the northeast and was evaluated as having "Substantial" Riparian and Recreational Resource value, and Outstanding Aquatic Resource value with the Cultural Resource ranking similarly unassigned due to unknown resources.

### **1.3.2 Built Environment**

Waialua Beach Road is a major thoroughfare connecting the communities of northwest O'ahu to Kamehameha Highway, Hale'iwa and the north shore, and central O'ahu connecting to the south shore of O'ahu and Honolulu. Waialua town, located just southwest of the project area, is a former sugar mill community and is a major residential area of northwest O'ahu.

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## Section 2 Methods

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### 2.1 Field Methods

CSH completed the archaeological fieldwork component of this study under archaeological fieldwork permit number 24-30, issued by the State Historic Preservation Division (SHPD) pursuant to HAR §13-282. CSH archaeologist David W. Shideler, M.A., carried out the fieldwork on 26 December 2024.

The purpose of the field inspection was to document general conditions within the project area, document any potential historic properties, and to assess the potential for significant subsurface deposits. The field inspection involved approximately 0.85 person-day. An archaeologist's track log is provided in Figure 33 and a key to photographs from the fieldwork (showing their general location and orientation) is provided in Figure 34.

In general, the field inspection started at the northwest corner of the project area and proceeded along the north side of the Waialua Beach Road portion of the project area across Ki'iki'i Bridge to the northeast corner of the project area where Waialua Beach Road intersects Hale'iwa Road and then followed the south side of the Waialua Beach Road portion of the project area back to the west end. Forays were undertaken to examine southern extensions of the project area generally from west to east and an attempt was made to ascertain the conditions in the general location of the re-buried human cervical vertebrae identified as State Inventory of Historic Places (SIHP) # 50-80-04-07143.

### 2.2 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai'i, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Accounting and General Services. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona 'Aina database (Waihona 'Aina 2025).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.

## Section 3 Historical Background Research

The proposed project area lies within the *ahupua'a* (traditional Hawaiian land division) of Kamananui Ahupua'a in Waialua District. Pukui et al. (1974:80) translate the *ahupua'a* name as “the large branch,” presumably a reference to Ki'iki'i Stream (also known as Kaukonahua Stream) which joins Paukauila Stream at the head of Kaiaka Bay. “Kamananu”i is a common geographic name with Kamananui streams and valleys in Waimea, Moanalua, and in Hālawā Ahupua'a on O'ahu.

Kirch and Sahlins (1992:20) relate that Kaiaka Bay “is more commonly called Waialua Bay in historic accounts,” since it is within Kamananui, “the political center of the *moku* [district] of Waialua.”

Not to be confused with Kamananui Ahupua'a where the current project area is located, there is also a perennial tributary of the Waimea River named Kamananui in Waimea Ahupua'a, Waialua District.

### 3.1 Traditional Accounts

#### 3.1.1 Legends

##### Kaneaukai A Legend of Waialua

There are few mythological accounts specific to Kamananui, O'ahu (the Hawaiian Legends Index lists one). Thrum's (1907:252–253) account of “Kaneaukai A Legend of Waialua” makes a passing reference to Kamananui Stream in Waimea Ahupua'a. Two *kahuna* of Waimea are told by the god Kāneaukai to go to Mokulē'ia to fetch a certain image of the god. The *kahuna* balk at going “as it was a dark night and there were usually quicksands after a freshet in the Kamananui River.” It is agreed they will send their grandsons who were aided “when a meteor [*hōkū kaolele*] appeared and went before them, showing them how to escape the quicksands” (Thrum 1907b:252–253). The account has the grandsons of the *kahuna* traveling from Waimea to Mokulē'ia

The young men started for Mokuleia by way of Kaika [Kaiaka Bay in coastal Pa'ala'a Ahupua'a ?], near the place where salt was made a few years ago. Being strangers they were in doubt about the true way, when a meteor (*hoku kaolele*) appeared and went before them, showing them how to escape the quicksands. [...] [Thrum 1907b:253]

The context appears to associate the danger of a stream in freshet with quicksand with the Kamananui River in Kamananui (where the grandsons were strangers, rather than the Kamananui of Waimea, where they seemingly lived). McAllister (1933:132) presents a tradition associating the name “Kaneaukai” with his “Site 205. Akua stone” (see present Section 4.1.2 for his discussion).

##### The Mo'o of Waialua

Sterling and Summers' compendium *Sites of Oahu* presents a quite wide-ranging geographical tradition of *mo'o* (lizard/dragon deities) with reference to Laniwahine, a well-known *mo'o* goddess associated with the 'Uko'a fishpond in coastal Kawaihoa Ahupua'a. In their discussion of

Kamananui Ahupua'a traditions, they cite a reference to three lesser *mo'o* deities in a Hawaiian-language newspaper article:

*A o Alamuki, Kamooloa, a me Kemoo, he poe moo aku keia malolo o Lakiwahine [sic.], aia ko lakou ola i ke ahe a ka makani [Ka Nupepa Kuokoa 25 April 1885]*

Alamuki, Kamo'oloa and Kemo'o were lizards who served under Laniwahine. They lived where there were breezes. [Sterling and Summers 1978:106]

The Mintmire and Collins study (2018:7) asserts that land divisions of Kamananui of these names “are associated with these spirits.”

### 3.1.2 Sayings

Mary Kawena Pukui records one *'ōlelo no'eau* (poetical saying) referencing Kamananui:

Pili pono ka la i Kamananui.

The sun is very close to Kamananui.

A play on Ka-mana-nui (The-great-power). When the person in power becomes angry, everyone around him feels uncomfortable, as in the scorching, blistering sun. [Pukui 1983:291]

While the saying is primarily a commentary on social relations with the aristocracy, it suggests an association of Kamananui with hot, sunny days (again it should be noted there are many places named “Kamananui” and the geographic association is not clear.

### 3.1.3 Trails

Waialua District was connected to central O'ahu and to southern Wai'anae and 'Ewa and Kona districts by a main trail that roughly paralleled the northeast side of the Kaukonahua/Ki'iki'i Stream (Figure 9). It is understood this trail bifurcated approximately 1.8 km uphill with routes splitting off northwest toward Mokulē'ia and northeast toward Pa'ala'akai (modern day Hale'iwa). There was another trail close to the coast, *makai* (toward the sea) of the present project area. While the present project area was close to all three trails it was not adjacent to any of them; it seems likely travel on these trails was just passing through.

## 3.2 Early Historic Period

Waialua enters the historic record in 1794 when Ka-'eo-kū-lani recruited the “warriors of Waialua and Wai'anae” to make war on his nephew Kalanikūpule, then ruler of O'ahu (Kamakau 1992:168); by December 1794, Ka'eo had been killed and his forces were defeated. Kalanikūpule was deposed the following year when the invading Hawai'i Island forces of Kamehameha prevailed at the Battle of Nu'uano in April 1795. Apparently, the Waialua District was spared direct involvement in the battles associated with Kamehameha's conquest. However, Kamehameha's hegemony on O'ahu would have immediate consequences for the district—including Kamananui Ahupua'a—during the first decades of the nineteenth century.



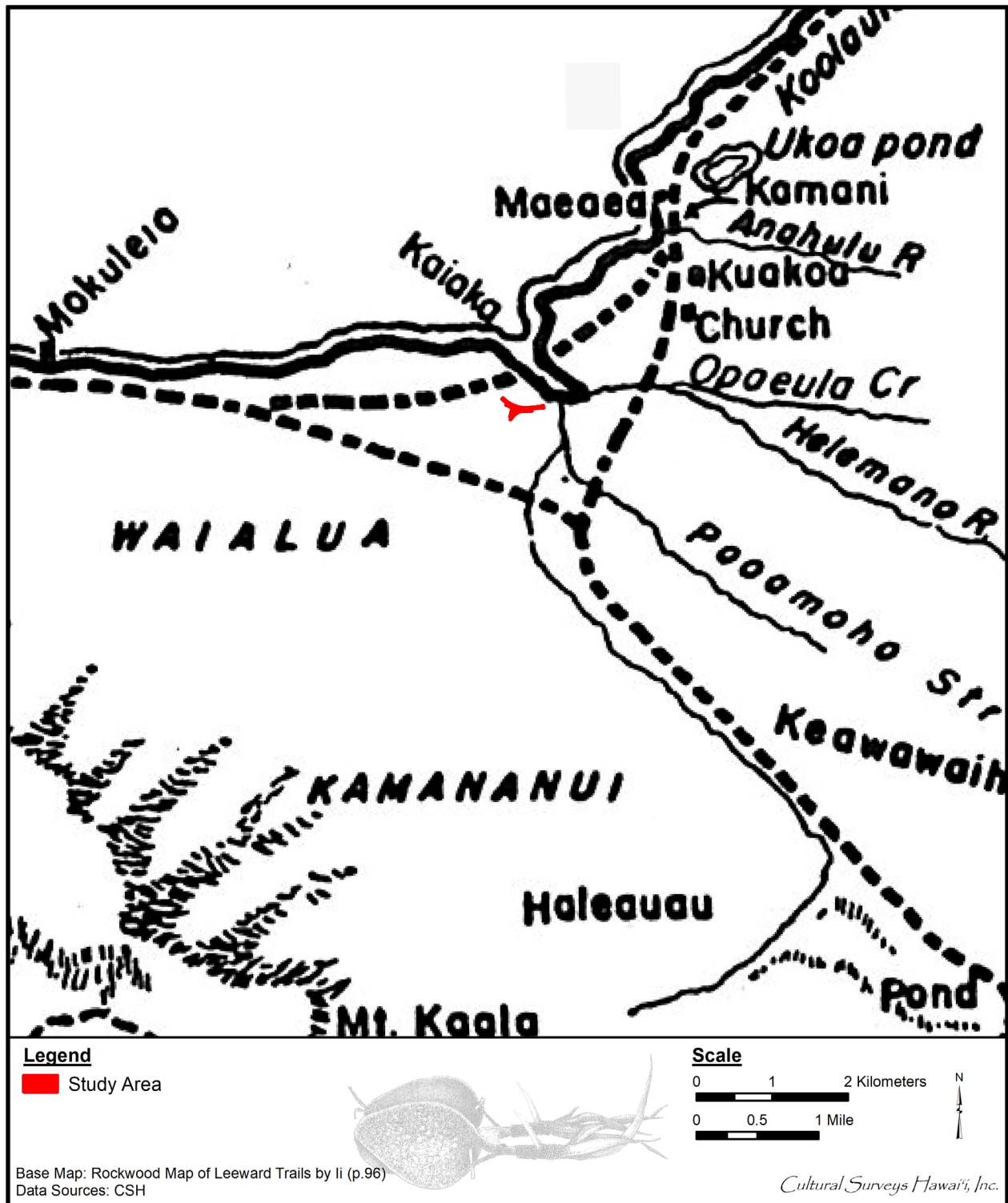


Figure 9. Portion of the Rockwood map of Leeward Trails of ca. 1810 (‘Īī 1959:96) showing the project area

### 3.3 Early to Mid-1800s

It has been suggested (Coulter 1931:18)) that the population of Waialua district in 1853 (and perhaps for centuries previous) was remarkably focused on the coastal areas we associate with the immediate vicinity of Waialua and Hale'iwa towns today (Figure 10).

In the early 1800s, sandalwood trade was on the rise. The Hawaiian Islands began exporting sandalwood to Asia shortly after 1800 and the commerce flourished until the supply dwindled in the mid-1830s. Trade in sandalwood was the strict monopoly of the *ali'i* (chiefly class) beginning with Kamehameha. At the height of the sandalwood boom, Kamehameha was buying foreign ships, including six vessels between 1816 and 1818, to transport his own wood to Asia. When Kamehameha bought the schooner *Columbia* in 1817, it was paid for with sandalwood from Kaua'i and from the districts of Waimea and Wai'anae on O'ahu (Kuykendall 1968:85–88).

After Kamehameha's death in 1819, Liholiho (Kamehameha II) allowed his chiefs to share in the trade, resulting in an unrestrained demand on stocks of the wood and upon the energies of the *maka'āinana* (commoners) who harvested the sandalwood. In October 1817, a Russian visitor on O'ahu noted, "There are now many fields left uncultivated, since the natives are obliged to be cutting sandalwood" (Barratt 1988:218).

"Traders records from Kamehameha's last years show several important *ali'i* trafficking in sandalwood on their own, including [...] Kalaimoku, Cox, Boki, Ka'ahumanu, and some others" (Kirch and Sahlins 1992:59). Among these *ali'i*, Ke'eumoku Cox was the Hawai'i Island chief who had been given control of Waialua by Kamehameha. Diaries and journals of the western entrepreneurs on O'ahu record the early nineteenth century sandalwood-based trade that intruded upon the established mores and customs of the Waialua population. Stephen Reynolds, a clerk for the Honolulu merchant William French, noted in his journal on 30 April 1824:

Very hot sun—many of the residents [of Honolulu] preparing to go to Wairua [Waialua], some for wood—some to buy hogs, some for pleasure—All the Kanakas of Wairua belonging to Cox who lately died, came up to day bringing cows, Pigs, Dogs, Fowls & other things, produce of the Country to give to Krymakoo [Kalaimoku, the Regent], Kahumana [Ka'ahumanu], & other principal chiefs—according to the custom of the country. [King 1989:27]

During the same decades that commercial ventures were forcing changes upon the Hawaiian landscape, western missionaries were gaining a foothold in the Islands. The American Board of Commissioners for Foreign Missions, headquartered in Boston, sent its first company of missionaries to the Hawaiian Islands in 1819, leaving Boston on October 23 aboard the brig *Thaddeus*.

Accounts by missionary visitors present some of the first documentation of the Kamananui landscape and inhabitants. By the 1820s, the Protestant missionaries had established close links with the *ali'i*. From July to August 1826, Ka'ahumanu and an entourage of up to 300 people conducted a proselytizing tour around O'ahu. The following excerpt provides Reverend Hiram Bingham's account of the proceedings at Waialua in 1826 which suggests the extent of the missionaries' inroads in the district:

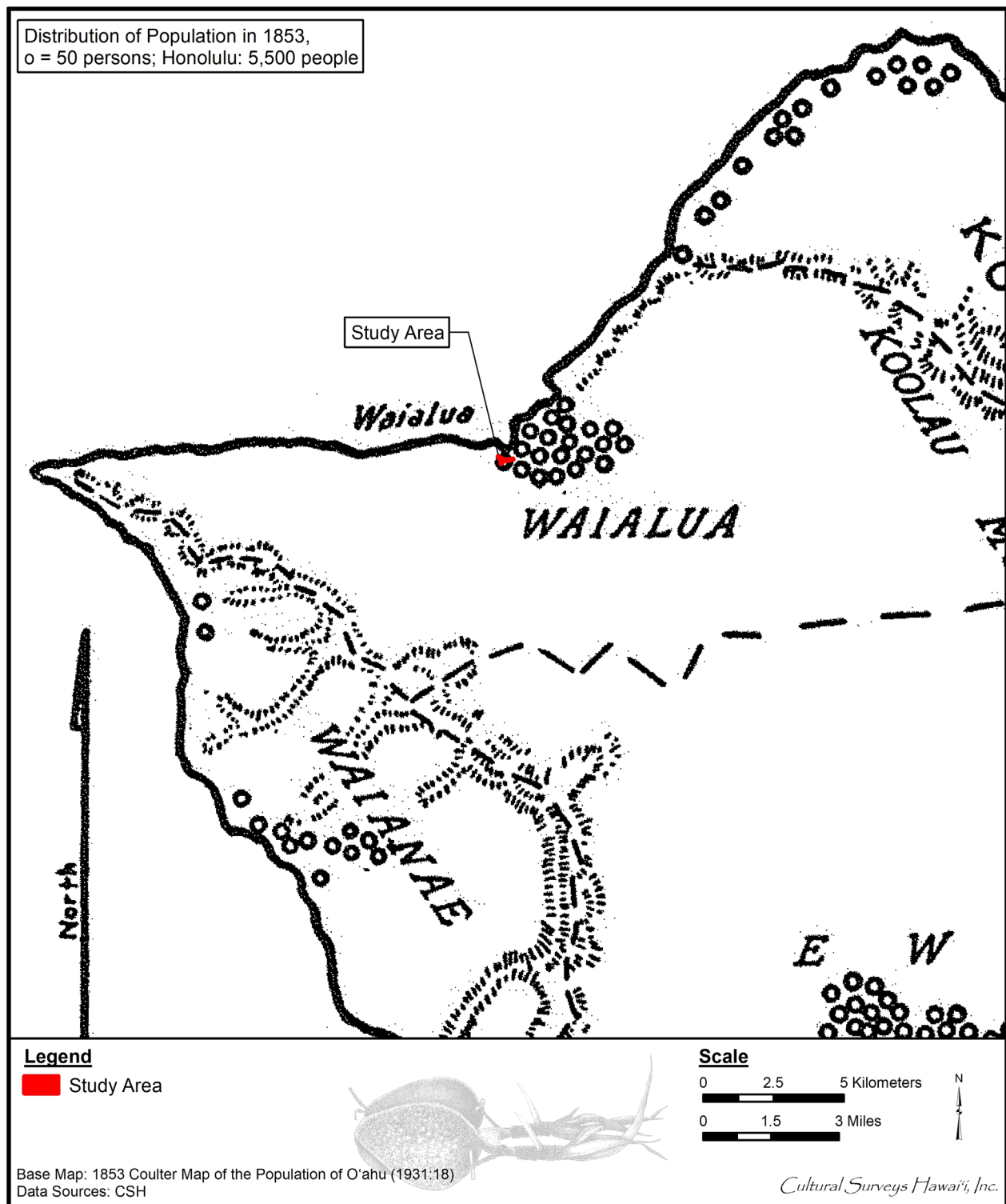


Figure 10. Portion of Coulter's (1931:18) reconstruction of the density and distribution of the population of O'ahu in 1853

A very large concourse of people assembled on the Lord's day, for public worship in the open air. To the listening throngs I endeavored to proclaim the great salvation After the Sabbath we examined and encouraged, and partially supplied with books, the incipient schools established there under the particular patronage of Lydia Namahana and Gideon Laanui, to whom the district belonged. There were found under Maiao and his assistant teachers, four hundred and ninety-five male and female pupils, and under Kaoo, one hundred and sixty-four, amounting together to six hundred and fifty-nine pupils, chiefly men and women. [Bingham 1847:295–296]

Lydia Pi'ia Namahana, sister of Ka'ahumanu, was involved in the Waialua sandalwood trade by 1826 and the following year, retained control of Kamananui and the Waialua District. Stephen Reynolds' journal entry of 24 October 1826 noted, "Convoy sailed for Wairua—to get 400 piculs of wood from Piia [Namahana]—Due from Cox's estate" (King 1989:155).

Namahana's husband, Gideon La'anui, had been born on Hawai'i Island and grew up in the train of Kamehameha. Elizabeth Pratt, La'anui's daughter (by his second wife, Teresa Owana), records that it was Kamehameha himself who arranged La'anui's marriage to Namahana:

Among the visitors to the royal court was Kekuwai-Piia [Namahana], who had just become a widow, coming as a guest of her sister, Queen Kaahumanu. Laanui was a boy growing to maturity. The king had not forgotten the great wish of his heart, coveting possession of Waimea and hoping to gain it, if not in battle, through a matrimonial alliance [...] [Now] he chose a new agent of his ambition by inviting Laanui to the court. The invitation was gladly accepted and the visit lasted for months. Kamehameha was loath to have Laanui depart while he was still slyly intriguing with Kaahumanu to negotiate a marriage between Piia and Laanui. Piia is described as being a person heavily built and not prepossessing in appearance like her sisters Kaahumanu and Kaheihimalie. When at last the proposition was put squarely to Laanui, that it was the united wish of the king and queen that the marriage should take place, for a moment he was dejected. To wed a woman very many years his senior was not the desire of his heart. Yet realizing that it might be perilous to go contrary to the express desire of the powerful monarch he quietly consented 'to take the bitter pill.' [Pratt 1920:46]

La'anui's own words (given in testimony to the mid-nineteenth century Land Commission) reveal how he and his wife came to reside at Waialua and tell of his land interests in Kamananui:

My wife Kuaipiia [Lydia Namahana Kekuapi'ia] is the foundation [*kumu*] of my claim here at Waialua, and I have truly become a *kamaaina* here, like the native children of the place [*a lilo maoli i kamaaina no o nei, me ke keiki papa la*]. After I had been living at Waialua for a little while with Kekuapiia, the *ili* of Ukoa became hers—that is at Kamananui—along with Kalopa [Kalaopa], the two of them. Kaahumanu asked Keeaumoku [Cox] for Lokoea and he consented it be given to Piia and she gave me [*a haawi a Piia ia 'u*] Ukoa, Lokoea and Kalopa in [*the ahupua'a* of] Kamananui. When Keeaumoku died in 1824, Ka'ahumanu gave Piia Waialua, from one point to the other, just for her support [*'food', kona ai io nae*], and Kawailoa from the sea inland to the mountain and one side to the other,

excepting the *kus* [*‘ili kūpono*]. Piia then said to me: Your land is Kawaihoa, from upland to the sea and one side to the other, I retain no *ku* within it; I give it to you, together with the two *ili* at Paalaa and the six *ili* at Kamananui. Ukoa and Lokoea are to be joined with the *ahupua‘a* of Kawaihoa. Thus Piia spoke to me. [Kirch and Sahlins 1992:95]

La‘anui was living at Kawaihoa, adjacent to Kamananui, in 1832 (Namahana had died in 1829).

The Reverend John S. Emerson and his wife Ursula Sophia Newell Emerson arrived with the Fifth Company of American Board of Commissioners of Foreign Missions Sandwich Islands Missionaries aboard the whaleship *Averick* in May 1832 and was stationed in Waialua from 1832-1842, and again from 1846-1864, residing in Waialua until his death in 1867 (Hawaiian Mission Children’s Society 1969:9, 92).

When the Rev. John S. Emerson (1800–1867) and his wife arrived at Waialua Bay to establish a mission station in the Waialua district. Emerson reported in a letter:

The wind was against us as we entered the harbor at Waialua, and we were obliged to ‘beat in.’ As soon as we approached the land, La‘anui, our chief, came alongside in a canoe to welcome us, presenting us with a good watermelon, of which we ate freely and were at once relieved of our seasickness. [Emerson 1928:55]

Emerson gave the name “Haleiwa” (home of the frigate bird) to their settlement. Emerson’s son, Oliver Pomeroy Emerson, recounts an episode revealing the authority La‘anui possessed within Waialua:

The new [meeting] house [at Waialua] was opened for the first time for dedication and public worship on September 25th, 1833, and Dr. Judd, Mr. Bingham and Mr. Brinsmade, a merchant, came from Honolulu for the occasion. When they got to the meeting with my father, they found an immense crowd of natives filling every part of the house and others crowding around all the windows and doors, utterly unable to enter. ‘Truly the spirit of God is here working on the hearts of this people, who are hungering for instruction,’ thought my father. Dr. Judd, who had been in the country four years longer than he, began to ask questions, and found that La‘anui had issued positive commands that everyone in the entire district of Waialua should attend this service under threat of severe penalty [...] When La‘anui had filled the meeting-house with the crowd of people standing, he ordered them to sit down on the floor, packed together as close as possible, but a great many were still compelled to stand outside. After the services were over, Dr. Judd and my father kindly explained to La‘anui that he should not force the people to attend church in that way [...] [Emerson 1928:88–89]

Protestant missionaries throughout the Hawaiian Islands began census taking in 1831, providing the earliest documentation of the size of the native population after the first decades of Western Contact. During the first census of O‘ahu Island in 1831-1832, a total population of 2,640 was recorded in the Waialua District, comprising only 8.8% of the entire island population of 29,745 (Schmitt 1977:12). By the census of 1835-1836, the Waialua population had dropped to 2,415 comprising 8.6% of the O‘ahu Island population of 27,798 (Schmitt 1977:38). These early censuses do not record the specific Kamananui Ahupua‘a population figures.

By the time Protestant missionaries were establishing their presence in Waialua in the 1830s, the sandalwood trade that had driven commerce in the Hawaiian Islands had collapsed. However, new enterprises began emerging to fill the void and activity at Waialua continued apace. In October 1819, two whaling ships had anchored in the Hawaiian Islands. During the next decades, other whaling ships followed, as the Islands became a victual and layover base in the mid-Pacific. Supplies of beef, fresh and salted, and produce were in demand; trade in hide and tallow was also developing. As had happened during the years of the sandalwood trade, authority to commandeer valued goods from the commoners of Waialua was vested in the chiefs.

The variety as well as amount of things being appropriated from Waialua by the ruling chiefs is impressive. The [letters of Gideon La'anui] speak of ocean fish taken in sweeps as well as great quantities of fish shipped from the old royal ponds of 'Uko'a and Lokoea, of dry cooked taro (*pai'ai*) as well as poi, of sweet potato, breadfruit, shrimp, goats and pigs, timbers of different kinds, chickens, oranges and lemons—and often cash money. [Kirch and Sahlins 1992:145]

Reverend Emerson was particularly interested in teaching practical knowledge of agricultural methods and is understood as having cultivated the first sugarcane in Waialua for western sugar and molasses production as early as 1836 (Condé and Best 1973:340). He constructed a small sugar mill that also produced molasses.

Times were difficult on the plantation of that day and the Reverend Emerson's guests complained of the monotony of the diet which consisted mostly of 'pai'ai' (hard poi), and molasses. Nevertheless both the *Friend* and the *Sandwich Islands Mirror & Gazette*, commented on the plantation. The *Friend* reported, 'Mr. Emerson made his own molasses, grinding a few bundles of cane in a little wooden mill turned by oxen, and boiling down the juice in an old whaler trypot.' The *Mirror*, in 1840 remarked that Emerson's mill was 'operated by horses,' and Emerson 'makes sugar and molasses for the natives in equal shares.' [Condé and Best 1973:340]

During subsequent decades, other missionaries, including Warren and Levi Chamberlain, and western entrepreneurs, including Halstead and Gordon continued expanding sugar cultivation in the district although still on a small scale (Condé and Best 1973:340).

### 3.4 Māhele of 1848

In 1845, the Board of Commissioners to Quiet Land Titles, also called the Land Commission, was established "for the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property" (Chinen 1958:8). This led to the Māhele, the division of lands among the King of Hawaii, the *ali'i*, and the common people, which introduced the concept of private property into the Hawaiian society. In 1848, Kamehameha III divided the land into four categories: Crown Lands reserved for himself and the royal house; Government Lands set aside to generate revenue for the government; Konohiki Lands claimed by *ali'i* and *konohiki* (supervisors); and Kuleana Lands, habitation and agricultural plots claimed by the common people (Chinen 1958:8–15). Kamananui Ahupua'a was retained by the Kingdom as "government lands."

The Waihona 'Aina Māhele website shows 19 land claims filed in Kamananui (summarized in Table 1) but none of them were awarded. This appears to have been the pattern in all the Waialua District lands other than in the *ahupua'a* of Pa'ala'a and Kawaihoa. Apparently, the missionary in residence, Reverend John S. Emerson, concluded it was in the interest of the Native Hawaiians to buy land outright as grants rather than to complete the Land Commission Award (LCA) application process. "He himself wrote the deeds and had them recorded, issued the titles, and collected for the Government the amounts due [...]" (Emerson 1928:141). Reverend John Emerson would assert with some pride, "I have accepted an appointment to sell to the natives, at my discretion, about 10,000 acres of land in the district of Waialua" and further that "I have plotted out about 8,000 acres, mostly grazing land, into about 300 lots, and nearly all are bargained for by natives" (Emerson 1928:142). While this system may have been a service to his parish, it makes it more difficult to reconstruct traditional Hawaiian patterns of land use at Kamananui from the historic

Table 1. Land claims at Kamananui Ahupua'a (none of which was seemingly awarded)

LCA #	Claimant	Ahupua'a	'Ili
02683	Imaui	Kamananui	Paukauila, Puaae
02693	Wanahea	Kamananui	Kamahu
02719	Polu	Kamananui?	Manuaula
02742	Puu	Kamananui	Nonokihewa
02797	Kahakinaawa	Kamananui	—
02805	Keoa	Kamananui	—
02810	Kiekie	Kamananui	Paukauila
02899	Kioi	Kamananui	Kumupali
02902	Kauakahi	Kamananui	—
02908	Kuemanu	Kamananui	Muliwai
04313	Kuhi	Kamananui	—
04314	Kaaiohelohua	Kamananui	—
04315	Kahinapoo	Kamananui	—
04317	Keoahu	Kamananui	Keoneula
07342	Kuokoa, L.	Waialua, Kawaihoa, Kamananui	Puaena, Lahuimoho, Honohikilua, Kalaopa, Kupalu, Kawaipuolo, Anahulu, Kalehunui, Kamahu, Lokoea, Kealia
07400	Koa	Kamananui	Paukauila
07405	Kahaimoana	Kamananui	—
07415	Kaelehiwa	Kamananui	—
07416	Kaamoku	Kamananui	—

record. All we know about the present project area is that by 1900 three former land grants including Land Grant 262 to Kupahu and Land Grant 263 to Ile (west portion of the present project area), Land Grant 721:2 to Chamberlain (central portion of the present project area), and Land Grant 373:2 also to Kupahu and 580:3 to Kuke (east portion of the present project area) had been awarded as shown on the 1901 W.A. Wall map of the Waialua Agricultural Company Ltd. lands (see Figure 12).

The nature of the Land Grants in the immediate project vicinity (as depicted on the 1889 Emerson map [Figure 11] and the 1901 Wall map [Figure 12]) included relatively large northeast/southwest-oriented rectangles with parallel sides in the western portion of the present project and smaller west/east-oriented parcels with parallel sides on the east side of Ki'iki'i Stream. This form is not at all typical for traditional Hawaiian land holdings that are more commonly in the shape of irregular polygons (as present just further to the east, see the 1901 Wall map; Figure 12). This suggests a dryland/animal grazing and/or small sugarcane cultivation pattern of land use west of Ki'iki'i Stream and wetland cultivation (as of taro) east of the stream.

### 3.5 Mid- to Late 1800s

#### 3.5.1 General Developments

In 1850, the first road from Honolulu to Waialua was built. Economic changes also impacted life within Waialua District at this time.

Although the whaling industry in the Pacific Ocean reached its peak in 1859, prices for whale oil collapsed five years later. This price decline during the 1860s led to far fewer whaling ships taking long layovers in the Islands. The paucity of whaling ships caused a decline in demand for provisions that adversely impacted the Hawaiian economy, which had been dependent on the heightened demands for goods and services by the whalers. Many residents of districts like Waialua, who had been dependent on cultivating crops for trade, migrated to Honolulu and other parts of O'ahu. Twenty-two percent of Hawai'i's population resided in Honolulu by 1860 (Juvik and Juvik 1998:174).

The diaries of Robert C. Perkins, an entomologist and ornithologist who collected specimens in the Waialua District in 1892-1893, reveal aspects of life in the area near the end of the nineteenth century:

The end of 1892 and early months of 1893 were not very favorable for collecting, the weather being generally wet in the mountains and there were three big spates of the mountain streams, these did very much damage to the system of flumes belonging to the Chinese of the district on more than one occasion during the winter months. [Perkins 1892-1893, n.p.]

An 1873 Boundary Commission report for the lands of Pa'ala'a and Kawaihoa cites a Mr. Kea (born ca. 1800) who describes the *makai* boundary of Pa'ala'a and Kamananui:

Palaa [sic] adjoins the sea beach. Kamananui adjoins it on the beach at North west corner of this land, at a place called Kaiaka, belonging to Kamananui, runs along by the salt lands of Kamananui, along Anderson's land (which is patented) to the river, Laukiha. [Kawaihoa & Paalaa Ahupuaa, District of Waialua, Island of Oahu, Boundary Commission, Oahu, Volume 1, No. 1:140 September 1873]



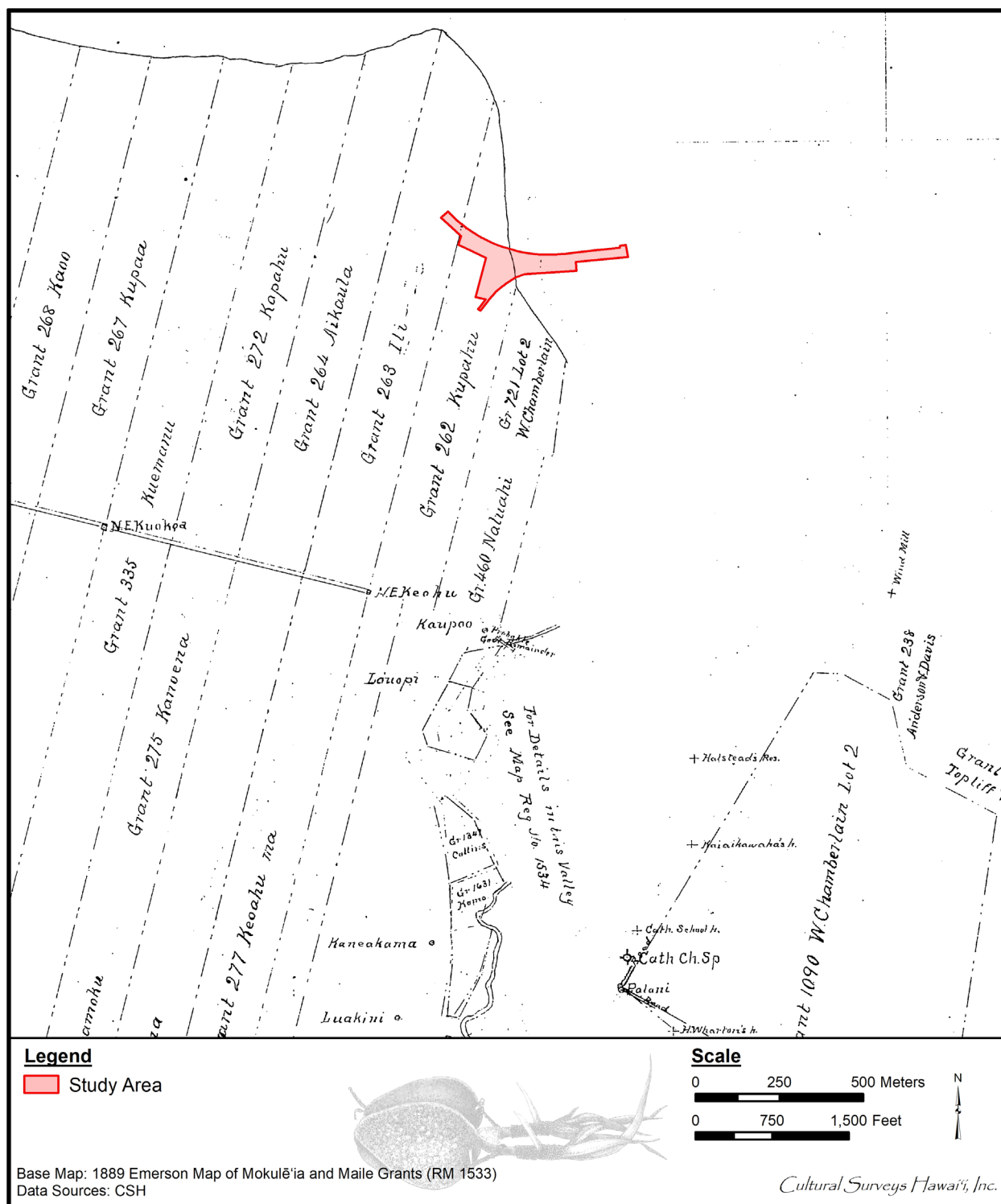


Figure 11. Portion of the 1889 Emerson map of Mokuleia and Maile Grants (RM 1533) showing the relationship to the project area

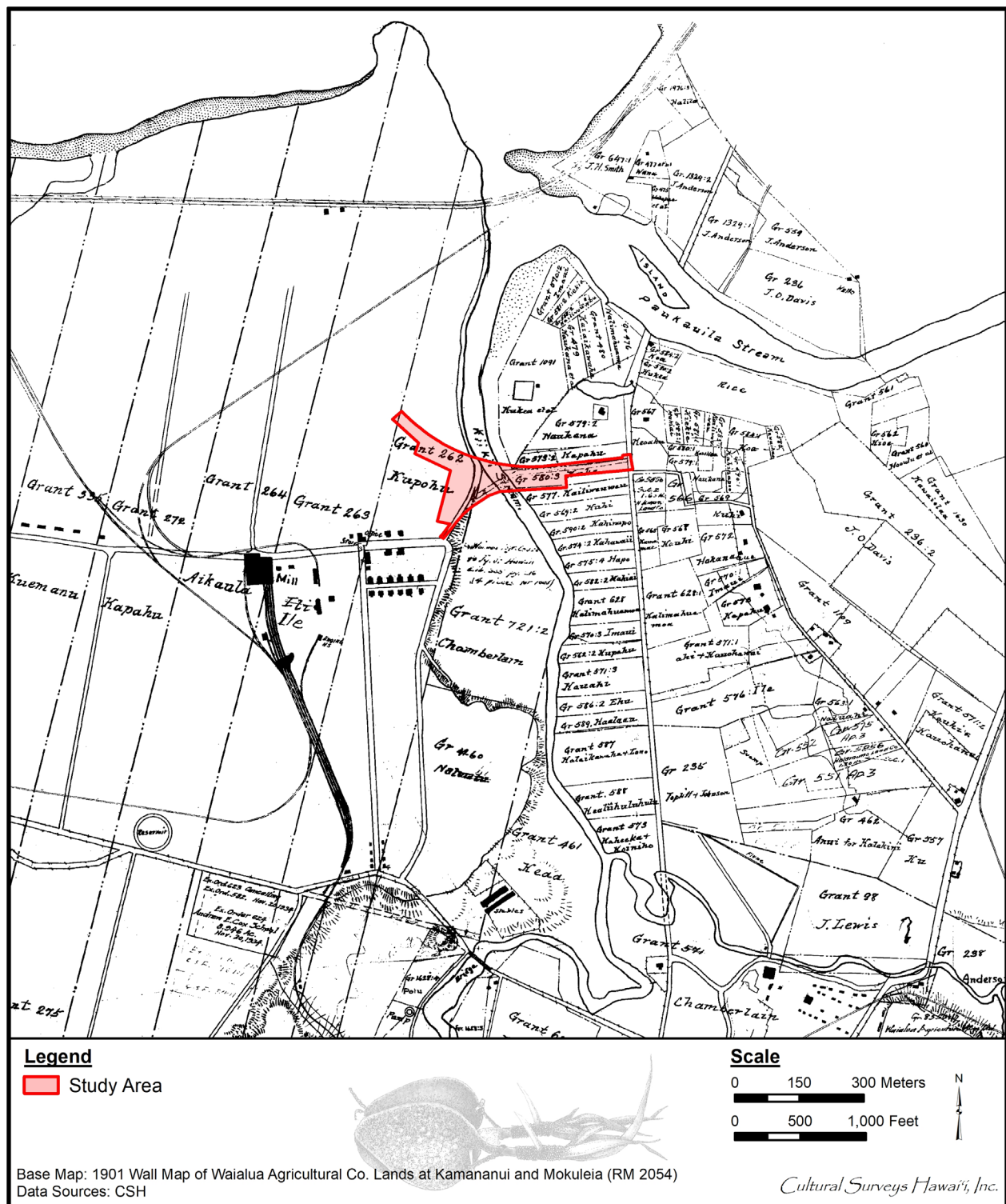


Figure 12. Portion of 1901 W.A. Wall map of the Waialua Agricultural Company Lands (RM 2054) at Kamananui and Mokuleia showing the project area

The reference to “the salt lands of Kamananui” suggests salt production in coastal Kamananui (that may have extended into the pre-Contact past) but this is uncertain.

We also learn of a fishpond and taro patches in, or adjacent to, Kamananui at the coast:

Palaa [*sic*] lies on the beach, commencing at the right of a big rock or ledge, runs South westerly to a sand beach called Kaiaka, following up Kamananui to John Anderson's land, defined by fence; then J.O. Davis to the river (See Royal Patents of Anderson & Davis) to river, Laukiha, crossing it to fish pond bank called Kealia, following round taro patches, and along boundary of Robinson's land (Patent ?) up mauka as far as this land extends. [Kawailoa & Paalaa Ahupuaa, District of Waialua, Island of Oahu, Boundary Commission, Oahu, Volume 1, No. 1:140, September 1873]

In another reference, we learn that prickly pear cactus was common and was used for land demarcation:

John F. Anderson, sworn, The boundary between Palaa [*sic*] and Kamananui & Paukauila is very well defined from ancient times. I was with Mr. Emerson, when he made the survey, assisted in carrying the chain. He had the assistance of a large number of kamaainas, It was some twenty years ago, perhaps in 1852, early in the business of surveying lands in the District. The line is now defined as then laid by prickly pear fences, along near the whole line. [Kawailoa & Paalaa Ahupuaa, District of Waialua, Island of Oahu, Boundary Commission, Oahu, Volume 1, No. 1:140, September 1873]

### 3.5.2 Rice Cultivation

The “Chinese of the district” mentioned above were rice growers who had settled in the area after fulfilling their sugar plantation contracts. In 1852, the first Chinese contract laborers arrived in the Islands. Contracts were for five years, and pay was \$3 a month plus room and board. Upon completion of their contracts, a number of the immigrants remained in the Islands, many of whom became merchants or rice farmers. As was occurring in other locales in the 1880s, groups of Chinese began leasing and buying (from the Hawaiians of Waialua) former taro lands for conversion to rice farming. The taro lands' availability throughout Hawai'i in the late 1800s reflected the declining demand for taro as the Native Hawaiian population diminished.

The Hawaiian Islands were well positioned for rice cultivation. A market for rice in California developed as increasing numbers of Chinese laborers immigrated there beginning in the mid-nineteenth century. Similarly, as Chinese immigration to the Islands also accelerated, a domestic market opened.

By 1876 there was still a considerable amount of former taro land available for rice farming. The great demand for rice land brought disused taro patches into requisition—especially because water rights attached to them [...]

As the demand for rice continued, it became profitable to bring into use land hitherto unused. The land most easily rendered fit for rice cultivation was swamp or marsh land of which there was a large amount in the islands [...] At Waialua on

Oahu, about three hundred acres of swamp land were reclaimed for rice farming.  
[Coulter and Chun 1937:11]

The immigrant Chinese may account for the rise in the Waialua District population during the last quarter of the nineteenth century; Government censuses record populations of 939 in 1878, 1,265 in 1884 and 1,286 in 1890 (Schmitt 1977:13). In 1892, 180 acres of rice were under cultivation in the Waialua District; these rice fields were in the *ahupua'a* of Mokulē'ia, Kamananui, and Kawaihoa (Coulter and Chun 1937:12, 21).

### 3.5.3 The OR&L

In addition to agricultural changes, western entrepreneurial interests would also alter the Kamananui landscape. The Oahu Railway and Land (OR&L) Company, organized by Benjamin Dillingham in 1889, connected outlying areas of O'ahu to Honolulu. During the last decade of the nineteenth century, the railroad extended from Honolulu to Pearl City in 1890, to Waianae in 1895, to Waialua in 1898, and to Kahuku in 1899 (Kuykendall 1967:100).

In 1899, Dillingham recognized the economic advantage of providing additional services for the increasing numbers of visitors to the north shore of O'ahu. The two-story Hale'iwa Hotel at Waialua Bay in neighboring Pa'ala'a Ahupua'a had its grand opening in 1899. The hotel was built at a cost of more than \$50,000 on land leased from the Bernice Pauahi Bishop Estate. The hotel's name—Hale'iwa—eventually became synonymous with the area above the bay and the "town" which comprised the hotel, a church, and a courthouse. The development of a railroad system also spurred the development of large-scale sugar farming in Waialua.

### 3.5.4 Sugar at Waialua in the Nineteenth Century

In 1874, Halsted and Gordon purchased the Chamberlain plantation. Following Gordon's death in 1888, Robert Halsted managed the plantation with his two sons, Edgar and Frank, and renamed the plantation to Halsted Brothers (Dorrance and Morgan 2000:42).

By 1898, Castle & Cooke, one of Hawai'i's Big Five trading and sugar industry management companies, purchased and acquired the Halsted Brothers plantation and the Waialua Agricultural Company, Ltd., was born (Dorrance and Morgan 2000:42 and 142). William W. Goodale, after whom a major avenue in the project vicinity is named, with previous experience on Hawai'i Island and Maui plantations, was the first manager and would manage the Waialua Agricultural Company for nearly 25 years (Condé and Best 1973:340). The first crop produced approximately 741 tons of sugar (Dorrance and Morgan 2000:47).

A description of the original state of the lands within the plantation at its inception is provided by William Warren Goodale, the Waialua Agriculture Company's plantation manager:

At the time Waialua Agricultural Co., Ltd., was organized in October, 1898, it took over the old Halstead Plantation with about 600 acres of cane, certain leases of large tracts of unimproved lands covered with lantana and stones, several hundred acres of rice and ranch land, a small mill, one five million gallon pumping station, no reservoirs or railroads, one small set of steam plows and other equipment of a small plantation. [Clark 2007:57]

Benjamin Dillingham, pursuing new business for his railroad, persuaded Castle & Cooke to lease Waialua land already under cultivation of sugar. In 1898, Castle & Cooke organized the

Waialua Agricultural Company and soon began a program of land purchases and leases to increase the plantation's capacity.

### 3.6 English Language Newspaper references to “Kamananui” (1852-1905)

Ninety-two English language newspaper articles regarding “Kamananui” were examined from eight newspapers (*The Polynesian*, *Pacific Commercial Advertiser*, *Hawaiian Gazette*, *Saturday Press*, *Daily Bulletin*, *The Hawaiian Star*, *The Independent*, and *Evening Bulletin*) spanning the timeframe of 1852 through the end of 1905 (in the twentieth century the number of articles per year rapidly increased) to develop information on social change and particularly road and bridge construction. All of the nineteenth century “Kamananui” references were to Kamananui of Waialua (but seven 1905 notices of intention to foreclose pertained to “Huea, Kamananui, Kalihi”).

What was particularly striking was the very large percentage of newspaper references (74 of 85 references or 87%) that were to land transactions at Kamananui, Waialua. This suggests the rather unique system of lands of Kamananui having been purchased as grants rather than claimed as Land Commission Awards led to a heightened, early “commodification” of Hawaiian lands. This may have led to an increased rate of loss of Hawaiian lands from Hawaiian hands but could also be interpreted as Hawaiians gaining at least some value for their lands, and a relatively large percentage of land transactions were among people with Hawaiian names (albeit these land transactions were relatively modest in cost). There are few references to land use, exceptions being an offer to lease “300 Acres Splendid Grazing Land at Kamaile, Kamananui, Waialua” (*The Hawaiian Gazette*, 22 November 1876) and the offer of sale of “land in Kamananui, Waialua incl. 97 acres of grazing land and 70 acres of Kalo land” (*Pacific Commercial Advertiser* 15 January 1881).

Three articles in *The Polynesian* on 12 June 1852 concern land that was requested at Kamananui by Hawaiian Catholics of Kamananui. This suggests a significant Hawaiian Catholic presence at Kamananui at a relatively early date. In a related story, the priest felt that Catholic schools were not being treated fairly when a land grant was denied, and he refused to pay for surveying or a land cost of 25 cents per acre (which even at the time was a quite modest cost). The resolution of the dispute over lands for a Catholic school and church at Kamananui is not stated.

Commercial activity at Kamananui is reflected in six references to a retail license to “Ahuna” of Kamananui expiring in 1879, 1880, and 1881. The nature of this licensed retail is not stated.

Our first newspaper references to the Waialua Agricultural Company are land transactions of June 1899. There is reference to plantation development of ditch capacity at Kamananui (*Pacific Commercial Advertiser*, 23 February 1903) but this development was still in a surveying stage.

Our first references to the construction of the OR&L railroad at Kamananui are in 1902 with OR&L land purchases. The fact that the Waialua Agricultural Company Ltd sold a 40-foot (ft) easement to the OR&L at Kamananui for the consideration of \$1 (*Pacific Commercial Advertiser* 28 January 1903) suggests the establishment of the railroad link to Honolulu was perceived as very much in the plantation's interests.

Two references to bridge development were identified in 1903 but both were rather vague. There is a reference to “Repairing and building of bridges from Walikanahale to Kamananui and from Kamooloa to Waialua sugar mill, \$27,000” (*Evening Bulletin*, 1903, 24 Feb) and “Mr. Pali’s resolution for \$30,000 for repairing and building bridges from Walianahale to Kamananui [...] laid on the table” *Pacific Commercial Advertiser* 20 March 1903). It is not clear that funds were dedicated to building (or repairing) the former bridge in the present project area that was operative through 1951 (see Figure 22, this former bridge was south of the present 1952 bridge).

The indicated pattern of life is that Kamananui was a very traditionally Hawaiian place until rapid transformation by the Waialua Agricultural Compsny (from 1899) and the OR&L (from 1902). Clearly livestock grazing was a major enterprise.

### 3.7 1900s and Contemporary Land Use

While in 1896 there were only 1,349 persons recorded in Waialua District, subsequent censuses recorded 3,285 persons in 1900; 6,083 in 1910; 7,641 in 1920; and 8,129 in 1930 (Schmitt 1977:13–14). Population growth was largely due to the Waialua Agricultural Company. The center of operations was the mill located approximately 350 m southwest of the present project area. A mill village quickly developed to the west, and particularly to the east of the mill (toward the project area).

Rice cultivation began to decline throughout the early to mid-1900s. Into the twentieth century, rice continued to be cultivated in well-watered areas of Kamananui, the Waialua District, and other areas within the Hawaiian Islands. However,

Rice farming went into a steady decline for several decades before phasing out almost completely just before the beginning of World War II. In 1921, Hawai‘i exported seven hundred thousand pounds of rice as compared to the ten million pounds produced at its height in 1890. In 1929 there were only twenty-five hundred acres of rice grown in Hawai‘i by less than seven hundred laborers, nearly five thousand laborers less than in 1903 when there were 5,643 rice planters. [Chong 1998:53]

The Waialua Agricultural Company developed very quickly.

Surveying for the railroad was commenced in December of 1898, since which time [by 30 September 1899] 22.3 miles of main and branch lines, side tracks and coal switches have been surveyed. 10.9 miles of track have been laid and are now in use. 11.4 miles are now being graded, and are nearly completed. Part of the track has been laid and is now in use for construction trains and light work. There are rails enough for four miles of track now on hand, and there are five more miles on the way from New York. [Condé and Best 1973:340]

By the end of the year 1900, there were 24 miles of permanent and ten miles of portable track (Condé and Best 1973:340).

The 1901 W.A. Wall map (see Figure 12) shows the early development of the mill, adjacent mill village, and core complex of tracks. The major alignment of track east of the mill crossed Ki‘iki‘i Stream at the coast just south of Kaiaka Bay (near the OR&L crossing at the confluence of Ki‘iki‘i Stream with Paukauila Stream). This 1901 map does, however, depict the old bridge

(south of the present bridge) within the project area proceeding east on the present alignment of Waialua Beach Road in the project area, but connecting with a road on the west bank of Ki'iki'i Stream, extending to the west through the southern portion of project area. This alignment appears to have been the major west/east road through to 1951 (see Figure 22) The 1901 map specifically notes "Rice" cultivation 150 m northeast of the east end of the project area. The modern Hale'iwa Road alignment at the east end of the project area is prominent. Since this north/south road forms a boundary of many grants to the west and to the east it had likely been in place for decades.

The 1906 Donn map (Figure 13) shows a large portion of coastal Kamananui (including the present project area) in overlapping land use designations; as within the lands of the Waialua Agricultural Company sugar plantation (bounded in red) and within "Wet Lands (rice and taro)" (indicated in blue hatching). Both land uses were likely present at the time in this area with conversion to sugarcane advancing rapidly. The quilt of nineteenth century grants is prominent.

The 1913 U.S. Army map (Figure 14) has sugarcane symbols throughout the project area (and most of the coastal lands of adjacent Waialua). The old road/bridge alignment along the south edge of the project area is clear. Houses are depicted along the west side of the Hale'iwa Road alignment at the east end of the project area.

The 1919 U.S. Army War Department map (Figure 15) shows much the same scene as the 1913 map with an increase in housing west of the Waialua mill. The old road/bridge alignment along the south edge of the project area is clear.

The 1925 Evans map (Figure 16) continues to show the outline of former land grants west of the project area but most of the former numbers and owner's names are lost, suggesting these properties have been subsumed by the sugar company. The old road/bridge alignment along the south edge of the project area is clear.

The 1929 USGS map (Figure 17) shows a patchwork of wetland fields east and southeast of the project area but no such fields are depicted along Ki'iki'i Stream (labeled here with the alternate name "Kaukonahua"). The old road/bridge alignment along the south edge of the project area is clear.

A 1935 Land Court Application 1089 map (Figure 18) has the annotation "Government Road" for the old road arcing along the south portion of the project area (and similarly labeled "Govt Road") as it crosses the "Kiki" Stream bridge into the east portion of the project area.

The 1935 U.S. Army War Department map (Figure 19) and the virtually identical 1943 U.S. Army War Department map (Figure 20) still show a patchwork of wetland fields east and southeast of the project area but no such fields are depicted along Ki'iki'i Stream (labeled here with the alternate name "Kaukonahua"). The old road/bridge alignment along the south edge of the project area is clear and is indicated as paved. A house is indicated in the project area on the east side of the stream south of the old road. A major complex of structures (assumed to be associated with the Waialua Sugar Company) is indicated just north of the east end of the project area.



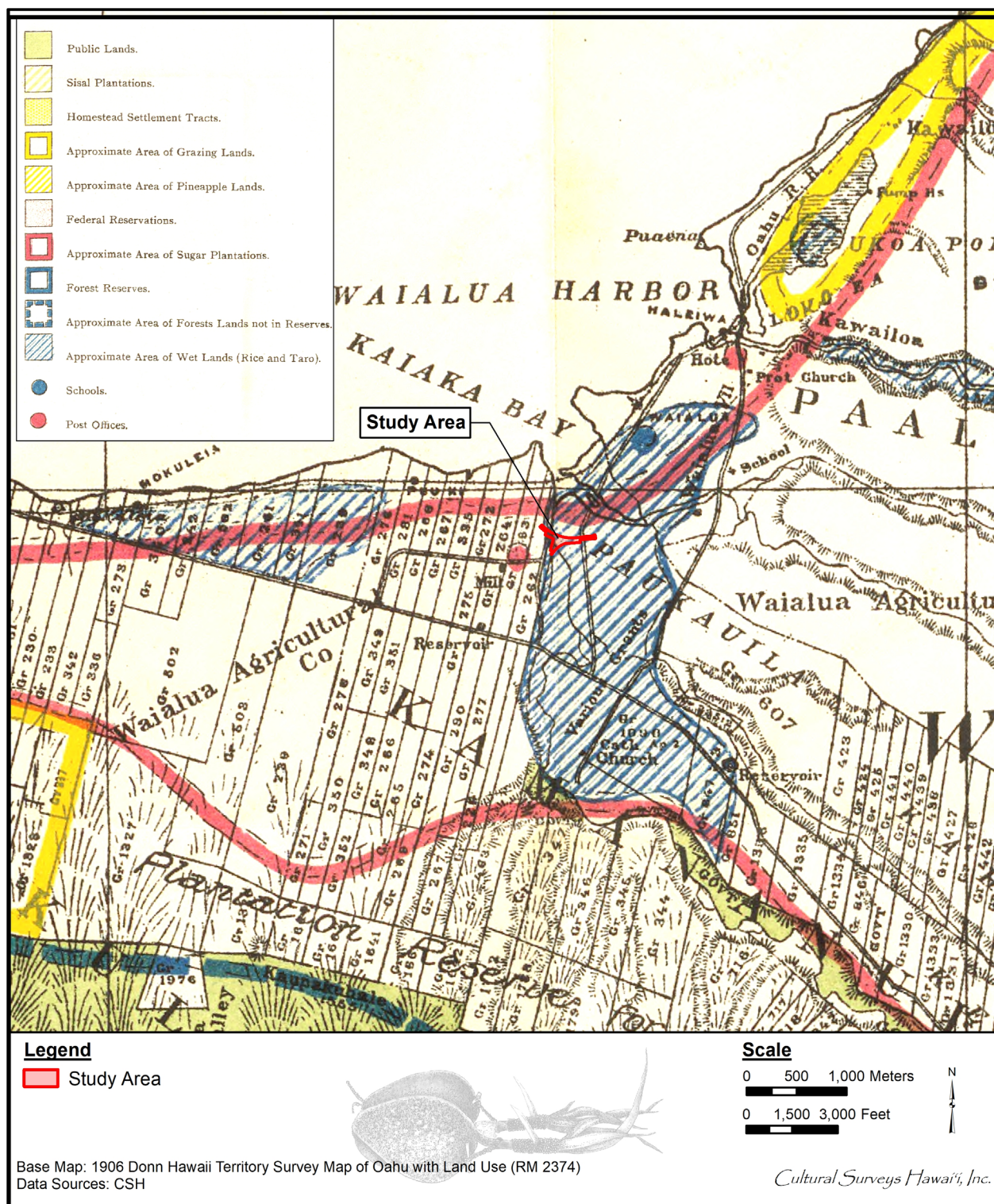


Figure 13. Portion of the 1906 Donn Hawaii Territory Survey map of O'ahu with land use (RM 2374) showing the project area



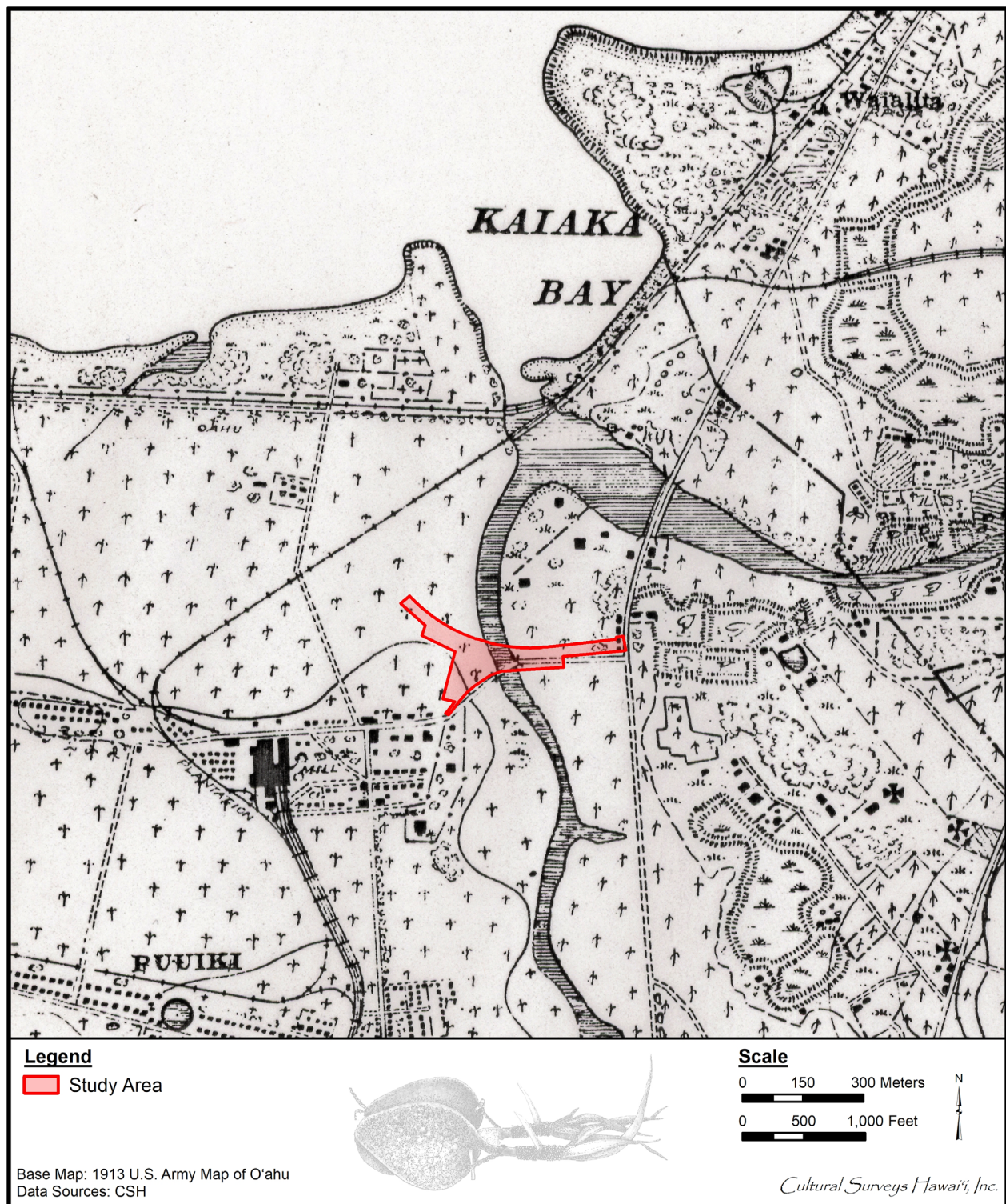


Figure 14. Portion of a 1913 U.S. Army map of O'ahu showing project area as largely surrounded by sugarcane fields; the former Government road is shown along the south side of the project area



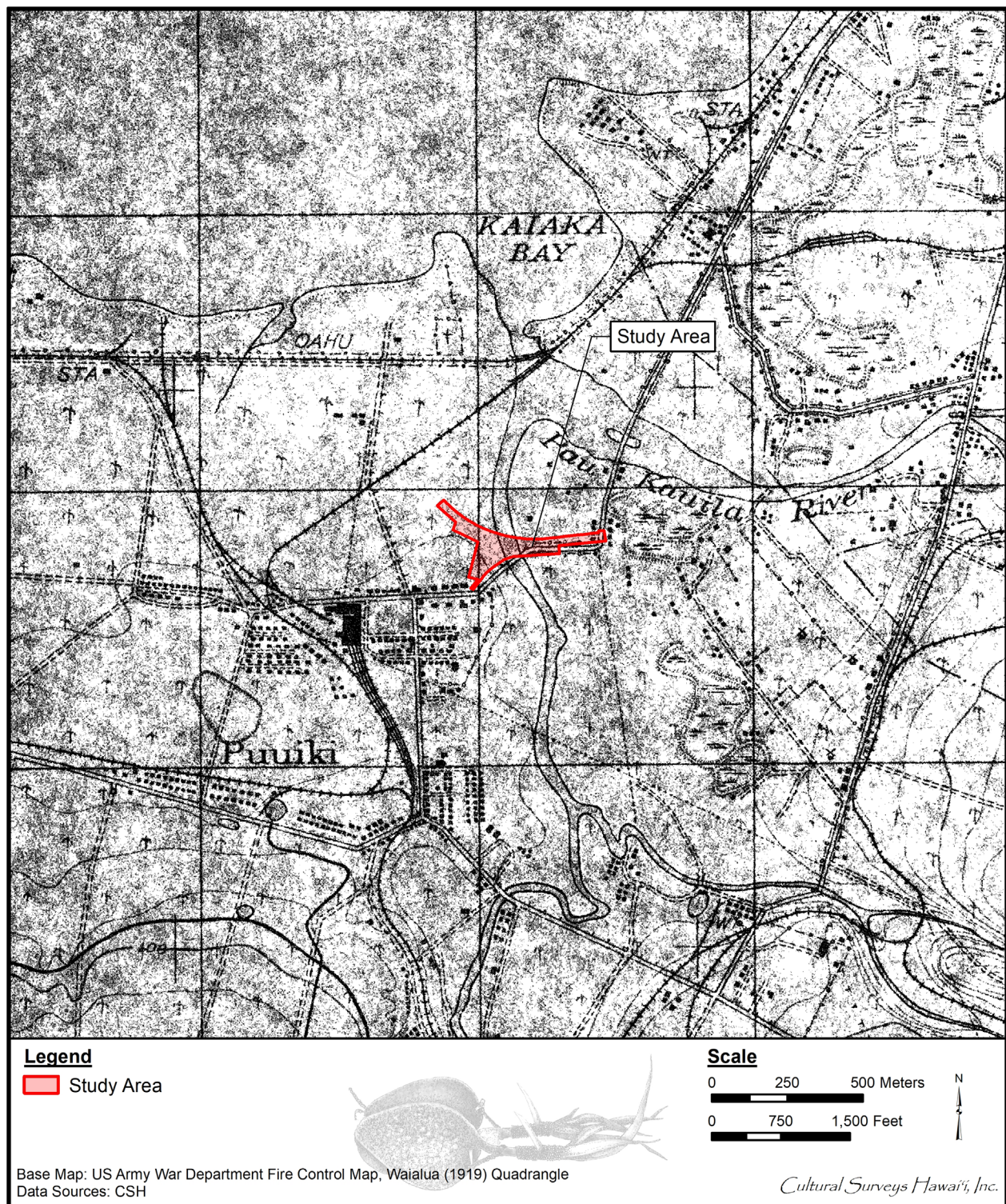


Figure 15. Portion of a 1919 U.S. Army War Department fire control map, Waialua quadrangle, showing the project area



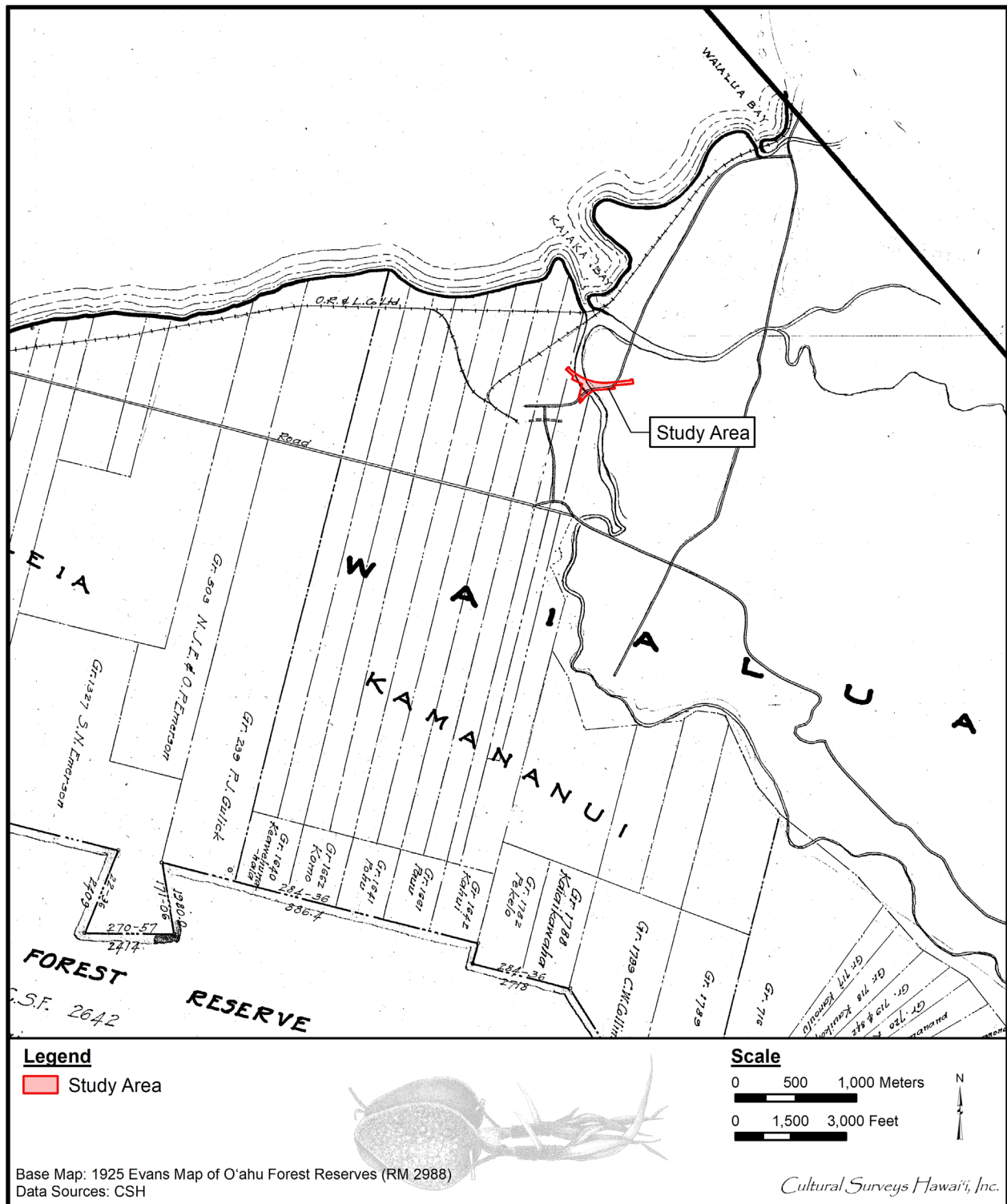


Figure 16. Portion of the 1925 Evans map of O'ahu Forest Reserves (RM 2988) showing the project area

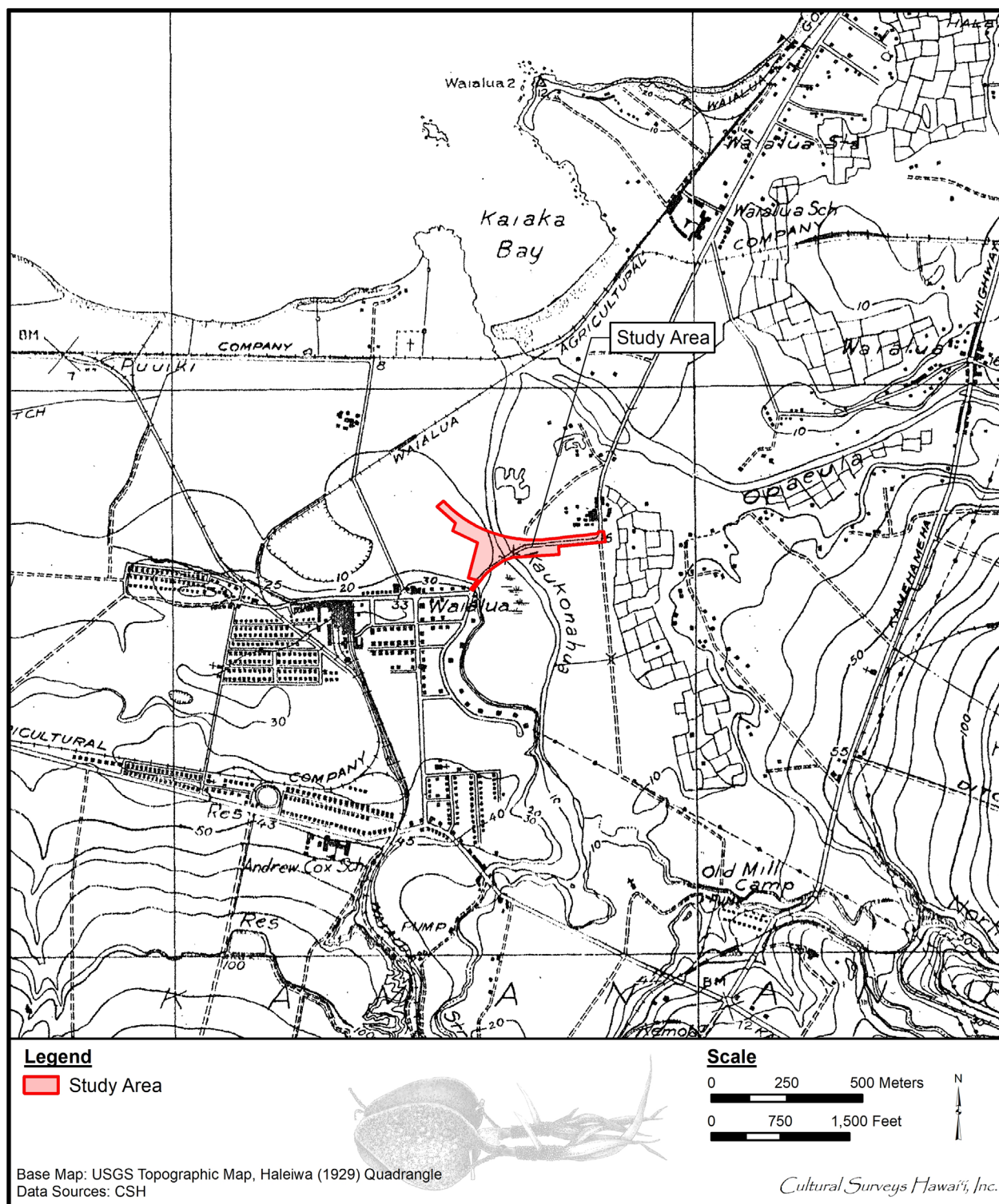


Figure 17. Portion of a 1929 Haleiwa USGS topographic quadrangle showing the project area

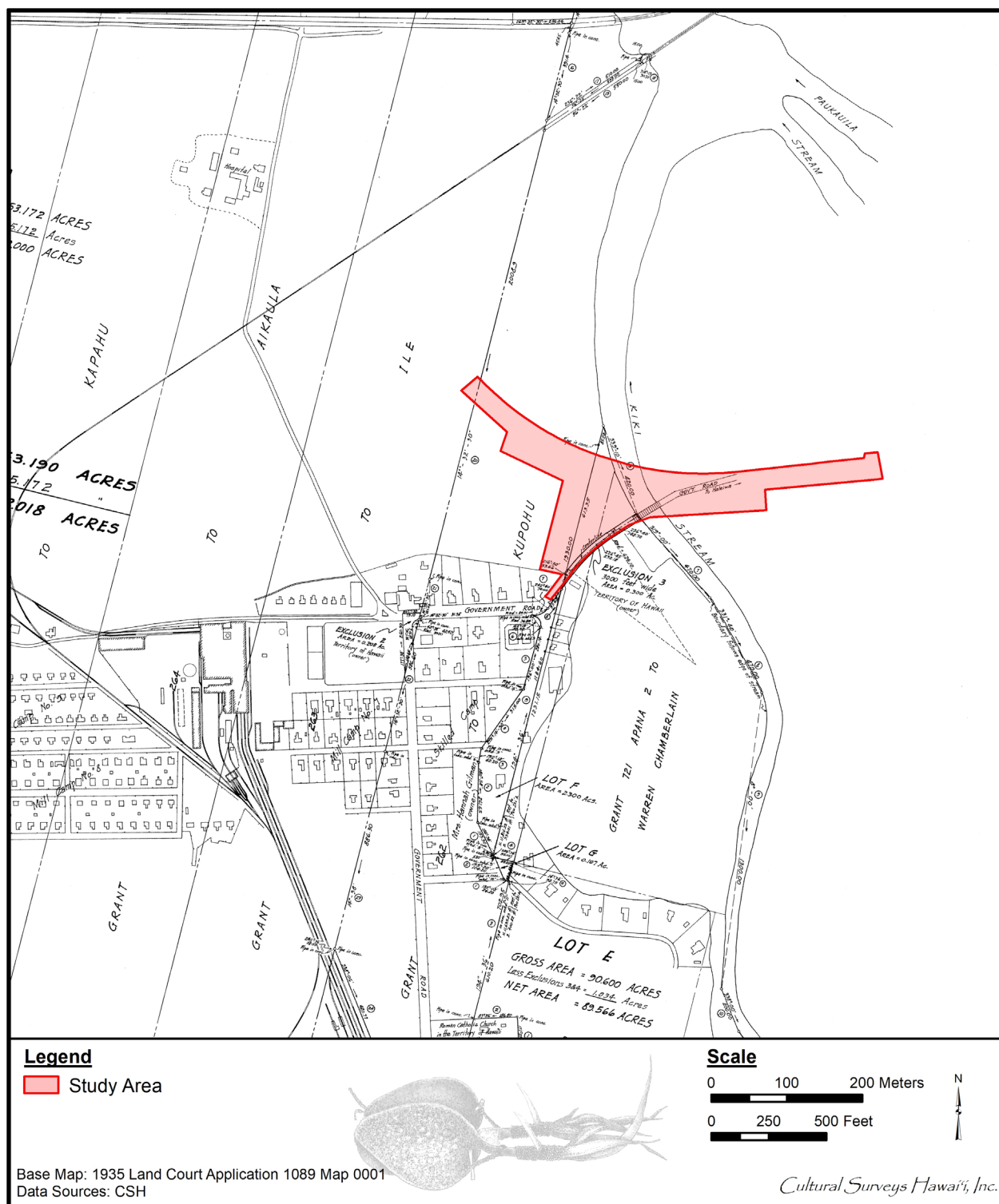


Figure 18. Portion of a 1935 Land Court Application 1089 Map 001 showing the project area



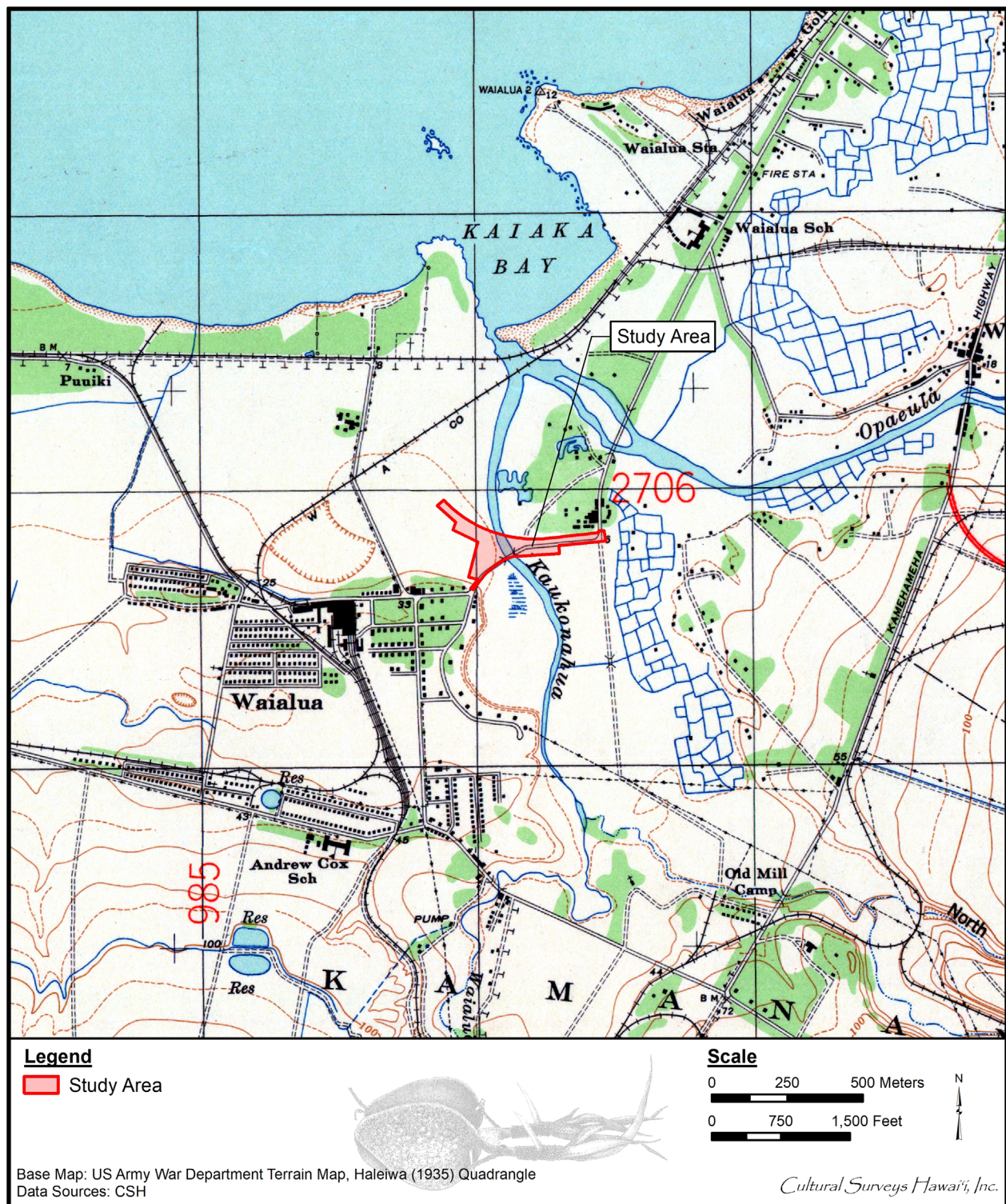


Figure 19. Portion of a 1935 U.S. Army War Department terrain map, Haleiwa quadrangle, showing the project area



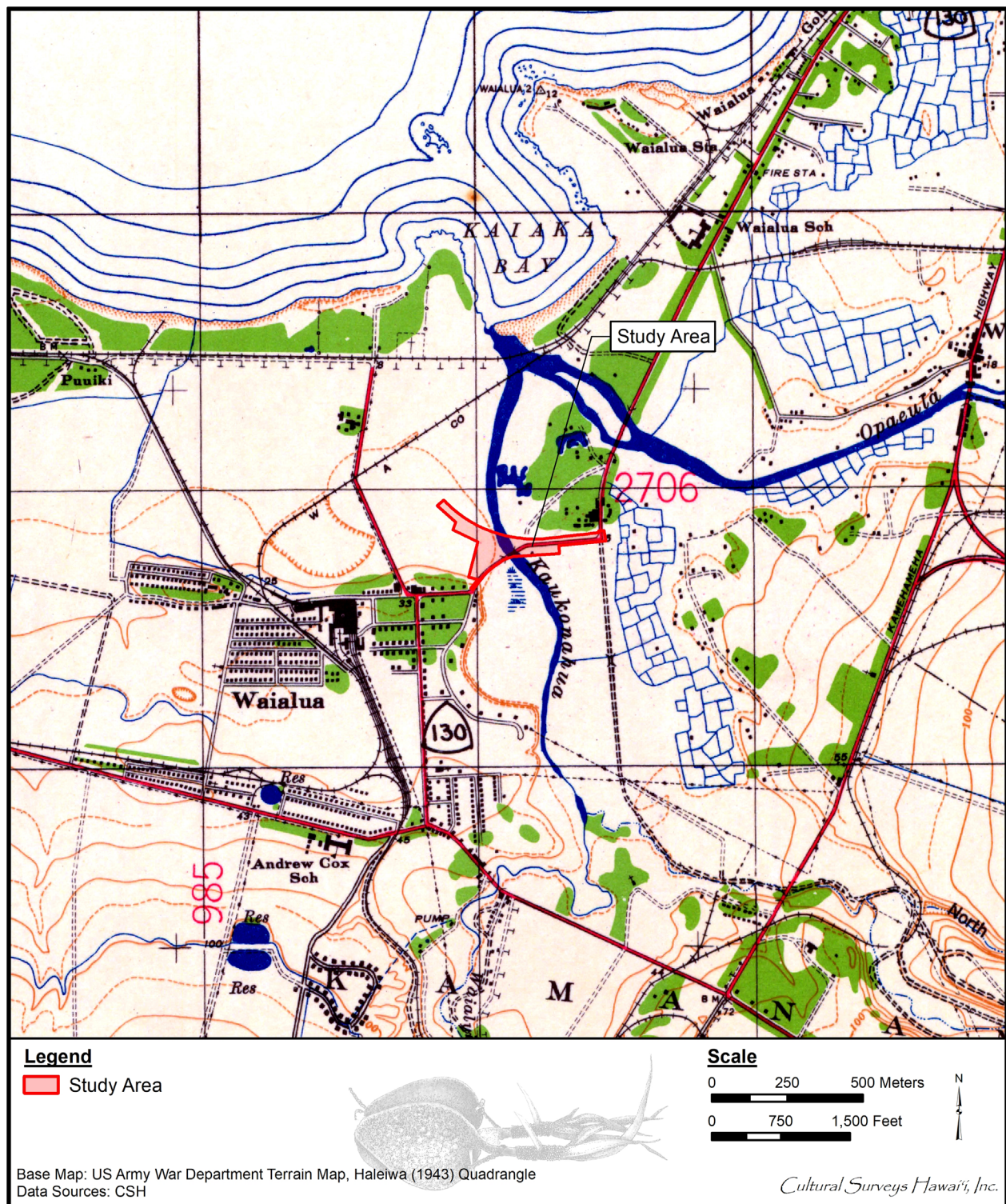


Figure 20. Portion of a 1943 U.S. Army War Department terrain map, Haleiwa quadrangle, showing the project area

A 1946 Territory of Hawaii Airport Division map (Figure 21) shows little detail of the project area but shows the Halewa Airport 3.5 km to the northeast (that supported a fighter response during the 7 December 1941 attack).

The 1951 USGS aerial photograph (Figure 22) clearly shows a sea of sugarcane northwest and south of the project area and the former roads and bridge. The road on the west bank of Ki'iki'i Stream north of the project area is quite prominent (despite not having been depicted on maps since the 1901 Wall map). No road alignment is depicted conforming to present-day Waialua Beach Road in the northwest portion of the project area. No house is discernible in the project area on the east side of the stream south of the old road as indicated on the 1935 and 1943 maps.

The 1953 Haleiwa USGS map (Figure 23) of just two years later shows a much different scene with no indication of the older, more southerly bridge or the road through the southern portion of the project area but with the new (present) Ki'iki'i Bridge and present-day Waialua Beach Road depicted as a major highway. The road on the west bank of Ki'iki'i Stream north of the project area is shown as unimproved (as typical of a cane haul road) but is not shown within the project area—having likely been obliterated by construction of present-day Waialua Beach Road. A large building (assumed to be associated with the Waialua Sugar Company) is depicted just south of the project area.

Provided City and County 1956 “as-built” Suburban Water System plans dated 1956 show a 16-inch Class “150” Cement-Lined Pipe was planned from “Weed” Junction to Goodale Avenue (crossing the length of the present project area; Figure 24, upper map) and show in the vicinity of the project area (“Kiikii Bridge”) that the water line was anticipated to be adjacent to the south side of Waialua Beach Road (Figure 24, lower map). This water line is associated with an imported sand bed from which a human bone was identified (designated SIHP # -07143; Filimoehala and Rieth 201, Vitousek 2010). It seems clear that calcareous sand was imported as a bed for this pipe and that it included a human vertebrae. It has reasonably been suggested, “The presence of the single human cervical vertebra does suggest the possibility that additional isolated human remains may be present in the modern construction fill” (Filimoehala and Rieth 2010:36). What these maps indicate is that this imported sand bed, with a possibility of human skeletal remains, likely runs the length of the project area (and beyond to east and west).

The 1960 Haleiwa USGS map (Figure 25) provides a “Waialua Beach Road” label for the road in the project area. A second large building (also assumed to be associated with the Waialua Sugar Company) is depicted just south of the project area. A small spur off Waialua Beach Road is depicted to the south just east of Ki'iki'i Stream in the eastern project area (not depicted on the 1953 map) approximating the former road.

The 1965 USDA aerial photograph (Figure 26) shows sugarcane fields south and northwest of the project area. It appears Waialua District Park immediately west of the project area is being established. The former road along the southeast side of the project area is clear (but the former bridge is gone).

The 1977 USGS orthophotoquad aerial photograph (Figure 27) still shows sugarcane fields south and northwest of the project area. Waialua Elementary School is shown.

The Waialua Sugar Company continued to expand during the first decades of the twentieth century, eventually reaching more than 12,000 acres, including extensive portions of Kamananui



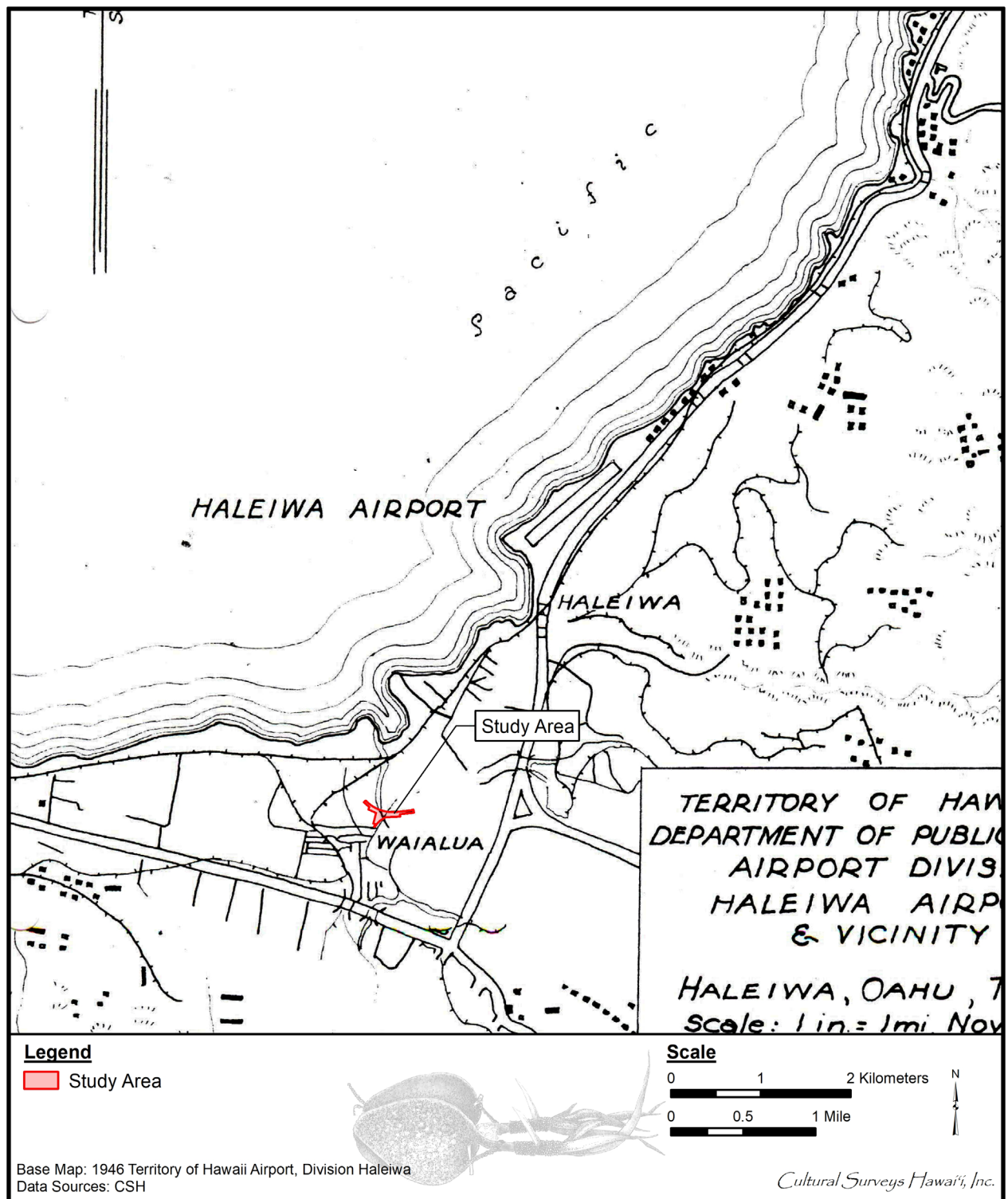


Figure 21. Portion of a 1946 Territory of Hawaii Airport Division Haleiwa map showing the project area

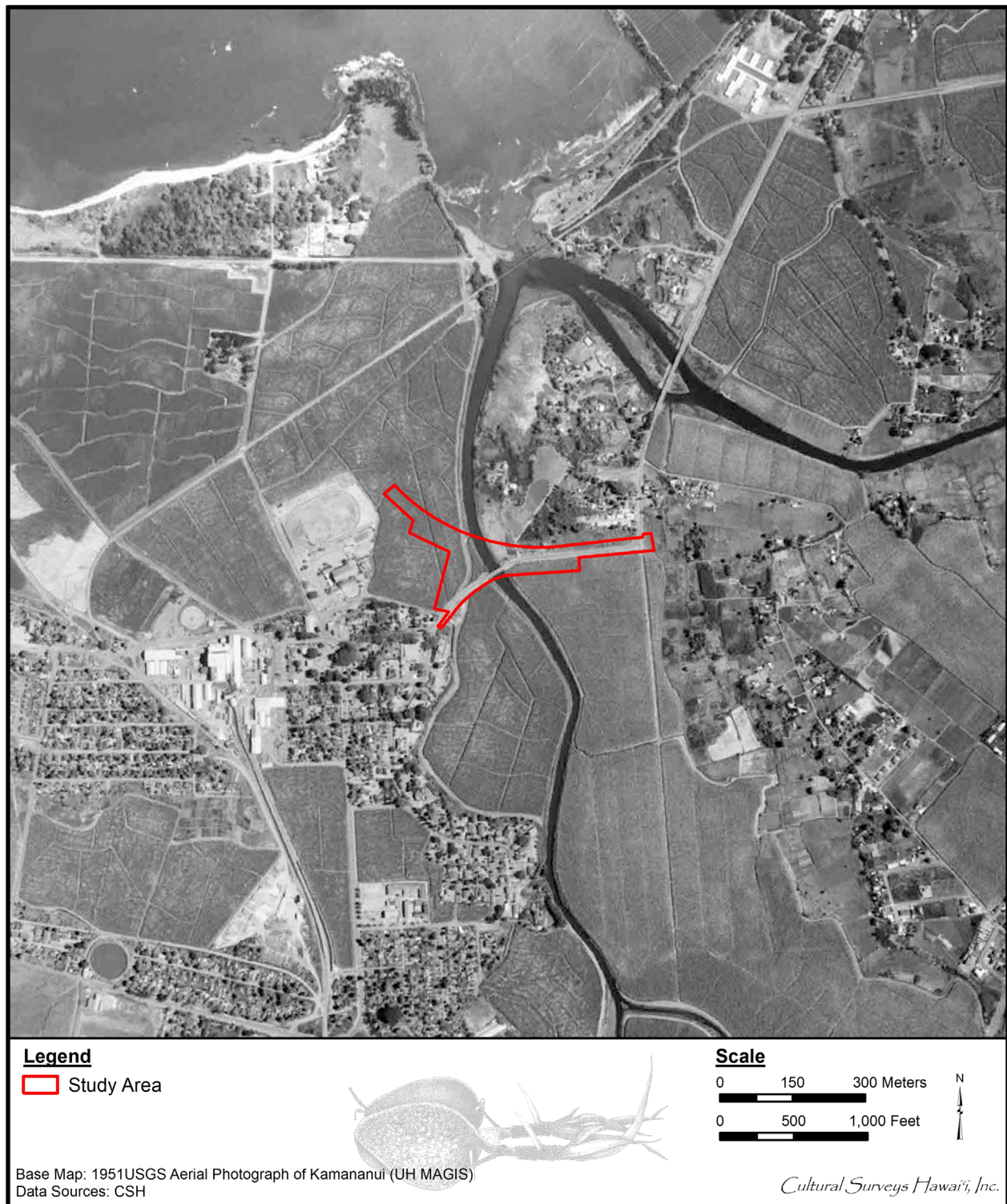


Figure 22. 1951 USGS aerial photograph of Kamananui (UH MAGIS) showing the project area as largely in sugarcane fields of the Waialua Agricultural Company



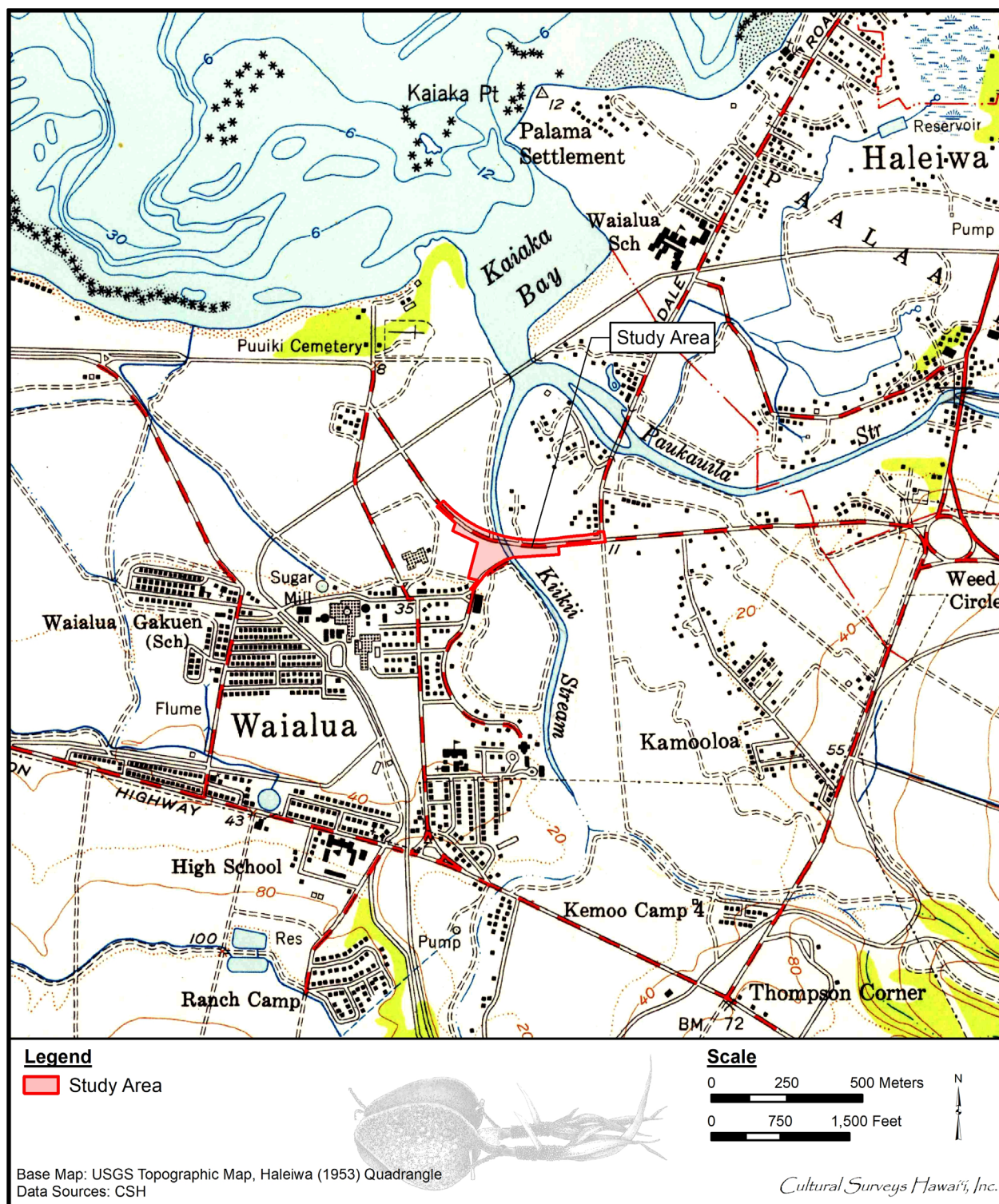


Figure 23. Portion of a 1953 Haleiwa USGS topographic quadrangle, showing the project area

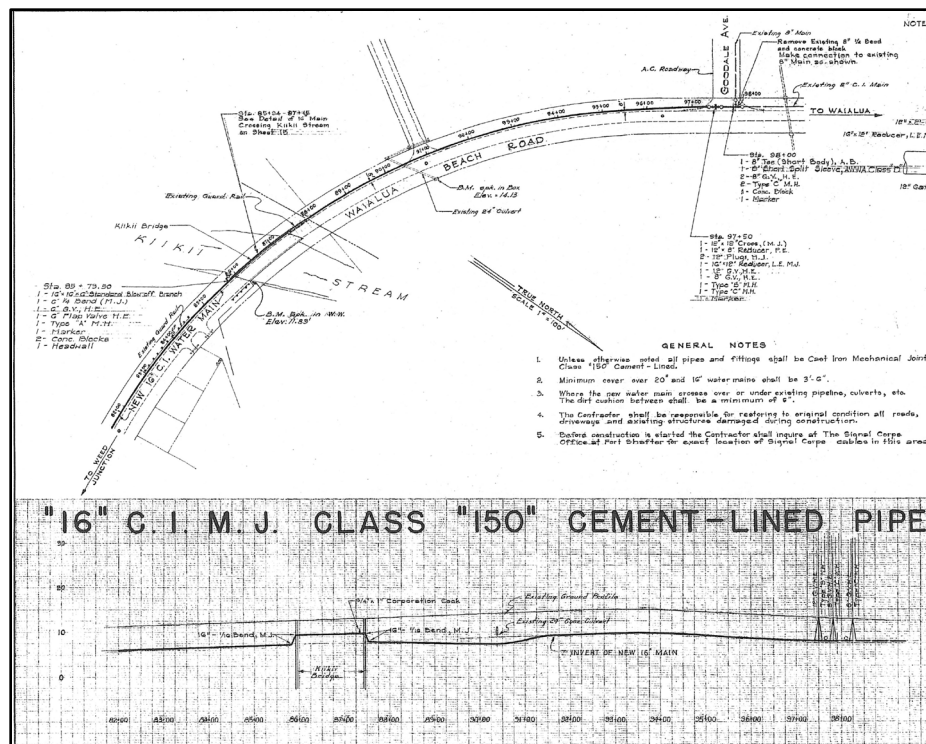
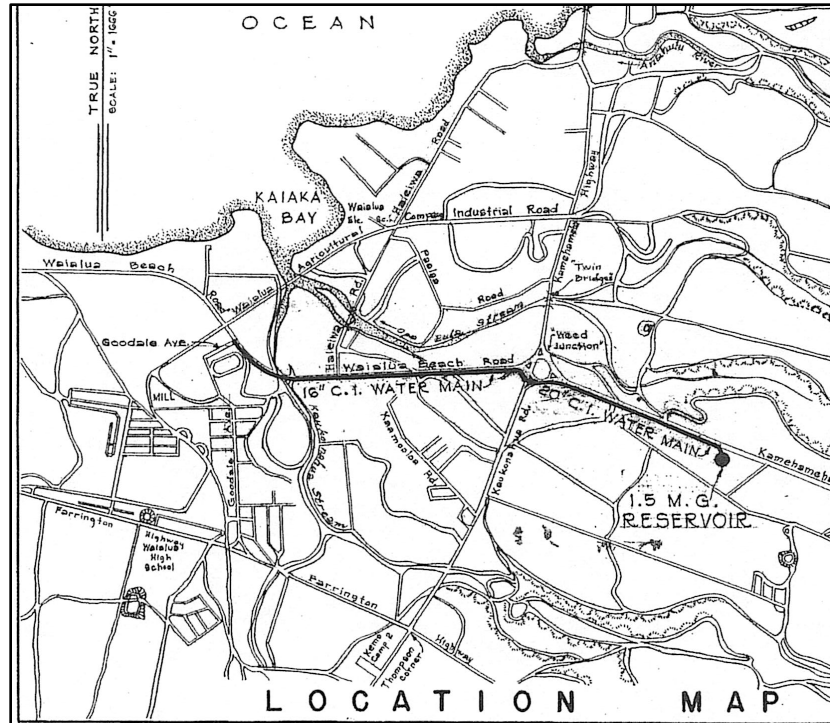


Figure 24. 1956 “as-built” Suburban Water System plans (upper map) show that a 16-inch Class “150” Cement-Lined Pipe was planned from “Weed” Junction to Goodale Avenue and (lower map) that near “Kiiki Bridge” the water line was anticipated to be adjacent to the south side of Waialua Beach Road



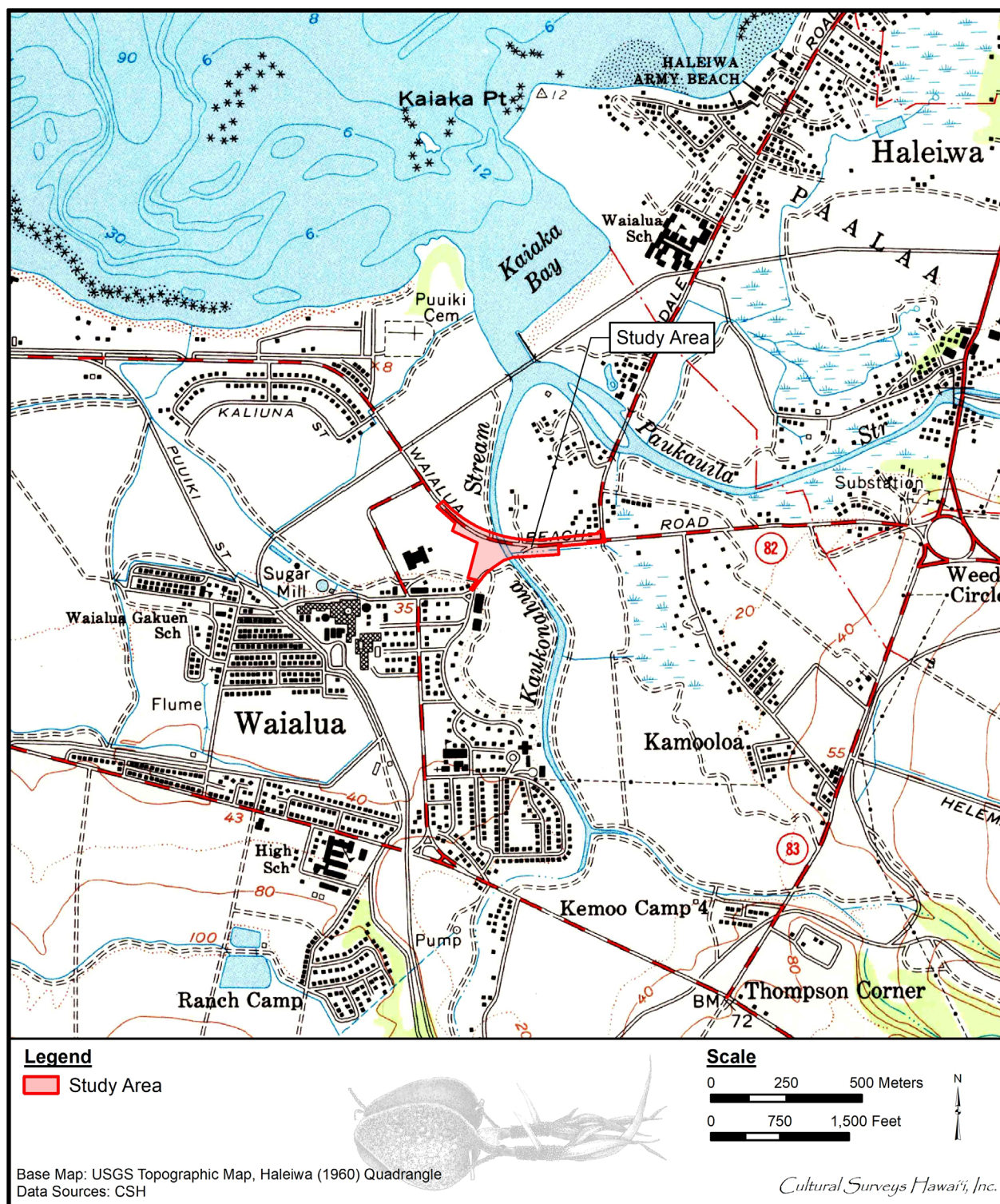


Figure 25. Portion of a 1960 Haleiwa USGS topographic quadrangle, showing the project area and newly constructed Waialua Beach Road; the former Government road spur appears abandoned and the old bridge is no longer extant



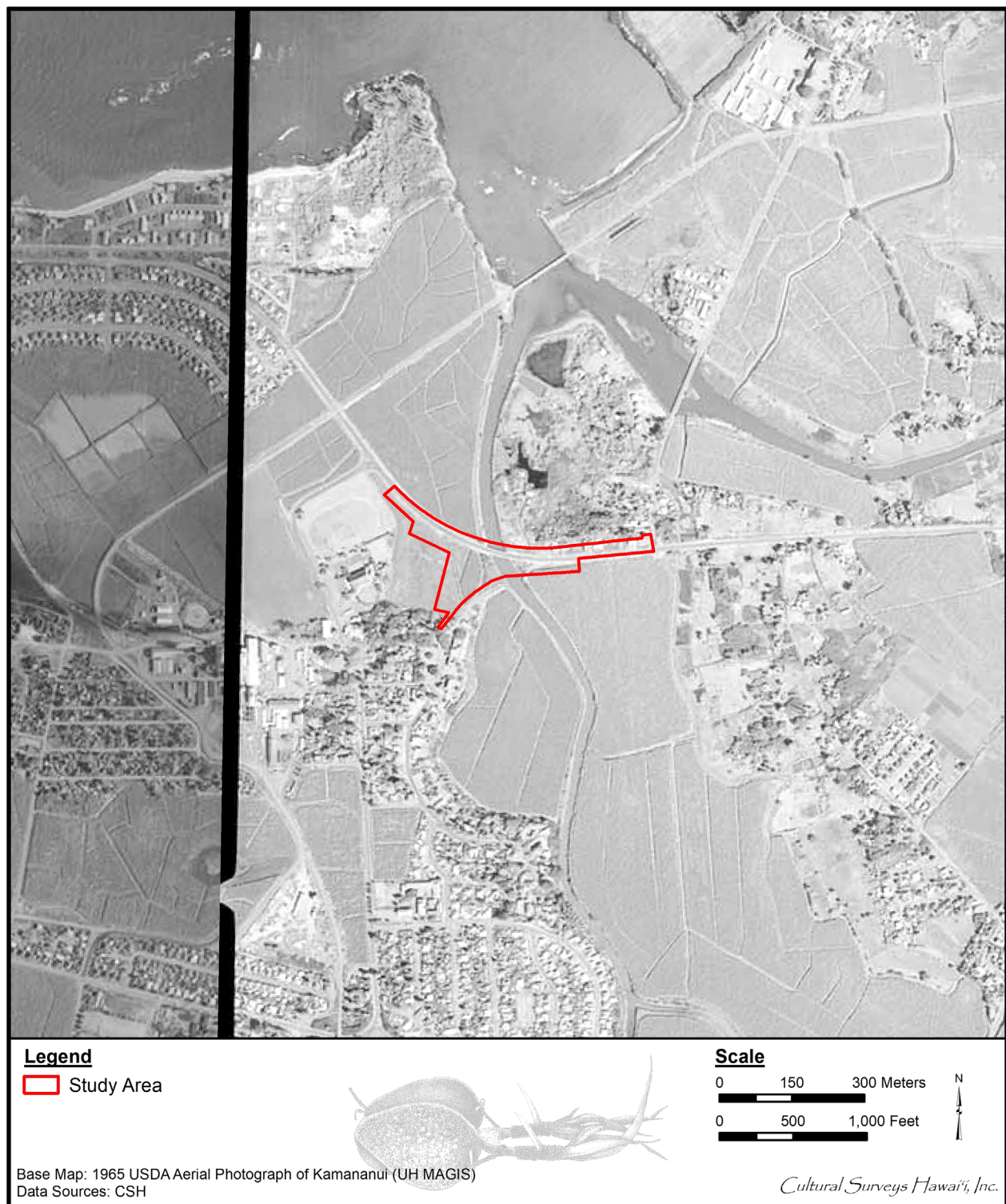


Figure 26. 1965 USDA aerial photograph of Kamananui showing the project area (UH MAGIS)



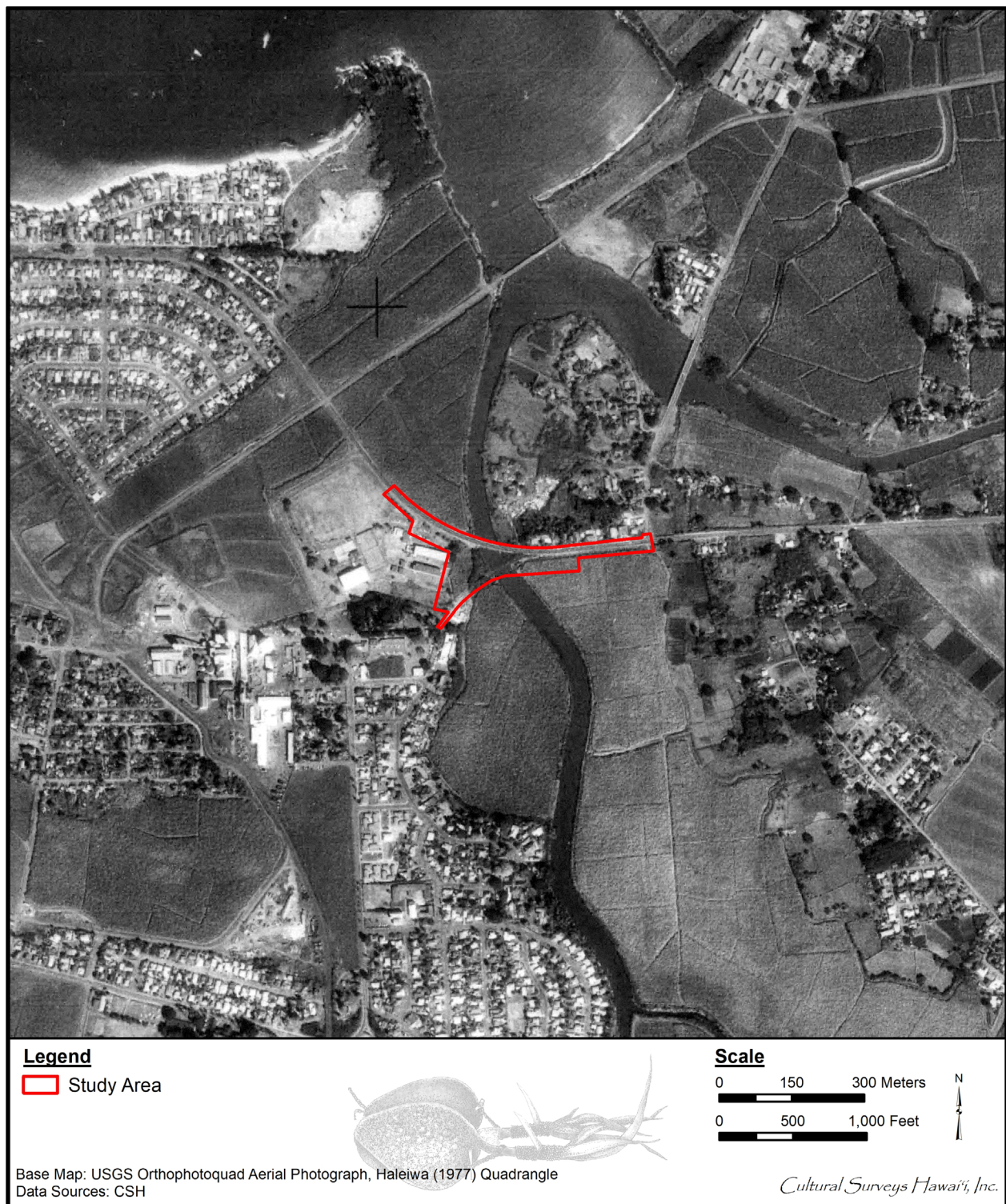


Figure 27. 1977 USGS Orthophotoquad aerial photograph, Haleiwa quadrangle, showing the project area



and Pa‘ala‘a Ahupua‘a. In 1990, Dole Food Company, Inc., took over the Waialua Sugar Company from Castle & Cooke, but was shut down following the 1996 harvest due to being unprofitable in subsequent years (Dorrance and Morgan 2000:49 and 142). Waialua Agricultural Company was the last sugarcane plantation to operate on O‘ahu.

## Section 4 Previous Archaeological Research

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### 4.1 Early Studies

#### 4.1.1 Thrum

Thomas Thrum had an antiquarian interest in *heiau* (pre-Christian place of worship) of Hawai'i and prepared a number of articles addressing them in his *Hawaiian Annual* almanacs. In his listing of the *heiau* of O'ahu he appears to mention only two within Kamananui Ahupua'a:

- Onehana, On slope at rear of Waialua Agr. Co.'s mill: a partly walled and platform *heiau* about 60 x 100 feet in size: of pookanaka class. (Thrum 1906:47)
- Kalakiki, On ridge north of Onehana, of pookanaka class; its walls covered in a tangle of hau and lantana. (Thrum 1906:47)

He provides the following additional account of these Kamananui *heiau*:

Two *heiaus* of local prominence graced the Waialua slopes of Kaala, viz.: Onehana, at the back of the Agricultural Co.'s mill, and Kalakiki toward Mokuleia, but higher up the ridge. The former seems to be a partly walled and part platform structure of good size, the full dimensions of which are lost in the jungle and soil accretions at the rear. Tradition places both of them in the fearsome class for the human sacrifices claimed for them, and the haunted character to this day experienced by night travelers in their vicinity, but more particular Onehana. Not only is the beating of drums and sound of the conch shell and gourd rattles heard in the nights of Kane in its precincts, but its influence extends to the shore and sea at its front, for torch-lights at times suddenly appear and dance about within its range, or vanish at one's approach. Figures, as of persons bathing, or fishing, are said to frequent its shore waters and mingle with persons so engaged but which vanish from sight- if addressed. It is deemed unwise to express an intent to go afishing abreast of Kalakiki unless in an indirect or figurative way, else Keanini, the shark-god deity of the *heiau*, which is a huge rock lying awash a few hundred feet from the shore, will cause the phosphorescent lights to so dog one's effort as to render the attempt futile. A still further superstition is, that a house built within the range from the temple to its deity must not have its doorway face the hills, else trouble, sickness and death to the household is sure to follow. [Thrum 1906:54]

#### 4.1.2 McAllister 1933

The first systematic archaeological study of Kamananui was conducted by J. Gilbert McAllister of the Bernice Pauahi Bishop Museum during his island-wide survey in the 1930s. McAllister (1933) consulted with knowledgeable informants about both physical and legendary sites of each district of O'ahu. McAllister identified 13 sites within Kamananui Ahupua'a (Sites 197–200, 202, 203, and 205–211). These sites are described below, and their locations as detailed by McAllister (1933) are depicted on Figure 28.

Site 197. Kalakiki Heiau in Kamananui, on the slope back of the Waialua mill beneath Puu Kaupakuhale

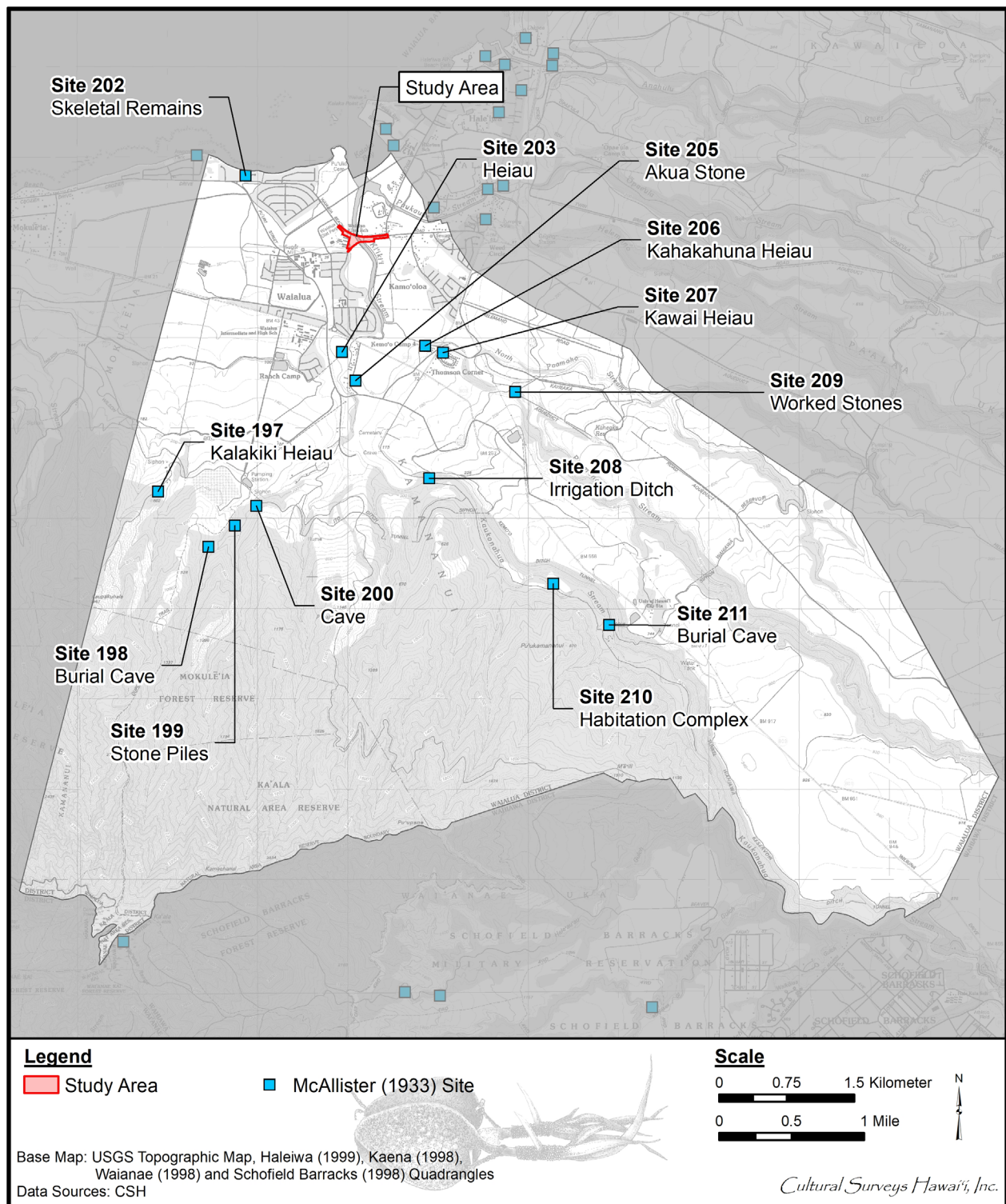


Figure 28. Portions of the 1998 Kaena, Waianae, and Schofield Barracks, and 1999 Haleiwa USGS topographic quadrangles showing the locations of McAllister (1933) sites within Kamananui Ahupua‘a in relation to the project area

Located on the crest of the ridge, with a slope on all except the mountain side, a large front terrace is about all that remains of the structure, and only that portion which is rock-paved is visible. The remainder of the heiau is covered with a dense growth of *Lantana*. The mountain-ward portion has undoubtedly been covered by dirt washed down from the almost bare slope behind. The heiau was probably of two or more terraces, with several small divisions. The highest wall is 1.5 feet, but terrace facings are as much as 6 feet high.

Thrum [referencing Thrum 1906 account provided above] says: 'it is deemed unwise to express an intent to go a-fishing abreast of Kalakiki unless in an indirect or figurative way, else Keanini, the shark-god deity of the heiau, which is a huge rock lying awash a few hundred feet from the shore will cause the phosphorescent lights to so dog one's efforts as to render the attempt futile. A still further superstition is, that a house built within the range from the temple to its deity must not have its doorway face the hills, else trouble, sickness and death to the household are sure to follow.' [McAllister 1933:129]

The Site 197 (Kalakiki Heiau) location as detailed by McAllister (1933) is approximately 3.6 km southwest from the Ki'iki'i Stream bridge (see Figure 28).

Site 198. Burial cave, Kaumoku Gulch, Waialua

Powdered skeletal material was noticed on the side of a cliff beneath several very small caves. Upon examination portions of two skeletons were found in a lava tube whose entrance was so cleverly sealed that the material would not have been discovered had there not been a hole into a lower cave larger than a man's head. From the inside, light was noticed through the cracks of the rocks, and the entrance then discovered. No mortar had been used, but sharp-edged rocks had been carefully fitted together. There were no artifacts with the burial. The bones had probably been bundled together, but had evidently been disturbed by animals, as several had been recently gnawed. There was one skull but no mandible, one humerus, one radius, two ulnas, four femurs, three tibiae, and many fragments. [McAllister 1933:130]

The Site 198 (burial cave) location as detailed by McAllister (1933) is approximately 3.7 km southwest from the Ki'iki'i Stream bridge (see Figure 28).

Site 199. Pile of stones, near the mouth of Kaumoku Gulch, Waialua.

Near the mountain side of the siphon put in 1930 by the Waialua Agricultural Company are many piles of stones which, as I was told by Mr. Low, who is of the opinion that they are old Hawaiian, were there 24 years ago when cane was first planted on this land. The largest pile is oval in shape, 28 by 15.5 feet by 7 feet high. There are six piles in a group averaging from 50 to 200 feet apart, evenly faced but with the top comparatively level. Just west of this group are a number of stone walls and one or two small inclosures [*sic*]. The whole site is in the mouth of the gulch. The stones may have been cleared away for agricultural purposes before the plantation took over the land. A large field on the mountain side and east of the Dillingham ranch which had also formerly been planted in cane has similar mounds

of stone. I was also told that these stones were there in 1908 when the plantation took over the land. Hookala says they were pile in this manner to clear the land for agricultural purposes. [McAllister 1933:130–131]

The Site 199 (pile of stones) location as detailed by McAllister (1933) is approximately 3.5 km southwest from the Ki'iki'i Stream bridge (see Figure 28).

Site 200. Cave in Kaumoku Gulch, Kamananui, Waialua.

At present one can squirm about 200 feet into the interior but comes in contact with large stones which obstruct the passage. It is believed that in the construction of the water tunnel just above, the blasting dislocated these stones. Water also constantly drips from the roof making shallow pools in the passageway. Twenty years or more ago the cave is said to have contained skeletal material, though there is no evidence now of such remains, which undoubtedly would have decayed with so much moisture. [McAllister 1933:131]

The Site 200 (cave) location as detailed by McAllister (1933) is approximately 3.2 km southwest from the Ki'iki'i Stream bridge (see Figure 28).

Site 201 is understood as located within Mokulēi'a Ahupua'a.

Site 202. Skeletal remains, near Puuiki station, Waialua.

In the sands near the present station a number of skeletons have been uncovered at a depth of approximately 4 feet by plantation workers who were removing sand. The skeletons are said to have been in good condition. One skull which I saw was well preserved. [McAllister 1933:132]

The Site 202 (skeletal remains) location as detailed by McAllister (1933) is near the coast, approximately 1.4 km northwest from the Ki'iki'i Stream bridge (see Figure 28).

Site 203. Heiau, near Kaukonahua Stream, Waialua.

It is said that a small heiau once occupied the site where the Waialua Agricultural Company has installed their Pump Number 1. This is near the mountain side of the bridge which crosses Kaukonahua Stream near the plantation settlement. The name is not known. [McAllister 1933:132]

The Site 203 (*heiau*) location as detailed by McAllister (1933) is approximately 1.5 km south-southwest from the Ki'iki'i Stream bridge (see Figure 28).

Site 204 is understood as located within Waianae-Uka Ahupua'a.

Site 205. Akua stone, Poloa grove, Kamananui.

The grove, once sacred to Pele, has been left untouched in the midst of cane, and covers an area of approximately 80 by 170 feet. On the eastern side is a stone, triangular in cross section, standing 1.7 feet high, 0.6 foot thick, surrounded by eight small stones. The plantation placed a small iron fence about this stone many years ago and it is now almost completely rusted. The stone was believed by Oscar Cox to be called Kaneaukai, but his uncle Hookala does not remember that name applied to this stone. Hawaiians have been buried in the grove within the last 50

years, though there is nothing to indicate such graves, which are shaded by breadfruit, mango, kukui, and Pride of India trees. [McAllister 1933:132]

The Site 205 (*akua* stone and *pōloa* grove) location as detailed by McAllister (1933) is approximately 1.5 km south-southwest from the Ki'iki'i Stream bridge (see Figure 28).

Site 206. Kahakahuna heiau, Pala-kai, was once located on the sea side of the road and north of the old mill site. The stones have been removed and the slightly elevated ground upon which it was built it is used for agricultural purposes. [McAllister 1933:132]

The Site 206 (Kahakahuna Heiau) location as detailed by McAllister (1933) is approximately 1.6 km south from the Ki'iki'i Stream bridge (see Figure 28).

Site 207. Kawai heiau was located just below the junction of Poamoho and Kaheeka gulches, on the elevation below the Waialua Plantation manager's house. It was one of the first heiaus to be destroyed. (McAllister 1933:132)

The Site 207 (Kawai Heiau) location as detailed by McAllister (1933) is approximately 1.5 km southeast from the Ki'iki'i Stream bridge (see Figure 28).

Site 208. Irrigation ditch, Kamananui, Waialua.

The longest irrigation ditch of which there is any memory. The intake was from the Kaukonahua Stream, just before it issues from the gulch, about 2 miles inland from the mill. According to Tom Low, the ditch could be traced as far as the intersection of the Mokuleia, Haleiwa, and Honolulu roads. The most distant land watered surrounded the site of the old mill one and one-third miles away. This ditch was for many years used by the plantation. The cemented intake and portion of the rebuilt walls are still to be seen. Along part of its course the ditch flowed along the side of a hill about 50 feet high. According to Low, the old ditch was made by piling stones on the lower side, with a rubble fill. Consequently, there was much seepage and loss of water. Aside from following the old course, the plantation had practically to reconstruct the walls. [McAllister 1933:133]

The Site 208 (irrigation ditch) location as detailed by McAllister (1933) is approximately 2.8 km southeast from the Ki'iki'i Stream bridge (see Figure 28).

Site 209. Worked stones, found some years ago in Poamoho Gulch.

When the shaft for the pump in Poamoho Gulch was being dug, a number of artificially worked stones were found at depths of 13 to 18 feet. Gravel and silt were found above the artifacts, according to G. L. Trist, who was in charge of the work. The stones are said to have resembled ulumaika. [McAllister 1933:133]

The Site 209 (worked stones) location as detailed by McAllister (1933) is approximately 2.5 km southeast from the Ki'iki'i Stream bridge (see Figure 28).

Site 210. Indications of former habitations, Kaukonahua Gulch, Waialua.

House sites on both sides of the stream and in the south bank a small cave with the decayed remnants of skeletal material. Four piles of large stones approximately

3 feet in height are built in a perfect line, with an interval of approximately 20 feet between each pile. It was at first thought that these were supports of a former flume, but there has never been a pipeline in this section, though cane is planted in this gulch on a small plain just above these stones. No explanation has been obtained. The Hawaiians say that the stone piles were built by Europeans. [McAllister 1933:133]

The Site 210 (indications of former habitations) location as detailed by McAllister (1933) is approximately 4.5 km southeast from the Ki'iki'i Stream bridge (see Figure 28).

Site 211. Burial cave, immediate vicinity of the Waialua Agricultural Company pumping plant (known as K.P.P.).

A small cave. The mouth had been walled up, but has since been broken into and the burials disturbed. Much of the skeletal material had evidently been removed. Bits of cloth and shoes indicate that it was post-European, though it may also have been used earlier. Just across the stream are indications that the narrow fertile plain was used for the cultivation of taro, and also the foundations of several frame houses. In the side of the bank is another burial cave, 10 feet wide and high and 15 feet deep, said to have been used by the Keloha family for many generations. When soldiers became troublesome the family built a doorway to the vault, which was locked. Later a party of soldiers destroyed the door, looted the coffins, scattered the remains, and took skulls and long bones for souvenirs. [McAllister 1933:133]

The Site 211 (burial cave) location as detailed by McAllister (1933) is approximately 4.8 km southeast from the Ki'iki'i Stream bridge (see Figure 28).

#### 4.1.3 Handy 1940

In E.S. Craighill Handy's survey of traditional Hawaiian agriculture *The Hawaiian Planter* he (1940:85) relates that Kamananui formerly had:

[...] large terrace areas along the flatlands between the junction of Helemano and Poamoho Streams and the flatland west of Poamoho. There were also small terrace areas up in the lower flats of Poamoho and Kaukonahua Valleys. There were small flats in the bottom of Kaukonahua Canyon for several miles above its junction with Manawai Stream. Poamoho is probably too narrow for taro terraces. It is likely that in these gulches, as at Waimea, sweet potatoes and bananas were planted around home sites along the ridge and near taro patches at the bottom of the gulch. Wild taro and bananas grow in Manawai Valley and presumably also in the other five valleys that run up toward Puu Kane. At Kamananui are the remains of what McAllister describes as 'the longest irrigation ditch of which there is any memory' among modern Hawaiians. [Handy 1940:85]

## 4.2 Modern Archaeological Studies in the Vicinity

Recent archaeological studies in the vicinity of the project area are depicted in Figure 29 and summarized in Table 2; they are discussed further below in chronological order. Previously identified archaeological historic properties in the vicinity are depicted on Figure 30 and summarized in Table 3.



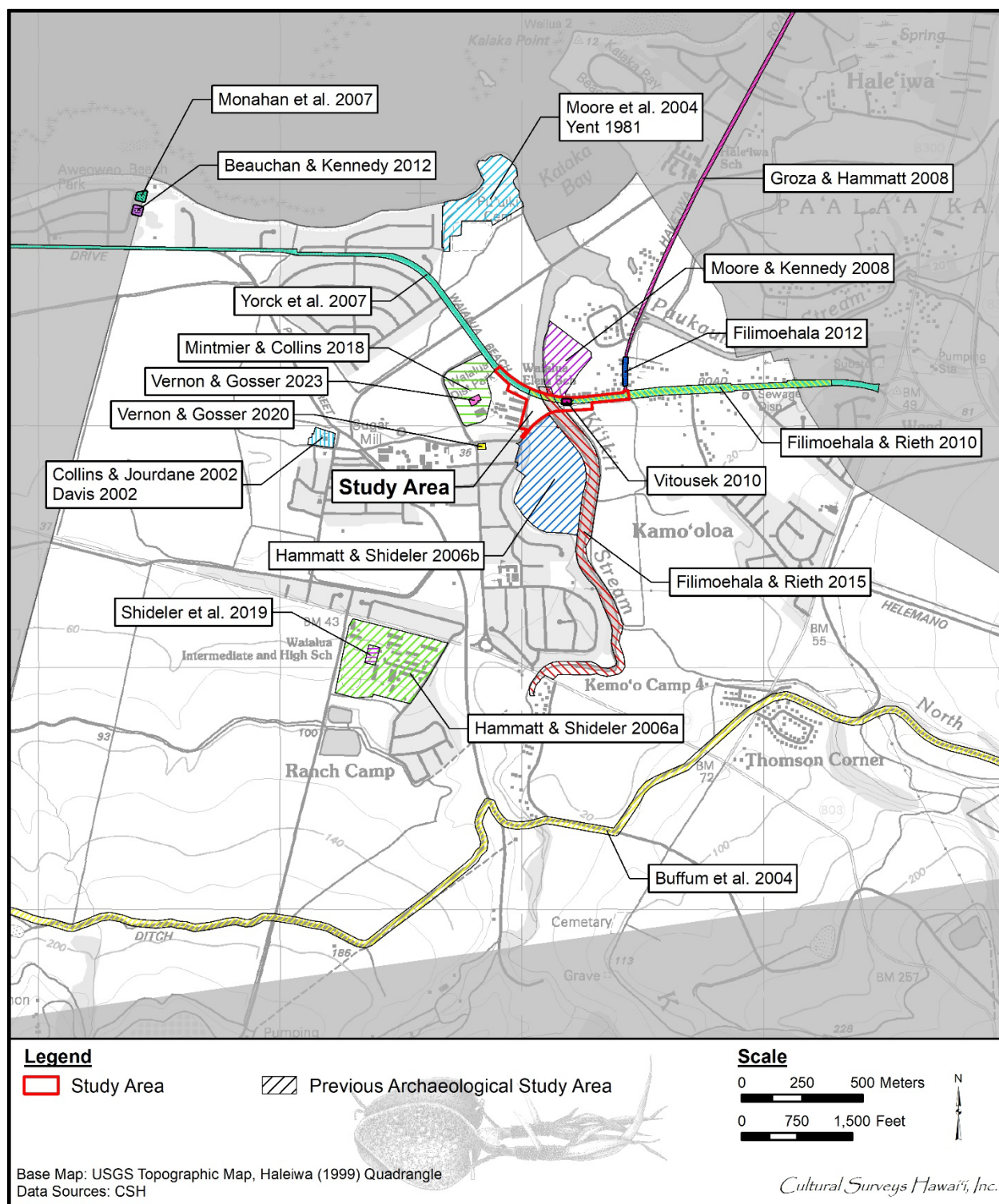


Figure 29. Previous archaeological studies in the vicinity of the project area on a 1999 Haleiwa USGS topographic quadrangle base map

Table 2. Previous archaeological studies in the vicinity of the project area

Reference	Type of Study	Location	Results (SIHP #s 50-80-04)
McAllister 1933	Island-wide survey	Kamananui	Identified 13 sites: 197, Kalakiki Heiau; 198, burial cave; 199, pile of stones; 200, cave in Kaumoku Gulch; 202, human skeletal remains; 203, <i>heiau</i> ; 205, <i>akua</i> stone; 206, Kahakahuna Heiau; 207, Kawai Heiau; 208, irrigation ditch; 209, worked stones; 210, former habitations; and 211, burial cave
Yent 1981	Archaeological inspection	TMK: (1) 6-7-001:051 across Kaiaka Bay from State Rec Area, coastal Kamananui	Eroding cultural deposit ca. 1900 noted
Collins and Jourdane 2002	Inadvertent discovery of human skeletal remains	Waialua Hongwanji Mission	One individual
Davis 2002	Inadvertent discovery of human skeletal remains	Waialua Hongwanji Mission	One individual, same as Collins and Jourdane 2002
Buffum et al. 2004	"Archaeological surveys"	Included "Dillingham Trail" that extended east/west 700 m south of Waialua Intermediate and High School campus	Five historic properties identified within or adjacent to Dillingham Trail survey corridor: Wilson Ditch, Halstead Mill, and three concrete span bridges likely constructed by Dillingham Ranch in 1952 to facilitate truck hauling
Moore et al. 2004	Archaeological inventory survey	TMKs: (1) 6-7-001:051 and 052, Kamananui Ahupua'a	Identified four sites: SIHP #s -06532 (collection of previously disturbed human osteological remains), -06533 (structural remains believed to be associated with Waialua Dairy), -06534 (remains of two pillboxes possibly associated with WWII), and undocumented reinternment location not permitted on parcel but utilized by Hui Mālama I Na Kūpuna O Hawai'i Nei

Reference	Type of Study	Location	Results (SIHP #s 50-80-04)
Hammatt and Shideler 2006a	Archaeological literature review and field inspection	Waialua High and Intermediate School	No further archaeological study recommended at Waialua High and Intermediate School due to absence of indications of significant cultural deposits and/or burials
Hammatt and Shideler 2006b	Archaeological literature review and field inspection	Kupahu Subdivision, Kamananui Ahupua'a, TMK: (1) 6-7-009:003	No pre-Contact agricultural features; project area very disturbed by decades of agricultural use
Monahan et al. 2007	Archaeological assessment (AIS scope of work with no finds)	Property located in coastal Mokulē'ia Ahupua'a, TMK: (1) 6-8-011:050	Three backhoe test trenches excavated but no historic properties identified or documented; no further archaeological work recommended
Yorck et al. 2007	Archaeological monitoring	Waialua Beach Road Bikeway	No significant cultural resources documented during monitoring fieldwork
Groza and Hammatt 2008	Archaeological monitoring	Hale'iwa Rd Water System Improvements, coastal Pa'ala'a and Kamananui, TMKs: (1) 6-6-002:002, 005, 006, 008, 012-015, 020, 021, 031	SIHP # -07033, pre-Contact subsurface cultural layer within A horizon containing three pit features, marine shell fragments, coral, and some charcoal
Moore and Kennedy 2008	Archaeological assessment (AIS scope of work with no finds)	TMK: (1) 6-6-021:001, Kamananui Ahupua'a	No historic properties identified
Filimoehala and Rieth 2010	Archaeological monitoring	Guardrail improvements between 66-080 Waialua Beach Rd and Ki'iki'i Stream	No pre-Contact or significant historical cultural deposits or features identified; single human cervical vertebra encountered during water line probing, designated SIHP # -07143
Vitousek 2010	Inadvertent discovery of human skeletal remains	Waialua Beach Rd guardrail improvement project, TMK: (1) 6-6-022:004	One intact cervical vertebra located in beach sand fill; remains reinterred outside Waialua Beach Rd corridor adjacent to TMK: (1) 6-6-022:004, between twelfth and thirteenth guardrail posts (same as find described in Filimoehala and Rieth 2010)

Reference	Type of Study	Location	Results (SIHP #s 50-80-04)
Filimoehala 2012	Archaeological monitoring	Guardrail improvements at 66-101 and 66-826 Haleiwa Rd; TMKs: (1) 6-6-001:025 and 6-6-020:018	Sediments exposed during limited excavations consisted principally of fill deposits associated with construction of Hale'iwa Rd; no pre-Contact or significant historical cultural deposits or features encountered
Beauchan and Kennedy 2012	Archaeological assessment (AIS scope of work with no finds)	Property located in coastal Mokuleia Ahupua'a, TMK: (1) 6-8-011:052	Work preceded proposed construction of two condominium units on then undeveloped parcels; subsurface testing consisted of four backhoe trenches; assessment did not lead to documentation of significant sites, but archaeological monitoring recommended
MKE Associates LLC, Fung Associates, Inc. 2013	Bridge study	1950 Waialua Beach Rd Bridge-Ki'iki'i Stream	Determined eligible for listing on National and/or State Register(s) of Historic Places (see present Appendix B) (not shown on Figure 29)
Filimoehala and Rieth 2015	Archaeological literature review and field inspection	Proposed Ki'iki'i Stream Dredging project, TMKs: (1) 6-6-002:001, 014; 6-6-021:001; 6-6-022:001, 004; 6-6-025:001, 003, 006, 007; 6-6-027:007; 6-7-000:000; and 6-7-001:032 (por.)	Field inspection largely limited to staging area and Kaukonahua Bridge and Waialua Beach Rd Bridge-Ki'iki'i Stream areas (thus it appears vast majority of project area not traversed); two historic properties identified within project area: Kaukonahua Bridge and Waialua Beach Rd Bridge-Ki'iki'i Stream
Mintmier and Collins 2018	Archaeological literature review and field inspection	Waialua baseball park	No historic properties identified; potential for historic properties or other cultural resources within project area determined to be low due to extensive ground disturbance
Vernon and Gosser 2020	Archaeological literature review and field inspection	Waialua Public Library (cesspool closure and seepage pit installation project)	No historic properties identified; potential for traditional Hawaiian subsurface cultural layers or features and human burials within project area determined to be low

Reference	Type of Study	Location	Results (SIHP #s 50-80-04)
Merrin et al. 2023	Cultural landscape study	Kamananui Ahupua'a	Discusses significant <i>wahi kūpuna</i> (ancestral places) in <i>ahupua'a</i> (no shown on Figure 29)
Vernon and Gosser 2023	Archaeological literature review and field inspection	Waialua Recreation Center (floodlighting of swimming pool project)	No historic properties identified (recommended determination of "no historic properties affected")

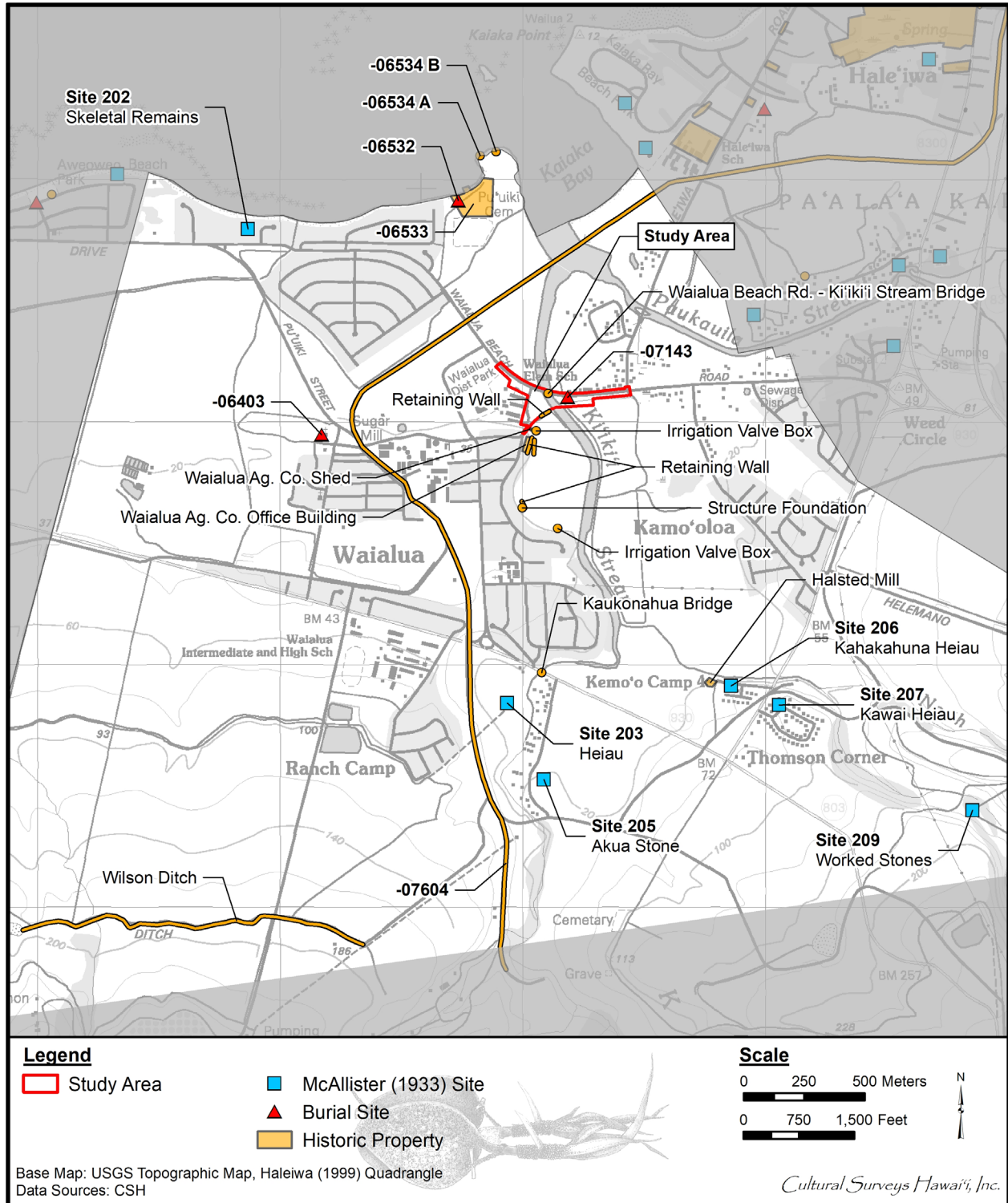


Figure 30. Previously identified historic properties in the vicinity of the project area on a 1999 Haleiwa USGS topographic quadrangle base map

Table 3. Previously identified historic properties in the vicinity of the project area

SIHP # 50-80-04	Formal Type	Source	Comment
Site 202	Burial site	McAllister 1933	Skeletal remains (see present Section 4.1.2)
Site 203	<i>Heiau</i>	McAllister 1933	No name documented (see present Section 4.1.2)
Site 205	<i>Akua</i> stone	McAllister 1933	Said to have been called “Kāneaukai” and previously protected by a fence in a grove, once sacred to Pele; associated with Hawaiian graves (see present Section 4.1.2)
Site 206	<i>Heiau</i>	McAllister 1933	Kahakahuna Heiau (see present Section 4.1.2)
Site 207	<i>Heiau</i>	McAllister 1933	Kawai Heiau (see present Section 4.1.2)
Site 209	Worked stones	McAllister 1933	Worked stones in Poamoho Gulch (see present Section 4.1.2)
-06403	Burial site	Collins and Jourdan 2002; Davis 2002	Primary interment of one individual, likely a traditional Hawaiian burial
-06532	Burial site	Moore et al. 2004	Disturbed human burial containing a mandible fragment with six intact teeth, a skull fragment, and several small, fractured limb fragments
-06533	Waiialua Dairy Complex	Moore et al. 2004	Dairy and slaughterhouse 7 features designated: A, B, C, and E were concrete slabs, D designates the remains of a drainage pipe, F was a walled structure located near the beach, and G was a rectangular concrete water trough
-06534A	Pillbox	Moore et al. 2004	Likely related to WWII, the structures had been constructed of thick (30+cm), heavily reinforced concrete, only portions of slab less than 2 m in diameter remained
-06534B	Pillbox	Moore et al. 2004	Likely related to WWII, the structures had been constructed of thick (30+cm), heavily reinforced concrete, only portions of slab less than 2 m in diameter remained
-07143	Burial site	Filimoeala and Rieth 2010	Isolated human cervical vertebra identified in imported fill for a waterline



<b>SIHP # 50-80-04</b>	<b>Formal Type</b>	<b>Source</b>	<b>Comment</b>
-07604	Cane Haul Road	McElroy and Duhaylonsod 2014 (study in Kawaihoa Ahupua'a)	Former cane haul road associated with Waialua Sugar Co. that extends from Kawaihoa Rd to approximately 1.4 km south of Farrington Hwy
No SIHP	Halstead Mill	Buffum et al. 2004	Identified a basalt and mortar smokestack associated with the Halstead Mill (with an inscribed date of 1883) near Thomsons Corner that is approximately 50 ft tall and tapers upward to a concrete top; the round base diameter was approximately 12 ft and the top diameter was estimated to be 6 ft.
No SIHP	Irrigation valve boxes (2)	Hammatt and Shideler 2006b	Briefly discusses two square brick valve boxes
No SIHP	Retaining walls (3)	Hammatt and Shideler 2006b	A number of post-Contact retaining walls of various construction and states of preservation were noted.
No SIHP	Structure foundation	Hammatt and Shideler 2006b	A cement and brick incinerator with a heavy iron door that was in poor preservation due to disturbance by banyan tree roots
No SIHP	Waialua Ag. Co. office building	Hammatt and Shideler 2006b	The Waialua Ag. Co. office building was briefly described and it was noted that the building appeared to be in relatively good repair and actively used.
No SIHP	Waialua Ag. Co. shed	Hammatt and Shideler 2006b	Noted a small wooden plank shed located just to the north of the Waialua Sugar Company office
No SIHP	Waialua Beach Road Bridge-Ki'iki'i Stream (1950)	MKE Associates LLC, Fung Associates, Inc. 2013; Filimoehala and Rieth 2015	1950 Determined eligible for listing on the National and/or State Register(s) of Historic Places (see present Appendix B)

#### **4.2.1 Yent 1981**

The Department of Land and Natural Resources State Parks Division (Yent 1981) undertook an archaeological inspection of lands adjacent to Kaiaka State Recreation Area. The study area is a small peninsula on the west side of Kaiaka Bay. The land had been used by Waialua Sugar Company for sugarcane cultivation but was at that time fallow and unused except for garbage dumping.

An eroding cultural deposit was noted along the northern coastline of the peninsula. Apparently, the area had been heavily plowed and bulldozed in the past which created a disturbed deposit. The material in the deposit was noted as historic, dating back to the late 1800s-early 1900s. The cultural materials included bottle glass, cut glass, ceramics, and earthenware, mostly fragmentary. It was noted that the area had already been pot-hunted where the deposit was exposed along the coast or had been exposed on the surface from prior bulldozing. The materials evident on the surface and in the bank appeared to be the remains of the plantation workers in Waialua around 1900. The base marks and materials suggest a largely Asian population, mostly Japanese, which would correspond to the plantation population at the time.

#### **4.2.2 Collins and Jourdane 2002**

Sara Collins and Elaine (Muffet) Jourdane (2002) of the SHPD documented the inadvertent discovery of skeletal remains discovered during excavation of an electrical trench at the Waialua Hongwanji (designated SIHP # 50-80-04-06403). The remains of a minimum of one adult were evaluated to comprise approximately 1/3 to 1/2 of a human skeleton. No excavation by SHPD staff was conducted to determine the extent of additional skeletal material left in the trench although portions of what appeared to be shaft portions of adult long bones were evident at the base of the trench. No evidence of a burial pit or coffin was noted. It was determined that an archaeological consultant should screen the backdirt pile to recover the disturbed remains.

#### **4.2.3 Davis 2002**

Scientific Consultant Services, Inc. (Davis 2002) documented their response to the Waialua Hongwanji Mission inadvertent find (first reported by Collins and Jourdane 2002, above). They were thought to be from the primary interment of one individual; also thought to likely be a traditional Hawaiian burial (although the Mintmier and Collins study 2018:9, 10 asserts the burial dated to 1932). The loose remains were placed with the unexcavated remains and were left in place.

#### **4.2.4 Buffum et al. 2004**

Garcia & Associates (Buffum et al. 2004) documented archaeological surveys of proposed training areas for the Stryker Brigade Combat Team (SBCT). This study included SBCT training facilities at Schofield Barracks Military Reservation (SBMR), Kahuku Training Area (KTA), Wheeler Army Airfield (WAAF), military vehicle trails from SBMR to Dillingham Training Area (DTA) and to Helemano Military Reservation, O'ahu Island; and at Pohakuloa Training Area (PTA), Hawai'i Island. The designated "Dillingham Trail" study area extended roughly east/west approximately 700 m south of the Waialua Intermediate and High School campus. Five historic properties were identified within or adjacent to the Dillingham Trail survey corridor: the Wilson Ditch, the Halstead Mill, and three bridges.

The Wilson Ditch is an irrigation ditch depicted as early as a ca. 1922. The ditch generally runs along the 200-ft contour from Makaleha Stream at its western terminus to the Ito Ditch located due south of Waialua. The ditch is constructed of dressed basalt blocks mortared to form a U-shaped channel. The ditch is approximately 2 m wide and 0.5 to 0.7 m deep.

Field investigations identified a basalt and mortar smokestack near Thompson Corner approximately 50 ft tall that tapers upward to a concrete top. The round base diameter was approximately 12 ft and the top diameter is estimated to be 6 ft. The date 1883 is inscribed on the side of the smokestack. The site is known as the Halstead Mill.

Three concrete span bridges were located on a cane haul road within the proposed Dillingham Trail corridor. The bridges spanned three minor drainage channels on the coastal plain west of Dillingham Ranch. The bridges were similarly constructed of poured concrete bridge abutments spanned by a poured concrete roadbed. The approximate dimensions are 30 ft long by 15 ft wide. One of the bridges was inscribed with "Miyaki" and the date "2-26-1952." The bridges are part of a transportation system that serviced the agricultural fields of the Mokulē'ia coastal plain area. It is likely these bridges were constructed by the Dillingham Ranch in 1952 to facilitate truck hauling.

#### **4.2.5 Moore et al. 2004**

Archaeological Consultants of the Pacific, Inc. (Moore et al. 2004) carried out an archaeological inventory survey for a property located at TMKs: (1) 6-7-001:051 and 052 on the west side of Kaiaka Bay. Fieldwork included a 100% surface survey of the subject parcel as well as the excavation of 51 backhoe trenches across the project area and the bulldozed scraping of a corridor along the inland (*mauka*) property boundary adjacent to Pu'uiki Cemetery. The study identified four historic properties on the subject parcel. Sites included a previously disturbed collection of human osteological remains (SIHP # 50-80-04-06532), structural remains believed to have been associated with the Waialua Dairy (SIHP # 50-80-04-06533), the remains of two pillboxes likely associated with World War II (collectively SIHP # 50-80-04-06534) and an undocumented reinterment location, not permitted on the subject parcel, utilized by Hui Malama i Na Kupuna o Hawai 'i Nei ("Re-interment Site").

#### **4.2.6 Hammatt and Shideler 2006a**

As part of an Inter-Island DOE Cesspool project, CSH (Hammatt and Shideler 2006a) carried out an archaeological literature review and field inspection at Waialua High and Intermediate School but found no indications of archaeological deposits or burials and recommended no further work.

#### **4.2.7 Hammatt and Shideler 2006b**

In 2006, CSH (Hammatt and Shideler 2006b) conducted an archaeological literature review and field inspection within a 26.53-acre project area (TMK: [1] 6-7-009:003) on what appeared to be bottom lands of a flood plain on the west side of the Ki'iki'i Stream (also known as Kaukonahua Stream). Field observations concluded the vast majority of the project area was highly disturbed by modern agricultural activities and was almost entirely under cultivation for cacao (*Theobroma cacao*). No pre-Contact cultural remains were identified, however, a number of historic features, largely agricultural features, were noted during the field inspection.

#### **4.2.8 Monahan et al. 2007**

Archaeological Consultants of the Pacific, Inc. (Monahan et al. 2007) conducted an archaeological inventory survey for a property located in coastal Mokulē'ia Ahupua'a at TMK: (1) 6-8-011:050. This work preceded the construction of four single-family dwellings and a wastewater treatment and absorption system on a previously undeveloped parcel. Three backhoe test trenches were excavated but no historic properties were documented. Given the negative results of this survey, no further archaeological work was recommended at the subject parcel.

#### **4.2.9 Yorck et al. 2007**

CSH (Yorck et al. 2007) documented archaeological monitoring for the Waialua Beach Road Bikeway project (TMKs: [1] 6-7-001:006, 026; 6-8-006:010, 017). The project involved the construction of bikeway/walkways located on the south side of Waialua Beach Road for approximately 3.2 km (2 miles) extending from Kaukonahua Road to Au Street. The project also included the construction of retaining walls, a box culvert extension, the reconstruction of a driveway, and the relocation of underground and surface utilities. No significant cultural resources were documented during the monitoring fieldwork.

#### **4.2.10 Groza and Hammatt 2008**

CSH (Groza and Hammatt 2008) produced an archaeological monitoring report for a Hale'iwa Road Water System Improvements project in coastal Pa'ala'a and Kamananui Ahupua'a (TMKs: [1] 6-6-002:002, 005, 006, 008, 012–015, 020, 021, 031). The project extends from Waialua Beach Road down Hale'iwa Road to the Paukauila Stream Bridge for approximately 1,525 linear ft, continuing to Walikanahale Road for another 4,500 linear ft. SIHP # 50-80-04-07033 was designated for a pre-Contact subsurface cultural layer within the A horizon containing three pit features, marine shell fragments, coral, and some charcoal.

#### **4.2.11 Moore and Kennedy 2008**

Archaeological Consultants of the Pacific, Inc. (Moore and Kennedy 2008) conducted an archaeological inventory survey for a 9.63-acre property located on the east side of Ki'iki'i Stream near the stream mouth at TMK: (1) 6-6-021:001, in Kamananui Ahupua'a. During the surface survey "no sites of significance to the interests of historic preservation were identified" (Moore and Kennedy 2008:18). The study recommended a determination of "no historic properties and no further archaeological work."

#### **4.2.12 Filimoehala and Rieth 2010**

International Archaeological Research Institute, Inc. (IARII) (Filimoehala and Rieth 2010) documented archaeological monitoring of guardrail improvements between 66-080 Waialua Beach Road and Ki'iki'i Stream, in coastal Pa'ala'a Kai, and Kamananui Ahupua'a (TMKs: [1] 6-6-018:004, 006; 6-6-020:004-006, 017; 6-6-021:001; 6-6-022:004; and 6-7-0010:14, 032). This study included much of the present project area. The guardrail improvements required the installation of temporary silt fences, probing for a subsurface water line, removal of existing guardrails and posts, and the installation of new guardrails and posts. Approximately 445 m (1,460 ft) of guardrail in four sections were replaced. Sediments exposed during the limited excavations consisted principally of fill deposits creating the artificial roadway berm. No pre-Contact or significant historical cultural deposits or features were observed during the project.

However, a single human cervical vertebra was inadvertently encountered during the waterline probe [references photo, see present Figure 31] in the area adjacent to the east bank of Ki'iki'i Stream [references map, see present Figure 32. This element has been designated Site 50-80-04-7143. The bone was found between guardrail post 12 and 13 (when counting from east to west) approximately 60 cm from the edge of the road pavement and at a depth of approximately 30 centimeters below surface (cm bs) within the calcareous beach sand road fill (Layer V). No additional skeletal elements or associated cultural material was present, and it is apparent that the bone was transported to this location within the construction fill during the initial construction of the road prior to 1951. [Filimoehala and Rieth 2010:29]

The referenced photo (no human skeletal remains depicted, showing the indicated imported construction sand fill) is provided in Figure 31 and the location map is provided in Figure 32. The main point here is that the single human bone was understood as within a matrix of imported sand fill. The study notes, "The presence of the single human cervical vertebra does suggest the possibility that additional isolated human remains may be present in the modern construction fill" (Filimoehala and Rieth 2010:36).

#### **4.2.13 Vitousek 2010**

The SHPD (Vitousek 2010) produced a memorandum documenting the inadvertent discovery of human skeletal remains during monitoring activities associated with the Waialua Beach Road Guardrail Improvement project and their re-burial. This was a write-up of an SHPD site visit to the Filimoehala and Rieth (2010) documented find of a single human cervical vertebra (see above). The remains were reburied "where the skeletal remains were originally discovered [...] in the sand fill [...] It was buried between the twelfth and thirteenth guardrail posts (when counting from southwest to northeast) across from a house at 66-437 Waialua Beach Road" (Vitousek 2010:1).

#### **4.2.14 Filimoehala 2012**

IARII (Filimoehala 2012) produced an archaeological monitoring report for guardrail improvements at 66-101 and 66-826 Haleiwa Road (TMKs: [1] 6-6-001:025 and 6-6-020:018). The improvements included installation of temporary erosion, sedimentation, and traffic controls, installation of new metal guardrails, and the repair of any existing erosion damage. Sediments exposed during the limited excavations consisted principally of fill deposits associated with construction of Hale'iwa Road. No pre-Contact or significant historical cultural deposits or features were encountered during the project.

#### **4.2.15 Beauchan and Kennedy 2012**

Archaeological Consultants of the Pacific, Inc. (Beauchan and Kennedy 2012) produced an archaeological assessment report (AIS scope of work with no finds) for a property located in coastal Mokulē'ia Ahupua'a. This work preceded the proposed construction of two condominium units on then undeveloped parcels. Subsurface testing consisted of four backhoe trenches. While this assessment did not lead to the documentation of significant sites, given the documented presence of Jaucus sands, which have yielded burials in the vicinity, archaeological monitoring was recommended.



Figure 31. “Waterline probe excavation in which human vertebra was encountered (view north)” (from Filimoehala and Rieth 2010:35, no human skeletal remains depicted)

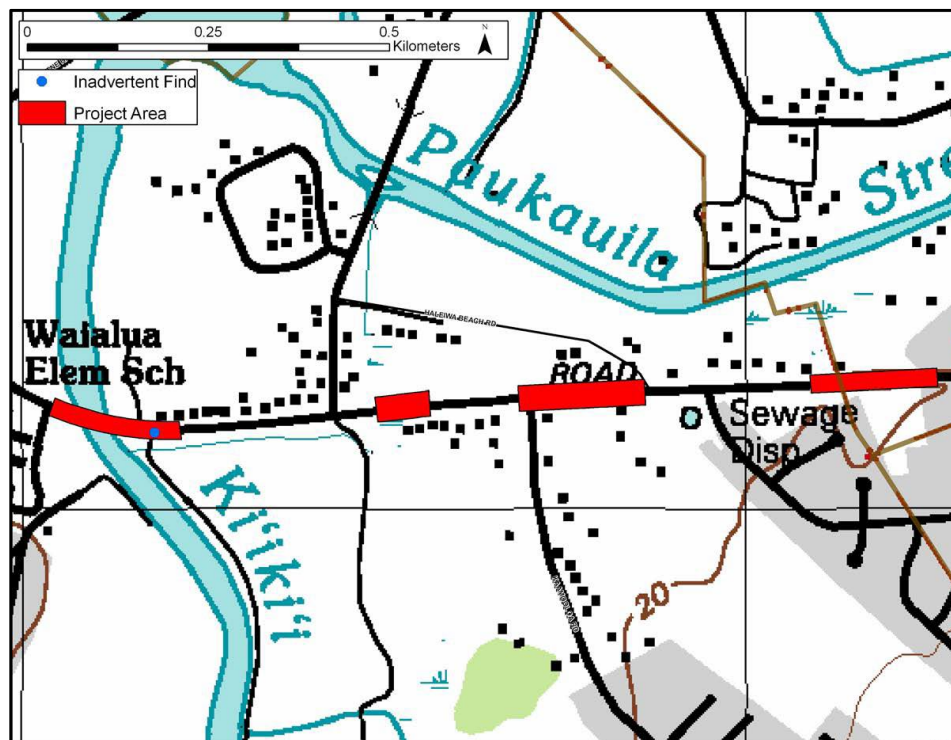


Figure 32. “Project area with the location of inadvertent find indicated” (from Filimoehala and Rieth 2010:34)

#### 4.2.16 Filimoehala and Rieth 2015

International Archaeology, LLC (Filimoehala and Rieth 2015) carried out an archaeological literature review for a proposed Ki'iki'i Stream Dredging project in Kamananui Ahupua'a, TMKs: (1) 6-6-002:001, 014; 6-6-021:001; 6-6-022:001, 004; 6-6-025:001, 003, 006, 007; 6-6-027:007; 6-7-000:000; and 6-7-001:032 (por.). The Ki'iki'i Stream Dredging project anticipated dredging of an approximately 1.7-km (1.06-mile) stretch of Ki'iki'i Stream (7.5 hectares or 18.6 acres), primarily between Waialua Beach Road and Farrington Highway. The field inspection was largely limited to a staging area and the Kaukonahua Bridge and Waialua Beach Road Bridge-Ki'iki'i Stream areas (thus it appears the vast majority of the project area was not traversed). Two historic properties were identified within the project area: Kaukonahua Bridge and Waialua Beach Road Bridge-Ki'iki'i Stream. The study concluded that

[...] no archaeological work is required within Ki'iki'i Stream prior to or during the dredging. There is no evidence suggesting that historic properties are present within the stream, and this is a dynamic riverine environment unlikely to preserve intact archaeological deposits or features. However, if dredging activities will impact the stream banks an archaeological inventory survey may be warranted for these areas. [Filimoehala and Rieth 2015:23]

#### 4.2.17 Mintmier and Collins 2018

Pacific Consulting Services, Inc. (Mintmier and Collins 2018) prepared an archaeological literature review and field inspection report for a Waialua District Park baseball field lighting replacement project (TMKs: [1] 6-7-001:044 and 047) in Waialua, Kamananui Ahupua'a located adjacent to the northwest of the present replacement of Waialua Beach Road bridge project area (there may in fact be some overlap). The project area is asserted to have been "108 acres" (Mintmier and Collins 2018:1), which is also cited in the SHPD review of 9 March 2018, but there appears to have been an error with the project area actually of 10.1 acres. The potential for historic properties or other cultural resources within that project area was determined to be low due to extensive ground disturbance.

#### 4.2.18 Vernon and Gosser 2020

Pacific Consulting Services, Inc. (Vernon and Gosser 2020) prepared an archaeological literature review and field inspection report for a Cesspool Closure and Septic Tank and Absorption Bed Installation project at the Waialua Public Library in Waialua, Kamananui Ahupua'a located approximately 300 m southwest of the present replacement of Waialua Beach Road bridge project area. The potential for traditional Hawaiian subsurface cultural layers or features and human burials within that project area was determined to be low.

#### 4.2.19 Merrin et al. 2023

Nohopapa Hawai'i LLC (Merrin et al. 2023) prepared a study of Kamananui Ahupua'a as part of a Waialua 'Āina (land) Inventory for Kamehameha Schools. The study focuses on "selected significant *wahi kūpuna* (ancestral places) in the *ahupua'a*" (Merrin et al. 2023:80) with summaries and locations depicted.



#### **4.2.20 Vernon and Gosser 2023**

Pacific Consulting Services, Inc. (Vernon and Gosser 2023) prepared an archaeological literature review and field inspection report for a 4.1-acre project area in support of floodlighting at the Waialua Recreation Center district park swimming pool at 67-180 Goodale Avenue in Waialua, Kamananui Ahupua'a located approximately 200 m west of the present replacement of Waialua Beach Road bridge project area. It was determined that there was low potential for pre-Contact historic properties and human burials in that project area, which was historically planted in sugarcane, subsequently followed by recreational use.

## Section 5 Field Inspection Results

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### 5.1 Overview of Fieldwork

A field inspection of the Replacement of Waialua Beach Road Bridge over Ki'iki'i Stream project area was undertaken by CSH archaeologist David W. Shideler, M.A., on 26 December 2024. The purpose of the field inspection was to document general conditions within the project area, document any potential historic properties and to assess the potential for significant subsurface deposits. The field inspection required approximately 0.85 person-day. An archaeologist's track log is provided in Figure 33 and a key to the following photographs (showing their general location and orientation) is provided in Figure 34.

In general, the field inspection started at the northwest corner of the project area and proceeded along the north side of the Waialua Beach Road portion of the project area across Ki'iki'i Bridge to the northeast corner of the project area where Waialua Beach Road intersects Hale'iwa Road and then followed the south side of the Waialua Beach Road portion of the project area back to the west end. Forays were undertaken to examine southern extensions of the project area generally from west to east and an attempt was made to ascertain the conditions in the general location of the re-buried human cervical vertebrae identified as SIHP # -07143.

A general view from the northwest corner of the project area is provided looking toward Waialua Elementary School in Figure 35. Proceeding to the southeast on the north side of Waialua Beach Road a 30-inch culvert was observed crossing under the road, with access constructions on each side that appeared to be more than 50 years old and as a potential historic property or possible character-defining feature of Waialua Beach Road as a potential historic property. The northern U-shaped concrete culvert access construction (Figure 36) measured 182 cm by 140 cm with an interior depth of 150 cm and an exterior height of 45 cm. A companion concrete culvert access construction (Figure 37) was noted on the south side of Waialua Beach Road at the Waialua Elementary School (Figure 38) which measured 270 cm by 130 cm with an interior depth of 153 cm and an exterior height of 54 cm.

Proceeding east, the bridge was soon reached (Figure 38) and the inscriptions "Kiikii" and a construction date of "1952" were noted. Two women were observed fishing and crabbing at the southwest corner of the bridge (see Figure 47). A view of the northwest corner of the bridge is provided in Figure 39. A general view back to the west from the central east portion of the project area north of Waialua Beach Road is provided in Figure 40 and a view from the east end of the project area along Waialua Beach Road at the intersection with Hale'iwa Road is provided in Figure 41. Much of the south edge of Waialua Beach Road in the east end of the project area was observed to be supported by concrete blocks (Figure 42) of a type believed to post-date the 1952 bridge construction indicating later road improvements. A general view is provided approaching the eastern south side of Ki'iki'i Bridge approximately midway on the project area east of the bridge (Figure 43) and a view is provided of the southeast corner of Ki'iki'i Bridge (Figure 44) showing a trestle supporting a large utility pipe that runs parallel along the southside of the Ki'iki'i Bridge.



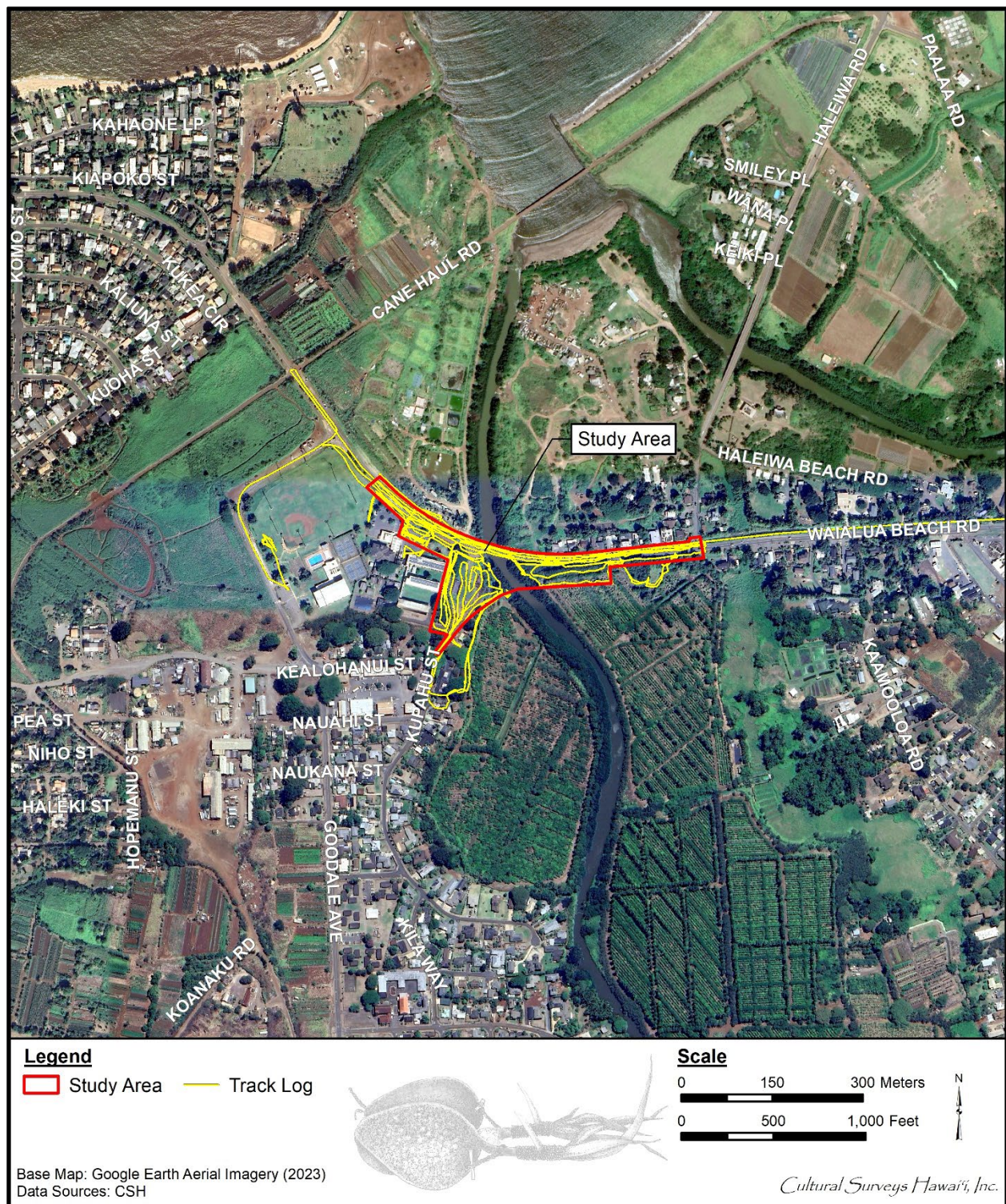


Figure 33. Archaeologist's track log showing the general location and orientation of the following photographs on a Google Earth 2023 aerial photograph base map



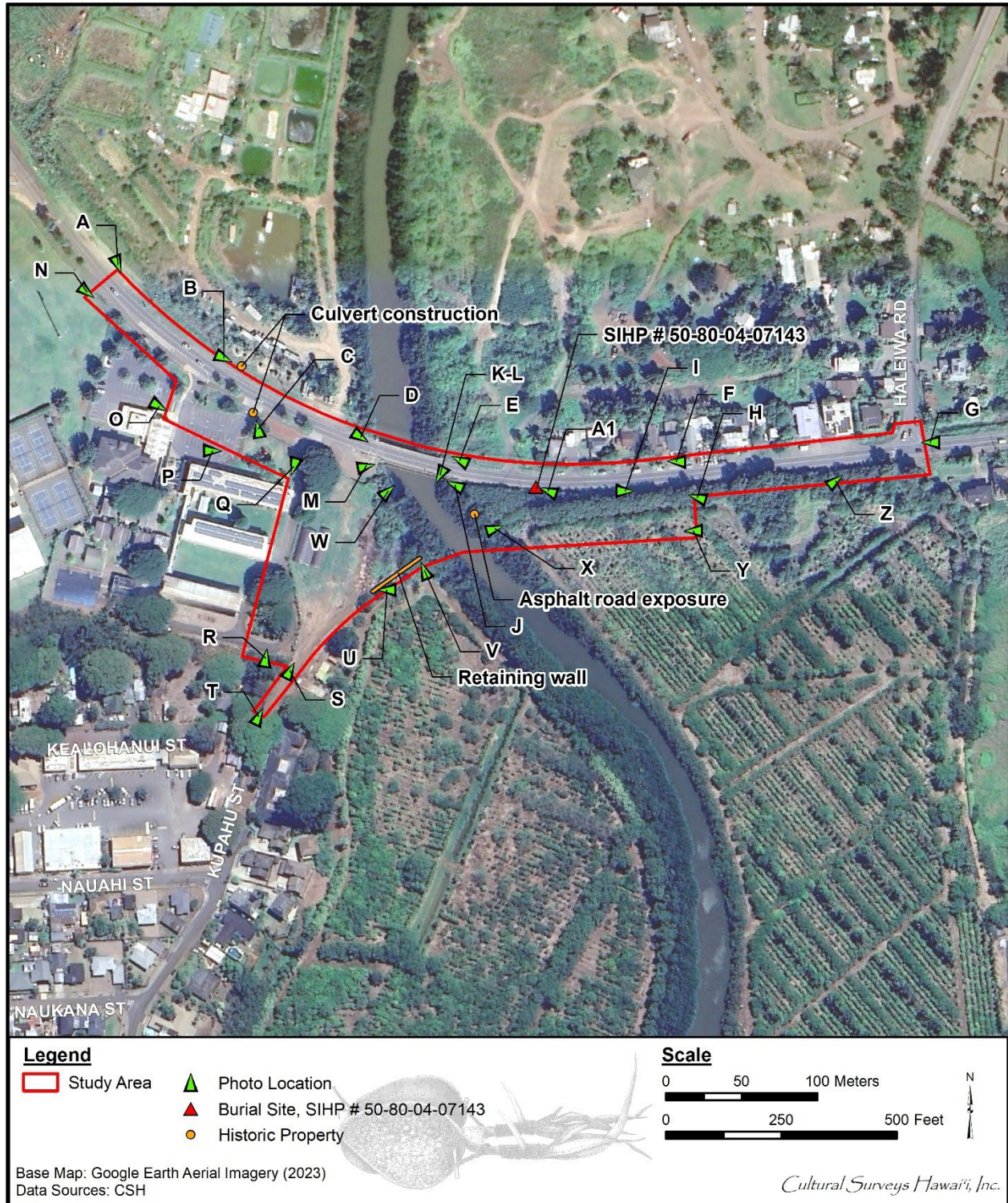


Figure 34. Key showing the general location and orientation of the following photographs on a Google Earth 2023 aerial photograph base map





Figure 35. Photo A: View from the northwest corner of the project area (Waialua Elementary School at upper right), view to southeast



Figure 36. Photo B: Culvert (passing under Waialua Beach Road) opening on northeast side of Waialua Beach Road, view to southeast





Figure 37. Photo C: Companion culvert opening just east of exit of Waialua Elementary School (Waialua Beach Road in background), view to northwest



Figure 38. Photo D: Approach to northwest corner of Ki'iki'i Bridge from the northwest (note two women fishing and crabbing at right of center), view to east-southeast





Figure 39. Photo E: View of northeast corner of Ki'iki'i Bridge, view to northwest



Figure 40. Photo F: View back toward Ki'iki'i Bridge (Waialua Elementary School in center background), view to west





Figure 41. Photo G: View of the east end of the project area at intersection of Waialua Beach Road and Hale'iwa Road (at right foreground), view to west



Figure 42. Photo H: South side of eastern project area where it widens to the south, view to west





Figure 43. Photo I: Approaching eastern south side of Ki'iki'i Bridge, view to west



Figure 44. Photo J: At southeast corner of Ki'iki'i Bridge showing parallel pipeline on utility trestle on south side, view to northwest

At this southeast corner of the Ki'iki'i Bridge (Figure 45, close-up in Figure 46) is a plaque that reads:

IN MEMORY OF  
HOWARD HISAYUKI KURIO  
CIVIL ENGINEER AND CITIZEN WHO WAS  
FATALLY INJURED HERE ON APRIL 17, 1952  
DURING CONSTRUCTION OF THIS BRIDGE  
THIS PLAQUE IS DEDICATED BY  
HIS MANY FRIENDS AND ASSOCIATES

While passing the fisherfolk on the southwest corner of the Ki'iki'i Bridge (Figure 47) a brief conversation indicated they were successful with their crabbing and it was understood they were capturing the crabs to be raised in an aquacultural effort. The traverse along the southern margin of the Waialua Beach Road was uneventful back to the west end of the project area just northeast of Waialua District Park (Figure 48).

While the north side of the Replacement of Waialua Beach Road Bridge over Ki'iki'i Stream project area is understood to approximate the north edge of the Waialua Beach Road Right-of-Way, the southern side is complicated. Proceeding east from the west end the project appears to include a northeast portion of Waialua District Park just west of Waialua Elementary School (Figure 49). The project area includes a significant northern portion of Waialua Elementary School (access driveways and parking lot, Figure 50). At the east side of the Elementary School is a long driveway extending to the southwest that is included in the project area (Figure 51 and Figure 52). This long access driveway (seemingly part of the school) is separated by a chain link fence from a generally open and level parcel extending to Ki'iki'i Stream (Figure 53) understood as including a north portion of Kealohanui Street. The southern tip of the project area is separated by a gate (understood as at the north end of Kealohanui Street, Figure 54).

In inspecting the portion of the project area along the west side of Ki'iki'i Stream south of Waialua Beach Road, a retaining wall of basalt boulder set in concrete mortar was observed (Figure 55). While clearly post-Contact, this retaining wall was perceived as more than 50 years old and hence a potential historic property. It seemed likely this retaining wall functioned to level the area immediately on the west and is understood to have supported a former road. The wall was typically of seven courses of medium basalt boulders, typically 190 cm high and 50 cm wide. Much of the margin of the project area on the west side of the stream was covered in dense grass, or more typically mangrove that made close inspection problematic (Figure 56). A view of the south side of the Ki'iki'i Bridge is provided from stream level (Figure 57).

The south side of the project area on the east margin of Ki'iki'i Stream is similarly in dense mangrove with some tangled *hau*. In this area a patch of asphalt paving was noted that extended to the east bank of the stream. The profile exposure (Figure 58) showed the road was supported by four courses of large basalt boulders 1.44 m high that supported a top thickness of an additional 35 cm of asphalt. It was thought this might be a remnant of an earlier asphalt road stream crossing possibly predating the 1952 bridge, and as a potential historic property.

Much of the wide portion of the project area just east of the river and south of Waialua Beach Road is in a relatively open cacao tree farm (Figure 59). The area immediately south of the Waialua





Figure 45. Photo K: “In Memory” plaque on the southeast corner of the Ki’iki’i Bridge, view to southwest



Figure 46. Photo L: Close-up of “In Memory” plaque on the southeast corner of the Ki’iki’i Bridge, view to southwest





Figure 47. Photo M: View off the southwest corner of the Ki'iki'i Bridge (note women crabbing and fishing), view to east-northeast



Figure 48. Photo N: Southwest end of project area (Waialua District Park at lower right), view (toward bridge) to east-southeast





Figure 49. Photo O: View of the west portion of the project area where it widens to the south into Waialua District Park (foreground, Waialua Elementary School at upper right), view to east-southeast



Figure 50. Photo P: View of project area crossing northern portion of Waialua Elementary School (parking lot), view to east





Figure 51. Photo Q: View of southwestern extension of project area into eastern Waialua Elementary School, view to south



Figure 52. Photo R: View of southwestern extension of project area into eastern Waialua Elementary School, view to north





Figure 53. Photo S: View of the south end of property on west side of Ki'iki'i Stream (at right) understood as including a north portion of Kealohanui Street (Waialua Elementary School at upper left), view to northeast



Figure 54. Photo T: View from the south end of the project area understood as Kealohanui Street (Waialua Beach Road barely visible in center background), view to northeast





Figure 55. Photo U: Basalt boulder with concrete mortar retaining wall (understood as supporting the former main road from 1901 to 1951) in the southwest portion of project area, view to northwest



Figure 56. Photo V: General view of thick mangrove growth along Ki'iki'i Stream southeast of the bridge, view to northwest





Figure 57. Photo W: General view of the south side of Ki'iki'i Bridge from the southwest bank of the stream, view to northeast



Figure 58. Photo X: Old asphalt road exposure on an abutment base of large basalt boulders (understood as supporting the former main road from ca. 1901 to 1951) on the east bank of Ki'iki'i Stream, view to northeast





Figure 59. Photo Y: General view of eastern southern expansion of project area in a cacao field, view to west



Figure 60. Photo Z: General view of ditch on south side of Waialua Beach Road east of bridge, view to northeast



Beach Road Right-Of-Way is, however, in quite dense grass and mangrove. A ditch with stagnant water approximately 2.5 m wide and 1.5 m deep (see Figure 60) parallels the south side of Waialua Beach Road for much of the project area east of the river. While this earthen ditch may have simply been a drainage feature for Waialua Beach Road, it seemed possible it was a component of Waialua Sugar Company irrigation system. Regardless, it was regarded as almost certainly more than 50 years old and as a potential historic property.

The general location of the indicated re-interment of a single human vertebrae was examined (Figure 61). It appears to be along a dirt road on the south side of Waialua Beach Road east of the bridge. Unfortunately, this area is used as a dump. There was consensus that this single human bone (designated SIHP # -07143) was accidentally imported with fill. With the re-burial near where the bone was encountered, it is understood that technically the re-burial site has this historic preservation designation.

With the exception of the possibility of “additional isolated human remains [that] may be present in the modern construction fill” (Filimoe hala and Rieth 2010:36), the prospect of significant subsurface cultural deposits in the project area was evaluated in the field as being low.



Figure 61. Photo A1: Approximate location of re-buried human vertebrae (at location of backpack at center) at a dirt road east of Ki'iki'i Stream and south of Waialua Beach Road

## Section 6 Summary and Recommendations

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### 6.1 Summary of Historic Properties

#### 6.1.1 SIHP # 50-80-04-07143

As noted above, the single human vertebrae from imported fill, designated SIHP # -07143 (see Filimoechala and Rieth 2010 and Vitousek 2010 for details), is understood as located within the project area, east of the stream and south of Waialua Beach Road. The approximate location is indicated in Figure 32, Figure 34, and Figure 61. SHPD provides the following locational data for the reburial:

The remains were reburied just outside of the Waialua Beach Road corridor adjacent to TMK# (1)-6-6-022:004. It was buried between the 12th and 13th guardrail posts (when counting from southwest to northeast) across from a house with the address 66-437 Waialua Beach Road. Chris Filimoechala of IARII took the following GPS coordinates on the reburial site: UTM~ E 0591181 and N 2386105. [Vitousek 2010:1]

It is recommended that subsurface excavation in this vicinity be generally avoided, or if necessary, that such excavation be conducted in consultation with the SHPD, the O'ahu Island Burial Council (OIBC), and the concerned Native Hawaiian community.

#### 6.1.2 Remnants of the Former Road and Bridge

Contemporary TMK plat maps (see TMK plat: [1] 6-6-021 Figure 2, TMK plat: [1] 6-6-022 Figure 3, and TMK plat: [1] 6-7-001 Figure 4) continue to show a former road and bridge across Ki'iki'i Stream. This road and bridge are still quite evident on the 1951 USGS aerial photograph (see Figure 22) which does not appear to show the contemporary Ki'iki'i Bridge or the adjacent western portion of Waialua Beach Road. The contemporary bridge has the date "1952" which is the same year the civil engineer Howard Kurio was fatally injured there which makes it a minor mystery that the Bridge Inventory asserts "The Kiikii Stream Bridge was built in 1950 [...]" (MKE Associates LLC, Fung Associates, Inc. 2013:4-441, see present Appendix B). Regardless, it seems probable the former bridge was demolished shortly after the present bridge was built (the former bridge does not appear on the 1953 USGS topographic quadrangle; see Figure 23).

The early history of the former bridge across Ki'iki'i Stream is unclear. The Rockwood map of Leeward Trails (see Figure 9) indicates a traditional Hawaiian trail crossing Ki'iki'i Stream in the general vicinity but this could have been well seaward (as suggested by Rockwood's approximation). The span would have been too great for a traditional Hawaiian log bridge, and it seems likely travelers just swam across the stream.

The 1889 Emerson map (see Figure 11) gives no hint of a road bridge alignment anywhere near this location but the 1901 Wall map (see Figure 12) appears to clearly show the former road and bridge. It thus seems most likely the former bridge was built between 1889 and 1901 (although no newspaper reference could be found to support this).

Within the project area two remnant archaeological features are believed to relate to the former bridge and adjacent road sections, a basalt boulder with concrete mortar retaining wall (see Figure



55, photo U) on the west side of the stream (see Figure 34 for location of the retaining wall) and an old asphalt road exposure on a base of large basalt boulders (understood as supporting the former main road from ca. 1901 to 1951) on the east bank of Ki'iki'i Stream (see Figure 58 photo X and Figure 34 for location). It seems likely there is a similar large basalt abutment on the west side of the stream, but this was not seen due to the thick mangrove growth in that vicinity (see Figure 56), or the west abutment may have been lost to erosion.

It seems clear that much of the southern tip of the project area (see Figure 53 photo S and Figure 54 photo T, and Figure 34 for location) was in fact the alignment of this former road (no asphalt or formal road remnant was observed on this earthen track).

The significance and integrity of the identified remnants of this former road (see Figure 55 and Figure 58) seem somewhat subjective. We are inclined to evaluate the observed remnant features as significant under Criterion d only for their information content and that while these features possess integrity of location (they are where they were built), and materials (the basalt boulders and asphalt used in construction are still clearly seen), and integrity of workmanship (while not outstanding, the stonework of the terrace and abutment was evaluated as displaying workmanship), they were regarded as lacking integrity of design (the remnants do not have the physical form or style of a road or bridge), lacking integrity of setting (they do not have the physical environment of a road/bridge), and as lacking integrity of association in that there was no perceived link to an event, activity, or person.

The evaluation of integrity of feeling was something of a toss-up but the stonework was felt to be evocative of the aesthetic and historic sense of the past time of the road.

### **6.1.3 Present Road and Bridge**

The major aspect of the present road/bridge is the (1952) bridge itself which has been formally evaluated as eligible to be listed on the National/Hawai'i Register (see Appendix B), with specific reference to Criterion B and its association with the civil engineer Howard Kurio who was fatally injured there.

Two other features related to the creation of Waialua Beach Road are documented here, a concrete culvert (see Figure 36 and Figure 37) and what is seemingly just a drainage ditch on the south side of the road (see Figure 60). While both these features were believed to be more than 50 years old, neither were regarded as significant individually under HAR §13-275-6(b) Criteria a through e.

## **6.2 Recommendations**

Following the discovery of human skeletal remains (one vertebrae in an imported fill deposit) designated SIHP # -07143 the study notes, "The presence of the single human cervical vertebra does suggest the possibility that additional isolated human remains may be present in the modern construction fill" (Filimoehala and Rieth 2010:36).

The present study documents that potential historic properties—particularly associated with a former road and bridge along the southeast margin of the property that existed from at least as early as 1901 (see Figure 12) and was still extant as late as 1951 (see Figure 22)—are extant within the project area.

The existing 1952 bridge has been formally evaluated as eligible to be listed on the National/Hawai'i Register (see Appendix B), with specific reference to Criterion B and its association with the civil engineer Howard Kurio who was fatally injured there. It is recommended that an architectural historian document the Waialua Beach Road Bridge-Ki'iki'i Stream and Waialua Beach Road and its subfeatures. It is also recommended that the former road and bridge remnants also be assessed. Consultation with both the SHPD Architecture and Archaeology branches regarding appropriate mitigation is recommended.

The previously documented human skeletal remains within the imported sand fill associated with the existing water line were preserved in place and may be within the boundaries of project-related ground disturbance and/or the temporary roadway for the temporary replacement bridge. It is recommended that the project consult with SHPDs Archaeology Branch and History and Culture Branch to determine appropriate next steps regarding the human skeletal remains.

Although the likelihood of undocumented archaeological historic properties being present within the project area is low, the identification of human skeletal remains within the existing water line trench suggest an identification effort will be required. Additional exposures of human skeletal remains are not expected outside the existing water line trench. The findings of this literature review and field inspection (LRFI) support a program of archaeological monitoring as a sufficient form of identification, however, it is possible an archaeological inventory survey may be required by the SHPD.

It may be more effective to examine any project-related impacts within the context of an archaeological monitoring program rather than an archaeological inventory survey for the following reasons:

- The concern for possible additional human skeletal remains is largely focused on the imported sand bedding that cushions a 16-inch water pipe that runs the length of the highway (see Figure 24). An archaeological inventory survey along this water line would likely only address a small portion and at some risk of water line breakage.
- Monitoring would allow for documentation of the remnants of the former road and former bridge abutments as they are exposed in the course of the work.
- Monitoring would allow better conditions for documentation of the banks of Ki'iki'i Stream, which might possibly have archaeological evidence of agricultural practices (bunds or ditches, or habitations) but are problematic of access owing to the very thick vegetation (see Figure 56, Figure 57, and Figure 60) that also creates difficult conditions for archaeological excavation.

Thus, it is recommended that a program of archaeological monitoring be undertaken, to begin with an archaeological monitoring plan (AMP) conforming to HAR §13-279-4 governing archaeological monitoring plans and submitted to the SHPD for review and acceptance prior to any project-related ground disturbing work. However, it is possible an archaeological inventory survey may be required by the SHPD.

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# Appendix A English Language Newspaper

## Articles referencing “Kamananui” 1852-1905

Date	Newspaper	Title	Summary
1852, 12 June	<i>The Polynesian</i>	Complaint from Kahuku Oahu	“Simona Delalande, catholic priest at Waialua” writing from Kamananui complains the catholic schools are not being treated fairly.
1852, 12 June	<i>The Polynesian</i>	Complaint from Kamananui	Addresses Hanapule, Paele, Punilio, and the other Catholics who have requested land for your priest in Kamananui, Wialua [sic].” Grant denied, but offer to sell at 25cents/acre
1852, 12 June	<i>The Polynesian</i>	Complaint from Kamananui	J.S. Emerson “measured the school land and church land, for the papists in Kamananui” [...] the priest refused to pay for the land or the survey”
1862, 30 Oct	<i>Pacific Commercial Advertiser</i>	Valuable Sale of Real Estate	25 8/10 acres in Kamananui, Waialua granted to J. Anderson and F. Davis conveyed to A. McDuff, conveyed to James Robinson & Co up for auction
1862, 1 Nov	<i>The Polynesian</i>	Valuable Sale of Real Estate	25 8/10 acres in Kamananui, Waialua granted to J. Anderson and F. Davis conveyed to A. McDuff, conveyed to James Robinson & Co up for auction
1862, 6 Nov	<i>Pacific Commercial Advertiser</i>	Valuable Sale of Real Estate	25 8/10 acres in Kamananui, Waialua granted to J. Anderson and F. Davis conveyed to A. McDuff, conveyed to James Robinson & Co up for auction
1862, 8 Nov	<i>The Polynesian</i>	Valuable Sale of Real Estate	25 8/10 acres in Kamananui, Waialua granted to J. Anderson and F. Davis conveyed to A. McDuff, conveyed to James Robinson & Co up for auction
1876, 22 Nov	<i>The Hawaiian Gazette</i>	Real Estate Exchange	To Lease 300 Acres Splendid Grazing Land at Kamaile, Kamananui, Waialua
1876, 2 Dec	<i>Pacific Commercial Advertiser</i>	Real Estate Exchange	To Lease 130 Acres Splendid Grazing Land at Kamaile, Kamananui, Waialua...E.T. O’Halloran, Solicitor
1876, 30 Dec	<i>Pacific Commercial Advertiser</i>	Real Estate Exchange	To Lease 130 Acres Splendid Grazing Land at Kamaile, Kamananui, Waialua...E.T. O’Halloran, Solicitor
1879, 10 May	<i>Pacific Commercial Advertiser</i>	Licenses expiring	Retail license to Ahuna, Kamananui, Waialua

Date	Newspaper	Title	Summary
1879, 17 May	<i>Pacific Commercial Advertiser</i>	Licenses expiring	Retail license to Ahuna, Kamananui, Waialua
1879, 24 May	<i>Pacific Commercial Advertiser</i>	Licenses expiring	Retail license to Ahuna, Kamananui, Waialua
1879, 31 May	<i>Pacific Commercial Advertiser</i>	Licenses expiring	Retail license to Ahuna, Kamananui, Waialua
1879, 20 Dec	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 3 January	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 24 January	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 28 January	<i>The Hawaiian Gazette</i>	Notice of Mortgage Foreclosures	Foreclosure of mortgages at Kamananui, Waialua: 1) to Peahi, 2) to Mano and Peahi and 3) at "Kamanui" to Kaialiilii
1880, 4 February	<i>The Hawaiian Gazette</i>	Notice of Mortgage Foreclosures	Foreclosure of mortgages at Kamananui, Waialua: 1) to Peahi, 2) to Mano and Peahi and 3) at "Kamanui" to Kaialiilii
1880, 7 February	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 21 February	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 28 February	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 20 Mar	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880. 17 April	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880. 24 April	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale

<b>Date</b>	<b>Newspaper</b>	<b>Title</b>	<b>Summary</b>
1880, 1 May	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 8 May	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 8 May	<i>Pacific Commercial Advertiser</i>	Licenses expiring	Retail license to Ahuna, Kamananui, Waialua
1880, 29 May	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 5 Jun	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 19 Jun	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 26 June	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 10 July	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1880, 24 July	<i>Pacific Commercial Advertiser</i>	Land for Sale	Wm Hillebrand offering 708 ½ acres at Kemoo, Kamananui formerly leased to John Silva and Owen J. Holt for sale
1881, 15 Jan	<i>Pacific Commercial Advertiser</i>	Notes of the Week	Land sales various lots of land in Kamananui, Waialua incl. 97 acres of grazing land and 70 acres of Kalo land
1881, 30 Apr	<i>Pacific Commercial Advertiser</i>	Licenses Expiring	Retail license to Ahuna, Kamananui, Waialua
1881, 7 May	<i>Saturday Press</i>	Real Estate at Public Auction	Lokai (w) and Henry Kama to A.J. Cartwright tract of land at Kamananui
1881, 11 May	<i>The Hawaiian Gazette</i>	Real Estate at Public Auction	Lokai (w) and Henry Kama to A.J. Cartwright tract of land at Kamananui
1881, 14 May	<i>Saturday Press</i>	Real Estate at Public Auction	Lokai (w) and Henry Kama to A.J. Cartwright tract of land at Kamananui

Date	Newspaper	Title	Summary
1881, 18 May	<i>The Hawaiian Gazette</i>	Real Estate at Public Auction	Lokai (w) and Henry Kama to A.J. Cartwright tract of land at Kamananui
1881, 21 May	<i>Saturday Press</i>	Real Estate at Public Auction	Lokai (w) and Henry Kama to A.J. Cartwright tract of land at Kamananui
1887, 10 Oct	<i>The Daily Bulletin</i>	Land Sales	1 1/10 acre at Kamananui for \$25; 5 1/10 acre at Kamananui for \$45
1895, 25 April	<i>The Hawaiian Star</i>	Sale of a Strip of Government Land	12.3 acres at Kamananui will be sold, upset price \$61.50
1895, 25 April	<i>Pacific Commercial Advertiser</i>	Local Brevities	A strip of Government land at Kamananui will be sold
1895, 26 April	<i>Pacific Commercial Advertiser</i>	Sale of a Strip of Government Land	12.3 acres at Kamananui will be sold, upset price \$61.50
1895, 27 April	<i>Pacific Commercial Advertiser</i>	Sale of a Strip of Government Land	12.3 acres at Kamananui will be sold, upset price \$61.50
1899, 27 June	<i>The Independent</i>	Recorded May 13, 1899	Luika Kaalemauna of Waialua to Waialua Agricultural Co. land at Kamananui
1899, 22 July	<i>The Independent</i>	Leases	Helela of Waialua to Waialua Agricultural Co. at Kamananui [and] J.S. Emerson of Honolulu to Waialua Agricultural Co. at Kamananui
1899, 3 Aug	<i>The Independent</i>	Recorded June 7, 1899	Henry Wharton of Waialua to Loo Joe rental of land at Kamananui
1899, 8 Aug	<i>The Independent</i>	Estate Register	Waialua Agricultural Co. to E&K Kawaikumuole interest in grant at Kamananui [and] Wm Perry of Waianae to E&K Kawaikumuole interest in grant at Kamananui
1899, 27 Sept	<i>The Independent</i>	Leases	Ulena of Waialua to Waialua Agricultural Co. land at Kamananui
1899, 12 Oct	<i>The Independent</i>	Conveyances	H. Wharton and Wife of Waialua to Waialua Agricultural Co. land at Kamananui
1899, 2 Nov	<i>The Independent</i>	Conveyances	Lui Kamana of Honolulu to S.H. Kalamakee of Waialua land at Kamananui

Date	Newspaper	Title	Summary
1899, 5 Dec	<i>The Independent</i>	Leases	E.K. Kalehua of Waialua to Waialua Agricultural Co. land at Kamananui
1899, 11 Dec	<i>The Independent</i>	Conveyances	S.K. Kalamakee and wife of Waialua to Waialua Agricultural Co. land at Kamananui
1900, 25 April	<i>Pacific Commercial Advertiser</i>	Sale of a Strip of Government Land	12.3 acres at Kamananui will be sold, upset price \$61.50
1900, May 17	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Kapiolani Estate, Limited to Waialua Agricultural Co. land at Kamananui, Consideration \$1
1900, May 25	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Kauahikea to J.M. Kealoha land at Kamananui. Consideration \$50
1900, 31 May	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	D.K. Kaiakawaha to S.K. Pua land at Kamananui. Consideration \$100
1900, June 29	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Kepani to L. Kalaikawaha land at Kamananui. Consideration \$40
1900, August 25	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Kelupaina to J.M. Kealoha land at Kamananui. Consideration \$15
1901, 16 Oct	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Ikalua to Kauakahi [land at] Kamananui Waialua \$50.
1901, 14 Dec	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Kaauwahi and Kaiwinui to Kula [land at] Lehuula, Kamananui, Waialua Consideration \$2
1902, 13 Sept	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Kaoo & wf to Oahu Railway and Land Co. ... Kamananui con \$125.
1902, 9 Oct	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Kahanawale & hsb to Oahu Railway and Land Co. ... Kamananui con \$40.
1902, 16 Oct	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	K. Ahuna & hsb to Keloha Kamananui Waialua. con \$200
1903, 28 Jan	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Waialua Agricultural Co. Ltd to Oahu R. & Land Co. 40 ft. right of way Kamananui Waialua Consideration \$1
1903, 23 Feb	<i>Pacific Commercial Advertiser</i>	Capacity of Streams and Ditches	There are six streams of water controlled by the Waialua Agricultural Company...Kamananui 60



Date	Newspaper	Title	Summary
			cubic feet per minute ... [ditch capacity] Kamananui, surveyed only
1903, 24 Feb	<i>Evening Bulletin</i>	House [Government ]	Repairing and building of bridges from Walikanahele to Kamananui and from Kamooloa to Waialua sugar mill, \$27,000.
1903, 20 Mar	<i>Pacific Commercial Advertiser</i>	House Had Short Working Session	On Mr. Pali's resolution for \$30,000 for repairing and building bridges from Walianahele to Kamananui ...laid on the table...
1904, 12 Mar	<i>Pacific Commercial Advertiser</i>	Real Estate Transactions	Aneko to W.K. Kaulu, et al. [land at Kapalāma and] Kamananui Waialua \$1.
1904, 30 Mar	<i>Pacific Commercial Advertiser</i>	Big Foreclosure Sale	Henry Smith, trustee vs. John D. Holt Jr. et al. [including] lands in Kamananui containing 36 acres
1904, 1 Apr	<i>Pacific Commercial Advertiser</i>	Com- missioner's Sale of Valuable Real Estate	Lands in Kamananui containing 36 acres
1904, 8 Apr	<i>Pacific Commercial Advertiser</i>	Com- missioner's Sale of Valuable Real Estate	Lands in Kamananui containing 36 acres
1904, 11 Apr	<i>Pacific Commercial Advertiser</i>	Com- missioner's Sale of Valuable Real Estate	Lands in Kamananui containing 36 acres
1904, 15 Apr	<i>Pacific Commercial Advertiser</i>	Com- missioner's Sale of Valuable Real Estate	Lands in Kamananui containing 36 acres
1904, 18 Apr	<i>Pacific Commercial Advertiser</i>	Com- missioner's Sale of Valuable Real Estate	Lands in Kamananui containing 36 acres
1904, 22 Apr	<i>Pacific Commercial Advertiser</i>	Com- missioner's Sale of	Lands in Kamananui containing 36 acres

Date	Newspaper	Title	Summary
		Valuable Real Estate	
1904, 17 June	<i>Pacific Commercial Advertiser</i>	Realty Transactions	Mrs. Kawaikumuole to Kaaipuliki [lands at] Kamananui, Waialua \$85
1904, 12 Oct	<i>Pacific Commercial Advertiser</i>	Realty Transactions	Bessie A Kauwalu et als to Waialua Agrctl Co Ltd \$102 per yr.
1905, 21 Jan	<i>Pacific Commercial Advertiser</i>	Realty Transactions	Charles G. Bartlett to Eperaima Kawaikumuole Kamananui [land] \$130 [and] Eperaima Kawaikumuole Kamananui to Antone J. Lopez [bldgs., etc] \$250
1905, 13 May	<i>Pacific Commercial Advertiser</i>	Notice of Intention to Foreclose	[Reference to land at Huea, Kamananui, Kalihi]
1905, 20 May	<i>Pacific Commercial Advertiser</i>	Notice of Intention to Foreclose	[Reference to land at Huea, Kamananui, Kalihi]
1905, 27 May	<i>Pacific Commercial Advertiser</i>	Notice of Intention to Foreclose	[Reference to land at Huea, Kamananui, Kalihi]
1905, 31 May	<i>Pacific Commercial Advertiser</i>	Notice of Intention to Foreclose	[Reference to land at Huea, Kamananui, Kalihi]
1905, 1 June	<i>Pacific Commercial Advertiser</i>	Notice of Intention to Foreclose	[Reference to land at Huea, Kamananui, Kalihi]
1905, 2 June	<i>Pacific Commercial Advertiser</i>	Notice of Intention to Foreclose	[Reference to land at Huea, Kamananui, Kalihi]
1905, 3 June	<i>Pacific Commercial Advertiser</i>	Notice of Intention to Foreclose	[Reference to land at Huea, Kamananui, Kalihi]
1905, 1 Sept	<i>Pacific Commercial Advertiser</i>	Realty Transactions	Edward S Holt and wf to William O. Smith Kamananui, etc. Waialua \$3000
1905, 17 Oct	<i>Pacific Commercial Advertiser</i>	Realty Transactions	Edward S Holt and wf to Arthur M. Brown [lands at] Kamananui, etc. Waialua \$1250.
1905, 18 Oct	<i>The Hawaiian Star</i>	Realty Transfers	Edward S Holt and wf to Arthur M. Brown [lands at] Kamananui, etc. Waialua \$1250.

Date	Newspaper	Title	Summary
1905, 11 Nov	<i>Pacific Commercial Advertiser</i>	Land Case	Hoopii Wire has brought an amended complaint against Waialua Agricultural Co., Ltd. ... an area of one hundred acres. She claims \$5000 damages
1905, 25 Dec	<i>Pacific Commercial Advertiser</i>	Realty Transactions	Lokai Kawaikumuole to Daniel K Kukea [lands at] Kamananui, Waialua \$1

## Appendix B Bridge Summary (from Hawaii State Historic Bridge Inventory & Evaluation, MKE Associates LLC, Fung Associates, Inc. 2013:4-27)

Bridge Number	Bridge Name	Feature Crossed	Feature Carried	Construction Date	Bridge Type	Parapet/Railing Type	Listed on National/Hawai'i Register	Eligibility Status	Character Defining Feature (Significance)	Page No.
00360500 1100001	Waialua Beach Road Bridge-Kiikii Stream	Kiikii Stream	Waialua Beach Road	1950	Concrete Tee Beam	Concrete Open Horizontal	No	Eligible	Associated with Howard Hisayuki Kurio who worked for Territorial Department of Public Works for 17 years since 1932	4-440

## Inventory Form

(County/Private)

### General Information

**Bridge Number:** 003605001100001

**Popular Name:** Waialua Beach Road Bridge-Kiikii Stream

**Feature Crossed:** Kiikii Stream

**Feature Carried:** Waialua Beach Road

**Milepost:**                      **County Private:** Honolulu

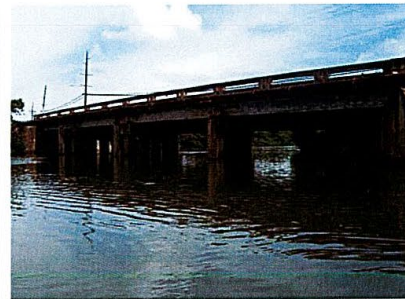
**Longitude:** 158d-07m-12.22s      **Latitude:** 21d-34m-32.62s

**Location:** TMK: 6-7-01

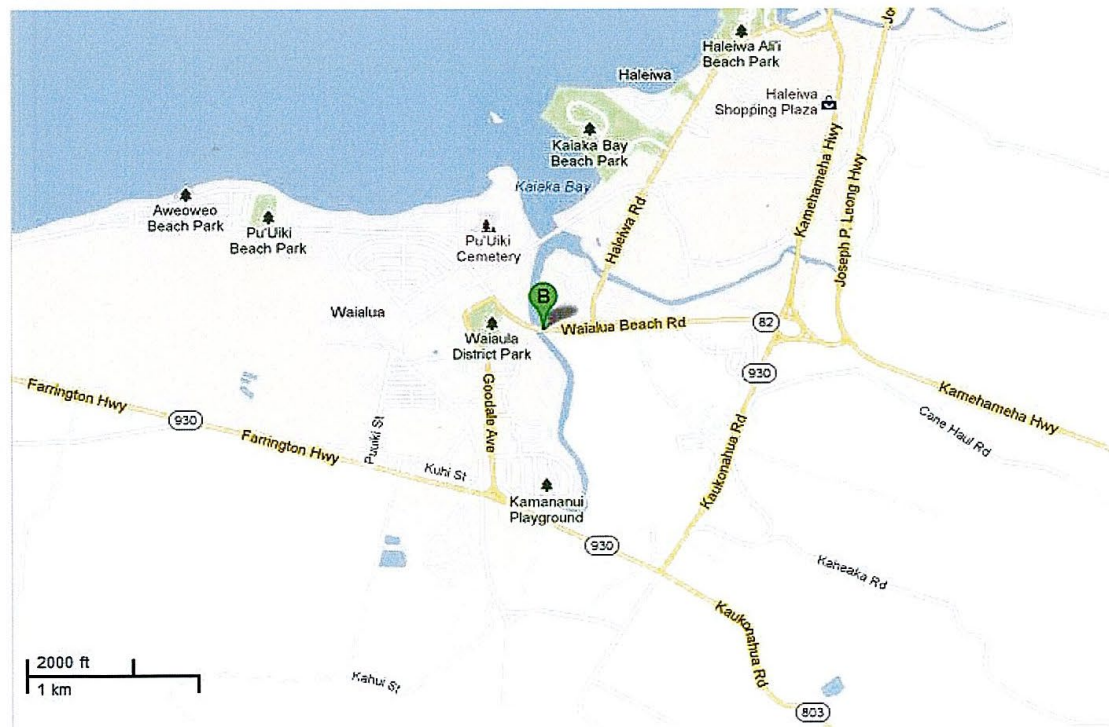
**Historic Name:** Waialua Beach Road Bridge-Kiikii Stream

**Designer/Engineer:**

**Builder/Contractor:** E. E. Black, Ltd.



### Location Map:



003605001100001      Waialua Beach Road Bridge-Kiikii Strea

4 - 440



**Construction Information**

<b>Bridge Type:</b> Concrete Tee Beam	<b>Construction Date:</b> 1950	<b>Replaced?</b> No
<b>Altered?</b> Yes <b>Alteration Date(s):</b>		
<b>Alteration Type(s):</b>		
<b>Alteration Description(s):</b> Replaced timber deck		

**Bridge Information**

<b>Number of Spans:</b> 4	<b>Max Span:</b> 35.0 ft.	<b>Total Length:</b> 141.0 ft.	<b>Deck Width:</b> 38.5 ft.
<b>Superstructure:</b> Concrete Tee Beam			
<b>Substructure:</b> Concrete Abutment Wall and Concrete Pile Bent			
<b>Floor/Decking:</b> Concrete Deck with AC Overlay			
<b>Parapets/Railings:</b> Concrete Open Horizontal			
<b>Setting:</b>			
<b>Other Features:</b> Sidewalk one side; stepped end piers			

**Historic Association**

<b>Eligibility Status:</b> Eligible	<b>Criteria:</b> B	<b>State/National Registered?</b> No
<b>Current Function:</b> Bridge		<b>Historic Function:</b> Bridge
<b>Area of Significance:</b> Significance with a Person		
<b>Narrative Description:</b> <p>The Kiikii Stream Bridge was built in 1950 and carries Waialua Beach Road over Kiikii stream in Waialua near the Waialua Elementary School. The bridge is part of the Haleiwa cut-off from Weed Junction to Waialua, created in 1952. It has four spans and is concrete tee beam construction. The Kiikii Stream Bridge is in its original location and has retained its original rural setting in the rural agricultural area of Waialua. The bridge's continuous tee beam construction remains intact and no apparent alterations have been made to the structure. Despite minor damage and the addition of removable flared guardrails to the end piers, the bridge's original workmanship remains evident. The guard railings are composed of a reinforced concrete balustrade of two horizontal rails with intermittent pairs of vertical supports common to the post-war era. The incised name and date on the end piers aid interpretation of the bridge. There is a bronze dedication plaque on one of the endposts. The bridge was dedicated in August 1952 to Howard Misayuki Kurio, a section engineer with the Territorial Department of Public works. Kurio was fatally injured on the jobsite during the construction of the bridge.</p>		

003605001100001    Waialua Beach Road Bridge-Kiikii Strea

**Significance Statement:**

The Kiikii Stream Bridge is eligible under criterion B – due to its close association with a significant person. Howard Hisayuki Kurio was a respected member of the Wahiawa community. He had a seventeen year career with the Territorial Department of Public Works where he began in 1932 as a rodman. At the time of his death, he was a section engineer. Prior to joining the Department of Public Works, Howard Kurio was the Postmaster at Wahiawa.

003605001100001      *Waialua Beach Road Bridge-Kiikii Strea*

4 - 442

## Appendix 3

*Letter Evaluation of Effect on Historic Resources (Hawai'i Revised Statutes (HRS) §6E-8 and Section 106), Ki'iki'i Stream (Waialua Beach Road) Bridge Replacement Project, Waialua Beach Road, Waialua, O'ahu, Hawai'i, prepared by Mason, dated April 28, 2025*



119 Merchant Street  
Suite 501  
Honolulu, HI 96813

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May 20, 2025

Roxanne Lee  
R. M. Towill Corporation  
2024 North King Street, Suite 200  
Honolulu, Hawai'i 96819

Re: Evaluation of Effect on Historic Resources  
(Hawai'i Revised Statutes (HRS) §6E-8 and Section 106)  
Ki'iki'i Stream (Waialua Beach Road) Bridge Replacement Project  
Waialua Beach Road, Waialua, O'ahu, Hawai'i

Dear Ms. Lee,

We are providing our evaluations of significance and effect below regarding the City and County of Honolulu's proposed project to replace Ki'iki'i Stream (Waialua Beach Road) Bridge. The following is in fulfillment of historic property identification and evaluation requirements for HRS §6E-8 and Hawai'i Administrative Rules (HAR) Chapter 13-275 and Section 106 of the National Historic Preservation Act (NHPA) of 1966.

#### **HRS §6E-8 and HAR Chapter 13-275**

##### Identification of Historic Properties HAR §13-275-5

The recommended Project Area is shown in Attachment A and encompasses portions of the Waialua Beach Road right of way, TMK (1) 6-6-022:001 and (1) 6-7-001:014 (owned by Dole Food), TMK (1) 6-6-022:004 (owned by the City & County of Honolulu), and TMK (1) 6-7001:010 (owned by the State of Hawai'i. MASON identified one historic property within the Project Area: the Ki'iki'i Stream (Waialua Beach Road) Bridge, built in 1950.

##### Evaluation of Significance HAR §13-275-6

In 2013, Fung Associates, Inc. (FAI) and MKE Associates, LLC completed a statewide inventory and evaluation of historic bridges.<sup>1</sup> Their findings for Ki'iki'i Stream (Waialua Beach Road) Bridge were as follows:

The Kiikii Stream Bridge is eligible under criterion B – due to its close association with a significant person. Howard Hisayuki Kurio was a respected member of the Wahiawa community. He had a seventeen year career with the Territorial Department of Public Works where he began in 1932 as a rodman. At the time of his death, he was a section engineer. Prior to joining the Department of Public Works, Howard Kurio was the Postmaster at Wahiawa.<sup>2</sup>

Refer to Attachment B for selected pages from MKE and FAI's bridge inventory. Their inventory did not evaluate for significance under HAR §13-275-6. However, their determination regarding the bridge's eligibility under National Register of Historic Places

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<sup>1</sup> MKE Associates, LLC and Fung Associates, Inc., *Hawaii State Historic Bridge Inventory and Evaluation* (Honolulu: Prepared for State of Hawai'i, Department of Transportation, Highways Division, 2013).

<sup>2</sup> Ibid., 4-442.



(NRHP) Criterion "B" is interpreted as equivalent to HAR §13-275-6 significance Criterion "b."

#### Determining Effects to Significant Historic Properties HAR §13-275-7

The project generally involves:

- Replacement of the existing bridge (demolition of the existing bridge and construction of a new bridge).
- Construction of a temporary access bridge across the stream to the south of the existing bridge.

Refer to the description in Attachment C for additional details on the proposed project.

[AS1] Because the project involves demolition of an existing bridge (which has been determined to meet HAR §13-275-6 significance Criterion "b"), MASON proposes an "Effect, with proposed mitigation" finding under HAR §13-275-7.

#### Mitigation HAR §13-275-8

Mitigation is recommended in the form of Architectural Recordation. Such recordation would consist of a Historic American Engineering Record (HAER) report and photography for the bridge.

### **Section 106**

#### 36 CFR 800.4 (a)(1) – Determine and Document the Area of Potential Effect (APE)

The recommended APE for architectural resources is shown in Attachment A and encompasses portions of the Waialua Beach Road right of way, TMK (1) 6-6-022:001 and (1) 6-7-001:014 (owned by Dole Foods), TMK (1) 6-6-022:004 (owned by the City & County of Honolulu), and TMK (1) 6-7001:010 (owned by the State of Hawai'i).

Note: This recommended architectural APE will likely need to be combined with an APE supplied by your archaeological consultant (if applicable), as well as the APE recommended by others for the construction work (laydown space, transportation routes, etc.).

#### 36 CFR 800.4 (b) – Identification of Historic Properties

MASON identified one historic property within the APE: the Ki'iki'i Stream (Waialua Beach Road) Bridge, built in 1950.<sup>3</sup>

#### 36 CFR 800.4 (c) – Evaluation of Significance

Fung Associates, Inc. (FAI) and MKE Associates, LLC previously determined that the Ki'iki'i Stream (Waialua Beach Road) Bridge meets NRHP Criterion "B."<sup>4</sup> (See Appendix B for more information).

#### 36 CFR 800.5 – Assessment of Adverse Effects

<sup>3</sup> Because the bridge is eligible for inclusion in the NRHP, it meets the definition of a "historic property" established in 36 CFR 800.16(l)(1). See Evaluation of Significance for more information.

<sup>4</sup> Ibid., 4-442.





Because the Undertaking involves demolition of an existing bridge (which has been determined to meet NRHP Criterion "B"), MASON proposes an "Adverse effect" finding under 36 CFR 800.5.<sup>5</sup>

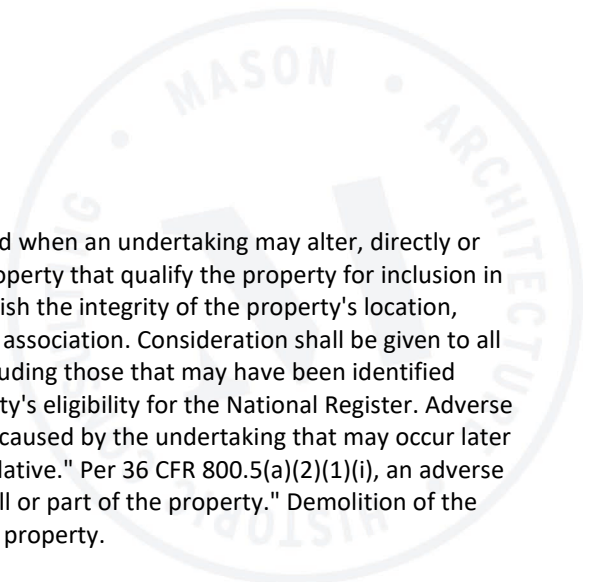
You may use the information from this letter to work with the Department of Design and Construction and the State Historic Preservation Division to support the HRS §6E-8, HAR Chapter 12-275, Section 106 processes.

Regards,

Polly Tice  
Principal and Research Section Director

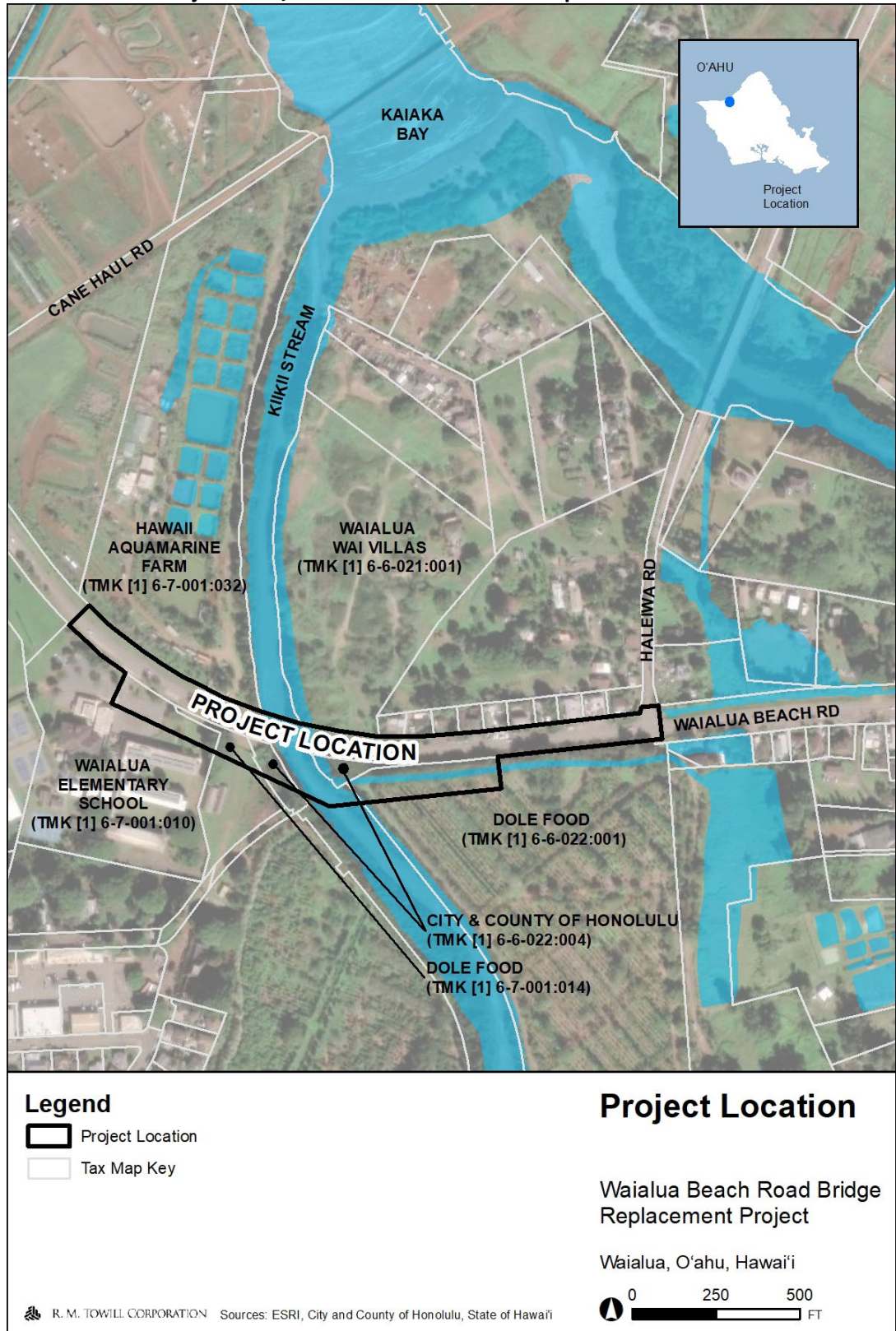
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<sup>5</sup> Per 36 CFR 800.5(a)(1), "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative." Per 36 CFR 800.5(a)(2)(1)(i), an adverse can include "Physical destruction of or damage to all or part of the property." Demolition of the bridge constitutes destruction of the entire historic property.





## Attachment A: Project Area/Area of Potential Effect Map



## Attachment B: Selected Pages from MKE and FAI's Statewide Historic Bridge Inventory

4 - 27

Oahu County Bridge Matrix										
Bridge Number	Bridge Name	Feature Crossed	Feature Carried	Construction Date	Bridge Type	Parapet/Railing Type	Listed on National/Hawaii Register	Eligibility Status*	Character Defining Feature (Significance)	Page No.
003268001200001	Waialoa Way Bridge No. 2-Manoa Stream	Manoa Stream	Waialoa Way	1965	Steel Stringer	Wood	No	Eligible	<ul style="list-style-type: none"> <li>Uncommon use of steel material in Hawaii's extreme marine environment</li> <li>Good example of distinct structural type of 1960's steel girder bridge</li> <li>Bridge is maintained by the Board of Water Supply</li> </ul>	4-431
003244001200001	Waialoa Way Bridge No. 3-Waialeakua Stream	Waialeakua Stream	Waialoa Way	1967	Steel Stringer	Wood	No	Eligible	<ul style="list-style-type: none"> <li>Uncommon use of steel material in Hawaii's extreme marine environment</li> <li>Good example of distinct structural type of 1960's steel girder bridge</li> <li>Bridge is maintained by the Board of Water Supply</li> </ul>	4-434
003245001200001	Waialoa Way Bridge No. 4-Waialeakua Stream	Waialeakua Stream	Waialoa Way	1963	Timber Stringer	Wood	No	Eligible	<ul style="list-style-type: none"> <li>Associated with early developments in concrete bridge construction in Hawaii</li> <li>Good example of post-war 1960's timber stringer bridge</li> <li>Bridge is maintained by the Board of Water Supply</li> </ul>	4-437
003605001100001	Waialua Beach Road Bridge-Kiiki Stream	Kiiki Stream	Waialua Beach Road	1950	Concrete Tee Beam	Concrete Open Horizontal	No	Eligible	<ul style="list-style-type: none"> <li>Associated with Howard Hisayuki Kurio who worked for Territorial Department of Public Works for 17 years since 1932</li> </ul>	4-440
003955001100001	Waihau Street Double Box Culvert-Waipio Lined No.1	Waipio Lined No. 1	Waihau Street	1957	Concrete Box Culvert	Metal Horizontal	No	Program Comments	This is a typical post-war culvert and falls under Program Comments.	n/a
003443001100001	Waihele Road Bridge-Kealahala Stream	Kealahala Stream	Waihele Road	1967	Concrete Rigid Frame	Concrete Open Horizontal	No	Program Comments	This is a typical post-war bridge and falls under Program Comments.	n/a
003349001200001	Wainiha Street Bridge-Kamiloiki Stream	Kamiloiki Stream	Wainiha Street	1967	Concrete Girder	Concrete and Metal	No	Program Comments	This is a typical post-war bridge and falls under Program Comments.	n/a
003967001100001	Wainihi Street Double Box Culvert-Waipio Lined No.1	Waipio Lined No. 1	Wainihi Street	1957	Concrete Box Culvert	Concrete and Metal	No	Program Comments	This is a typical post-war culvert and falls under Program Comments.	n/a
003083661400104	Waipahu Street Arch Bridge-Waialele Stream	Waialele Stream	Waipahu Street	1905	Closed Spandrel Arch	Concrete Solid with Cap	No	High Preservation Value	<ul style="list-style-type: none"> <li>Arch bridges are an uncommon bridge type</li> <li>Associated with early developments in concrete bridge construction in Hawaii</li> <li>Good example of 1900's closed spandrel arch bridge</li> </ul>	4-443
003083661400002	Waipahu Street Bridge No. 3-Waipahu Stream	Waipahu Stream	Waipahu Street	1967	Concrete Girder	Concrete and Metal	No	Program Comments	This is a typical post-war bridge and falls under Program Comments.	n/a
003083660000003	Waipahu Street Footbridge-Waipahu Street	Waipahu Street	Pedestrian Overpass	1963	Concrete Tee Beam	Metal Picket	No	Program Comments	This is a typical post-war pedestrian bridge and falls under Program Comments.	n/a
003971001100001	Waipio Point Access Road Bridge No. 2-Wailani Stream	Wailani Stream	Waipio Point Access Road	1967	Concrete Girder	Concrete and Metal	No	Program Comments	This is a typical post-war bridge and falls under Program Comments.	n/a
003909001100001	Waipio Point Access Road Bridge No. 1-Railroad Right of Way	Railroad Right of Way	Waipio Point Access Road	1946	Concrete Tee Beam	Concrete Open Greek Cross	No	Eligible	<ul style="list-style-type: none"> <li>Associated with early developments in concrete bridge construction in Hawaii</li> <li>Good example of 1940's reinforced concrete bridge</li> </ul>	4-446
003956001100001	Waipuka Place Double Culvert-Waipio Lined No.1	Waipio Lined No. 1	Waipuka Place	1957	Concrete Box Culvert	Concrete and Metal	No	Program Comments	This is a typical post-war culvert and falls under Program Comments.	n/a
003083681400001	Wyllie Street Bridge-Waolani Stream	Waolani Stream	Wyllie Street	1931	Concrete Tee Beam	Concrete Open Arched	No	Eligible	<ul style="list-style-type: none"> <li>Associated with early developments in concrete bridge construction in Hawaii</li> <li>Good example of 1930's reinforced concrete bridge</li> </ul>	4-449

\*High Preservation Value: Has unique or exemplary characteristics of a bridge type and exhibits high degrees of historic integrity.  
 Eligible: Not unique or the best example of a type, but may become a rare example of a bridge type in the future; reflects characteristics of its bridge type.  
 Not Eligible: Has lost historic integrity through significant alteration or does not reflect characteristics from its time period.  
 Program Comments: Common post-war bridges built after 1945 covered by Advisory Council program comments.  
 Non-Contributing: The bridge/culvert is non-contributing to the historic district.

\*\* This bridge falls under "Not Eligible" or "Program Comments" and has potentially historic resources adjacent to the structure that requires additional consideration.




119 Merchant Street  
Suite 501  
Honolulu, HI 96813

P 808.536.0556  
F 808.526.0577

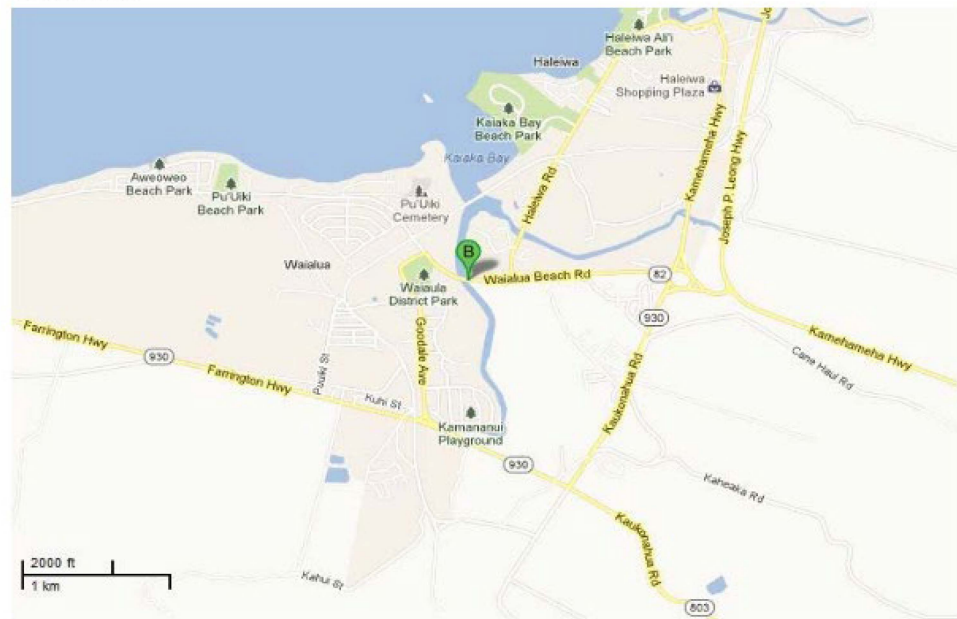
MASONARCH.COM

## Inventory Form (County/Private)

### General Information

<b>Bridge Number:</b> 003605001100001		
<b>Popular Name:</b> Waialua Beach Road Bridge-Kikii Stream		
<b>Feature Crossed:</b> Kikii Stream		
<b>Feature Carried:</b> Waialua Beach Road		
<b>Milepost:</b>	<b>County Private:</b> Honolulu	
<b>Longitude:</b> 158d-07m-12.22s	<b>Latitude:</b> 21d-34m-32.62s	
<b>Location:</b> TMK: 6-7-01		
<b>Historic Name:</b> Waialua Beach Road Bridge-Kikii Stream		
<b>Designer/Engineer:</b>		
<b>Builder/Contractor:</b> E. E. Black, Ltd.		

### Location Map:



003605001100001 Waialua Beach Road Bridge-Kikii Strea





#### Construction Information

<b>Bridge Type:</b> Concrete Tee Beam	<b>Construction Date:</b> 1950	<b>Replaced?</b> No
<b>Altered?</b> Yes <b>Alteration Date(s):</b>		
<b>Alteration Type(s):</b>		
<b>Alteration Description(s):</b> Replaced timber deck		

#### Bridge Information

<b>Number of Spans:</b> 4	<b>Max Span:</b> 35.0 ft.	<b>Total Length:</b> 141.0 ft.	<b>Deck Width:</b> 38.5 ft.
<b>Superstructure:</b> Concrete Tee Beam			
<b>Substructure:</b> Concrete Abutment Wall and Concrete Pile Bent			
<b>Floor/Decking:</b> Concrete Deck with AC Overlay			
<b>Parapets/Railings:</b> Concrete Open Horizontal			
<b>Setting:</b>			
<b>Other Features:</b> Sidewalk one side; stepped end piers			

#### Historic Association

<b>Eligibility Status:</b> Eligible	<b>Criteria:</b> B	<b>State/National Registered?</b> No
<b>Current Function:</b> Bridge		<b>Historic Function:</b> Bridge
<b>Area of Significance:</b> Significance with a Person		
<b>Narrative Description:</b> <p>The Kii Stream Bridge was built in 1950 and carries Waialua Beach Road over Kii stream in Waialua near the Waialua Elementary School. The bridge is part of the Haleiwa cut-off from Weed Junction to Waialua, created in 1952. It has four spans and is concrete tee beam construction. The Kii Stream Bridge is in its original location and has retained its original rural setting in the rural agricultural area of Waialua. The bridge's continuous tee beam construction remains intact and no apparent alterations have been made to the structure. Despite minor damage and the addition of removable flared guardrails to the end piers, the bridge's original workmanship remains evident. The guard railings are composed of a reinforced concrete balustrade of two horizontal rails with intermittent pairs of vertical supports common to the post-war era. The incised name and date on the end piers aid interpretation of the bridge. There is a bronze dedication plaque on one of the endposts. The bridge was dedicated in August 1952 to Howard Misayuki Kurio, a section engineer with the Territorial Department of Public works. Kurio was fatally injured on the jobsite during the construction of the bridge.</p>		

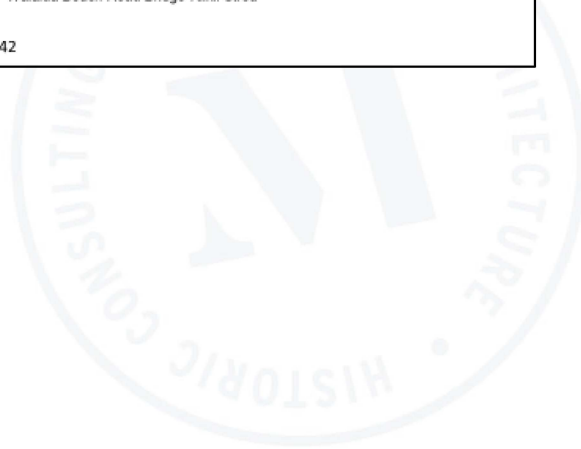




**Significance Statement:**

The Kīkīi Stream Bridge is eligible under criterion B – due to its close association with a significant person. Howard Hisayuki Kurio was a respected member of the Wahiawa community. He had a seventeen year career with the Territorial Department of Public Works where he began in 1932 as a rodman. At the time of his death, he was a section engineer. Prior to joining the Department of Public Works, Howard Kurio was the Postmaster at Wahiawa.

003605001100001 Waialua Beach Road Bridge-Kīkīi Strea





## **PROJECT DESCRIPTION** [AS2]

**Project:**

**Replacement of Waialua Beach Road Bridge (Bridge No. 605)**

**over Kiikii Stream**

Waialua, Island of Oahu, Hawaii

TMKs 6-6-21:001, 6-7-1:032, and 6-6-22:004

**City Project No.:** XX-XX-XXXX

### **Existing Bridge Description:**

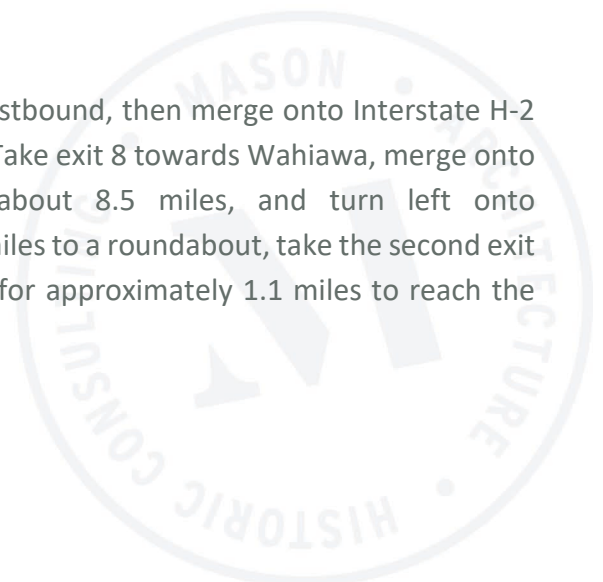
The Waialua Beach Road Bridge (#605) over Kiikii Stream was built in 1950 near the Waialua Elementary School, Structure No. 003605001100001, carries Waialua Beach Road over the Kiikii Stream, at 21.575744°, -158.120078°, TMKs 6-6-21:001, 6-7-1:032, and 6-6-22:004, in Waialua, Island of Oahu, Hawaii.

The existing bridge was a 4-span reinforced concrete structure with three concrete pile bents, and has a total length of 140 ft. The abutments are concrete breast walls with sloped wingwalls at each end. The bridge deck is 38'-6" wide, out-to-out, and includes 4 ft. wide raised sidewalks, 2 ft. wide shoulders, and two 12 ft. wide travel lanes.

### **Directions to the Site:**

From Fort Shafter, take Interstate H-1 westbound, then merge onto Interstate H-2 northbound for approximately 7.8 miles. Take exit 8 towards Wahiawa, merge onto Kamehameha Highway, continue for about 8.5 miles, and turn left onto Kamehameha Highway/HI 99. Travel 0.2 miles to a roundabout, take the second exit onto Waialua Beach Road, and continue for approximately 1.1 miles to reach the Waialua Beach Road Bridge.

### **Project Description:**





The City and County of Honolulu plan to replace the existing Waialua Beach Road Bridge with a new concrete bridge that meets current design standards. The replacement bridge will maintain dimensions similar to those of the existing bridge. It will provide two 11-foot-wide travel lanes, two 2-foot-wide shoulders, and a 5-foot-wide sidewalk on each side for pedestrian access.

The new bridge superstructure will be a two-span, precast/prestressed concrete structure that is designed to carry current AASHTO HL-93 design live loads. The existing abutments will remain, while the new abutments will be placed immediately behind the existing abutments. The new center pier and abutments will be supported on deep foundations with drilled shafts, while existing bent piles will be removed down to the mudline. To optimize water flow through the channel, the stream embankments below and immediately next to the bridge will be regraded.

Vegetation and sediment will be cleared upstream and downstream of the bridge to improve water flow and reduce upstream water elevation. Although the bridge and embankments will be designed to improve hydraulic flow, they may still be overtopped during extreme floods due to low embankments and the flat coastal plain. Scour protection and erosion control measures will reinforce embankments, directing flow through the bridge.

Two overhead utility poles will be temporarily relocated during construction and reinstalled upon completion. The existing waterline on the mauka side of the bridge will remain in service. Lateral bracing attached to the current bridge will be removed and temporarily connected to the ACROW Bridge for stability; new lateral bracing will be added to the replacement bridge upon completion.

### **Construction Approach:**

Waialua Beach Road will remain operational with two lanes open to traffic. A temporary bypass road will be constructed on the mauka side of Waialua Beach Road to maintain traffic flow during the demolition and replacement of the bridge. This bypass will be completed and accessible to traffic prior to the removal of the existing bridge. An ACROW Bridge will be used as the temporary structure, including



a 5-foot-wide pedestrian walkway cantilevered on the upstream side. Due to the current topography of the proposed walkway landings, fill will be added to elevate the approach to ADA standards; this fill will be removed after project completion.

The temporary bypass road will encroach into the property owned by Dole Foods, Inc. The temporary bypass road will also temporarily impact access to the service entrance for Waialua Elementary School. This is a lightly used driveway that is not connected to the main entrance to the school property, which will not have any major effect on school operations.

New abutments with drilled shafts will be installed first. Ground water within the excavated shafts will be removed as the concrete is pumped into the shafts. Forming and pouring of the abutment pile caps will begin after the shaft concrete has cured for a minimum of 7 days. The new bridge will be erected after the abutment concrete has cured for a minimum of 21 days. The contractor's means and methods will determine the construction sequence of new bridge and approach slabs. Final highway paving and striping will follow the installation of the new bridge.

After the erection of the new bridge and the traffic shifted onto the new highway, the contractor will demolish the temporary bypass road, remove ACROW bridge and footing, and all instream isolation and confinement structures and other temporary structures.

In general, the project will involve typical roadway and bridge construction activities including the following:

- Installing temporary erosion control measures and BMPs
- Regrading and reinforcing the stream embankments beneath the new bridge and downstream of the bridge
- Installing traffic controls
- Realignment of temporary bypass with structural fill
- Installing temporary bypass ACROW bridge
- Relocating electrical utility poles



- Demolishing existing bridge superstructure and pier
  - Installation of drilled shafts, concrete pilecaps and center piers
  - Erect/assemble concrete bridge, pedestrian walkway and railings
  - Temporary bracing waterlines remain in place and mounting to new bridge structure
  - Approach slab and roadway excavation, placing fill, grading, and paving
- Constructing retaining walls
  - Revegetating disturbed areas, and Installing highway appurtenances such as signing, roadside barriers, and pavement markings

Construction equipment anticipated for construction of the bridge foundations, abutments, and superstructure includes the following:

- Bulldozers and backhoes
- Augers for foundation construction
- Excavators
- Cranes
- Dump trucks
- Hydraulic rams
- Dewatering pumps and hoses

Stockpiling during construction will occur in properties owned by the City and County of Honolulu and owned by Dole Foods, Inc. Construction easements will be secured prior to the commencement of construction.

Construction of the new bridge is expected to start in Feb. 2028 and will take approximately 2.5 years.





## Appendix 4

*Natural Resources Assessment for Ki'iki'i Stream Bridge Replacement Project in Waialua,  
O'ahu; prepared by AECOS Inc.; dated April 28, 2025*

# **Natural Resources Assessment for Ki'iki'i Stream Bridge replacement project in Waialua, O'ahu**

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

May 22, 2025

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# Natural Resources Assessment for Ki'iki'i Stream Bridge replacement project in Waialua, O'ahu

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May 22, 2025

AECOS No. 1864

**Anne Lee, Susan Burr, Kamryn Yoneshige, Gioconda López, and Stacey Kilarski**

AECOS Inc.

45-939 Kamehameha Highway Suite 104

Kāne'ohe, Hawai'i 96744

Phone: (808) 234-7770 Email: [annelee@aecos.com](mailto:annelee@aecos.com)

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## Introduction

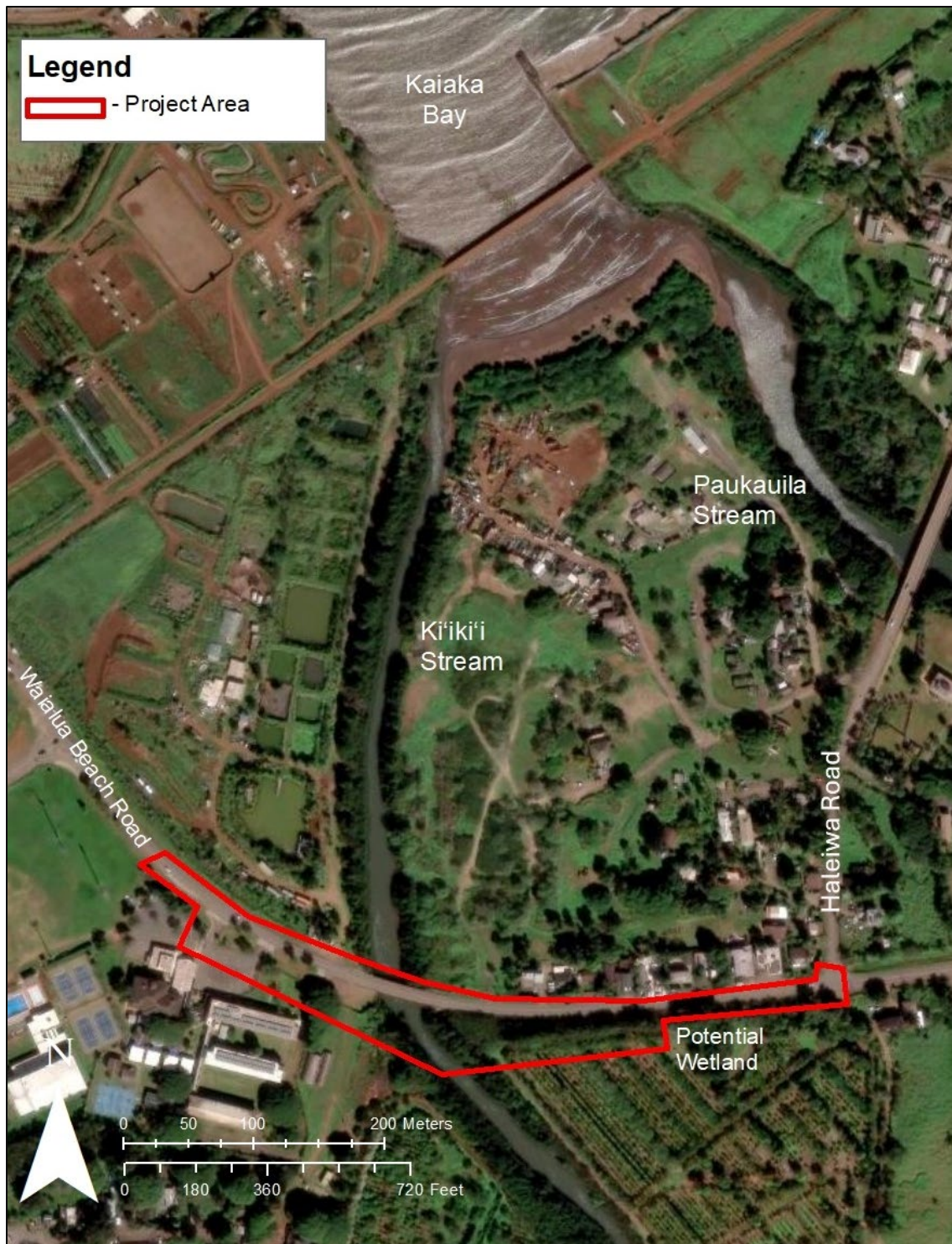
The Waialua Beach Road Bridge is a four-span reinforced concrete bridge and built in 1952. It is located on Waialua Beach Road between Goodale Avenue and Haleiwa Road, crossing over Ki'iki'i Stream (Figure 1). In 2021, underwater inspection revealed that the timber pile supports were decayed and the bridge considered scour-critical, meaning it posed a high risk of structural instability. A temporary repair was installed shortly after. As a long term solution to ensure public safety, a temporary access bridge (ACRO bridge) will be installed across the stream along the south side of the existing bridge and a new bridge will be constructed ("Project"). The temporary access bridge will span the stream and will not require column supports in the stream. Depending on hydrology, the new bridge will have either one or two concrete support columns in the stream. R.M. Towill Corporation tasked AECOS, Inc. with an assessment and delineation of federal jurisdictional waters, water quality sampling, an Essential Fish Habitat (EFH) assessment, and a flora and fauna survey and assessment. AECOS, Inc. completed these tasks as detailed in this report of findings.

## Watershed Description

### *Ki'iki'i Stream*

Ki'iki'i Stream is a fourth order perennial stream (HCPSU, 1990) that drains to Kaiaka Bay. The Ki'iki'i watershed is the largest on O'ahu, comprising 151.7 km<sup>2</sup> (58.6 mi<sup>2</sup>). The watershed is used primarily for agriculture and conservation





**Figure 1. Project area in Waialua, O'ahu.**

(Parham et al., 2008). Six tributaries that contribute flow to Kī'iki'ī Stream (all far upstream from the Project area) are North Poamoho, Poamoho, Kaukōnāhua

(North Fork and South Fork), Waikōloa, Mohiākea, and Hale'au'au. The water of Ki'iki'i Stream is often brown, murky, and turbid due to runoff in the watershed (Townscape, Inc. 2018). The stream is classified in the state water quality standards (HDOH, 2021) as a Class 2 estuary. The Class 2 designation indicates that uses of these waters are to be protected “for recreational purposes, the support and propagation of aquatic life, and industrial water supplies, shipping, and navigation” (11-54-3[b][2]; HDOH, 2021). A pollution budget or total maximum daily load (TMDL) was developed for the North Fork and South Forks of Kaukōnāhua Stream, which are tributary to Ki'iki'i Stream (HDOH and Tetra Tech, 2009).

Within the Project area, Ki'iki'i Stream is confined to a levee-bound channel, constructed to limit flooding of adjacent agricultural land (former sugar cane fields). This channelization drives the riparian ecology and geomorphic responses of the estuary as it exists today—the estuary delivers storm water runoff and associated sediment load to Kaiaka Bay. Riparian vegetation (primarily a mangal) is confined to a narrow channel margin and temporary fluvial deposits within the channel are eventually remobilized and transported to Kaiaka Bay, which has a long history of turbid water conditions occurring after significant rainfall events on the large watershed.

### ***Kaiaka Bay***

Kaiaka Bay is essentially a coastal estuary of Ki'iki'i and Paukauila streams. Kaiaka Bay is classified in the water quality standards as Class A embayment (HDOH, 2021). The “A” classification means that the use of water is protected “for recreational purpose and aesthetic enjoyment” (11-54-3[c][2]; HDOH, 2021). The water of Kaiaka Bay is often turbid from suspended sediments brought in by streams. The bay is considered to be an impaired body of water, meaning the Hawai'i Department of Health (HDOH) has determined that it does not meet its designated beneficial uses and is therefore placed on the Clean Water Act (CWA) §303(d) list. Kaiaka Bay (Geocode ID HIW00106 and HIW00083) is on the §303(d) list because it does not meet appropriate criteria for *Enterococci*, total nitrogen, nitrate-nitrite, ammonia, turbidity, and chlorophyll *a*. The bay is assigned a “low” priority for development of a TMDL.

The eastern shore of Kaiaka Bay is a relatively level limestone bench with a few pockets of sand. The bench varies in width but is around 4 m (13 ft) wide and located in the intertidal zone: partially exposed at low tides and covered to a depth of about 0.6 m (2 ft) during high tides.

The south shore of Kaiaka Bay is a sand beach of predominantly terrestrial detrital material. The beach is almost always brown from the constant deposits



of silt in the bay waters. The inner bay is less than 2 m (6 ft) deep and much of the bottom is covered by silt (AECOS, 1979, 1981).

A fringing reef approximately 915 m (1000 yd) offshore extends between Pu'uiki Beach to the west of Kaiaka Bay to Kaiaka Point. This reef has a shallow limestone surface with sand channels and depressions. A sand-bottom channel extends westward from the mouth of Kaiaka Bay, then northward off Pu'uiki Beach. The channel leads to an offshore submarine canyon (AECOS, 1979).

## Jurisdictional Waters

Waters of the U.S. (also called “jurisdictional waters”) are surface waters that come under federal jurisdiction as authorized by the Clean Water Act (CWA) and the Rivers and Harbors Act (RHA). Authority over these waters is granted to various federal agencies, including the U.S. Environmental Protection Agency (USEPA), with the U.S. Army Corps of Engineers (USACE) having permit authority for some actions that impact jurisdictional waters. Jurisdictional waters include all tidal waters and a subset of streams, lakes, reservoirs, and wetlands.

***Revised Definition of Waters of the US*** – On March 20, 2023, the final “Revised Definition of ‘Waters of the United States’” (“2023 rule”) took effect (USACE and USEPA, 2023a). Jurisdictional waters identified in the rule include:

- tidal waters, also known as traditionally navigable waters (TNWs) [(a)(1)(i)]<sup>1</sup>
- impoundments of jurisdictional waters [(a)(2)];
- tributaries of TNWs that have relatively permanent water (RPW) [(a)(3)(i)] or tributaries of TNWs that have a significant effect on the chemical, physical, or biological integrity of a TNW [(a)(3)(ii)];
- wetlands adjacent to TNWs [(a)(4)(i)] or wetlands adjacent to and with a continuous surface connection to RPW tributaries [(a)(4)(ii)], or wetlands adjacent to tributaries, provided the wetlands significantly affect the chemical, physical, or biological integrity of a TNW [(a)(4)(iii)];
- other waters not identified above that have RPW and a surface connection to a TNW or RPW tributary [(a)(5)(i)] or other waters not identified above that significantly affect the chemical, physical, or biological integrity of a TNW [(a)(5)(i)].

Non-jurisdictional waters identified in the rule include:

- waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the CWA [(b)(1)];

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<sup>1</sup> Numbers and letters given in brackets are from the final rule (USACE and USEPA, 2023a). Waterbody types are referred to by these designations.

- ditches excavated wholly in and draining only dry land that do not carry RPW [(b)(3)]; and artificial lakes or ponds created by excavating or diking dry land to collect and retain water and are used exclusively for irrigation [(b)(5)].

**US Supreme Court Ruling** – On May 25, 2023, a Supreme Court of the US (SCOTUS) ruling, *Sackett v. Environmental Protection Agency* (SCOTUS, 2023), ejected the *significant nexus* standard, effectively eliminating jurisdiction over (a)(3)(ii), (a)(4)(iii), and (a)(5)(ii) waters as listed above; revised the “adjacent wetlands” definition; and eliminated jurisdiction over intrastate wetlands.

**Revised Definition of Waters of the US; Conforming Rule** – On September 8, 2023, the agencies published a conforming rule for the Revised Definition of ‘Waters of the United States’ (“Conforming Rule; USACE and USEPA, 2023b) to comply with the SCOTUS opinion. According to the Conforming Rule, (a)(3)(ii), (a)(4)(iii), and (a)(5)(ii) waters are no longer jurisdictional and the only jurisdictional wetlands, including intrastate wetlands, are ones that are adjacent (meaning they have a continuous surface connection) to bodies that qualify as WOTUS in their own right.

The extent of federal jurisdiction for tidal waters (TNWs) under RHA is mean high water (MHW) and extends to the high tide line (HTL) under CWA. If wetlands are adjacent to the TNW, CWA jurisdiction extends to the wetland/upland boundary. Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar features characterized by wet ground (USACE, 1987; USACE and USEPA, 2023a).

## Methods

### Jurisdictional Waters

On August 29, 2017, AECOS biologists conducted a survey to identify and delineate wetlands within the active channel and floodplain of Ki'iki'i Stream between Waialua Beach Road and Farrington Highway for the Ki'iki'i Stream dredging project (AECOS, 2017). On February 6, 2025, we returned to the stream within the Project area to confirm the 2017 delineation<sup>2</sup> and identify and delineate jurisdictional limits of other features within the Project area that were

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<sup>2</sup> Delineations are only valid for 5 years.

not delineated in 2017. We walked the course of Ki'iki'i Stream and a drainage canal on the south side of Waialua Beach Road to determine if these features meet the definition of a TNW. We determined if the wetland boundary delineated in 2017 adjacent to Ki'iki'i Stream remained essentially at the base of the respective levees and extended to the drainage canal.

We used a handheld global navigation satellite system (GNSS) instrument (Trimble 7) to mark the wetland boundary of Ki'iki'i Stream and the drainage canal. The resulting shapefile was processed with GPS Pathfinder, including differential correction, and exported as ArcMap shapefiles projected as NAD 1983 UTM, Zone 4N. The data were used to prepare maps presented in this report. The biologists investigated other low-lying areas and potential wetlands within the Project vicinity.

### Water Quality

On February 6, 2025, *AECOS* biologists K. Yoneshige and A. Lee collected water samples at three stations along Ki'iki'i Stream at both low and high tides. Samples were collected just below the surface at the following three stations: 50 m (165 ft) upstream from the Project area ("Upstream"), at the bridge ("Bridge"), and 50 m (165 ft) downstream from the bridge ("Downstream"; Figure 2). Physical measurements, including temperature, salinity, conductivity, pH, and dissolved oxygen (DO) were measured *in situ* at each water quality station. Water samples were collected, chilled, and brought back to the *AECOS* laboratory (*AECOS* Log No. 52144). The following parameters were measured from these samples: chlorophyll  $\alpha$ , salinity, turbidity, nitrate + nitrite ( $\text{NO}_3+\text{NO}_2$ ), ammonium ( $\text{NH}_4$ ), total nitrogen (TN), and total phosphorus (TP). The instruments and analytical methods used for these measurements are listed in Table 1.

The predicted tide was a high of +0.50 ft at 0726 hours (Station 1612668, Haleiwa, Waialua Bay; NOAA, 2024). Water quality samples were collected during high tide conditions between 0940 and 1000 hours. The predicted low tide was -0.09 ft at 1323 hours (NOAA, 2024). Water quality samples were collected between 1335 and 1345 hours during low tide conditions.



**Figure 2. Location of water quality sampling stations.**

**Table 1. Analytical methods and instruments used for  
*AECOS* water quality sampling.**

Analysis	Units	Method	Reference	Instrument
Temperature	°C	SM 2550B	SM (2017)	YSI ProPlus
Salinity	ppt*	SM 120.1	SM (2017)	Accument AB200
Conductivity	µmhos/cm	SM 2510B	SM (2017)	YSI ProPlus
pH	standard units	SM 4500H+	SM (2017)	pH pHep Hanna
Dissolved Oxygen (DO)	mg/L	SM 4500 O-G	SM (2017)	YSI ProPlus

Table 1 (continued).

Analysis	Units	Method	Reference	Instrument
Dissolved Oxygen Saturation (DO%)	%	SM 4500 O-G	SM (2017)	YSI ProPlus
Turbidity	NTU	EPA 180.1 Rev. 2.0	USEPA (1993b)	HACH 2100N Turbidimeter
Ammonium	µg/L	G-327-05 Rev. 4	Kérouel et al. (1997)	Seal AA3 Auto Analyzer
Nitrate-Nitrite	µg/L	EPA 353.4	USEPA (1993a)	Seal AA3 Auto Analyzer
Total Nitrogen	µg/L	SM 4500N	SM (2022)	Seal AA3 Auto Analyzer
Orthophosphate	µg/L	EPA 365.5	USEPA (1997a)	Seal AA3 Auto Analyzer
Total Phosphorus	µg/L	SM 4500P	SM (2022)	Seal AA3 Auto Analyzer
Chlorophyll α	mg/L	SM 10200 H (M)	SM (2017)	Turner Fluorometer

## Botanical Survey

AECOS biologists G. López and A. Lee surveyed the Project area on February 11, 2025 using wandering transects. Plant species were identified as they were encountered. Any plant not immediately recognized during the survey was photographed and/or a representative feature (fruit, flower, branch) collected for later identification at the laboratory. Species names follow *Hawai'i's Ferns and Fern Allies* (Palmer, 2003), and *Taxonomic and Nomenclatural Updates to the Fern and Lycophyte Flora of the Hawaiian Islands* (Ranker et al, 2019) for ferns, *Manual of the Flowering Plants of Hawai'i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental plants. More recent name changes for naturalized plant species follow Imada (2019).

## Terrestrial Vertebrates Survey

### *Avian Survey*

AECOS biologists conducted bird surveys in the morning hours of February 6 and February 11, 2025. Birds were identified to species by visual observation aided by Leica 8 X 42 binoculars and by listening for vocalizations. Weather conditions were ideal, with unlimited visibility, no precipitation, and winds between 8 and 16 kilometers per hour. The avian phylogenetic order and nomenclature used in this report follows the *AOU Checklist of North and Middle American Birds* (Chesser et al., 2024).



A 30-minute waterbird count was conducted from the Waialua Beach Road Bridge on February 6, 2025 between 1:30 and 2:00 pm. All birds observed within a visible radius of the bridge during the survey were noted.

### ***Mammalian Survey***

A list was made of mammals encountered during the survey. Indicators of mammalian presence, such as tracks, scat, and other sign were noted. Mammalian phylogenetic order and nomenclature follow *Mammal Species of the World* (Wilson and Reeder, 2005).

### **Aquatic Survey**

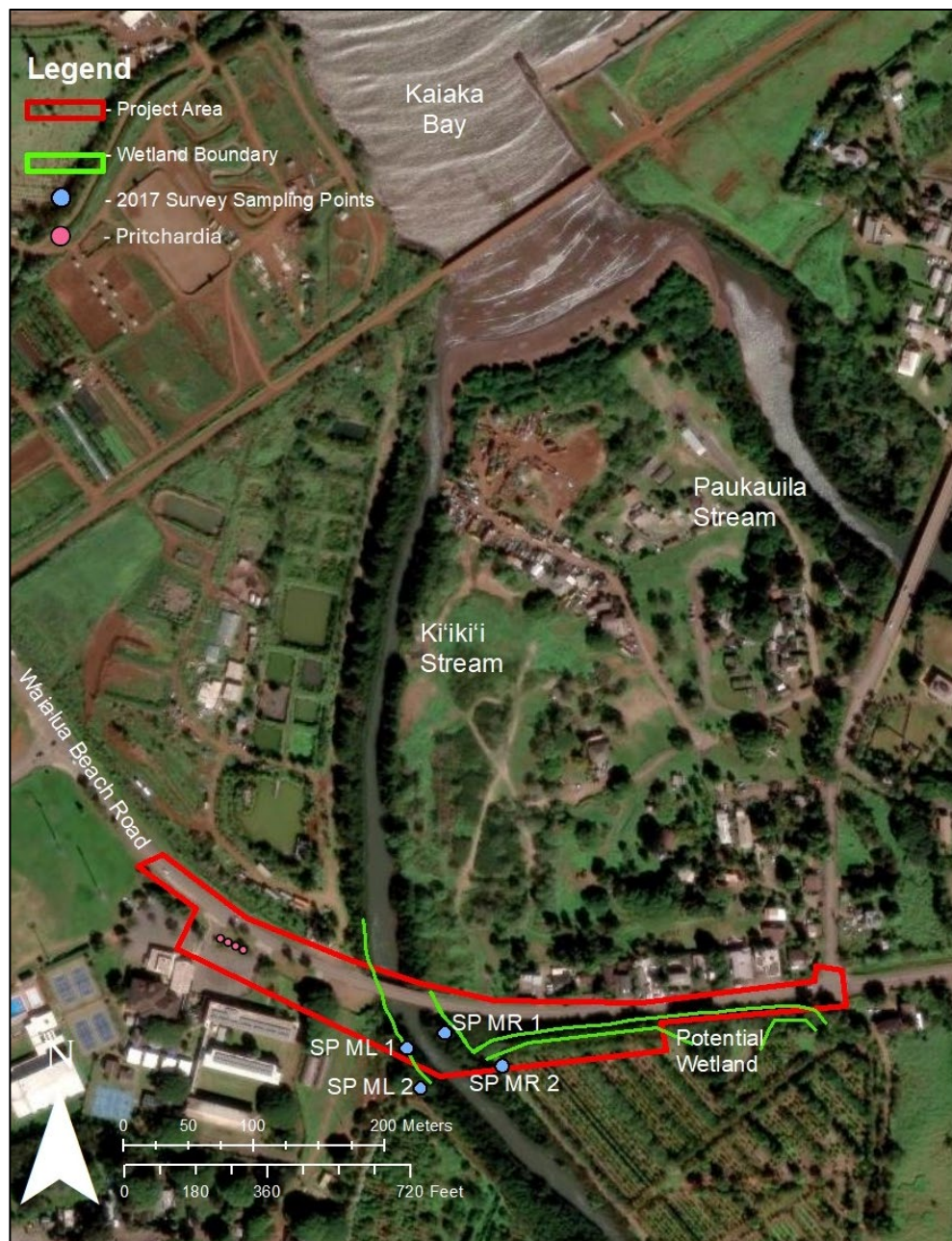
On February 6, 2025, biologists made visual observations of aquatic organisms as they kayaked Ki'iki'i Stream and surveyed from the bridge. Underwater visibility was too poor to conduct an underwater survey of Kaiaka Bay or to assess Essential Fish Habitat (EFH). Our biologists conducted a pedestrian survey along the shoreline of Kaiaka Bay and dip nets were utilized to identify species and to reach deep areas. Notes were made on each species encountered. Additional information on aquatic organisms was provided from previous AECOS reports (AECOS, 2015, 2016). Our biologists conducted research using databases from US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) for information on other aquatic marine organisms, monk seal, and sea turtle use of Kaiaka Bay.

## **Results**

### **Jurisdictional Waters**

Ki'iki'i Stream is classified as a perennial stream (Parham et al., 2008; HCPSU, 1990) with a direct surface connection to the ocean at Kaiaka Bay. Within the Project site, Ki'iki'i Stream is estuarine and is confined to a levee-bound channel. The drainage canal on the south side of Waialua Beach Road is also estuarine and confined to a levee-bound channel. Mangrove wetlands (mangal) are adjacent to the estuary within both channels and the wetland boundaries are essentially along the bases of the respective levees (Figure 3).

Conditions of the adjacent wetlands have not changed since our site visit in 2017. The locations and status (wetland or upland) of the four sampling points (SPs), SP MR 1, SP MR 2, SP ML 1, and SP ML 2, investigated in 2017 are shown in Fig. 3. Wetland data determination sheets for the four SPs are provided in Attachment

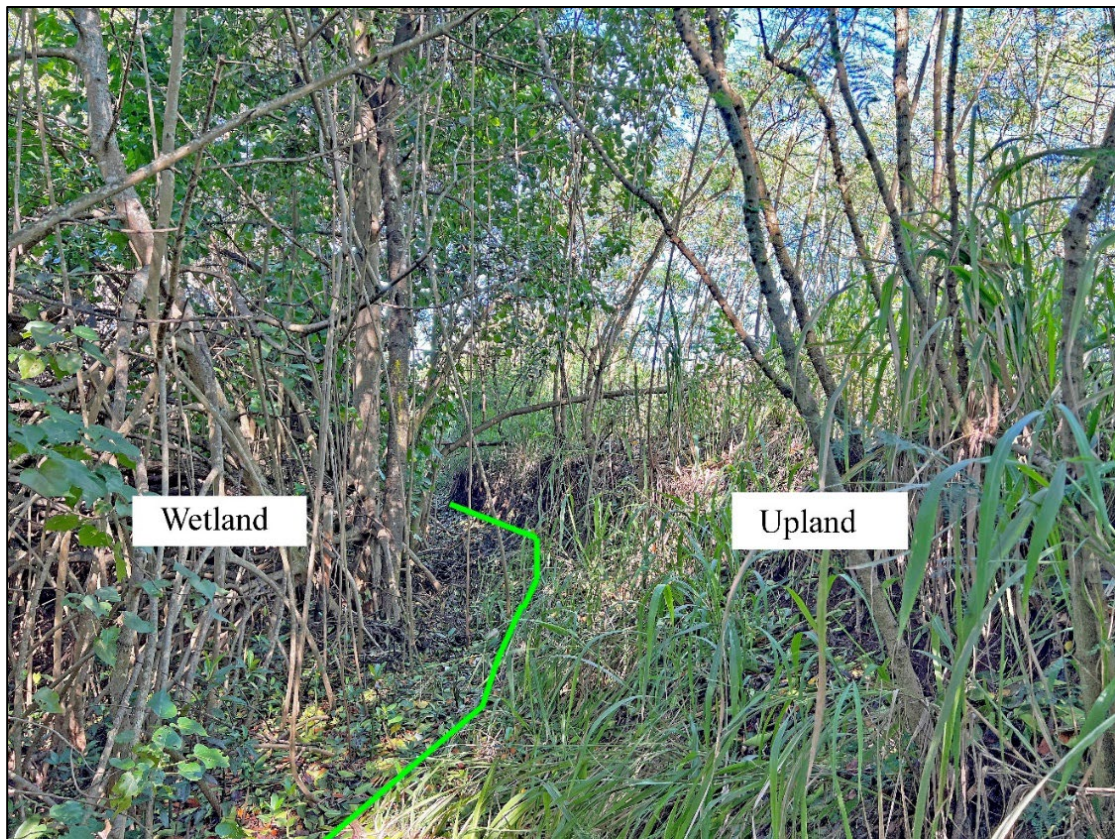


**Figure 3. Wetland boundaries (green lines) within Ki'iki'i Stream channel and Wailua Beach Road drainage canal. A potential wetland is noted south of the east end of the Project area.**

A. Red mangrove (*Rhizophora mangle*) is the dominant species within these adjacent wetlands and Guinea grass (*Megathyrsus maximus*) and *koa haole* (*Leucaena leucocephala*) are the dominant species on the levees above the wetlands (Figures 4 and 5). The soils within the wetlands is a dark mucky



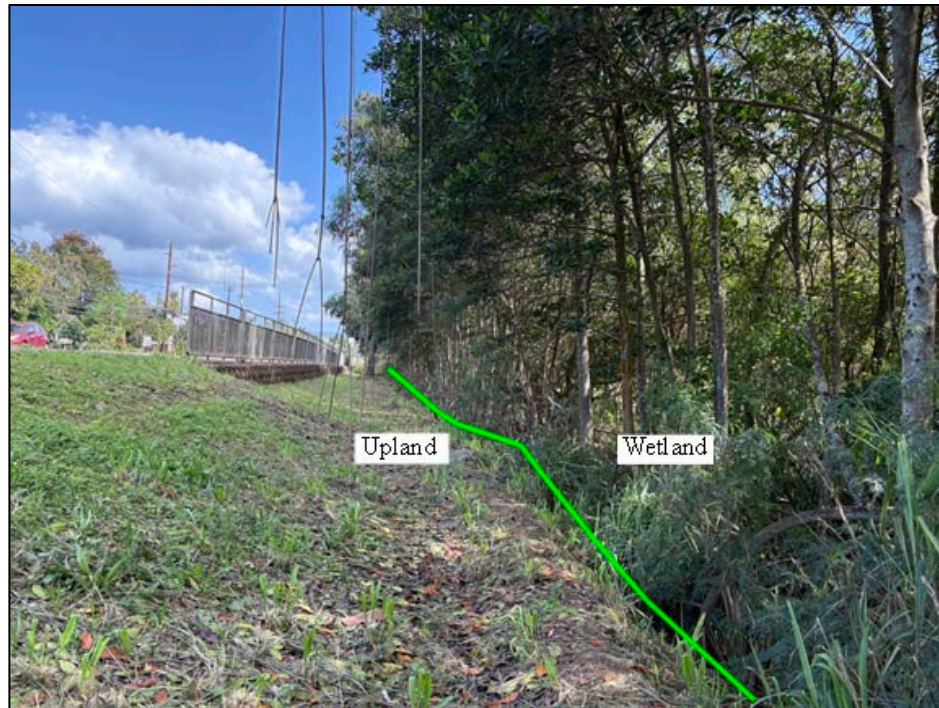
mineral soil with redox features underlain by a black muck or a dark loamy sand with prominent redox features. The upland soils are a uniform sandy clay or sandy clay loam with no redox features. Within the wetlands, the soil is saturated and oxidized rhizospheres are present on living roots and the soil is saturated and has a hydrogen sulfide odor. Other than being within the floodway (geomorphic position—a secondary indicator of wetland hydrology), the levees and beyond do not have indicators of wetland hydrology.



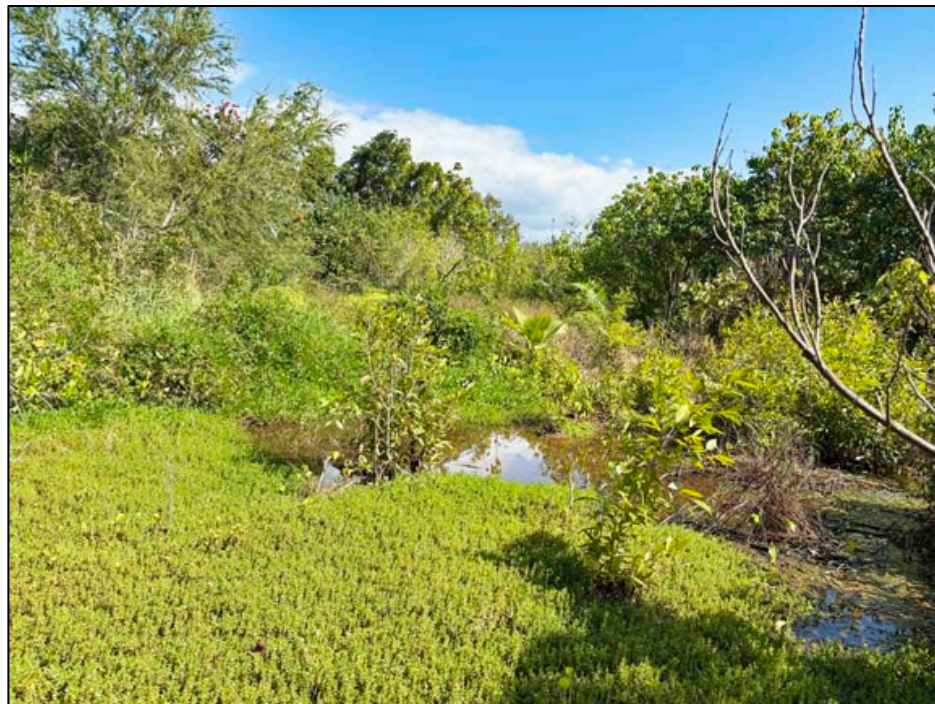
**Figure 4. Wetland boundary (green line) looking upstream in Kī'iki'ī Stream channel on the left bank.**

The drainage channel appears to have been excavated to drain wetlands located south of the Project area (Figure 6). This area is marked as “Potential Wetland” on Figure 3 but was not further investigated because it is outside the Project limits.





**Figure 5. Wetland boundary (green line) along the drainage channel, shown here looking upstream at the right bank.**



**Figure 6. A wetland with hydrophytic vegetation ('ae'ae or *Bacopa monnieri*, shown here) extends to agricultural fields south of the Project area.**

## Water Quality

Tables 2 and 3 summarize the water quality at Ki'iki'i Stream based on our February 6, 2025 sampling effort.

**Table 2. Water quality for samples collected along Ki'iki'i Stream at high tide.**

Station	Time	Temp. (°C)	Salinity (ppt)	Conductivity (µS/cm)	pH	DO (mg/L)	DO sat. (%)	Turbidity (ntu)
Upstream	1000	20.2	1.78	3060	6.73	5.59	62	15.0
Bridge	0950	20.3	1.90	3270	6.71	5.82	66	15.6
Downstream	0940	20.6	2.48	4640	6.68	5.14	59	15.8

Station	TSS (mg/L)	Ammonia (µg/L)	Nitrate+ Nitrite (µg N/L)	Total Nitrogen (µg N/L)	Total Phosphorus (µg P/L)	Chlorophyll α (µg/L)
Upstream	6.4	108	328	550	13	1.20
Bridge	8.0	115	320	546	12	1.18
Downstream	9.2	111	317	577	11	1.47

**Table 3. Water quality for samples collected along Ki'iki'i Stream at low tide.**

Station	Time	Temp. (°C)	Salinity (ppt)	Conductivity (µS/cm)	pH	DO (mg/L)	DO sat. (%)	Turbidity (ntu)
Upstream	1345	21.7	2.31	4070	6.76	3.32	37	15.0
Bridge	1340	21.7	4.07	6960	6.74	3.41	40	15.4
Downstream	1335	21.9	2.90	4820	6.72	3.66	43	14.8

Station	TSS (mg/L)	Ammonia (µg/L)	Nitrate+ Nitrite (µg N/L)	Total Nitrogen (µg N/L)	Total Phosphorus (µg P/L)	Chlorophyll α (µg/L)
Upstream	6.6	117	382	630	19	0.87
Bridge	7.4	127	372	626	16	0.89
Downstream	6.6	139	353	652	15	0.82



## Vegetation

In the Project area, Ki'iki'i stream flows through a mangal dominated by *Rhizophora mangle* (red mangrove) and scattered milo trees (*Thespesia populnea*). The vegetation along Waialua Beach Road comprises either ruderal plants regularly mowed or treated with herbicide, or ornamental species that have been intentionally planted fronting residential properties.

To the southeast of the project occurs an agricultural parcel currently cultivated in cacao. East of this plantation, a likely wetland dominated by 'ae'ae (*Bacopa monnieri*) and California grass (*Urochloa mutica*) is present that extends outside of the Project area.

## Flora

A botanical listing (flora) with approximate relative abundance for all plant taxa recorded is presented in Table 4. Entries are arranged alphabetically under family names and include scientific name, common name, status (i.e., native or non-native; see key at end of table), and a relative abundance value within the survey area. "Status" reflects the state-wide distribution of the species.

**Table 4. List of plants observed in the survey area.**

Species listed by family	Common Name	Status	Abundance	Notes
<b>PTERIDOPHYTES - FERNS &amp; FERN ALLIES</b>				
<b>POLYPODIACEAE</b>				
<i>Phymatosorus grossus</i> (Langsd. & Fisch.) Brownlie	<i>laua'e</i>	Nat	U	
<b>PSILOTACEAE</b>				
<i>Psilotum nudum</i> (L.) P. Beauv.	<i>moa</i>	Ind	R	
<b>FLOWERING PLANTS - MONOCOTS</b>				
<b>ASPARAGACEAE</b>				
<i>Cordyline fruticosa</i> (L.) A. Chev.	ti; kī	Pol	U	
<i>Dracaena marginata</i> Lam.	money tree	Orn	R	
<b>ASPHODELACEAE</b>				
<i>Aloe vera</i> (L.) Burm. f.	aloe vera	Nat	p	

Table 4 (continued).

Species listed by family	Common Name	Status	Abundance	Notes
<b>ARECACEAE</b>				
<i>Cocos nucifera</i> L.	<i>niu</i> , coconut	<b>Pol</b>	U	
<i>Chrysalidocarpus lutescens</i> H.Wendl.	areca palm	Orn	R	
<i>Livistona chinensis</i> (Jacq.) R. Br. ex Mart.	Chinese fan palm	Nat	R	
<i>Phoenix</i> hybrid	date palm	Nat	R	
<i>Pritchardia</i> sp.	<i>loulou</i>	<b>End</b>	p	
<b>COMMELINACEAE</b>				
<i>Commelina diffusa</i> N.L. Burm.	day flower; <i>honohono</i>	<b>Pol</b>	U	
<b>CYPERACEAE</b>				
<i>Cyperus gracilis</i> R. Br.	McCoy grass	Nat	U	
<i>Cyperus involucratus</i> Rottb.	umbrella sedge	Nat	U	<1>
<i>Cyperus rotundus</i> L.	nut grass	Nat	U	
<b>CRASSULACEAE</b>				
<i>Crassula ovata</i> (P. Mill.) Druce	jade plant	Orn	p	
<b>MUSACEAE</b>				
<i>Musa acuminata</i> Colla	hybrid banana	<b>Pol</b>	p	
<b>POACEAE (GRAMINEAE)</b>				
<i>Axonopus compressus</i> (Sw.) P. Beauv.	brd-lf carpetgrass	Nat	O	
<i>Bothriochloa pertusa</i> (L.) A. Camus	pitted beardgrass	Nat	O	
<i>Cenchrus ciliaris</i> L.	buffelgrass	Nat	U	
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	Nat	U	
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	Nat	U	
<i>Dactyloctenium aegyptium</i> (L.) Willd.	beach wiregrass	Nat	U	
<i>Echinochloa colona</i> (L.) Link	jungle-rice	Nat	R	
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	Nat	U	
<i>Eragrostis amabilis</i> (L.) Wight & Arnott	Japanese lovegrass	Nat	U	
<i>Megathyrsus maximus</i> (Jacq.) B.K. Simon & W.L. Jacobs	Guinea grass	Nat	A	
<i>Urochloa mutica</i> (Forssk.) T.Q. Nguyen	California grass	Nat	C	
<b>STRELITZIACEAE</b>				
<i>Strelitzia reginae</i> Drylander	bird-of-paradise	Orn	p	

Table 4 (continued).

Species listed by family	Common Name	Status	Abundance	Notes
<b>FLOWERING PLANTS – EUDICOTS</b>				
<b>ACANTHACEAE</b>				
<i>Asystasia gangetica</i> (L.) T. Anderson	Chinese violet	Nat	U	
<i>Pseuderanthemum maculatum</i> (G.Lodd.) I.M.Turner	purple pseuderanthemum	Orn	p	
<b>AMARANTHACEAE</b>				
---		Nat	R	
<i>Alternanthera pungens</i> Kunth	khaki weed	Nat	U	
<i>Amaranthus graecizans</i> L.	---	Nat	R	
<i>Amaranthus spinosus</i> L.	spiny amaranth	Nat	U	
<i>Gomphrena celosioides</i> Mart.	---	Nat	R	
<b>ANACARDIACEAE</b>				
<i>Mangifera indica</i> L.	mango	Nat	R	
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	Nat	U	
<b>ANNONACEAE</b>				
<i>Annona muricata</i> L.	soursop	Orn	p	
<i>Annona squamosa</i> L.	sugar apple	Orn	p	
<b>APOCYNACEAE</b>				
<i>Plumeria obtusa</i> L.	Singapore plumeria	Orn	p	
<i>Plumeria rubra</i> L.	graveyard flower	Orn	p	
<b>ARALIACEAE</b>				
<i>Schefflera arboricola</i> (Hayata) Merr.	dwarf umbrella tree	Nat	p	
<i>Polyscias guilfoylei</i> (W. Bull.) L. H. Bailey	panax	Nat	p	
<b>ASCLEPIADACEAE</b>				
<i>Calotropis gigantea</i> (L.) W.T. Aiton	crownflower	Orn	p	
<i>Stephanotis floribunda</i> Jacq.	<i>pua male</i>	Orn	p	
<b>ASTERACEAE</b>				
<i>Ageratum conyzoides</i> L.	<i>maile hohono</i>	Nat	U	
<i>Bidens alba</i> (L.) DC	<i>kī</i>	Nat	U	
<i>Bidens pilosa</i> L.	<i>kī</i>	Nat	R	
<i>Calyptocarpus vialis</i> Less.	---	Nat	O	
<i>Eclipta prostrata</i> (L.) L.	false daisy	Nat	U	<1>
<i>Emilia fosbergii</i> Nicolson	Flora's paintbrush	Nat	U	
<i>Emilia sonchifolia</i> (L.) DC.	Flora's paintbrush	Nat	R	
<i>Pluchea carolinensis</i> (Jacq.) G. Don	sourbush	Nat	O	

Table 4 (continued).

Species listed by family	Common Name	Status	Abundance	Notes
ASTERACEAE (cont.)				
<i>Pluchea indica</i> (L.) Less.	Indian fleabane	Nat	O	
<i>Sonchus oleraceus</i> L.	<i>pualele</i>	Nat	U	
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	Nat	U	
<i>Tridax procumbens</i> L.	coat buttons	Nat	U	
<i>Youngia japonica</i> (L.) DC.	Oriental hawksbeard	Nat	R	
BIGNONIACEAE				
<i>Spathodea campanulata</i> P. Beauv.	African tulip tree	Nat	U	
BORAGINACEAE				
<i>Carmona retusa</i> (Vahl) Masamune	Fukien-tea	Nat	R	
<i>Cordia subcordata</i> Lam.	<i>kou</i>	<b>Ind</b>	R	
BRASSICACEAE				
<i>Lepidium virginicum</i> L.	---	Nat	U	
CACTACEAE				
<i>Opuntia cochenillifera</i> (L.) Mill.	<i>panini</i>	Nat	R	
CANNABACEAE				
<i>Trema orientalis</i> (L.) Blume	gunpowder tree	Nat	R	
CARICACEAE				
<i>Carica papaya</i> L.	papaya	Nat	U	
CASUARINACEAE				
<i>Casuarina glauca</i> Sieber ex Spreng.	longleaf ironwood	Nat	R	
CONVOLVULACEAE				
<i>Cuscuta</i> sp.	dodder	Nat?	R	
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	---	Nat	U	
<i>Ipomoea triloba</i> L.	little bell	Nat	R	
<i>Merremia tuberosa</i> (L.) Rendle	wood rose	Nat	R	
CUCURBITACEAE				
<i>Momordica charantia</i> L.	balsam pear	Nat	U	
EUPHORBIACEAE				
<i>Aleurites moluccana</i> (L.) Wild.	<i>kukui</i>	<b>Pol</b>	U	
<i>Codiaeum variegatum</i> (L.) Blume	croton	<b>Orn</b>	p	
<i>Euphorbia hirta</i> L.	garden spurge	<b>Nat</b>	U	

Table 4 (continued).

Species listed by family	Common Name	Status	Abundance	Notes
EUPHORBIACEAE (cont.)				
<i>Euphorbia hypericifolia</i> L.	graceful spurge	Nat	U	
<i>Euphorbia prostrata</i> Aiton	prostrate spurge	Nat	U	
<i>Phyllanthus debilis</i> Klein ex Willd.	<i>niruri</i>	Nat	U	
<i>Ricinus communis</i> L.	castor bean	Nat	U	
FABACEAE				
<i>Albizia saman</i> F. Muell.	monkeypod	Nat	R	
<i>Alysicarpus vaginalis</i> (L.) DC.	Alyce clover	Nat	U	
<i>Canavalia cathartica</i> Thouars	<i>maunaloa</i>	Nat	U	
<i>Cassia x nealiae</i> H.S. Irwin & Barneby	rainbow shower tree	Orn	R	
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea	Nat	U	
<i>Crotalaria incana</i> L.	fuzzy rattlepod	Nat	U	
<i>Gliricidia sepium</i> (Jacq.) Walp.	Madre de cacao	Orn	R	
<i>Indigofera spicata</i> Forssk.	creeping indigo	Nat	U	
<i>Leucaena leucocephala</i> (Lam.) deWit	<i>koa haole</i>	Nat	A	
<i>Neonotonia wightii</i> (Wight & Arnott) Lackey	glycine vine	Nat	U	
<i>Pithecelobium dulce</i> (Roxb.) Benth.	<i>'opiuma</i>	Nat	U	
GERANIACEAE				
<i>Erodium cicutarium</i> (L.) L'Hér.	alfilaria, pin clover	Nat	R	
LAMIACEAE				
<i>Mesosphaerum pectinatum</i> (L.) Kuntze	comb hyptis	Nat	U	
LYTHRACEAE				
<i>Ammannia coccinea</i> Rottb.	toothcup	Nat	U	<1>
MALVACEAE				
<i>Malva parviflora</i> L.	cheeseweed	Nat	U	
<i>Malvastrum coromandelianum</i> (L.) Garck	false mallow	Nat	U	
<i>Sida acuta</i> N. L. Burm.	---	Nat	U	
<i>Sida ciliaris</i> L.	---	Nat	U	
<i>Theobroma cacao</i> L.	cacao	Orn	p	



Table 4 (continued).

Species listed by family	Common Name	Status	Abundance	Notes
MALVACEAE (cont.)				
<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	<i>milo</i>	<b>Ind</b>	U	
MELIACEAE				
<i>Azadirachta indica</i> Adr. Jussieu	neem	Orn	U	
MORACEAE				
<i>Ficus microcarpa</i> L. fil.	Chinese banyan	Nat	U	
MORINGACEAE				
<i>Moringa oleifera</i> Lam.	horseradish tree	Nat	R	
MYRTACEAE				
<i>Syzygium cumini</i> (L.) Skeels	Java plum	Nat	O	
NYCTAGINACEAE				
<i>Boerhavia coccinea</i> Mill.	false <i>alena</i>	Nat	U	
<i>Bougainvillea spectabilis</i> Wild.	bougainvillea	Orn	R	
ONAGRACEAE				
<i>Ludwigia octovalvis</i> (Jacq.) Raven	primrose willow	Nat	U	<1>
OXALIDACEAE				
<i>Oxalis corniculata</i> L.	yellow wood sorrel	<b>Pol</b>	U	
PASSIFLORACEAE				
<i>Passiflora foetida</i> L.	love-in-a-mist	Nat	R	
PLANTAGINACEAE				
<i>Bacopa monnieri</i> (L.) Wettst.	'ae'ae	<b>Ind</b>	U	<1>
<i>Plantago lanceolata</i> L.	English plantain	Nat	U	
RHIZOPHORACEAE				
<i>Rhizophora mangle</i> L.	red mangrove	Nat	A	<2>
RUBIACEAE				
<i>Ixora</i> sp.	ixora	Orn	p	
RUTACEAE				
<i>Murraya paniculata</i> (L.) W. Jack	mock orange	Nat	p	
SOLANACEAE				
<i>Solanum americanum</i> Mill.	<i>pōpolo</i>	<b>Ind</b>	R	
<i>Solanum torvum</i> Sw.	turkey plant	Nat	R	
<i>Solanum lycopersicum</i> var. <i>cerasiforme</i> (Duval) Spooner, G.J. Anderson, & R.K. Jansen	cherry tomato	Nat	R	

Table 4 (continued).

Species listed by family	Common Name	Status	Abundance	Notes
VERBENACEAE				
<i>Pilea microphylla</i> (L.) Liebm.	artillary plant	Nat	U	
ZYGOPHYLLACEAE				
<i>Tribulus terrestris</i> L.	puncture vine	Nat	R	<3>

## Key to Table 4.

## Status = distributional status

**End** = endemic; native to Hawaii and found naturally nowhere else.

**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** = Early Polynesian introduction.

## Abundance = occurrence ratings for plants in survey area.

R - Rare – seen in only one or two locations.

U - Uncommon – seen at most in several locations.

O - Occasional – seen with some regularity.

C - Common – observed numerous times during the survey.

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

p - Present – Abundance not determined. Plant cultivated for ornamental or agricultural purposes.

## Notes:

<1> - Plant recorded in wetland/wetland boundary.

<2> - Plant recorded only in the stream bed.

<3> - Plant without flower or fruit; identification uncertain.

In all, we recorded 116 species of vascular plants, 114 of them angiosperms (flowering plants), one fern, and one fern ally. Among these, one is an endemic (**End**), five species are native indigenous plants (**Ind**; native, but also distributed elsewhere in the Pacific), representing 4% of the total number of species. Additionally, six species (5%) are early Polynesian introductions (**Pol**; so-called “canoe plants”). The remaining 104 species (90%) are plants introduced to the Hawaiian Islands after 1778, comprising 87 naturalized species (**Nat**; i.e., grow naturally in the wild) and 17 ornamentals (**Orn**). Fifteen percent of the plant species recorded correspond to species cultivated for ornamental or agricultural purposes as part of the landscaping on Waialua Beach Road properties or planted in an adjacent agricultural parcel.

The single endemic plant is a *loulou* palm (*Pritchardia* sp.). Twenty-six *Pritchardia* species are found in Hawai'i and 24 are endemic species, most unique to only a

single Island. Some *loulou* are listed as endangered. However, identifying a specimen planted as part of landscaping (in this case, on Waialua Elementary School grounds (Fig. 3)) is difficult, in part because it is unknown if this specimen is even a species native to O'ahu.

The indigenous species recorded are: *moa* (*Psilotum nudum*), *miro* (*Thespesia populnea*), *kou* (*Cordia subcordata*), *'ae'ae* (*Bacopa monnieri*), and *pōpolo* (*Solanum americanum*). The early Polynesian introductions observed are: *ki* (*Cordyline fruticosa*), coconut palm or *niu* (*Cocos nucifera*), *honohono* (*Commelina diffusa*), banana (*Musa acuminata*), *kukui* (*Aleurites moluccana*), and yellow wood sorrel (*Oxalis corniculata*). All these species are common plants across the Hawaiian Islands.

### Avian Fauna

No waterbirds were observed during the 30-min waterbird survey from Waialua Beach Road Bridge. In 2017, a single *'auku'u* or Black-crowned Night Heron (*Nycticorax nycticorax*) was observed flying overhead at this bridge (AECOS, 2017).

Table 5 summarizes the avian species observed within the Project area. A total of 15 different bird species were recorded during our survey. All bird species are naturalized introductions to the Island.

**Table 5. List of avian species observed within the Project area.**

Common Name	Species	Status
<b>COLUMBIFORMES</b>		
COLUMBIDAE – Pigeons & Doves		
Rock Pigeon	<i>Columbia livia</i>	A
Zebra Dove	<i>Geopelia striata</i>	A
Mourning Dove	<i>Zenaida macroura</i>	A
Spotted Dove	<i>Streptopelia chinensis</i>	A
<b>PASSERIFORMES</b>		
CARDINALIDAE – Cardinals & Allies		
Northern Cardinal	<i>Cardinalis cardinalis</i>	A
ESTRILDIDAE – Estrildid Finches		
Common Waxbill	<i>Estrilda astrild</i>	A
African Silverbill	<i>Euodice cantans</i>	A
Java Sparrow	<i>Padda oryzivora</i>	A

Table 5 (continued).

Common Name	Species	Status
PASSERIDAE – Old World sparrows		
House Sparrow	<i>Passer domesticus</i>	A
FRINGILLIDAE - Fringilline and Carduline Finches & Allies		
House Finch	<i>Haemorhous mexicanus</i>	A
PYCNONOTIDAE		
Red-vented Bulbul	<i>Pycnonotus cafer</i>	A
STURNIDAE – Starlings		
Common Myna	<i>Acridotheres tristis</i>	A
THRAUPIDAE – Tanagers		
Saffron Finch	<i>Sicalis flaveola</i>	A
ZOSTEROPIDAE – White-eyes		
Warbling White-eye	<i>Zosterops japonicus</i>	A
<b>PELECANIFORMES</b>		
ARDEIDAE – Herons, Bitterns & Allies		
Western Cattle-Egret	<i>Ardea ibis</i>	A

Key to Table 5.

**Status:**

A = Naturalized, non-natives species (introduced)

## Mammals

A single Small Indian mongoose (*Herpestes auropunctatus*) was observed on the banks of the Project area and a dog (*Canis lupis familiaris*) was walking on the path. Small Indian mongoose is common in agricultural fields and alien to the Hawaiian Islands. A black rat was observed in the previous AECOS survey (2016). It is possible that one or more of the other three rodents naturalized in the Hawaiian Islands (Family Muridae) occur around the Project area.

## Aquatic Survey

### *Ki'iki'i Stream*

High turbidity in the water of Ki'iki'i Stream made it difficult to see any aquatic inhabitants residing below the water surface. Some fish carcasses were present

beneath the bridge, attracting blackchin tilapia (*Sarotherodon melantheron*). Crabs ('*alamihi* or *Metopograpsus thukuhar*) and striped barnacles (*Balanus amphitrite*) were observed just below the waterline on the pillars beneath the bridge.

In our 2016 survey, blackchin tilapia, '*ama'ama* (*Mugil cephalus*), and *āholehole* (*Kuhlia xenura*) were the most prevalent fishes encountered and numerous *hapawai* (*Neritina vespertina*) were observed on concrete bridge abutments (AECOS, 2016). No poeciliid fishes, such as mosquito fish, rainbow guppy, and swordtail (*Gambusia affinis*, *Poecilia* hybrids, and *Xiphophorus helleri*) were observed during 2016 and 2025 surveys. These fishes are common inhabitants of O'ahu streams, but not large estuaries. A green sea turtle (*Chelonia mydas*) was observed from Ki'iki'i Stream Bridge during our recent survey.

Table 6 is a list of aquatic species observed in Ki'iki'i and Kaukōnāhua estuaries from AECOS report in 2016, reported as occurring in Ki'iki'i Estuary (Parham et al, 2008), and observed in Ki'iki'i Stream on February 6, 2025.

**Table 6. List of aquatic species observed or reported from Ki'iki'i Stream.**

PHYLUM, CLASS, ORDER, FAMILY <i>Species</i>	Common name	Status	ID Code
INVERTEBRATES			
MOLLUSCA, BIVALVIA, VENEROIDA, CORBICULIDAE			
<i>Corbicula fluminea</i> O.F. Müller	Asian clam	Nat	1
MOLLUSCA, GASTROPODA, ARCHITAENIOGLOSSA, VIVIPARIDAE			
<i>Cipangopaludina chinensis</i> Gray	Chinese mystery snail	Nat	2
MOLLUSCA, GASTROPODA, NERITOPSINA, NERITIDAE			
<i>Neritina vespertina</i> Sowerby	<i>hapawai</i>	<b>End</b>	1
ARTHROPODA, INSECTA, ODONATA, AESHNIDAE			
<i>Anax</i> sp.	darner	<b>Ind</b>	2
<i>Anax junius</i> Drury	<i>pinao</i> ; common green darner	<b>Ind</b>	1



Table 6 (continued).

PHYLUM, CLASS, ORDER, FAMILY <i>Species</i>	Common name	Status	ID Code
COENAGRIONIDAE			
<i>Megalagrion</i> sp.	native damselfly	<b>End</b>	2
LIBELLULIDAE			
<i>Crocothemis servilia</i> Drury	scarlet skimmer	Nat	1, 3
<i>Orthemis ferruginea</i> Fabricius	roseate skimmer	Nat	1
<i>Pantala flavescens</i> Fabricius	<i>pinao</i> ; globe skimmer	<b>Ind</b>	1
ARTHROPODA, MAXILIA, SESSILIA,			
<i>Balanus amphitrite</i>	striped barnacle	Nat	1, 3
<i>Chthamalus proteus</i> Dando and Southward	<i>pī'oe'oe</i> ; Proteus rock barnacle	Nat	1
ARTHROPODA, MALACOSTRACA, DECOPODA			
CAMBARIDAE			
<i>Procambarus clarkii</i> Girard	red swamp crayfish	Nat	2
GRAPSIDAE			
<i>Grapsus tenuicrustatus</i> J.F.W. Herbst	<i>'a'ama</i>	<b>Ind</b>	1, 3
<i>Metopograpsus thukuhar</i> Owen	<i>'alamihi, kūkūau</i>	<b>Ind</b>	1, 3
PORTUNIDAE			
<i>Scylla serrata</i> De Man	Samoan crab	<b>Ind</b>	1
VERTEBRATES			
CHORDATA, ACTINOPTERYGII		--	
CICHLIDAE			
<i>Amphilophus labiatus</i> Günther/ <i>A. citrinellus</i> Günther	red devil / Midas cichlid	Nat	1
<i>Hemichromis elongatus</i> Guichenot in Duméril	jeweled cichlid	Nat	1
<i>Sarotheron melanotheron</i> Rüppell	blackchin tilapia	Nat	1, 3
COBITIDAE			
<i>Misgurnus anguillicaudatus</i> Cantor	dojo; oriental weatherfish	Nat	2
CYPRINIDAE			
<i>Carassius auratus</i> L.	goldfish	Nat	2
GOBIIDAE			
<i>Awaous guamensis</i> Valenciennes in Cuvier and Valenciennes	<i>'o'opu nākea</i>	<b>Ind</b>	1
unidentified goby	<i>'o'opu hinana</i>	<b>Ind or End</b>	1
KUHLIIDAE			
<i>Kuhlia xenura</i> Jordan and Gilbert	<i>āholehole</i> Hawaiian flagtail	<b>End</b>	1

Table 6 (continued).

PHYLUM, CLASS, ORDER, FAMILY <i>Species</i>	Common name	Status	ID Code
MUGILIDAE			
<i>Mugil cephalus</i> Linnaeus	'ama'ama striped mullet	<b>Ind</b>	1, 3

## Legend to Table 6

STATUS = distributional status for the Hawaiian Islands:

- End** = endemic; native to Hawai'i, and not occurring naturally elsewhere.  
**Ind** = indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.  
 Nat = naturalized; non-native species introduced to the Hawaiian Islands intentionally or accidentally.

ID CODES:

- 1 – observed in Ki'iki'i and Kaukōnāhua estuaries from AECOS report in 2016.  
 2 – reported as occurring in Ki'iki'i Estuary (Parham et al, 2008).  
 3 – observed in Ki'iki'i Stream and Kaiaka Bay on February 6, 2025.

**Kaiaka Bay**

The waters of Kaiaka Bay are turbid in the Project area, causing poor underwater visibility. The benthic composition on the limestone bench along the eastern shoreline of Kaiaka Bay was assessed in our March 2014 survey. At the time of that survey, no corals were observed, and the coverage on the limestone bench was predominantly colonized by macroalgae as well as bare limestone, rubble, and sand pockets. The intertidal zone along the eastern shoreline of Kaiaka Bay had an abundance of black nerite (*Nerita picea* or *pipipi*), dotted periwinkle (*Littoraria pintado*), helmet urchin (*Colobocentrotus atratus* or *hā'uke'uke*), and thin-shelled rock crab (*Grapsus grapsus tenuicrustatus* or *'a'ama*).

Fishes are not abundant near shore in Kaiaka Bay. Four species are known to occur in the survey area: Hawaiian flagtail (*Kuhlia xenura*), striped mullet (*Mugil cephalus*), molly (*Poecilia* sp.), and tide pool goby (*Bathygobius* sp.; AECOS, 2015). 'Ōhiki or ghost crab (*Ocypode pallidula*) is common on the sand beach of Kaiaka Bay. A sighting of a Green sea turtle (*Chelonia mydas*) was observed in Kaiaka Bay waters. Kaiaka Bay may be a potential habitat for amphidromous fish but no 'o'opu nākea (*Awaous guamensis*) was seen at the time of the survey. 'O'opu nākea is known to have habitat in the Kaiaka Bay watersheds (Townscape Inc., 2018).

Table 7 lists marine biota including macro-algae and invertebrates species that were observed and identified in Kaiaka Bay from previous surveys (2014 and 2015) and species observed in Kaiaka Bay on February 6, 2025.

**Table 7. List of marine biota observed in Kaiaka Bay.**

PHYLUM, CLASS, ORDER, FAMILY <i>Species</i>	Common name	Status	ID Code
ALGAE			
CHLOROPHYTA, ULVOPHYCEAE UVLACEAE	Green algae		
<i>Ulva fasciata</i> Delile	sea lettuce, <i>pālahalaha</i>	<b>Ind</b>	1, 2
RHODOPHYTA, FLORIDEOPHYCEAE	Red Algae		
CERAMIACEAE			
<i>Centroceras clavulatum</i>		<b>Ind</b>	1
<i>Ceramium flaccidum</i> (Kützign) Ardissona		<b>Ind</b>	1
CORALLINACEAE			
<i>Hydrolithon onkodes</i> (Heydrich) Penrose & Chamberlain		<b>Ind</b>	1
RHODOMELACEAE			
<i>Acanthophora spicifera</i> (Vahl) Borgesen		Nat	1
PHAEOPHYTA, PHAEOPHYCEAE	Brown Algae		
SCYTOSIPHONACEAE			
<i>Rosenvingea orientalis</i> (J.Agardh) Borgesen		<b>Ind</b>	1, 2
BACILLARIOPHYTA, COSCINODISCOPHYCEAE	Diatoms		
BIDDULPHIACEAE			
<i>Biddulphia biddulphiana</i> (J.E. Smith) Boyer		<b>Ind</b>	1
<i>Trigonium formosum</i> (Brightwell) Cleve		<b>Ind</b>	1
FRAGILAROPHYCEAE			
LICMOPHORACEAE			
<i>Licmophora abbreviata</i> C. Agardh		<b>Ind</b>	1

Table 7 (continued).

PHYLUM, CLASS, ORDER, FAMILY <i>Species</i>	Common name	Status	ID Code
	INVERTEBRATE		
MOLLUSCA, GASTROPODA	GASTROPODS		
PATELLIDAE			
<i>Siphonaria normalis</i> Gould	false 'opihi; 'opihi 'awa	<b>Ind</b>	1
NERITIDAE			
<i>Nerita picea</i> Recluz	Black nerite; <i>pipipi</i>	<b>End</b>	1, 2
LITTORINIDAE			
<i>Littorina pintado</i> Wood	Dotted periwinkle; <i>pipipi kōlea</i>	<b>Ind</b>	1, 2
VERMITIDAE			
<i>Serpulorbis variabilis</i> Hadfield & Kay	variable worm snail; <i>kauna'oa</i>	<b>Ind</b>	1, 2
THAIDIDAE			
<i>Morula granulata</i> Duclos	granular drupe; <i>maka'awa</i>	<b>Ind</b>	1, 2
MOLLUSCA, BIVALVIA	BIVALVES		
ISOGNOMONIDAE			
<i>Isognomon californicum</i> Conrad	black purse shell, <i>nahawe</i>	<b>End</b>	1
<i>Isognomon perna</i> Linnaeus	brown purse shell, <i>nahawe</i>	<b>Ind</b>	1
MYTILIDAE			
<i>Brachidontes crebristriatus</i>	Hawaiian mussel	<b>End</b>	1
ARTHROPODA,			
MALACOSTRACA DECAPODA	CRABS		
DIOGENIDAE			
<i>Calcinus</i> sp.	hermit crab	<b>Ind</b>	1, 2
GRAPSIDAE			
<i>Grapsus tenuicrustatus</i> Herbst	thin-shelled rock crab; 'a'ama	<b>Ind</b>	1, 2
OCYPODIDAE			
<i>Ocypode pallidula</i> Jacquinot	Pallid ghost crab	<b>Ind</b>	1, 2

Table 7 (continued).

PHYLUM, CLASS, ORDER, FAMILY	<i>Species</i>	Common name	Status	ID Code
PORTUNIDAE				
	<i>Portunus sanguinolentus hawaiiensis</i> Stephenson	Hawaiian bloodspotted swimming crab; <i>kūhonu</i>	<b>End</b>	1
ECHINODERMATA, ECHINOIDEA ECHINOMETRIDAE		Sea Urchins		
	<i>Echinometra mathaei</i> de Blainville	rock-boring urchin, <i>'ina kea</i>	<b>Ind</b>	1, 2
	<i>Echinometra oblonga</i> de Blainville	oblong boring urchin; <i>'ina</i>	<b>Ind</b>	1
	<i>Colobocentrotus atratus</i>	Helmet urchin; <i>hā'uke'uke</i>	<b>End</b>	2
VERTEBRATA, PISCES KUHLIDAE		Vertebrates BONY FISHES		
	<i>Kuhlia xenura</i> Jordan & Gilbert	Hawaiian flagtail; <i>'āholehole</i>	<b>End</b>	1
MUGILIDAE				
	<i>Mugil cephalus</i>	striped mullet; <i>'ama'ama</i>	<b>Ind</b>	1
POECILIDAE				
	<i>Poecilia</i> sp.	Indet. molly	Nat	1
GOBIIDAE				
	<i>Bathygobius</i> sp.	tide pool goby	<b>Ind</b>	1
BLENNIIDAE				
	Blennies	indet.		1

## Legend to Table 7

STATUS = distributional status for the Hawaiian Islands:

**End** = endemic; native to Hawai'i, and not occurring naturally elsewhere.**Ind** = indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.

Nat = naturalized; non-native species introduced to the Hawaiian Islands intentionally or accidentally.

ID CODES:

1 – observed Kaiaka Bay from AECOS reports (2014 and 2015).

2 – observed in Ki'iki'i Stream and Kaiaka Bay on February 6, 2025.



## Discussion

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

### Jurisdictional Waters

Within the Project site, Ki'iki'i Stream is estuarine and tidal (a TNW). The stream and adjacent wetlands are confined to a levee-bound channel. The drainage channel south of Waialua Beach Road also contains an estuary and adjacent wetlands—also confined to a levee-bound channel. The estuary and adjacent wetlands are jurisdictional waters of the U.S. and the jurisdictional limits are depicted in Fig. 3.

If project plans propose to place fill in or near these channels, a Department of the Army permit issued by the US Army Corps of Engineers (USACE) may be required and the USACE must verify our jurisdictional determination.

### Water Quality

State water quality criteria applicable to estuaries are shown in Table 8. The criteria for temperature, salinity and pH are based on “deviations from ambient conditions”; i.e., pertain essentially to discharges that might cause deviations. Criterion for DO saturation is based on a not-to-exceed value. Criteria for particulates (turbidity and TSS), nutrients (nitrogen and phosphorus compounds), and chlorophyll  $\alpha$  are based on geometric means not to exceed specific criterion values. Since geometric means require a minimum of three separate samples per station, our single-event results cannot be compared with the geometric mean criteria.

Turbidity, total nitrogen, ammonia, and nitrate+nitrite levels were elevated at each station. DO saturation (ranging from 37 to 66 percent) and pH values (ranging from 6.68 to 6.76) at each station are extremely low. Previous samples collected near the Waialua Beach Road Bridge noted higher pH values (ranging from 7.68 to 7.84). In an estuary, pH will vary based on salinity: marine waters should have a pH a little above 8.0; stream water can have a pH closer to 6 or 7.

In-water work for the Project has the potential to cause short term water quality impacts by suspending bottom sediments up into the water column, which will

increase turbidity, TSS, and nutrients.

**Table 8. Applicable state of Hawai'i water quality criteria for estuaries (HAR §11-54-5.2; HDOH, 2021).**

Parameter	Geometric Mean value not to exceed this value	Value not to be exceeded more than 10% of the time	Value not to be exceeded more than 2% of the time
Total Nitrogen (µg N/l)	200.00	350.00	500.00
Ammonia Nitrogen (µg NH <sub>4</sub> -N/l)	6.00	10.00	20.00
Nitrate + Nitrite (µg N/l)	8.00	25.00	35.00
Total Phosphorus (µg P/l)	25.00	50.00	75.00
Chlorophyll α (µg/l)	2.00	5.00	10.00
Turbidity (NTU)	1.5	3.00	5.00

Other criteria:

- pH units are not to deviate more than 0.5 units from ambient conditions and shall not be lower than 7.0 nor higher than 8.6.
- Dissolved oxygen is not to decrease below 75% saturation.
- Temperature is not to vary more than 1C° from ambient conditions.
- Salinity is not to vary more than 10% from ambient conditions.

***Total Maximum Daily Load (TMDL) and Wasteload Allocation (WLA)***

Kaukonahua Stream, which feeds into Ki'iki'i Stream, is listed as a pollutant-impaired water body in wet and dry seasons for total nitrogen, nitrate+nitrite, and turbidity (HDOH, 2024). Ki'iki'i Stream also feeds into Kaiaka Bay, another listed waterbody that does not attain water quality standards. Ki'iki'i Stream is

listed, but there is insufficient information to claim that it attains water quality standards for the listed parameters (HDOH, 2024). Based on the 2006 water quality monitoring and assessment report (HDOH, 2006), water quality conditions are unknown in Ki'iki'i Stream, and it has a low priority for initiating total maximum daily load (TMDL) development. Therefore, HDOH has not established TMDLs nor assigned waste load allocations (WLAs) to improve water quality of this stream (HDOH, 2009).

### ***Best Management Practices***

Standard best management practices (BMPs) to protect water quality during work should be used to minimize impacts to water quality and fish and wildlife resources. It is important to reduce the transport of sediments to the stream because of the potential for pollutants associated with particulates carried to nearshore waters. Project work may be completed with minimum impacts to water quality and without negative impacts to long-term water quality if proper BMPs are implemented:

- Minimize turbidity and siltation from project-related work. Use effective silt containment devices and curtail work during periods of weather-related runoff.
- Prior to use, clean pollutants from all project-related materials and equipment (dredges, barges, backhoes, etc.) that will be placed in the water.
- Dispose of all debris removed from aquatic environments at an approved upland dumping site.
- Prevent contamination (trash or debris disposal, non-native species introductions, attraction of non-native pests, etc.) of aquatic habitats from project-related activities. Implement a litter-control plan and develop a hazard analysis and critical control point plan to prevent attraction and introduction of non-native species.
- Fuel project-related vehicles and equipment away from the water and develop a contingency plan to control petroleum products accidentally spilled during work. Store absorbent pads and containment booms on-site, as appropriate, to facilitate the clean-up of accidental petroleum releases.
- Do not stockpile project-related materials (fill, revetment rock, pipe, etc.) in the water.
- Protect under-layer fills from erosion with stones (or core-loc units) as soon after placement as practicable.
- Protect from erosion any soil exposed near water as part of the project (with plastic sheeting, filter fabric, etc.) after exposure and stabilize as

soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).

## Floral Resources

Although scattered and sparse, occurrences of native flora are present within the Project area. These plants are all common species, and their respective populations are more abundant outside of the Project area.

Although no plant proposed or listed as threatened or endangered as set forth in the Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1543; USFWS, nd-a; HDLNR, 1998) were recorded in the Project area, the *loulou* palm planted in front of Waialua Elementary School (Fig. 3) could be a listed species. It is not expected that the Project will have any impacts on landscaping at the school or the houses in the area.

- In the event that this planted fan palm is found to be in a location where landscaping is to be removed, additional effort to establish the identity can be made. If found to be an endangered species, a landscaping professional could move the specimen to a safe location to avoid 'take' under the ESA.

## Avian Resources

### **Waterbirds**

On O'ahu, endangered Hawaiian waterbirds comprise the Hawaiian Common Gallinule (*Gallinula galeata sandvicensis*) or 'alae 'ula, Hawaiian Coot (*Fulica alai*) or 'alae ke'oke'o, and Hawaiian Stilt or ae'o (*Himantopus mexicanus knudseni*). The water edge of Ki'iki'i Stream is dominated by red mangrove which is not a suitable nesting habitat for waterbirds. Habitat for the Hawaiian Black-necked Stilt was not observed within the Project area, but it does occur further downstream at the mouths of Ki'iki'i and Paukaula streams. The Hawaiian Black-necked Stilt requires shallow water for foraging. Although the Project area is not appropriate nesting habitat for waterbirds, they may visit the area.

The 'Auku'u or Black-crowned Night Heron (*Nycticorax nycticorax*), Mallard, (*Anas platyrhynchos*), and Hawaiian Duck-Mallard hybrid are waterbird species that may utilize waterways in the Project area and are quite common on O'ahu. However, they are not listed as endangered or threatened species under federal or state listings (USFWS, 2016). The O'ahu population of Hawaiian Duck has interbred extensively with the non-native feral Mallard (*Anas platyrhynchos*), such that Hawaiian Duck-Mallard hybrid of the two species are predominantly observed and are difficult to distinguish from pure *koloa* (Uyehara et al., 2007).

Although the chance that one or more endemic waterbird species described above may frequent the survey area is low, potential impacts to waterbird species coming into the Project area during construction and later use of the proposed improvements include injury due to vehicular traffic and animal predation. Potential threats can be minimized to the maximum extent practicable by implementing the following measures during construction:

- Prior to construction, create an Endangered Species Awareness Training Program to inform construction workers and managers about waterbird species on-site and appropriate response when encountered. The training program should include appropriate restrictions to ensure that construction activities mitigate negative impacts to the listed bird species.
- No pets should be allowed on site.
- No feeding of birds, especially if they approach for handouts.
- Secure all food rubbish in closed trash receptacles.

### ***Seabirds***

On O'ahu, protected night-flying seabirds—Hawaiian Petrel (*Pterodroma sandwichensis*), Newell's Shearwater (*Puffinus newelli*), Band-rumped Storm-petrel (*Oceanodroma castro*), and Wedge-tailed Shearwater (*Ardenna pacifica*)—may overfly the project site during the nesting season. The first three of these are listed under both federal and state endangered species statutes, and the Wedge-tailed Shearwater is protected under the federal Migratory Bird Treaty Act (MBTA). Hawaiian Petrel and Newell's Shearwater nest in upland mountainous habitat and have been detected on the Island of O'ahu (Young et al. 2019).

In the summer and fall, nocturnally flying seabirds (especially fledglings) transiting to the sea from inland locations can become disoriented by exterior lighting. When disoriented, seabirds can collide with man-made structures or the ground. If not killed outright, dazed or injured birds are easy targets of opportunity for feral mammals (Podolsky et al., 1998; Ainley et al., 2001; Day et al., 2003). The primary cause of mortality nesting seabirds in Hawai'i is predation by alien mammalian species at the nesting colonies (USFWS, 1983; Ainley et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality of these seabirds in Hawai'i. No suitable nesting habitat for seabird species occurs in the Project area.

- If night-time construction activity or equipment maintenance is proposed during any construction phases of the project, all associated lights should be shielded and, when flood/work lights are used, they should be placed

on poles high enough to allow the lights to be pointed directly towards the ground (Reed et al., 1985; Telfer et al., 1987). Deleterious impacts to transiting seabirds can be avoided if construction occurs only during daylight hours or all site outdoor lighting installed is fully “dark sky compliant” (HDLNR-DOFAW, 2016). HDLNR recommends avoiding construction-related night-time lighting between September 15 and December 15.

White Tern (*Gygis alba*), or *manu o Kū*, is an indigenous seabird listed as threatened under State of Hawai‘i endangered species statute, HRS 195D (HDLNR, 2015). In the main Hawaiian Islands, the majority of the White Tern population is restricted to central urban and suburban Honolulu, with a known breeding range extending from Niu Valley to Aloha Tower. Isolated pairs have been observed as far west as Hickam Air Force Base at Pearl Harbor (VanderWerf and Downs, 2018). The Project area is on the north side of the Island and nesting by White Tern is unlikely in this Project area.

### ***Owls***

The Hawaiian endemic sub-species of Short-eared Owl or *Pueo* (*Asio flammeus sandwichensis*) is state-listed as endangered on O‘ahu only. Short-eared Owl is a ground-nesting species and susceptible to mammalian predation. The species is increasingly scarce on O‘ahu but is known to utilize agricultural crop and pastureland for hunting and nesting (Price and Cotin, 2018).

- If a nest is discovered, Hawai‘i Department of Land and Natural Resources (DLNR) must be notified before proceeding with any activity that could disturb the nest.

## **Mammalian Resources**

The findings of the mammalian survey are consistent with the location of the property and the environments present. It is probable that one or more of the four Muridae (rats and mice) currently established on the Island of O‘ahu also utilize this area to some extent. These mammalian species are introduced and deleterious to native ecosystems and the native fauna.

### ***Hawaiian hoary bat***

It is probable that the Hawaiian hoary bat overflies the Project area on a seasonal basis as they are regularly recorded in the area (Thompson and Starceovich, 2022). The removal of trees within the Project area could temporarily displace individual bats using the trees for roosting. As bats use multiple roosts within



their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. However, during the pupping season, females carrying pups may be less able to vacate a roost site if the tree is felled. Further, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled.

- Potential adverse impacts from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft) between June 1 and September 15, the period in which bats may have pups.

## Marine Biota

Kaiaka Bay has a history of turbid water conditions occurring after significant rainfall events in the watershed. Kaiaka Bay receives runoff from four distinct drainage areas and receives runoff from 86% of the Kaiaka-Waialua Bay Hydrologic Unit surface area (DeVito et al. 1995). Sediment loading, whether discrete or chronic, can be a key factor in determining the nature of the marine biota that resides in shallow benthic environments (Jokiel, 2006). Silt bottom environments, like those of inner Kaiaka Bay, do not typically support algae, coral, or macroinvertebrate populations. The absence of other substrates, such as hard bottom or sand, typically limits the utilization of silt bottom environments to micro-invertebrates, burrowing species (*Alpheus rapax*, *A. racida*, *Psilogobius mainlandi*, some portunid crabs like *Podophthalmus vigil*), and species that actively forage in soft bottoms (like goatfishes). Mobile predators (like jacks and sharks) may visit to a lesser degree.

State- and federally-listed (endangered or threatened; HDLNR, 2015; USFWS, nd) marine species—green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*) and monk seal (*Neomonachus schauinslandi*)—may occur in the general vicinity of the Project considering the distribution of these species throughout the Islands.

### **Monk Seal**

The Hawaiian monk seal (*Monachus schauinslandi*) was listed as an endangered species pursuant to the ESA in 1976 (41 FR 51612). In the same year, the Hawaiian monk seal population was designated as “depleted” under the Marine Mammal Protection Act (MMPA). Critical habitat for Hawaiian monk seals has been designated (NOAA-NMFS, 2015) and includes the seafloor and marine environment to 10 m (33 ft) above the seafloor shoreward of the 200 m (660 ft) depth contour, through the shoreline and extending onto the land 5 m (16.5 ft) inland from the shoreline between identified boundary points. These terrestrial

boundary points define preferred pupping areas and significant haul-out areas. The Project site is excluded from terrestrial critical habitat designation (NOAA-NMFS, 2015).

The majority of Hawaiian monk seal sighting information collected in the main Hawaiian Islands is reported by the general public and, therefore, highly biased by location and reporting effort. The only truly systematic monk seal count data available for the main Hawaiian Islands are from aerial surveys conducted by the Pacific Islands Fisheries Science Center (NOAA-PIFSC) in 2000, 2001, and 2008 (Baker and Johanos, 2004<sup>3</sup>, PIFSC, 2025). No monk seals were sighted in this area during those three aerial surveys.

Reports by the general public, which are non-systematic and not representative of overall seal use of main Hawaiian Island shorelines, have been collected in the main Hawaiian Islands since the early 1980s. For the purposes of this report, a sighting is defined as a calendar day during which an individual seal is documented as present at a specific location. There have been 5 reported sightings of monk seals from Kaiaka Bay and Kaiaka Bay Beach Park between 2014 to 2024 (Table 9).

**Table 9. Number of reported Hawaiian monk seal sightings at Kaiaka Bay and Kaiaka Bay Beach Park on the island of O'ahu (NOAA-PIFSC, 2025).**

Location	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Kaiaka Bay	0	0	0	0	0	0	0	0	0	0	0
Kaiaka Bay Beach Park	0	2	0	0	0	1	0	0	2	0	5
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>

### ***Sea Turtles***

The distinct population segment (DPS) of green sea turtle that occurs in Hawai'i is federally-listed as a threatened species (USFWS and NOAA-NMFS, 2016; USFWS, 2018) and as a threatened species (*Chelonia mydas*) under state regulations (DLNR, 2015). Adult green sea turtles primarily forage on benthic macroalgae in shallow nearshore areas and on coral reefs (Arthur and Balazs, 2008) such as may be found in Kaiaka Bay.

<sup>3</sup> Baker JD, and Johanos TC. 2004. Abundance of the Hawaiian monk seal in the main Hawaiian Islands. Biological Conservation 116:103-110.

Hawksbill sea turtle (*Eretmochelys imbricata*) is federally listed as endangered (USFWS, nd) and is also listed as an endangered subspecies (*Eretmochelys imbricata bissa*) under state regulations (HDLNR, 2015). Hawksbill sea turtle are much less common than green sea turtle in Hawaiian waters.

A PIFSC Marine Turtle Biology and Assessment Program (MTBAP) database query resulted in 25 reports of green sea turtles nesting or basking within the specified areas Kaiaka Bay and Kaiaka Bay Beach Park (Table 10; S. Murakawa, pers. comm., 2025).

**Table 10. Number of reported green sea turtles at Kaiaka Bay and Kaiaka Bay Beach Park on the island of O'ahu (NOAA-PIFSC, 2025).**

Species	Date	Site	Sex
Green	9/6/1993	Kaiaka Bay Beach Park	Female
Green	12/25/1993	Kaiaka Bay Beach Park	Undetermined
Green	11/12/1994	Kaiaka Bay	Undetermined
Green	9/14/1996	Kaiaka Bay	Undetermined
Green	9/22/1998	Kaiaka Bay	Undetermined
Green	2/5/1999	Kaiaka Bay	Female
Green	10/23/2001	Kaiaka Bay Beach Park	Undetermined
Green	10/24/2001	Kaiaka Bay Beach Park	Undetermined
Green	3/12/2009	Kaiaka Bay	Undetermined
Green	4/29/2010	Kaiaka Bay Beach Park	Female
Green	8/22/2010	Kaiaka Bay Beach Park	Undetermined
Green	11/22/2010	Kaiaka Bay Beach Park	Male
Green	6/30/2011	Kaiaka Bay Beach Park	Female
Green	7/27/2011	Kaiaka Bay Beach Park	Female
Green	2/25/2012	Kaiaka Bay	Male
Green	4/10/2014	Kaiaka Bay Beach Park	Undetermined
Green	9/12/2017	Kaiaka Bay	Undetermined
Green	4/20/2018	Kaiaka Bay Beach Park	Female
Green	6/20/2018	Kaiaka Bay Beach Park	Female
Green	8/30/2018	Kaiaka Bay	Undetermined
Green	8/1/2020	Kaiaka Bay Beach Park	Undetermined
Green	8/20/2020	Kaiaka Bay Beach Park	Undetermined
Green	1/26/2021	Kaiaka Bay Beach Park	Undetermined
Green	8/3/2021	Kaiaka Bay Beach Park	Male
Green	8/19/2022	Kaiaka Bay Beach Park	Male

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Critical habitat for the Central North Pacific distinct population segment (DPS) of green sea turtle (*Chelonia mydas*) has been proposed (USFWS, nd-b; 2023). No area within Kaiaka Bay is included in the proposed critical habitat.

- Prior to construction, create an Endangered Species Awareness Training Program to inform construction workers and managers about the appropriate response when a sea turtle is encountered. The training program should include appropriate restrictions to ensure that construction activities mitigate negative impacts.
- If a turtle is found within the Project area, cease all mechanical and construction activities within 100 feet until the animal voluntarily leaves the area.

The proposed action includes the installation of support columns with the use of an auger to install drilled shafts. Whereas pile-driving, pile-drilling, and saw-cutting can produce high intensity in-water sound levels capable of causing injury or adverse behavioral modifications for marine mammals and sea turtles., the use of an auger produces lower noise and vibration levels. Effects vary with the frequency, intensity, and duration of the sound source, as well as the hearing characteristics of the affected animal. Effects may include: physical injury and/or permanent hearing damage; behavioral impacts through temporarily reduced sensitivity also referred to as temporary threshold shifts (TTS), temporarily masked communications or acoustical environmental cues; and modified behavior ranging from attraction to avoidance.

The effects thresholds currently used by NMFS are marine mammal specific and based on levels of harassment as defined by the Marine Mammal Protection Act (MMPA). For exposure to sounds in water, >180 dB and >190 dB are the thresholds for Level A harassment (i.e., injury and/or TTS) for cetaceans and pinnipeds, respectively. The thresholds for Level B harassment for all marine mammals in the form of TTS and other behavioral impacts are >160 dB for impulsive noises and >120 dB for continuous noises. Currently, no acoustic thresholds have been established for sea turtles. Consequently, the marine mammal thresholds must be used for sea turtles as well, with the exception that the 160 dB threshold will be applied for both impulsive and non-impulsive sources for sea turtles, under the assumption that these thresholds are likely to be conservative.

Sound typically dissipates more rapidly in shallow, turbid waters over soft substrates. The shallow waters of most harbors and marinas, with silt and mud bottoms, are considered poor environments for acoustic propagation because sound typically dissipates more rapidly under those circumstances. Kaiaka Bay

is relatively shallow, and we expect this to help attenuate any elevated noises due to the Project activities.

Based on the best available information and the shallow waters of Kaiaka Bay, we expect that no marine mammals or sea turtles would be exposed to project-related in-water noise levels that approach the thresholds for the onset of TTS or other physical impacts. Accordingly, exposure to project-related elevated noise is expected to result in no more than the temporary avoidance of the immediate area, which would have insignificant effects on ESA-listed marine mammals and sea turtles.

### Essential Fish Habitat (EFH)

The 1996 Sustainable Fishery Act amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and subsequent Essential Fish Habitat (EFH) Regulatory Guidelines (NOAA, 2002) describe provisions to identify and protect habitats of federally-managed marine and anadromous fish species. Under the various provisions, federal agencies that fund, permit, or undertake activities that may adversely affect EFH are required to consult with the National Marine Fisheries Service (NMFS).

Congress defines EFH as “those waters and substrate necessary to fish[es] for spawning, breeding, feeding, or growth to maturity” (MSFCMA, 1996; NOAA, 2002). EFH provisions in MSFCMA designate that species harvested in sufficient quantities to require fisheries management are to be subdivided into similar Management Unit Species (MUS). Five MUS groups are currently managed in Hawaiian waters: bottom fishes, pelagics, precious corals, crustaceans, and coral reef ecosystem (Table 11). In the waters surrounding the Hawaiian Islands, EFH for coral reef ecosystem MUS as defined by the Final Coral Reef Ecosystem Fishery Management Plan (WPRFMC, 2001) and subsequent Fishery Ecosystem Plan for the Hawaiian Archipelago (WPRFMC, 2009a, 2009b, 2016) “includes all waters and habitat at depths from the sea surface to 50 fathoms extending from the shoreline (including state and territorial land and waters) to the outer boundary of the Exclusive Economic Zone (EEZ).”

The Western Pacific Regional Fishery Management Council (WPRFMC) has restructured its management framework from species-based fishery management plans (FMPs) to place-based fishery ecosystem plans (FEPs). The Hawaiian Archipelago FEP establishes the framework under which the WPRFMC will manage fishery resources and begin the integration and implementation of ecosystem approaches to management in the Hawaiian Archipelago. This FEP does not establish any new fishery management regulations but rather consolidates existing fishery regulations for demersal species. Specifically, this

FEP identifies as MUS those species known to be present in waters around the Hawaiian Archipelago and incorporates all of the management provisions of the Bottomfish and Seamount Groundfish FMP, the Crustaceans FMP, the Precious Corals FMP, and the Coral Reef Ecosystems FMP that are applicable to the area.

**Table 11. EFH Designations for Hawai'i Archipelago FEP Management Unit**

<b>Management Unit</b>	<b>Species Complex</b>	<b>EFH</b>
Pelagic	Temperate species Tropical species Sharks Squid	<b>Eggs and larvae:</b> the water column extending from the shoreline to the outer limit of the EEZ down to a depth of 656 ft. (200 m)  <b>Juvenile/adults:</b> the water column extending from the shoreline to a depth of 3,280 ft. (1,000 m)
Bottomfish and Seamount Groundfish	Shallow-water species (0 to 50 fm)	<b>Eggs and larvae:</b> the water column extending from the shoreline to the outer limit of the EEZ down to a depth of 1,310 ft. (400 m)  <b>Juvenile/adults:</b> the water column and all bottom habitat extending from the shoreline to a depth of 1,310 ft. (400 m)
Bottomfish and Seamount Groundfish	Deep-water species (50 to 200 fm)	<b>Eggs and larvae:</b> the water column extending from the shoreline to the outer limit of the EEZ down to a depth of 1,310 ft. (400 m)  <b>Juvenile/adults:</b> the water column and all bottom habitat extending from the shoreline to a depth of 1,310 ft. (400 m)
Crustacean	Spiny and slipper lobster complex Kona crab	<b>Eggs and larvae:</b> the water column from the shoreline to the outer limit of the EEZ down to a depth of 490 ft. (150 m)  <b>Juvenile/adults:</b> all of the bottom habitat from the shoreline to a depth of 330 ft. (100 m)
Coral Reef Ecosystem	All Currently Harvested Coral Reef Taxa (CHCRT)  All Potentially Harvested Coral Reef Taxa (PHCRT)	EFH for the Coral Reef Ecosystem MUS includes the water column and all benthic substrate to a depth of 330 ft. (100 m) from the shoreline to the outer limit of the EEZ for eggs, larvae, juveniles and adults



The waters of Kaiaka Bay are designated as EFH (including water column and all bottom areas) for coral reef ecosystem, bottomfish, pelagic, and crustacean MUS (including eggs, larvae, juvenile and adults). Of the thousands of species which are federally managed under the coral reef FMP, at least 50 (specifically juvenile fish life stages) are known to occur in Kaiaka Bay (including both estuarine and marine species (AECOS, 1979, 2014, 2016, this survey; Parham et al., 2008). No pelagic or bottomfish MUS were observed in the Kaiaka Bay surveys. Eggs and larvae of a variety of crustacean (crabs and lobsters), reef fish, and pelagic fish species are likely transported to the general vicinity by coastal currents, which generally flow from east to west in this area. Additionally, mesoscale eddy/current systems may entrain and entrap larvae into bays (Lobel and Robinson, 1986).

Although the fishable stocks of Federally managed fisheries are distant from the Project vicinity, it is reasonable to assume that prey, eggs, larvae of these fishable stocks could be within the EFH of Kaiaka Bay and thereby susceptible to adverse impacts from Project-generated sound. It is also reasonable to presume that eggs and juvenile fish from within the bay would move out onto the reef and become members of the broader EFH ecosystem.

Direct impacts to marine biological resources at the bridge site would result from the physical habitat modification (soft bottom habitat to concrete support columns) and sound emissions during pile driving/drilling for the construction of the replacement bridge support columns. Indirect impacts to the marine environment may occur during pile and pier construction and include sediments suspended during construction carried by currents to distant locations.

Adult fishes are mobile and will actively avoid direct impacts from the Project activities, including sediments suspended in the immediate vicinity of the action. Some impairment of ability of EFH managed species to find prey items could occur, but this effect should be temporary and spatially limited to the immediate vicinity of construction activities. Most of the adult and juvenile MUS that use the EFH are not tied to artificial substrates and routinely experience turbid conditions due to natural processes within Kaiaka Bay. For these reasons and those elaborated on further below, the adverse effects created by the Project would be temporary and minimal. The summation of impacts from Project activities on EFH and FMP species is provided in Table 11 (above).

Physical Habitat Modification - Depending on hydrology, the new bridge will have either one or two concrete support columns in the stream. Support columns for the new bridge will enhance the physical complexity of the environment around the new bridge. Much like artificial reefs, vertical concrete structures offer habitats and spaces for (in this case) estuarine organisms to colonize (e.g.,

hard surfaces afford an opportunity to attach to the substrate). Like a log at sea, juvenile fishes are attracted to the enhanced protection from predation by improving their ability to hide. An enhanced physical environment can increase diversity of species compared to surrounding areas without such structures and offset habitats lost by removal of pilings supporting the old bridge.

Suspended Sediments - Adverse water quality impacts to EFH due to the Project would most likely include changes in turbidity levels and suspended solids in the estuary of Kaiaka Bay. Some change in dissolved oxygen (DO) may also occur, concomitant with sediment re-suspension. Additionally, the additional outfalls at the streams have the potential to cause elevated nutrient levels from inorganic and organic fertilizers that can cause algal blooms, and consequentially anoxic zones<sup>4</sup>. Anoxic zones can lead to fish kills and create long-term impacts on EFH. However, most of the adult and juvenile MUS that use the EFH routinely experience heavy sediment loading and turbid conditions due to the long history of Kaiaka Bay receiving runoff from a highly disturbed drainage basin (DeVito et al., 1995). The water quality impacts to EFH resulting from the Project are expected to be short term and temporary. Implementation of in-water BMPs (see pages 31-2) will minimize WQ impacts to EFH in Kaiaka Bay

Acoustical Impacts - The replacement bridge will require up to two concrete support columns to be drilled or driven into place. "Driving" piles is performed with impact hammers, which produce intense, sharp spikes of sound which can easily reach levels that injure fish. "Drilling" entails auguring a hole into which the pile is dropped. Sound pressure waves in the water from impact hammers, drilling, and saw-cutting can affect fish, particularly those with a swim bladder. The extent of impact is influenced by factors such as species, fish size, physical condition, peak sound pressure and frequency, shape of the sound wave, depth of water, location of fish in the water column, amount of air in the water, size and number of waves on the water surface, bottom substrate texture, currents, presence of predators, and drill type and size. Sound energy has been demonstrated (Popper et al. 2014) to harm fish primarily in association with the air-filled swim bladder, but also by:

- change in hearing capability
- damage to the inner ear
- damage of organs adjacent to the swim bladder
- cellular and molecular effects
- adverse effects on eggs and larvae

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<sup>4</sup> Once all the nutrients are consumed, the algae die and sink to the bottom where they decompose. The bacteria responsible for decomposition remove oxygen from the water, making anoxic zones uninhabitable for many fishes and invertebrates

- behavioral effects such as fish leaving or avoiding an area
- cumulative stress induced impacts causing fish to be more susceptible to infection, predation, and slower growth may also result

The Project will auger-drill shafts to place support columns, a method that will generate noise and vibrations, but at much lower levels compared to driving piles in place. With adequate design and effective BMP implementation (see pages 31-2) the sound energy generated by drilling to install support columns is not anticipated to be sufficient to result in permanent adverse effects to MUS or EFH species within or near the Project area.

## Other Resources of Potential Concern

### *Critical Habitat*

Federally delineated Critical Habitat is not present in the Project area (USFWS, nd-b). No equivalent designation exists under state law.

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Attachment A

Wetland Determination  
Data Forms

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## **Appendix 5**

Pre-EA Consultation Comment and Response Letters



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**From:** Dang, Charmian I <charmian\_dang@fws.gov>

**Sent:** Friday, February 14, 2025 9:37 AM

**To:** James Niermann <JimN@rmtowill.com>

**Subject:** Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge over Ki'iki'i Stream in Waialua, Oahu

**CAUTION:** External Email

Dear Mr. Niermann,

Our office received your letter requesting the U.S. Fish and Wildlife Service's input on the proposed Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge over Ki'iki'i Stream on Oahu. Below are instructions for the IPaC online portal to obtain a list of species that may be affected in the project location and conservation measures which should be included in the EA.

The Pacific Island Fish and Wildlife Office (PIFWO) is transitioning to the use of the Information for Planning and Consultation (IPaC) online portal, <https://ipac.ecosphere.fws.gov/>, for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species and designated critical habitat in your project area. Using IPaC expedites the process for species list distribution and takes minimal time. Therefore, the IPaC list would fulfill your request for a species list. Please find step by step instructions attached to use IPaC for future projects, and feel free to share with additional project partners.

For recommended avoidance and minimization measures, you can visit the following webpage <https://www.fws.gov/office/pacific-islands-fish-and-wildlife/library>

As the proposed project will involve work around water our Aquatic Program has added the following comment.

### **Fish and Wildlife Coordination Act**

Any modification to freshwater or marine waters of the U.S. including impounding, diverting, deepening, controlling, or modification for any other purpose requires a Fish and Wildlife Coordination Act (FWCA) consultation with the U.S Fish and Wildlife Service, State/ Territorial wildlife agency (State of Hawaii Division of Aquatic Resources, American Samoa's Department of Marine and Wildlife Resources, Guam's Division of Aquatic and Wildlife Resources, or the Northern Mariana Island's Division of Fish and Wildlife) and the National Marine Fisheries Service. The Pacific Islands Fish and Wildlife Office in Honolulu should be notified of a FWCA consultation request with a project description and any relevant biological information in order expedite the appropriate level of coordination and consultation needs.

Aloha,  
Charmian Dang

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Charmian Dang  
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# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, Hawai'i 96850



Subject: IPaC generated official species list for the Pacific Islands Fish and Wildlife Office

Dear Action Agency or Applicant:

The Pacific Islands Fish and Wildlife Office (PIFWO) is transitioning to the Information for Planning and Consultation (IPaC) online portal, <https://ipac.ecosphere.fws.gov/> for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species, designated critical habitat, and avoidance and minimization measures to consider in your general project design. IPaC has been used by continental USFWS offices to provide official species lists and avoidance and minimization guidance since 2017. Using IPaC expedites the process for species list distribution. Obtaining a species list in IPaC is relatively straightforward and takes minimal time to complete. Step by step instructions are included below.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of your species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change the species list. Verification can be completed by visiting the IPaC website at regular intervals during project planning and implementation. An updated list may be requested through the IPaC system by completing the same process used to obtain the initial species list.

We hope this process provides efficiencies to our partners in obtaining a species list. For federal action agencies, it also opens additional IPaC functionality that the PIFWO office is still working on, such as the use of Determination Keys for informal section 7 programmatic consultations. We will let our agency partners know when that functionality becomes available.

If you have questions about a species list obtained through the IPaC system or need assistance in completing an IPaC species list request, please contact the Service at 808-792-9400 or via email at [pifwo\\_admin@fws.gov](mailto:pifwo_admin@fws.gov). We appreciate your efforts to conserve listed species across the Pacific Islands.

## INTERIOR REGION 9 COLUMBIA-PACIFIC NORTHWEST

IDAHO, MONTANA\*, OREGON\*, WASHINGTON

\*PARTIAL

## INTERIOR REGION 12 PACIFIC ISLANDS

AMERICAN SĀMOA, GUAM, HAWAI'I, NORTHERN  
MARIANA ISLANDS

Instructions for Action Agencies and partners to obtain an official species list in IPaC


- Navigate to <https://ipac.ecosphere.fws.gov/>
- You can get an unofficial species list without logging in. However, if you want an official species list you will need to log in first using your Login.gov account. If you don't have an IPaC account, they are easy to create.

## Log in

×

LOGIN.GOV LOGIN

You can use your Login.gov profile as your IPaC account. You will need to allow IPaC to read your [basic profile information](#).

LOG IN WITH  LOGIN.GOV

IPAC LOGIN

> Why do I need an IPaC account?

Select Log in with Login.gov and sign in using your email and password.

Email address

Password

☐ Show password

Sign in

Create an account

[Sign in with your government employee ID](#)

If you have a PIV or CAC card, you can sign in using that method as well.

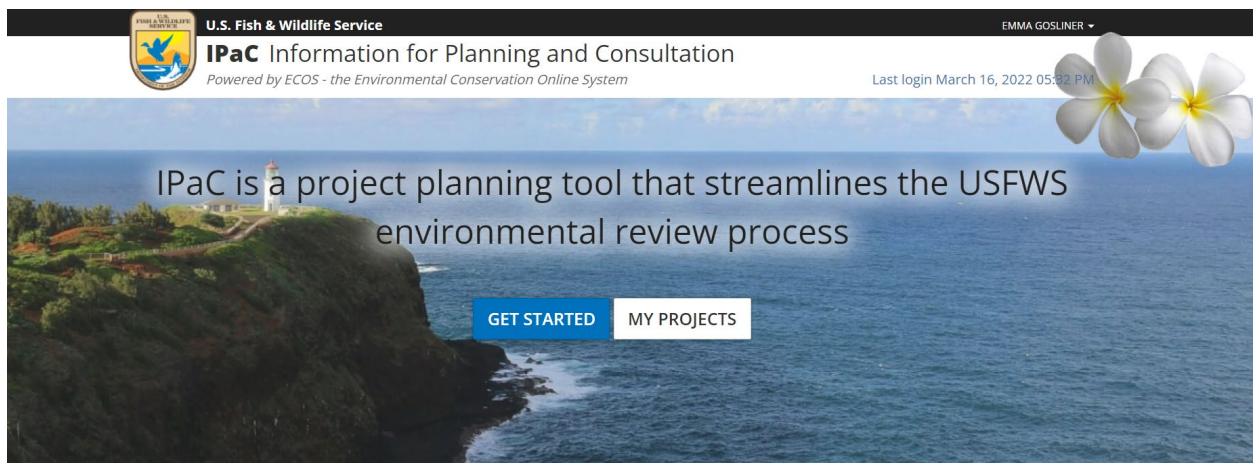
## Sign in with your PIV or CAC

Make sure **you have a Login.gov account** and **you've set up PIV/CAC** as a two-factor authentication method.

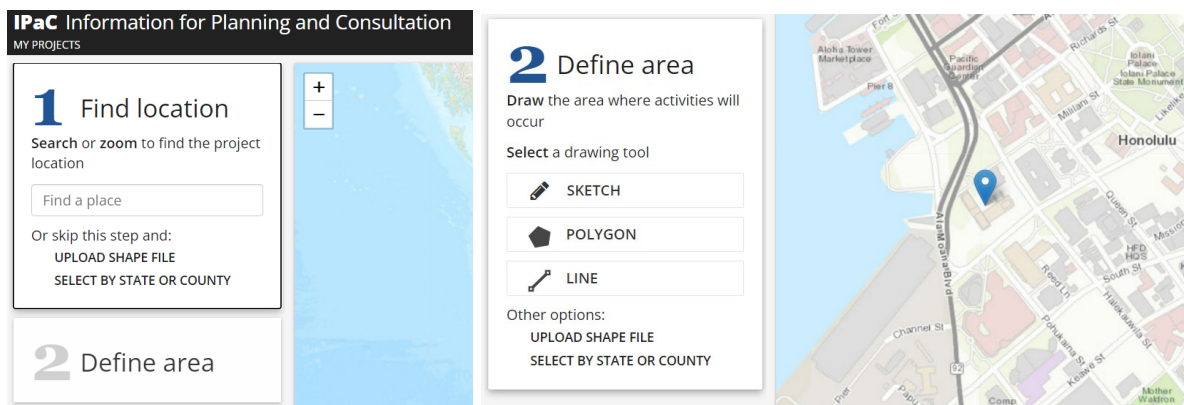
**Insert your PIV/CAC**

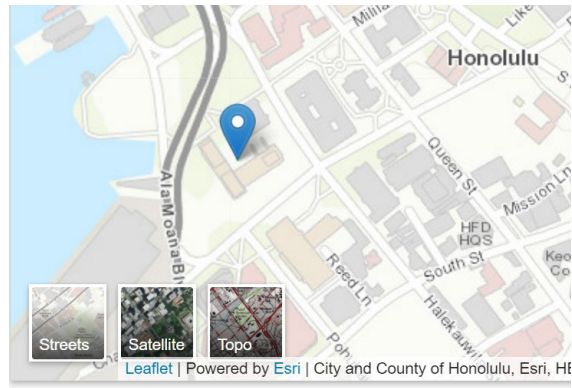
[Cancel](#)

- Once you log in, select “Get Started”.

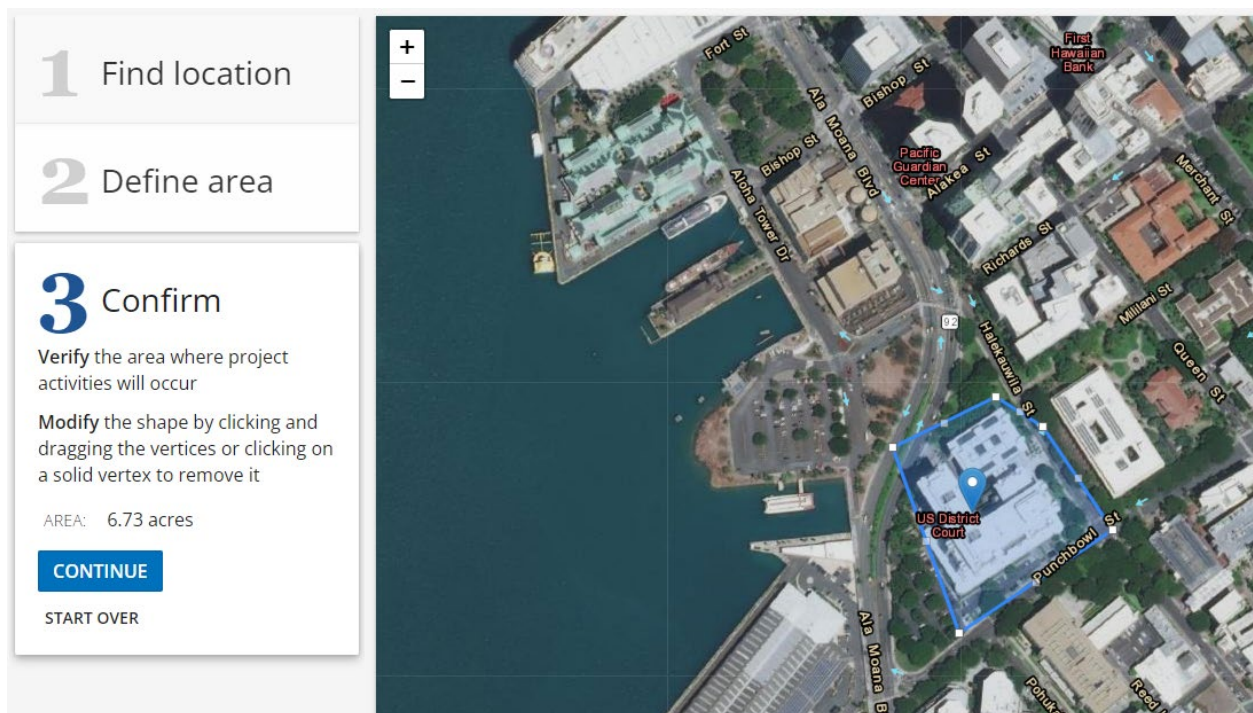


- Define the action area: Identify the location of the proposed action by uploading an existing shapefile or by entering an address or coordinates of the action area. Once identified on the map, you can manually draw the action area using the drawing tools.





To help identify your action area you can choose between multiple base maps available.



Press continue when you have finished drawing or uploading the action area location.

- The species information on the page that follows is not official. However, it identifies the project County, local Fish and Wildlife Field Office, species covered under NOAA Fisheries as well as Migratory Bird Treaty Act species. The list can be viewed in Thumbnail or List format.
- Once the species list populates you will see images of the species that may occur on, near, or transgress across your project. Click on SPECIES GUIDELINES on your top right to see Avoidance and Minimization measures to incorporate into your General Project Design Guidelines.



# Explore location

LOCAL OFFICE PACIFIC ISLANDS FISH AND WILDL OFC

LOCATION  
Honolulu County,  
Hawaii  
[CHANGE LOCATION](#)

## Resources

ENDANGERED SPECIES	20
MIGRATORY BIRDS	5
FACILITIES	
WETLANDS	!

[PRINT RESOURCE LIST](#)

What's next?

Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.

[DEFINE PROJECT](#)

## Endangered species

Listed species <sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries <sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

Additional information on endangered species data is provided [below](#).

The following species are potentially affected by activities in this location:

THUMBNAILS

LIST

[SPECIES GUIDELINES](#)

### Mammals

Endangered

Hawaiian Hoary Bat  
*Lasiurus cinereus semotus*  
Wherever found

- Continue with the following steps to comply with the requirements of ESA section 7 to obtain an **official species list**.
- Select Define Project

## What's next?

Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.

[DEFINE PROJECT](#)

## Define project

Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.

Project name

Project description  
Describe the location, size, scope, and timing of this project.

OPTIONAL

[SAVE](#) [CANCEL](#)

Enter the Project Name and a brief description of the project (a description is not mandatory, but recommended for future coordination with the Service). Click SAVE at bottom of page.

- At the bottom of the What's next box on the right, click Request Species List

## Test Project

Testing

LOCATION Honolulu County, Hawaii

CREATED March 17, 2022

1 MEMBER 2 DOCUMENTS

### What's next?

**ESA REVIEW**  
Review this project's effects on listed species pursuant to the Endangered Species Act (ESA), as part of the overall regulatory review.

**START REVIEW**

**SPECIES LIST**  
Requesting an official species list is now part of IPaC's ESA Review.

**REQUEST SPECIES LIST**

### Local office

Pacific Islands Fish And Wildlife Office

- on the following screen, click Yes, Request Species List

## Endangered Species Act Review

← BACK EXIT REVIEW

1 Request an official species list

2 Evaluate determination keys  
No Dkeys for project

3 Analyze project (optional)

4 Download documentation

### Step 1: Request an official species list

An official species list is a letter from the local U.S. Fish and Wildlife Service field office that assists in the evaluation of potential impacts of your project. It includes a list of species that should be considered under [Section 7](#) of the Endangered Species Act, a project tracking number, and other pertinent information from the field office.

#### Does this project require an official species list?

Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action" ([Section 7](#) of the Endangered Species Act).

This requirement applies to projects that are conducted, permitted, funded, or licensed by any Federal agency.

**YES, REQUEST A SPECIES LIST** SKIP / DOES NOT APPLY

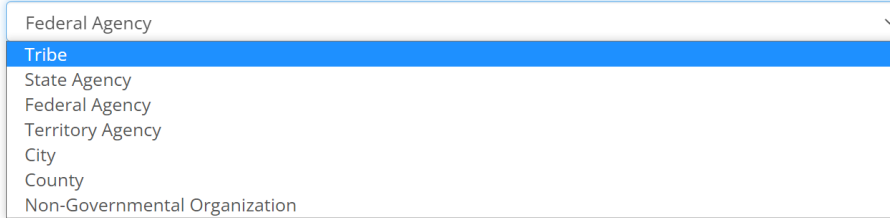
- Fill out the contact information for yourself or your agency. Contractors, state partners, and any other project proponents may request a species list and should be covered using the dropdown menus.

## Tell us about the project and your organization or agency

Is this project being conducted, permitted, funded, or licensed by a Federal agency?

- ☐ Yes  
☐ No

What kind of organization are you working for directly?



A dropdown menu with a light blue border and a downward arrow on the right. The menu is open, showing a list of organization types. The first option, "Federal Agency", is highlighted in blue. The other options are "Tribe", "State Agency", "Federal Agency", "Territory Agency", "City", "County", and "Non-Governmental Organization".

- Federal Agency
- Tribe
- State Agency
- Federal Agency
- Territory Agency
- City
- County
- Non-Governmental Organization

- From the pull-down menu for Classify Type of Project, select the project type that best fits the proposed action.

### Enter your project information

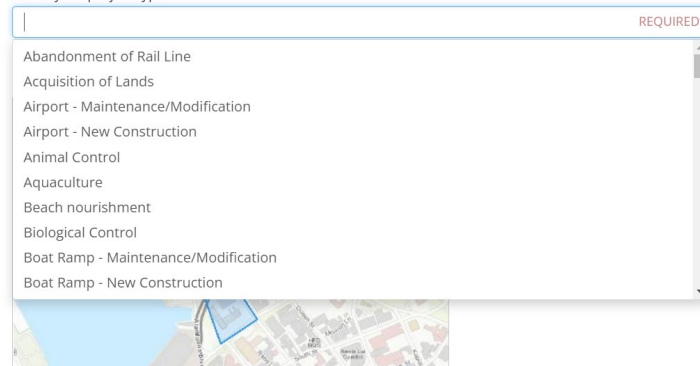
Project name

Test Project

Project description

Testing

Select your project type



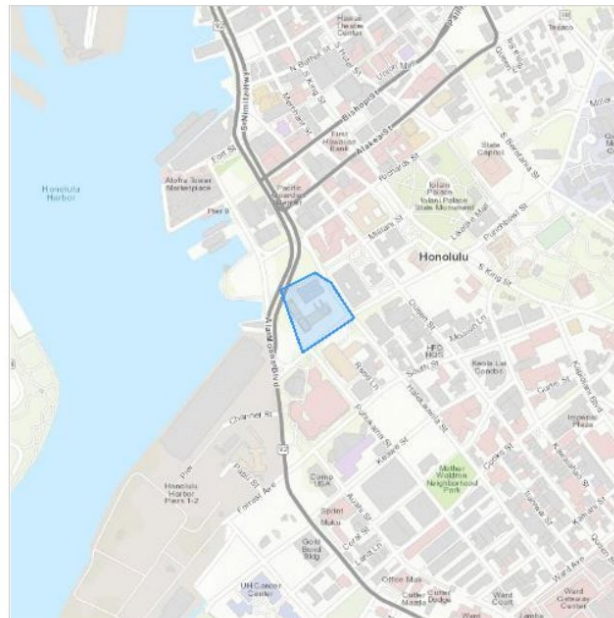
A dropdown menu with a light blue border and a downward arrow on the right. The menu is open, showing a list of project types. The first option, "Abandonment of Rail Line", is highlighted in blue. The other options are "Acquisition of Lands", "Airport - Maintenance/Modification", "Airport - New Construction", "Animal Control", "Aquaculture", "Beach nourishment", "Biological Control", "Boat Ramp - Maintenance/Modification", and "Boat Ramp - New Construction".

REQUIRED

- Abandonment of Rail Line
- Acquisition of Lands
- Airport - Maintenance/Modification
- Airport - New Construction
- Animal Control
- Aquaculture
- Beach nourishment
- Biological Control
- Boat Ramp - Maintenance/Modification
- Boat Ramp - New Construction

- Once all required sections are filled out, press SUBMIT OFFICIAL SPECIES LIST REQUEST

## Location



[SUBMIT OFFICIAL SPECIES LIST REQUEST](#)

- An Official Species List should be generated and available for download in a couple of seconds.
- If you need additional information on a species, click on their name that is hot-linked to their species information page. A brief overview of the species' status, description and critical habitat will appear as well as a link to their ECOS species profile.

### Resources

- ENDANGERED SPECIES 20
- MIGRATORY BIRDS 5
- FACILITIES
- WETLANDS !
- [PRINT RESOURCE LIST](#)


What's next?

Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.

[DEFINE PROJECT](#)

## ʻIiwi

*Drepanis coccinea*



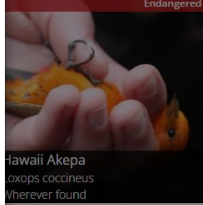
**STATUS**

Threatened: A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

**DESCRIPTION**

The Iiwi is an Hawaiian forest bird in the endemic honeycreeper subfamily of the Fringillidae (finch family). Iiwi are medium-sized forest birds (total body length is approximately 14 centimeters (cm) (5.5 inches (in)) with bright scarlet feathers, black wings and tail, and a small white patch on the inner secondary flight feathers. The bill is long, deeply

**Endangered**



Hawaii Akepa  
*Akoxops coccineus*  
Wherever found

**FINAL Avoidance and Minimization Measures (AMMs)**  
**Final revised May 2023**

**ESA Listed Species**

**Endangered ‘ōpe‘ape‘a (Hawaiian hoary bat, *Lasiurus cinereus semotus*):** The Hawaiian hoary bat roosts in woody vegetation across all islands and will leave their young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, June 1 through September 15, there is a risk that young bats could inadvertently be harmed or killed, since they are too young to fly or move away from disturbance. Hawaiian hoary bats forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you incorporate the following applicable measures into your project description:

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

**Endangered ‘ua‘u (Hawaiian petrel, *Pterodroma sandwichensis*), Threatened ‘a‘o, (Newell’s shearwater, *Puffinus newelli*), and Endangered Hawai‘i Distinct Population Segment of the ‘akē‘akē (band-rumped storm-petrel, *Hydrobates castro*):**

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

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

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

Listed seabirds have been documented colliding with communication towers, particularly in areas of high seabird passage rate. In general, self-supporting monopoles are the least likely to result in collisions, whereas lattice towers, particularly those that rely on guy-wires, have a greater risk.

To avoid and minimize the likelihood that towers will result in collisions by listed seabirds we recommend you incorporate the following measures into your project description:

- The profile of the tower should be as small as possible, minimize the extent of the tower that protrudes above the surrounding vegetation layer, and avoid the use of guywires.
- If the top of the tower must be lit to comply with Federal Aviation Administration regulations, use a flashing red light versus a steady-beam red or white light.
- If possible, co-locate with existing towers or facilities.

Seabirds have been known to collide with fences, powerlines, and other structures near nesting colonies. To avoid and minimize the likelihood of collision we recommend you incorporate the following measures into your project description:

- Where fences extend above vegetation, integrate three strands of polytape into the fence to increase visibility.
- For powerlines, guy-wires and other cables, minimize exposure above vegetation height and vertical profile.

We recommend further coordination with our office to address specific project details and potential seabird interactions.

**Threatened nēnē (Hawaiian goose, *Branta (Nesochen) sandvicensis*):** Nēnē are found on the islands of Hawai‘i, Maui, Moloka‘i, and Kaua‘i. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid and minimize potential project impacts to nēnē we recommend you incorporate the following measures into your project description:

- Do not approach, feed, or disturb nēnē.
- If nēnē are observed loafing or foraging within the project area during the breeding season (September through April), have a biologist familiar with nēnē nesting behavior survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).
- Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 feet of proposed project, or a previously undiscovered nest is found within the 150-foot radius after work begins.
- In areas where nēnē are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.

A 4(d) rule was established at the time the nēnē was downlisted to threatened status. Under the 4(d) rule, the following actions are not prohibited under the Act, provided the additional measures described in the downlisting rule are adhered to:

- Take by landowners, or their agents, conducting intentional harassment in the form of hazing or other deterrent measures not likely to cause direct injury or mortality, or nēnē surveys.



- Take that is incidental to conducting lawful control of introduced predators or habitat management activities for nēnē.
- Take by authorized law enforcement officers for the purpose of aiding or euthanizing sick, injured, or orphaned nēnē; disposing of dead specimens; and salvaging a dead specimen that may be used for scientific study.

**Endangered Hawaiian waterbirds (ae‘o, Hawaiian stilt, *Himantopus mexicanus knudseni*; ‘alae ke‘oke‘o, Hawaiian coot, *Fulica alai*; ‘alae ‘ula, Hawaiian common gallinule, *Gallinula galeata sandvicensis*; koloa maoli, Hawaiian duck, *Anas wyvilliana*):** Hawaiian waterbirds are currently found in a variety of wetland habitats including freshwater marshes and ponds, coastal estuaries and ponds, artificial reservoirs, kalo or taro (*Colocasia esculenta*) lo‘i or patches, irrigation ditches, sewage treatment ponds, and in the case of the Hawaiian duck, montane streams and marshlands. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation. Hawaiian ducks are also subject to threats from hybridization with introduced mallards.

#### Guidance for Projects That May Create an Attraction for Hawaiian Waterbirds:

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

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

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

chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

**Endangered Hawaiian forest birds (O‘AHU:** O‘ahu ‘elepaio, *Chasiempis ibidis*; ‘i‘iwi, *Drepanis coccinea*; **KAUA‘I:** puaiohi, *Myadestes palmeri*; ‘akikiki, *Oreomystis bairdi*; akeke‘e, *Loxops caeruleirostris*; ‘i‘iwi, *Drepanis coccinea*; **HAWAI‘I:** ‘akiapōlā‘au, *Hemignathus wilsonsi*; ‘alawī, Hawai‘i creeper, *Loxops mana*; Hawai‘i ‘ākepa, *Loxops coccineus*; palila, *Loxioides bailleui*; ‘i‘iwi, *Drepanis coccinea*; **MAUI:** kiwīkiu, Maui parrotbill, *Pseudonestor xanthophrys*; ‘ākohekohe, crested honeycreeper, *Palmeria dolei*; ‘i‘iwi, *Drepanis coccinea*; **MOLOKA‘I:** ‘i‘iwi, *Drepanis coccinea*

Hawaiian forest birds’ current ranges are predominately restricted to montane forests above 3,500 feet in elevation due to habitat loss and threats at lower elevations. Hawaiian forest bird habitat has been lost due to development, agriculture, grazing, wildfire, and spread of invasive habitat-altering species. Forest birds are also affected by mosquito-borne diseases. Mosquitoes are not native to Hawai‘i; their occurrence increases in areas where ungulate presence results in small pools of standing water. Actions such as road construction and development increase human access and result in increased wildfire and invasive species threats. Grazing results in reductions in woody vegetation and increased grass cover, which reduces forest habitat quality and results in increased wildfire risk on the landscape.

Avoid conducting activities within forest bird habitat that:

- Promote the spread or survival of invasive species.
- Increase mosquito populations or stagnant water habitat.
- Increase wildfire threat to montane forest habitats.
- Remove tree cover during the peak breeding season between January 1 and June 30.

**Endangered Blackburn’s sphinx moth (*Manduca blackburni*):** NOTE: Found on Hawai‘i, Maui, Kaho‘olawe, Moloka‘i, and Lāna‘i.

The adult Blackburn’s sphinx moth feeds on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), ‘ilie‘e (*Plumbago zeylanica*), maiapilo (*Capparis sandwichiana*), and others. Blackburn’s sphinx moth larvae feed on non-native tree tobacco (*Nicotiana glauca*) and native ‘aiea (*Nothocestrum* spp.). To pupate, the larvae burrow into the soil and can remain in a state of torpor for a year or more before emerging from the soil. Soil disturbance can result in death of the pupae.

We offer the following survey recommendations to assess whether the Blackburn’s sphinx moth occurs within the project area:

- A biologist familiar with the species should survey areas of proposed activities for Blackburn’s sphinx moth and its larval host plants prior to work initiation.
  - Surveys should be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and within 4-6 weeks prior to construction.
  - Surveys should include searches for adults, eggs, larvae, and signs of larval feeding (chewed stems, frass, or leaf damage).

- If moths, eggs, larvae, or native ‘aiea or tree tobacco over 3 feet tall, are found during the survey, please contact the Service for additional guidance to avoid impacts to this species.

If no Blackburn’s sphinx moth, ‘aiea, or tree tobacco are found during surveys, it is imperative that measures be taken to avoid attraction of Blackburn’s sphinx moth to the project location and prohibit tree tobacco from entering the site. Tree tobacco can grow greater than 3 feet tall in approximately 6 weeks. If it grows over 3 feet, the plants may become a host plant for Blackburn’s sphinx moth. We therefore recommend that you:

- Remove any tree tobacco less than 3 feet tall.
- Monitor the site every 4-6 weeks for new tree tobacco growth before, during, and after the proposed ground-disturbing activity.
  - Monitoring for tree tobacco can be completed by any staff, such as groundskeeper or regular maintenance crew, provided with picture placards of tree tobacco at different life stages.

**Threatened (Central North Pacific DPS) (Hawai‘i and Johnston Atoll) and Endangered (Central West Pacific DPS (Mariana Archipelago and Wake NWR) and Central South Pacific DPS (American Samoa, Palmyra, Kingman, Howland, Baker and Jarvis NWR)) Green sea turtles (*Chelonia mydas*) and Endangered Hawksbill sea turtle (*Eretmochelys imbricata*) (collectively referred to as sea turtles):** The Service consults on sea turtles and their use of terrestrial habitats (beaches where nesting and/or basking is known to occur), whereas the National Oceanic and Atmospheric Administration (NOAA) Fisheries consults on sea turtles in aquatic habitats. We recommend that you consult with NOAA Fisheries regarding the potential impacts from the proposed project if it may affect off-shore or open ocean habitats.

Green sea turtles may nest on any sandy beach area in the Pacific Islands. Hawksbill sea turtles exhibit a wide tolerance for nesting substrate (ranging from sandy beach to crushed coral) with nests typically placed under vegetation. Both species exhibit strong nesting site fidelity. Nesting occurs on beaches from May through September, peaking in June and July, with hatchlings emerging through November and December. In Guam and the Marianas, nesting occurs throughout the year, peaking in April and July. In American Samoa, nesting occurs from October to March.

Information for projects occurring on sandy beaches OR in areas where hawksbills are known to occur:

Construction on, or in the vicinity of, beaches can result in sand and sediment compaction, sea turtle nest destruction, beach erosion, contaminant and nutrient runoff, and an increase in direct and ambient light pollution which may disorient hatchlings or deter nesting females. Off-road vehicle traffic may result in direct impacts to sea turtles or nests, and also contributes to habitat degradation through erosion and compaction.

Information for projects with a beach hardening, stabilization, or nourishment component:

Projects that alter the natural beach profile, such as nourishment and hardening, including the placement of seawalls, jetties, sandbags, and other structures, are known to reduce the suitability of on-shore habitat for sea turtles. These types of projects often result in sand compaction,

erosion, and additional sedimentation in nearshore habitats, resulting in adverse effects to the ecological community and may inhibit future sea turtle nesting. The hardening of a shoreline increases the potential for erosion in adjacent areas, resulting in subsequent requests to install stabilization structures or conduct beach nourishment in adjacent areas. Given projected sea level rise estimates, the likelihood of increase in storm surge intensity, and other factors associated with climate change, we anticipate that beach erosion will continue and likely increase.

Where possible, projects should consider alternatives that avoid the modification or hardening of coastlines. Beach nourishment or beach hardening projects should evaluate the long-term effect to sea turtle nesting habitat and consider the cumulative effects.

To avoid and minimize project impacts to sea turtles and their nests we recommend you incorporate the following measures into your project description:

- No vehicle use on or modification of the beach/dune environment during the sea turtle nesting or hatching season (See nesting date ranges above).
- Do not remove native dune vegetation.
- Incorporate applicable best management practices regarding Work in Aquatic Environments (see enclosed) into the project design.
- Have a biologist familiar with sea turtles conduct a visual survey of the project site to ensure no basking sea turtles are present.
  - If a basking sea turtle is found within the project area, cease all mechanical or construction activities within 100 feet until the animal voluntarily leaves the area.
  - Cease all activities between the basking turtle and the ocean.
- Remove any project-related debris, trash, or equipment from the beach or dune if not actively being used.
- Do not stockpile project-related materials in the intertidal zone, reef flats, sandy beach and adjacent vegetated areas, or stream channels.

For projects with lighting near beaches:

Optimal sea turtle nesting habitat is a dark beach free of barriers that restrict sea turtle movement. Nesting turtles may be deterred from approaching or laying successful nests on lighted or disturbed beaches. They may become disoriented by artificial lighting, leading to exhaustion and placement of a nest in an inappropriate location (such as at or below the high tide line). Hatchlings that emerge from nests may also be disoriented by artificial lighting. Inland areas visible from the beach should be sufficiently dark to allow for successful navigation by hatchlings to the ocean.

To avoid and minimize project impacts to sea turtles from lighting we recommend incorporating the following applicable measures into your project description:

- Avoid nighttime work during the nesting and hatching season.
- Minimize the use of lighting on or near beaches and shield all project-related lights so the light is not visible from any beach.
  - If lights can't be fully shielded or if headlights must be used, fully enclose the light source with light filtering tape or filters.
- Incorporate design measures into the construction or operation of buildings adjacent to the beach to reduce ambient outdoor lighting such as:

- tinting or using automatic window shades for exterior windows that face the beach;
- reducing the height of exterior lighting to below 3 feet and pointed downward or away from the beach; and
- minimize light intensity to the lowest level feasible and, when possible, include timers and motion sensors.

**Endangered pe‘e pe‘e maka‘ole, Kaua‘i cave wolf spider (*Adelocosa anops*) and Kaua‘i cave amphipod (*Spelaeorchestia koloana*):**

The Kaua‘i cave wolf spider and amphipod may be in the vicinity of the proposed project area. In addition, the proposed project also occurs within designated critical habitat for both animals. One of the primary threats to these two species is their mesocavern (underground spaces, caves, cracks, crevices) habitat being exposed to drying conditions, most typically from increased airflow created by breaking through the mesocaverns.

These species are restricted to subterranean mesocavern (cracks, voids, spaces, caves) bearing rock with above ground soil deposits of less than 12 inches within the Kōloa District of the island of Kaua‘i. Mesocaverns that provide appropriate food sources (woody debris, plant roots penetrating the mesocavern) and conditions approaching 100 percent relative humidity levels are likely to contain these unique animals. All known areas likely to contain these animals have been designated critical habitat for these species.

**Survey Recommendations:**

- Survey the project area for depth of soil deposits and the presence of caves. Any areas with soil deposits greater than 12 inches are not likely to provide appropriate habitat or have the species present. Contact the Service and do not disturb the vegetation or soil in areas with soil deposits less than 12 inches or if a cave is found.

**Enhance cave invertebrate habitat if possible:**

- Outplant native plants like maiapilo (*Capparis sandwichiana*) so roots eventually provide a food source and irrigate the surface. Control established ecosystem-altering non-native invasive plant species around all caves.
- Enhance habitat by sealing currently non-occupied caves with temporary air blocks – to increase relative humidity by restricting air flow through cave entrances.
- Design permanent air blocks (e.g., walls) and develop plans to replace temporary air blocks.

**Endangered picture-wing flies (*Drosophila aglaia*, *D. differens*, *D. digressa*, *D. hemipeza*, *D. heteroneura*, *D. montgomeryi*, *D. mulli*, *D. musaphilia*, *D. neoclavisitae*, *D. obatai*, *D. ochrobasis*, *D. sharpi*, *D. substenoptera*, *D. tarphytrichia*):**

Picture-wing flies live in montane forest habitat and are restricted to single islands. Larvae of each species are dependent on a single or a few related plant species. The flies are threatened by destruction of habitat from non-native ungulates and invasive weeds, and also directly threatened by a variety of introduced invertebrates, including yellow jackets, crane flies, and several ant species.

- Avoid clearing forest vegetation within 200 feet of a site potentially occupied by endangered *Drosophila*.
- Restrict construction equipment to existing roads and trails.
- If the site is potentially occupied by endangered *Drosophila* based on location and presence of host plants, consult the Service since permits are required to conduct surveys.

General Species Information (check Critical Habitat layers for specific locations):

<b>Species</b>	<b>Island</b>	<b>Habitat</b>	<b>Host plant(s)</b>
<i>D. aglaia</i> :	O‘ahu	Mesic forest	<i>Touchardia oahuensis</i>
<i>D. differens</i>	Moloka‘i	Wet forest	<i>Clermontia</i> spp.
<i>D. digressa</i>	Hawai‘i	Mesic to wet forest	<i>Charpentiera</i> spp., <i>Ceodes</i> spp. or <i>Rockia sandwicensis</i> ( <i>Pisonia</i> spp.)
<i>D. hemipeza</i>	O‘ahu	Mesic forest	<i>Cyanea</i> spp., <i>Lobelia</i> spp., and <i>Urera kaalae</i>
<i>D. heteroneura</i>	Hawai‘i	Mesic to wet forest	<i>Cheirodendron trigynum</i> ssp. <i>trigynum</i> , <i>Clermontia</i> spp., <i>Delissea argutidentata</i>
<i>D. montgomeryi</i>	O‘ahu	Mesic forest	<i>Urera kaalae</i>
<i>D. mulli</i>	Hawai‘i	Wet forest	<i>Pritchardia beccariana</i>
<i>D. musaphilia</i>	Kaua‘i	Mesic forest	<i>Acacia koa</i>
<i>D. neoclavisetae</i>	Maui	Wet forest	<i>Cyanea</i> spp.
<i>D. obatai</i>	O‘ahu	Dry to mesic forest	<i>Dracaena</i> spp.
<i>D. ochrobasis</i>	Hawai‘i	Mesic to wet forest	<i>Clermontia</i> spp., <i>Marattia</i> spp., <i>Myrsine</i> spp.
<i>D. sharpi</i>	Kaua‘i	Wet forest	<i>Cheirodendron</i> spp, <i>Polyscias</i> spp.
<i>D. substenoptera</i>	O‘ahu	Wet forest	<i>Cheirodendron</i> spp, <i>Polyscias</i> spp.
<i>D. tarphytrichia</i>	O‘ahu	Mesic forest	<i>Charpentiera</i> spp.

**Endangered Hawaiian yellow-faced bees (*Hylaeus anthracinus*, *H. assimulans*, *H. facilis*, *H. hilaris*, *H. kuakea*, *H. longiceps*, and *H. mana*):**

General species information (bold islands are known populations):

<b>Species</b>	<b>Island(s)</b>	<b>Habitat</b>
<i>H. anthracinus</i>	<b>Hawai‘i, Maui, Kaho‘olawe, Lāna‘i, Moloka‘i, O‘ahu</b>	Coastal and lowland dry forests
<i>H. assimulans</i>	<b>Maui, Kaho‘olawe, Lāna‘i, O‘ahu</b>	Coastal and lowland dry forests
<i>H. facilis</i>	Maui, Lāna‘i, <b>Moloka‘i, O‘ahu</b>	Coastal and dry and mesic shrublands and forests
<i>H. hilaris</i>	Maui, Lāna‘i, <b>Moloka‘i</b>	Coastal to dry forest; obligate parasite on <i>H. anthracinus</i> , <i>H. longiceps</i> , and <i>H. asssimulans</i> .
<i>H. kuakea</i>	<b>O‘ahu</b>	Lowland mesic
<i>H. longiceps</i>	<b>Maui, Lāna‘i, Moloka‘i, O‘ahu</b>	Coastal and dry shrubland



Species	Island(s)	Habitat
<i>H. mana</i>	O‘ahu	Lowland mesic; possible close association with <i>Santalum freycinetianum</i>

For coastal species:

Coastal populations of yellow-faced bees occur in habitat along rocky shorelines with *Scaevola taccada* (naupaka) and *Heliotropium arboreum* (tree heliotrope) with either landscaped vegetation, non-native kiawe (*Prosopis pallida*), or bare rock inland. Bees are restricted to an extremely narrow corridor, typically 10–20 meters wide, and do not occur on sandy beaches or inland, or on landscaped native plants on hotel grounds. Documented nectar plants include naupaka, *Sida fallax* (‘ilima), *Euphorbia* spp. (‘akoko), *Argemone glauca* (pua kala), *Myoporum sandwicense* (naio), and tree heliotrope.

*Hylaeus kuakea* has only been found at two sites in lowland mesic forest of the Wai‘anae Mountains. Little is known about its habitat needs and distribution within its range.

*Hylaeus mana* is restricted to a few populations in a narrow band of native mesic koa forest around 1,400 feet in elevation in the Ko‘olau Mountains. Limited information suggests that it has a possible close association with *Santalum freycinetianum*.

Threats to yellow-faced bees include habitat destruction and modification from land use change, non-native plants, ungulates, and fire, along with predation by non-native ants and wasps.

To avoid and minimize project impacts to yellow-faced bees and their nests, we recommend you incorporate the following applicable measures into your project description:

- If an action will occur in or adjacent to known occupied habitat, a buffer area around the habitat may be required and can be worked out on a site-specific basis through consultation with the Service.
- For coastal species, protect all coastal strand habitat from human disturbance, including:
  - No fires or wood collecting.
  - Leave woody debris in place.
  - Restrict vehicles to existing roads and trails.
  - Post educational signs to inform people of the presence of sensitive species.

**Endangered Hawaiian tree snails (*Achatinella* spp., (O‘ahu), *Partulina* spp. (Lāna‘i), Newcomb’s tree snail (*Newcombia cumingi*) (West Maui)), Tutuila tree snail (*Eua zebrina*) (American Samoa) and the American Samoa land snail Sisi or akaleha’ (*Ostodes strigatus*):**

Hawai‘i: Hawaiian tree snails are found in montane wet forests, usually dominated by ‘ōhi‘a (*Metrosideros polymorpha*). Snails feed on fungi and algae that grow on the leaves of trees. *Newcombia cumingi* is found nearly exclusively on ‘ōhi‘a, while other species can occur on a variety of predominately native, but also some non-native tree species. Common native species include *Hydrangea arguta*, *Psychotria* spp., *Melicope* spp., *Coprosma* spp., *Kadua* spp., *Antidesma* spp., and *Perrottetia sandwicensis*. Threats to tree snails include habitat destruction and fragmentation resulting from the impacts of non-native ungulates such as pigs, goats, and

deer, habitat modification due to invasive plants, and predation by non-native mammals, reptiles, flatworms, and snails. Wildfire is also a threat to the tree snails.

American Samoa: *Eua zebrina* is a tree snail found on the islands of Tutuila and Ofu, where they are found primarily on leaves of understory trees. Native forest canopy and understory is a critical need for this species, as all live snails have been found on understory plants beneath native canopy. *Ostodes strigatus* is a ground-dwelling snail found in rocky areas under relatively closed canopy with sparse understory. It is endemic to Tutuila. Closed canopies and areas with heavy tree cover appear to be an important habitat factor for this species. Threats include habitat destruction through agriculture, urban development and introduced ungulates, fire, predation by introduced rats and invertebrates, typhoons, public collection, and low numbers of individuals.

Listed tree snails may occur in the vicinity of the proposed project area. To avoid potential adverse effects to listed tree snails, we offer the following recommendations:

- Where work must be conducted in forested areas, survey proposed project sites for the presence of tree snails. Surveys may only be conducted by biologists holding a Service permit for this work.
- If any tree snails are found, determine the extent of the colony by surveying outwards in all directions from the original sighting until individuals are no longer detected.
- Avoid cutting or removing vegetation within 200 feet of the known occurrence to minimize impacts to the tree snails and their habitat.
- Mark the trees and shrubs occupied by tree snails with brightly colored flagging tape and keep foot traffic to a minimum of 33 feet from marked vegetation to avoid inadvertently dislodging and trampling individuals.
- Avoid clearing understory and overstory forest vegetation outside existing developed areas. Intact vegetation is important for maintaining microclimates and air movement conditions that allow snails to survive in a given area.
- Confine movement of heavy equipment to existing roadways.
- If helicopters are used to reach the project site, avoid affecting the occupied site with helicopter rotor wash that could dislodge snails by selecting alternate landing areas.
- Train personnel who work in tree snail habitat to identify the listed species and their habitat.

**Aquatic invertebrates in Hawai‘i: Newcomb’s snail (*Erinna newcombi*) (Kaua‘i), Anchialine pool shrimp (*Procaris hawaiiiana*) (Hawai‘i Island, Maui) and *Vetericaris chaceorum* (Hawai‘i Island), Hawaiian damselflies (crimson [*Megalagrion leptodemas*] (O‘ahu), flying earwig (*M. nesiotes*) (Maui), blackline (*M. nigrohamatum nigrolineatum*) (O‘ahu), oceanic (*M. oceanicum*) (O‘ahu), Pacific (*M. pacificum*) (Moloka‘i, Maui, Hawai‘i), and orange-black (*M. xanthomelas*) (Hawai‘i, Maui, Lāna‘i, Moloka‘i, O‘ahu):**

Newcomb’s snail is restricted to fast-flowing freshwater streams on Kaua‘i, where it feeds on vegetation growing on submerged rocks. Threats to the species include reduced stream flow from drought, water diversion projects, or other natural and human causes; predation by introduced snails, flies, and aquatic species; and small population dynamics.

- Applicable best management practices regarding work in aquatic environments (see enclosure) should be incorporated into the project design to minimize the degradation of water quality and impacts to fish and wildlife resources.
- Permits are required for accurate surveys of this species, so consult with the Service if work will be done in proximity to stream areas or within water bodies.

**Damselflies** – All of the species are site specific, so check for detailed locations if stream work is occurring.

*Megalagrion leptodemas* breeds in slow reaches of streams and seep-fed pools.

*Megalagrion nesiotes* is found along one stream on Maui (formerly on Hawai‘i as well). Naiads may be terrestrial or semi-terrestrial and the species appears to be closely associated with uluhe.

*Megalagrion nigrohamatum nigrolineatum* occurs in slow sections or pools along mid-reach and headwater sections of upland streams and seep-fed pools.

*Megalagrion oceanicum* is found in swiftly flowing sections of streams, usually amid rocks and gravel in stream riffles. Naiads can forage out of the stream on wet moss on rocks.

*Megalagrion pacificum* is found in seepage-fed pools cut off from the main stream channel, usually in areas with thick vegetation. Formerly found on all islands, now known from Moloka‘i, Maui, and Hawai‘i Island at low elevations.

*Megalagrion xanthomelas* is known from Hawai‘i, Maui, Lāna‘i, Moloka‘i, O‘ahu, and formerly Kaua‘i. It breeds in a widespread number of sites, including anchialine pools, coastal wetlands, small streams, and artificial ponds at low elevations.

Hawaiian damselflies are found in aquatic habitats across the islands, with high species endemism within islands. Breeding habitat includes anchialine pools, perennial streams, marshes, ponds, and even artificial pools and seeps. Major threats include introduced fish, amphibians, and invertebrates in streams, reduced stream flow from drought and water diversion, small isolated populations, reduced habitat quality from ungulates and nonnative plants, and possibly over-collection.

- Applicable best management practices regarding work in aquatic environments (see enclosure) should be incorporated into the project description to minimize the degradation of water quality and impacts to fish and wildlife resources.
- Permits are required for accurate surveys of this species, so consult with the Service if work will be done in proximity to stream areas or within water bodies.

### **Anchialine pool shrimp**

*Procaris hawaiana* is restricted to a small number of anchialine pools on Hawai‘i and Maui, while *Vetericaris chaceorum* is found in only two anchialine pool areas on Hawai‘i. Threats to these species include habitat loss due to in-filling and bulldozing of anchialine pools, waste disposal including used oil and grease into pools, non-native fish, human use of pools for bathing, water extraction, in-flow of fertilizer and pesticides, and collection for the aquarium trade.

If work is occurring within an anchialine pool, ground disturbance occurs near the pools that increases run-off, erosion, or sedimentation, or toxic organic or inorganic substances, or increases the opportunity for the introduction of non-native fish, we recommend the project

proponent consult with us to avoid Section 9 violations and provide the ACOE/Service joint BMPs. If work is occurring around pools we can offer the following:

- Applicable best management practices regarding work in aquatic environments (see enclosure) should be incorporated into the project description to minimize the degradation of water quality and impacts to fish and wildlife resources.
- Protect anchialine pools (both in and around) from human disturbance by implementing the following measures:
  - Restrict vehicles to existing roads and trails.
  - Prevent trash, and other waste from entering into anchialine pools.
  - Avoid or limit to the maximum extent practicable entrance into the anchialine pools.
- Install educational signs near anchialine pools to inform people of the presence of sensitive species and habitats.

## **Migratory Bird Treaty Act protected species**

**White terns or Manu o Kū (*Gygis alba*):** The white tern is not federally listed, but it is a listed species under Hawai'i State law. White terns often nest in urban parks and residential areas from Hawai'i Kai to Hickam Air Force Base on the island of O'ahu. White terns breed during all months of the year, but the core breeding season is January through June, with a major peak in March. White terns do not build nests, instead they lay a single egg directly on a ledge, tree branch, or other suitable location. The egg will hatch after approximately 35 days, after which it takes 45 days for the chick to be mature enough to leave the tree on its own. Signs that white terns are present include accumulation of white feathers or white droppings underneath the tree.

To avoid and minimize potential project impacts to white terns we recommend you incorporate the following applicable measures into your project description:

- If tree trimming is part of your project, please examine all trees slated to be cut to determine if there are white terns nesting in them.
- Do not trim branches or remove trees with nesting white terns.
- Do not disturb a nesting tree or branch for at least 80 days from when the egg is laid.

**Wedge-tailed shearwater or 'ua'u kani (*Ardenna pacificus*):** Unlike other Hawaiian seabird species, wedge-tailed shearwaters nest in littoral vegetation along coastlines. Nesting adults, eggs, and chicks are particularly susceptible to impacts from human disturbance and predators.

To avoid and minimize potential project impacts to wedge-tailed shearwaters we recommend you incorporate the following measures into your project description:

- Conduct surveys throughout the project area during the species' breeding season (March through November) to determine the presence and location of nesting areas.
- If wedge-tailed shearwaters nest within a proposed project area and the project would cause ground disturbance, time project construction outside of the breeding season.
- If outdoor lighting is needed, use light shields that are completely opaque, appropriately sized, and positioned so that the bulb is only visible from below and that light from the shielded source cannot be seen from the beach.

- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.

**Hawaiian hawk or ‘io (*Buteo solitarius*):** The Hawaiian hawk was recently federally delisted, but remains a listed species under Hawai‘i State law. The Hawaiian hawk is known to occur across a broad range of forest habitats throughout the Island of Hawai‘i. Loud, irregular and unpredictable activities, such as using heavy equipment or building a structure, near an endangered Hawaiian hawk nest may cause nest failure. Harassment of Hawaiian hawk nesting sites can alter feeding and breeding patterns or result in nest or chick abandonment. Nest disturbance can also increase exposure of chicks and juveniles to inclement weather or predators.

To avoid and minimize impacts to Hawaiian hawks we recommend you incorporate the following applicable measures into your project description:

- If work must be conducted during the March 1 through September 30, the Hawaiian hawk breeding season, have a biologist familiar with the species conduct a nest search of the project footprint and surrounding areas immediately prior to the start of construction activities.
  - Pre-disturbance surveys for Hawaiian hawks are only valid for 14 days. If disturbance for the specific location does not occur within 14 days of the survey, conduct another survey.
- Clearing of vegetation or construction activities should not occur within 1,600 feet of any active Hawaiian hawk nest during the breeding season until the young have fledged.
- Regardless of the time of year, avoid trimming or cutting trees containing a hawk nest, as nests may be re-used during consecutive breeding seasons.

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

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

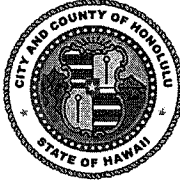
1. Authorized dredging and filling-related activities that may result in the temporary or permanent loss of aquatic habitats should be designed to avoid indirect, negative impacts to aquatic habitats beyond the planned project area.
2. Dredging/filling in the marine environment should be scheduled to avoid coral spawning and recruitment periods, and sea turtle nesting and hatching periods. Because these periods are variable throughout the Pacific islands, we recommend contacting the relevant local, state, or federal fish and wildlife resource agency for site specific guidance.
3. Turbidity and siltation from project-related work should be minimized and contained within the project area by silt containment devices and curtailing work during flooding or adverse tidal and weather conditions. BMPs should be maintained for the life of the construction period until turbidity and siltation within the project area is stabilized. All project construction-related debris and sediment containment devices should be removed and disposed of at an approved site.
4. All project construction-related materials and equipment (dredges, vessels, backhoes, silt curtains, etc.) to be placed in an aquatic environment should be inspected for pollutants including, but not limited to; marine fouling organisms, grease, oil, etc., and cleaned to remove pollutants prior to use. Project related activities should not result in any debris disposal, non-native species introductions, or attraction of non-native pests to the affected or adjacent aquatic or terrestrial habitats. Implementing both a litter-control plan and a Hazard Analysis and Critical Control Point plan (HACCP – see <https://www.fws.gov/policy/A1750fw1.html>) can help to prevent attraction and introduction of non-native species.
5. Project construction-related materials (fill, revetment rock, pipe, etc.) should not be stockpiled in, or in close proximity to aquatic habitats and should be protected from erosion (e.g., with filter fabric, etc.), to prevent materials from being carried into waters by wind, rain, or high surf.
6. Fueling of project-related vehicles and equipment should take place away from the aquatic environment and a contingency plan to control petroleum products accidentally spilled during the project should be developed. The plan should be retained on site with the person responsible for compliance with the plan. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of accidental petroleum releases.
7. All deliberately exposed soil or under-layer materials used in the project near water should be protected from erosion and stabilized as soon as possible with geotextile, filter fabric or native or non-invasive vegetation matting, hydro-seeding, etc.



**DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
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DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Earl Campbell, Project Leader  
Pacific Islands Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, Hawaii 96850

Dear Mr. Campbell:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Kī'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response email dated February 14, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*The Pacific Island Fish and Wildlife Office (PIFWO) is transitioning to the use of the Information for Planning and Consultation (IPaC) online portal, <https://ipac.ecosphere.fws.gov/>, for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species and designated critical habitat in your project area. Using IPaC expedites the process for species list distribution and takes minimal time. Therefore, the IPaC list would fulfill your request for a species list. Please find step by step instructions attached to use IPaC for future projects, and feel free to share with additional project partners.*

An official species list from the USFWS IPaC program will be obtained and incorporated into the terrestrial and aquatic biological survey that is being prepared for the Draft Environmental Assessment (EA).

*For recommended avoidance and minimization measures, you can visit the following webpage <https://www.fws.gov/office/pacific-islands-fish-and-wildlife/library>.*

Mr. Earl Campbell, Project Leader  
June 20, 2025  
Page 2

Applicable avoidance and minimization measures identified in the *Final Avoidance and Minimization Measures (Final revised May 2023)* and *U.S. Fish and Wildlife Service Recommended Standard Best Management Practices* will be included as mitigation measures in the Draft EA.

*As the proposed project will involve work around water our Aquatic Program has added the following comment.*

*Fish and Wildlife Coordination Act. Any modification to freshwater or marine waters of the U.S. including impounding, diverting, deepening, controlling, or modification for any other purpose requires a Fish and Wildlife Coordination Act (FWCA) consultation with the U.S. Fish and Wildlife Service, State/Territorial wildlife agency (State of Hawaii Division of Aquatic Resources, American Samoa's Department of Marine and Wildlife Resources, Guam's Division of Aquatic and Wildlife Resources, or the Northern Mariana Island's Division of Fish and Wildlife) and the National Marine Fisheries Service. The Pacific Islands Fish and Wildlife Office in Honolulu should be notified of a FWCA consultation request with a project description and any relevant biological information in order expedite the appropriate level of coordination and consultation needs.*

The proposed project will involve modification of the Ki'iki'i Stream embankment and therefore, will require Fish and Wildlife Coordination Act consultation with USFWS, State of Hawai'i Department of Land and Natural Resources, Division of Aquatic Resources, and National Marine Fisheries Service, as well as notification of PIFWO.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,



Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

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



KEITH A. REGAN  
COMPTROLLER  
KA LUNA HO'OMALU HANA LAULĀ  
  
MEOH-LENG SILLIMAN  
DEPUTY COMPTROLLER  
KA HOPE LUNA HO'OMALU HANA LAULĀ

**STATE OF HAWAII | KA MOKU'ĀINA O HAWAII**  
**DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWÉ LAULĀ**  
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)25.013

**JAN 31 2025**

Jim Niermann  
R. M. Towill Corporation  
2024 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Jim Niermann:

Subject: Pre-Assessment Consultation for Replacement of  
Waialua Beach Road Bridge (Bridge No. 605) over Kiikii Stream  
Waialua, Island of Oahu, Hawaii  
TMK: Waialua Beach Road Right-of-Way and portions of (1) 6-6-021: 001;  
(1) 6-6-022: 001, 004; (1) 6-7-001:010, 014, 032

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

If you have any questions, please call Dora Choy-Johnson of the Planning Branch at (808) 586-0488.

Sincerely,

A handwritten signature in blue ink, appearing to read "G. Wood", written over a circular blue stamp.

GORDON S. WOOD  
Public Works Administrator

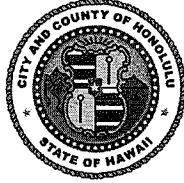
DC:sn

c: Eric Agena, MDO

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
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DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Keith A. Regan, Comptroller  
State of Hawai'i  
Department of Accounting and General Services  
P.O. Box 119  
Honolulu, Hawai'i 96810

Dear Mr. Regan:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated January 31, 2025, regarding the subject project. We acknowledge that the Department of Accounting and General Services has no comments on the proposed project.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

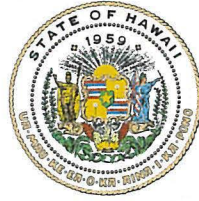
On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles", is written over a horizontal line.

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm



**STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
KA 'OIHANA HO'ONA'AUAO  
P.O. BOX 2360  
HONOLULU, HAWAII 96804**

OFFICE OF FACILITIES AND OPERATIONS

February 7, 2025

Mr. Jim Niermann  
R.M. Towill Corporation  
2024 North King Street, Suite 200  
Honolulu, HI 96819

Re: Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge  
(Bridge No. 605) over Kiikii Stream, Tax Map Key Nos.: Waialua Beach Road  
Right-of-way and portions of (1)6-6-021:001; 6-6-022:001, 004; 6-7-001:010, 014,  
032

Dear Mr. Niermann:

Thank you for your letter dated January 17, 2025. The Hawaii State Department of Education (Department) has reviewed the information provided and offers the following comments regarding replacing the Waialua Beach Road Bridge (Project).

Due to the proximity of Waialua Elementary School to the Project, the Department requests early consultation with the school administration to identify and minimize any potential effects on pedestrian and vehicular traffic that may impact school operations.

Should you have any questions, please contact Cori China, Professional Worker of the Facilities Development Branch, Planning Section, at (808) 784-5080 or via email at [cori.china@k12.hi.us](mailto:cori.china@k12.hi.us).

We appreciate the opportunity to comment.

Sincerely,

A handwritten signature in blue ink, appearing to read "Roy Ikeda", is written over a circular stamp.

Roy Ikeda  
Interim Public Works Manager  
Planning Section

RI:ctc

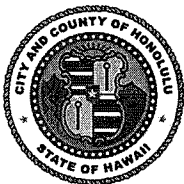
c: Ernest Muh, Complex Area Superintendent, Leilehua-Mililani-Waialua Complex  
Facilities Development Branch

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Keith Hayashi, Superintendent  
Department of Education  
State of Hawai'i  
P.O. Box 2360  
Honolulu, Hawai'i 96804

Dear Mr. Hayashi:

**SUBJECT:** Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Kī'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 7, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*Due to the proximity of Waialua Elementary School to the Project, the Hawai'i State Department of Education requests early consultation with the school administration to identify and minimize any potential effects on pedestrian and vehicular traffic that may impact school operations.*

Two consultation meetings were held with the Waialua Elementary principal and staff on February 14 and March 31, 2025. The second meeting was also attended by the Department of Education (DOE). Comments received during the two meetings were documented by the project team and will be incorporated into the project scope to the maximum extent feasible. The meeting minutes from the two meetings are included as an attachment.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.



Mr. Keith Hayashi, Superintendent  
June 20, 2025  
Page 2

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles", with a stylized flourish at the end.

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

January 27, 2025

**MEMORANDUM**

TO: **DLNR Agencies:**  
X Div. of Aquatic Resources ([kendall.i.tucker@hawaii.gov](mailto:kendall.i.tucker@hawaii.gov))  
X Div. of Boating & Ocean Recreation ([richard.t.howard@hawaii.gov](mailto:richard.t.howard@hawaii.gov))  
X Engineering Division ([DLNR.ENG@hawaii.gov](mailto:DLNR.ENG@hawaii.gov))  
X Div. of Forestry & Wildlife ([rubyrosa.t.terrago@hawaii.gov](mailto:rubyrosa.t.terrago@hawaii.gov))  
X Div. of State Parks ([curt.a.cottrell@hawaii.gov](mailto:curt.a.cottrell@hawaii.gov))  
X Commission on Water Resource Management ([DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))  
X Office of Conservation & Coastal Lands ([sharleen.k.kuba@hawaii.gov](mailto:sharleen.k.kuba@hawaii.gov))  
X Land Division – O'ahu District ([barry.w.cheung@hawaii.gov](mailto:barry.w.cheung@hawaii.gov))  
X Aha Moku Advisory Committee ([leimana.k.damate@hawaii.gov](mailto:leimana.k.damate@hawaii.gov))

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: Pre-Assessment Consultation for **Replacement of Waialua Beach Road Bridge (#605) over Ki'iki'i Stream**

LOCATION: Waialua, Island of O'ahu; TMKs: Waialua Beach Road ROW and Portions of (1) 6-6-021:001, 6-6-022: 001, 004; 6-7-001: 010,014, 032

APPLICANT: City and County of Honolulu's Design and Construction

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **February 13, 2025**.

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Dayna Vierra at [dayna.k.vierra@hawaii.gov](mailto:dayna.k.vierra@hawaii.gov). Thank you.

**BRIEF COMMENTS:**

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

Signed: *Richard Howard*

Print Name: Richard Howard

Division: D9602

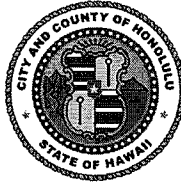
Date: 1/28/2025

Attachments

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Ms. Meghan Statts, Administrator  
Division of Boating and Ocean Recreation  
Department of Land and Natural Resources  
State of Hawai'i  
4 Sand Island Access Road  
Honolulu, Hawai'i 96819

Dear Ms. Statts:

**SUBJECT:** Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated January 28, 2025, regarding the subject project. We acknowledge that the Division of Boating and Ocean Recreation has no objections to the proposed project.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

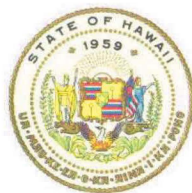
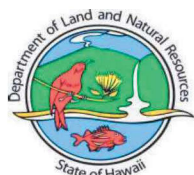
A handwritten signature in black ink, appearing to read "H. Milles", is written over a horizontal line.

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

January 27, 2025

**MEMORANDUM**

FROM: ~~TO:~~

**DLNR Agencies:**

- X Div. of Aquatic Resources ([kendall.l.tucker@hawaii.gov](mailto:kendall.l.tucker@hawaii.gov))
- X Div. of Boating & Ocean Recreation ([richard.t.howard@hawaii.gov](mailto:richard.t.howard@hawaii.gov))
- X Engineering Division ([DLNR.ENGR@hawaii.gov](mailto:DLNR.ENGR@hawaii.gov))
- X Div. of Forestry & Wildlife ([rbyrosa.t.terrago@hawaii.gov](mailto:rbyrosa.t.terrago@hawaii.gov))
- X Div. of State Parks ([curt.a.cottrell@hawaii.gov](mailto:curt.a.cottrell@hawaii.gov))
- X Commission on Water Resource Management ([DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))
- X Office of Conservation & Coastal Lands ([sharleen.k.kuba@hawaii.gov](mailto:sharleen.k.kuba@hawaii.gov))
- X Land Division – O'ahu District ([barry.w.cheung@hawaii.gov](mailto:barry.w.cheung@hawaii.gov))
- X Aha Moku Advisory Committee ([leimana.k.damate@hawaii.gov](mailto:leimana.k.damate@hawaii.gov))

TO: **FROM:** Russell Y. Tsuji, Land Administrator *Russell Tsuji*  
**SUBJECT:** Pre-Assessment Consultation for **Replacement of Waialua Beach Road Bridge (#605) over Ki'iki'i Stream**  
**LOCATION:** Waialua, Island of O'ahu; TMKs: Waialua Beach Road ROW and Portions of (1) 6-6-021:001, 6-6-022: 001, 004; 6-7-001: 010,014, 032  
**APPLICANT:** City and County of Honolulu's Design and Construction

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **February 13, 2025**.

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Dayna Vierra at [dayna.k.vierra@hawaii.gov](mailto:dayna.k.vierra@hawaii.gov). Thank you.

**BRIEF COMMENTS:**

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

Signed: *Dina U. Lau*  
Print Name: Dina U. Lau, Acting Chief Engineer  
Division: Engineering Division  
Date: Feb 11, 2025

Attachments

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

**LD/Russell Y. Tsuji**

**Ref: Pre-Assessment Consultation for Replacement of Waialua Beach Road  
Bridge (#605) over Ki'iki'i Stream**

**Location: Waialua, Island of O'ahu**

**TMK(s): Waialua Beach Road ROW and Portions of (1) 6-6-021:001,  
6-6-022: 001, 004; 6-7-001: 010,014, 032**

**Applicant: City and County of Honolulu's Design and Construction**

**COMMENTS**

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

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

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

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

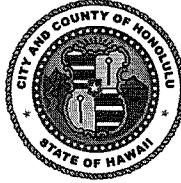
Signed:   
DINA U. LAU, ACTING CHIEF ENGINEER

Date: Feb 11, 2025

**DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Ms. Dina U. Lau, Acting Chief Engineer  
Engineering Division  
Department of Land and Natural Resources  
State of Hawai'i  
1151 Punchbowl Street, Room 221  
Honolulu, Hawai'i 96813

Dear Ms. Lau:

**SUBJECT:** Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 11, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

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

*The owner of the project property and/or their representative is responsible for researching the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center ([msc.fema.gov](http://msc.fema.gov)). Our Flood Hazard Assessment Tool (FHAT) ([fhat.hawaii.gov](http://fhat.hawaii.gov)) could also be used to research flood hazard information. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:*



Ms. Dina U. Lau, Acting Chief Engineer  
June 20, 2025  
Page 2

*O'ahu: City and County of Honolulu, Department of Planning and Permitting  
(808) 768-8098*

The project site is located within a Special Flood Hazard Area and Flood Zone AE (Floodway) as identified on FEMA's FIRM No. 15003C0105H; effective January 19, 2011. Therefore, the project will comply with the rules and regulations of the NFIP, Title 44CFR. In addition, the project is required to obtain a floodway permit from the City and County of Honolulu, Department of Planning and Permitting, Site Development Division and comply with all applicable development standards and other requirements pursuant to Revised Ordinances of Honolulu, Chapter 21A, *Flood Hazard Areas*.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,



Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

February 14, 2025

R.M. Towill Corporation  
ATTN: Jim Niermann  
2024 North King Street, Suite 200  
Honolulu, Hawai'i 96819

via email: [jimn@rmtowill.com](mailto:jimn@rmtowill.com)

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge (#605)  
over Ki'iki'i Stream, Waialua, O'ahu

Dear Mr. Niermann,

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the Engineering Division, the Division of Boating & Ocean Recreation, and the Office of Conservation & Coastal Lands on the subject matter. Should you have any questions, please feel free to contact Dayna Vierra (808) 587-0423 or email: [dayna.k.vierra@hawaii.gov](mailto:dayna.k.vierra@hawaii.gov). Thank you.

Sincerely,

*Russell Tsuji*

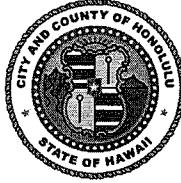
Russell Y. Tsuji  
Land Administrator

Enclosures

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Russell Tsuji, Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawai'i  
P.O. Box 621  
Honolulu, Hawai'i 96809

Dear Mr. Tsuji:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 14, 2025, regarding the subject project. We acknowledge that the Land Division of the Department of Land and Natural Resources has no comments on the proposed project.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles", is written over a horizontal line.

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



RECEIVED  
LAND DIVISION

2025 FEB -3 PM 3:00



DAWN N. S. CHANG  
CHAIRPERSON

RECEIVED  
BOARD OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION  
AND COASTAL LANDS  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

2025 JAN 28 A 8:55

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

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

KA 'OIHANA KUMUWAIWAI 'ĀINA  
LAND DIVISION

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

P.O. BOX 621  
HONOLULU, HAWAII 96809

January 27, 2025

### MEMORANDUM

TO:

**DLNR Agencies:**

- ☒ Div. of Aquatic Resources ([kendall.l.tucker@hawaii.gov](mailto:kendall.l.tucker@hawaii.gov))
- ☒ Div. of Boating & Ocean Recreation ([richard.t.howard@hawaii.gov](mailto:richard.t.howard@hawaii.gov))
- ☒ Engineering Division ([DLNR.ENG@hawaii.gov](mailto:DLNR.ENG@hawaii.gov))
- ☒ Div. of Forestry & Wildlife ([rubyrosa.t.terrago@hawaii.gov](mailto:rubyrosa.t.terrago@hawaii.gov))
- ☒ Div. of State Parks ([curt.a.cottrell@hawaii.gov](mailto:curt.a.cottrell@hawaii.gov))
- ☒ Commission on Water Resource Management ([DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))
- ☒ Office of Conservation & Coastal Lands ([sharleen.k.kuba@hawaii.gov](mailto:sharleen.k.kuba@hawaii.gov))
- ☒ Land Division – O'ahu District ([barry.w.cheung@hawaii.gov](mailto:barry.w.cheung@hawaii.gov))
- ☒ Aha Moku Advisory Committee ([leimana.k.damate@hawaii.gov](mailto:leimana.k.damate@hawaii.gov))

FROM:

Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT:

Pre-Assessment Consultation for **Replacement of Waialua Beach Road Bridge (#605) over Ki'iki'i Stream**

LOCATION:

Waialua, Island of O'ahu; TMKs: Waialua Beach Road ROW and Portions of (1) 6-6-021:001, 6-6-022: 001, 004; 6-7-001: 010,014, 032

APPLICANT:

City and County of Honolulu's Design and Construction

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **February 13, 2025**.

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Dayna Vierra at [dayna.k.vierra@hawaii.gov](mailto:dayna.k.vierra@hawaii.gov). Thank you.

### **BRIEF COMMENTS:**

\* Not in the Conservation District nor → coastal property

- ☐ We have no objections.
- ☒ We have no comments. \*
- ☐ We have no additional comments.
- ☐ Comments are included/attached.

Signed:

Print Name:

Division:

Date:

*K. Tucker Mills*  
K. Tucker Mills  
DLNR - OCLL  
1/31/2025

Attachments

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA  
OFFICE OF CONSERVATION AND COASTAL LANDS  
P.O. BOX 621  
HONOLULU, HAWAII 96809

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

REF:OCCL:TM

Correspondence: OA 25-126

Jim Niermann  
R.M. Towill Corporation  
[jimn@rmtowill.com](mailto:jimn@rmtowill.com)

February 14, 2025

SUBJECT: HRS 343, Pre-consultation for the Replacement of the Waialua Beach Road  
Bridge over Ki'iki'i Stream

Dear Jim Niermann:

The Office of Conservation and Coastal Lands (OCCL) has reviewed your correspondence regarding the subject matter and note the project area is outside of the Conservation District and not along the coastline. Therefore, the OCCL has no comments regarding the bridge replacement project.

Should there be any questions regarding this correspondence, feel free to contact me at (808) 587-0382 or at [kimberly.mills@hawaii.gov](mailto:kimberly.mills@hawaii.gov).

Sincerely,

A handwritten signature in blue ink, reading "K. Tiger Mills".

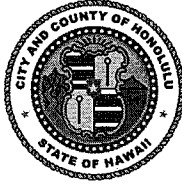
K. Tiger Mills, Staff Planner  
Office of Conservation and Coastal Lands

C: ODLO  
City-DPP

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Michael Cain, Administrator  
Office of Conservation & Coastal Lands  
Department of Land and Natural Resources  
State of Hawai'i  
P.O. Box 621  
Honolulu, Hawai'i 96809

Dear Mr. Cain:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Kī'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letters dated January 31 and February 14, 2025,  
regarding the subject project. We acknowledge that the Office of Conservation and  
Coastal Lands has no comments on the proposed project.

We value your participation in the environmental review process. Your response  
and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill  
Corporation will be preparing environmental documentation for the project. Should you  
have any questions, please contact Jim Niermann, R. M. Towill Corporation at  
(808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles", is written over the printed name.

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm





## DISABILITY AND COMMUNICATION ACCESS BOARD

1010 Richards Street, Rm. 118 • Honolulu, Hawai'i 96813  
Ph. (808) 586-8121 (V) • Fax (808) 586-8129 • (808) 586-8162 TTY

February 5, 2025

R.M. Towill Corporation  
Attn: Jim Niemann  
2024 North King Street, Suite 200  
Honolulu, Hawai'i 96819  
Email: jimn@rmtowill.com

Regarding: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Dear Mr. Niemann:

The Disability and Communication Access Board (DCAB) received the request for the above-referenced project requesting an environmental review of the proposed bridge replacement over Ki'iki'i stream. Thank you for your consideration, however, DCAB does not review environmental issues and therefore has no comments regarding this project proposal. DCAB does provide accessibility-related technical assistance and would welcome the opportunity to provide informal assistance prior to the official submittal for the above-referenced project.

Should you have any questions, please feel free to contact Rodney Kanno, Facility Access Coordinator at (808) 586-8121.

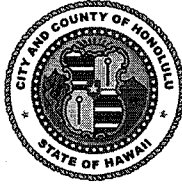
Sincerely,

KIRBY L. SHAW  
Executive Director

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Kirby L. Shaw, Executive Director  
State of Hawai'i  
Department of Health  
Disability and Communication Access Board  
1010 Richards Street, Room. 118  
Honolulu, Hawai'i 96813

Dear Mr. Shaw:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 5, 2025, regarding the subject project. We acknowledge that the Disability and Communication Access Board has no comments on the proposed project.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles".

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

---

**From:** Saito, Tracie <tracie.saito@doh.hawaii.gov>  
**Sent:** Tuesday, February 18, 2025 8:04 AM  
**To:** James Niermann <jimN@rmtowill.com>  
**Cc:** Balmilero, Diane Orsino <Diane.Orsino@doh.hawaii.gov>  
**Subject:** Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge

**CAUTION:** External Email

Aloha,

Please see the attached documentation in response to the request regarding Waialua Beach Road Bridge.

Thank you,

**Tracie Saito**  
Office Assistant | Solid and Hazardous Waste Branch  
Hawai'i State Department of Health | Ka 'Oihana Olakino  
2827 Waimano Home Road, #100 | Pearl City, HI 96782  
**Office:** (808) 586-4226

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# **Solid and Hazardous Waste Branch**

## **Standard Comments**

October 11, 2024

The Solid and Hazardous Waste Branch administers programs in the areas of:

- 1) Management of hazardous waste;
- 2) Management of solid waste; and
- 3) Regulation of underground storage tanks.

Our general comments on projects are below. For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226. All chapters of the Hawaii Revised Statutes (HRS) are at <https://www.capitol.hawaii.gov/hrscurrent/>.

### **Hazardous Waste Program**

- The state regulations for hazardous waste and used oil are in chapters 11-260.1 to 11-279.1, Hawaii Administrative Rules (HAR) [<https://health.hawaii.gov/shwb/hazwaste/hwrules/>]. These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste and used oil. Generators, transporters and treatment, storage, and disposal facilities of hazardous waste and used oil must adhere to these requirements. Violations are subject to penalties under chapter 342J, HRS.

### **Solid Waste Section**

- The Solid Waste Section (SWS) enforces laws and regulations contained in chapters 342H and 342I, HRS, and chapter 11-58.1, HAR, “Solid Waste Management Control” [<http://health.hawaii.gov/shwb/solid-waste/>].
- The purpose of the rules is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation and transfer systems.
- All facilities that accept solid wastes are required to obtain a solid waste management permit from the SWS. Examples of the types of facilities governed by these regulations include landfills, transfer stations and convenience centers, recycling facilities, composting facilities, and salvage facilities. Medical waste, infectious waste, and foreign waste treatment facilities are also included.
- Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.

## Solid and Hazardous Waste Branch Standard Comments

### Office of Solid Waste Management

- The Office of Solid Waste Management (OSWM) administers statewide integrated solid waste management planning activities, which apply to the counties, as well as various recycling programs, e.g. the Glass Advance Disposal Fee (ADF) and Deposit Beverage Container (DBC) Programs. Management of the DBC Program is conducted pursuant to chapter 342G, HRS, which contains compliance and enforcement provisions, and chapter 11-282, HAR, “Deposit Beverage Recycling” [<http://health.hawaii.gov/hi5/rules-regulations-additional-links/>]. OSWM is also responsible for limited enforcement and compliance of solid waste management facilities that operate primarily as certified DBC redemption centers pursuant to chapter 342H, HRS, and chapter 11-58.1, HAR, “Solid Waste Management Control” [<http://health.hawaii.gov/shwb/solid-waste/>]. Authority for the integrated solid waste management planning and ADF programs is contained in chapter 342G, HRS.
- Glass Advance Disposal Fee Program: Businesses that import glass containers into Hawaii are required to register with the Department of Health and pay a 1.5 cent per container fee. Fee revenue is distributed to the counties for the operation of glass recycling programs.
- Deposit Beverage Container Program: Business that manufacture or import deposit beverage containers into Hawaii are required to register with the Department of Health and pay the five cent deposit and one cent container fee on each deposit container. Deposits and fees are deposited into a special fund and are used to reimburse DBC redemption center refunds paid to consumers; and to pay handling fees to redemption/recycling companies to process and recycle collected deposit beverage containers; and to pay program administrative costs.
- The Department of Health reimburses and pays an associated handling fee for the redemption of deposit beverage containers (DBC). These transactions are conducted only with certified redemption centers. Certification requires obtaining a solid waste management permit from the SWS (which addresses environmental issues) and a certification from the DBC program (which standardizes the redemption process).
- Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes and divert recyclables from being landfilled.
- Solid waste management plans seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

## Solid and Hazardous Waste Branch Standard Comments

### Underground Storage Tank Program

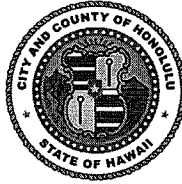
- The state's underground storage tank (UST) regulations, found in chapter 11-280.1, HAR [<http://health.hawaii.gov/shwb/underground-storage-tanks/>], include specific requirements that UST owners and operators must meet when installing, operating, and permanently closing their UST systems and addressing releases from USTs. Violations are subject to penalties under chapter 11-280.1, HAR, and chapter 342L, HRS.
- A permit is required prior to the installation and operation of a UST. Any new UST system that will be installed must have secondary containment with interstitial monitoring. Refer to subchapters 2, 3, 4, and 12 of chapter 11-280.1, HAR. The installation permit expires 1 year from the date of issuance. The operation permit expires 5 years from the date of issuance.
- §11-280.1-50, HAR, requires owners and operators of USTs or tank systems to notify DOH within twenty-four (24) hours and follow the procedures in §11-280.1-52, HAR, if any of the following occur, with specific exceptions found in the rules:
  - 1) The discovery by any person of evidence of regulated substances which may have been released at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, or nearby surface water);
  - 2) Unusual UST system operating conditions observed or experienced (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST, or an unexplained presence of water in the tank); or
  - 3) Monitoring results from a release detection method required under §§11-280.1-41 or 11-280.1-42 indicate a release may have occurred.
- For release response actions, responsible parties and their consultants and contractors should not only follow the applicable regulations, but also the Department of Health Hazard Evaluation Emergency (HEER) Office Technical Guidance Manual, HEER Environmental Action Level (EAL) guidance, and other guidance documents on the DOH HEER Office website [<https://health.hawaii.gov/heer/>], including those pertaining to Multi-Increment Sampling of soil, low flow groundwater sampling, soil vapor sampling, and Environmental Hazard Evaluations (EHE)/Environmental Hazard Management Plans (EHMP).



**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Ms. Lene Ichinotsubo, Acting Chief  
Solid and Hazardous Waste Branch  
Department of Health  
State of Hawai'i  
2827 Waimano Home Road, Suite 100  
Pearl City, Hawai'i 96782

Dear Ms. Ichinotsubo:

**SUBJECT:** Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Kī'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response email dated February 18, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*Please see the attached documentation [Solid and Hazardous Waste Branch Standard Comments] in response to the request regarding Waialua Beach Road Bridge.*

The project will comply with all applicable State laws and regulations regarding the management and disposal of hazardous and solid waste (including construction debris) as documented in the *Solid and Hazardous Waste Branch Standard Comments* and pursuant to Chapter 342H, Hawai'i Revised Statutes (HRS), *Solid Waste Pollution* and Chapter 342I, HRS, *Special Wastes Recycling*, Chapters 11-260.1 to 11-279.1, Hawai'i Administrative Rules (HAR), *Hazardous Waste Management* and Chapter 11-58.1, HAR, *Solid Waste Management Control*.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

Ms. Lene Ichinotsubo, Acting Chief  
June 20, 2025  
Page 2

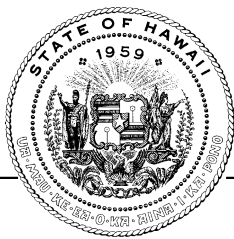
On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "L. M. Niermann".

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm



**STATE OF HAWAII  
OFFICE OF PLANNING  
& SUSTAINABLE DEVELOPMENT**

**JOSH GREEN, M.D.**  
GOVERNOR

**SYLVIA LUKE**  
LT. GOVERNOR

**MARY ALICE EVANS**  
DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846  
Fax: (808) 587-2824  
Web: <https://planning.hawaii.gov/>

DTS202501241622HE

Coastal Zone  
Management  
Program

February 14, 2025

Environmental Review  
Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented  
Development

Statewide Geographic  
Information System

Statewide  
Sustainability Branch

Mr. Jim Niermann  
R.M. Towill Corporation  
2024 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Nierman:

**Subject:** Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of (1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

We are in receipt of your early consultation request, dated January 17, 2025, regarding the replacement of Waialua Beach Road Bridge, located in Waialua, O'ahu. The request notified our office of the Draft Environmental Assessment (Draft EA), Hawai'i Revised Statutes (HRS) Chapter 343 that is being prepared on this proposed action by the City and County of Honolulu (CCH), Department of Design and Construction (DDC).

It is our understanding that the proposed bridge will be a two-span concrete bridge and will provide two 11-foot-wide travel lanes, two 2-foot-wide shoulders, and two 5-foot-wide sidewalks. Demolition of the existing bridge will include the removal of the existing bridge support columns down to the mudline. Existing utilities located along the project alignment will be temporarily relocated during construction and reinstalled upon completion.

The Office of Planning and Sustainable Development (OPSD) has reviewed the submitted material, and we offer the following comments:

1. List of Permits and Agency Approvals/Maps & Diagrams  
The Draft EA should discuss the triggers necessitating the development of an Environmental Assessment set forth in HRS Chapter 343, as well as list all required permits and approvals. Furthermore, the Draft EA should include detailed maps and diagrams indicating actions taken within and along the banks of Ki'iki'i Stream, proximity to coastal resources, and land use boundaries.

2. Coastal Zone Management (CZMA) federal consistency

We note that the bridge spans Ki'iki'i Stream and is located within close proximity to the nearshore waters of Kaiaka Bay. If federal permits or approvals are required, such as a Department of Army Permit, please consult our office on the applicable rules and regulations on a CZMA federal consistency review.

3. Hawai'i Coastal Zone Management (CZM) Program

The CZM area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" under HRS § 205A-1.

Pursuant to HRS § 205A-4, in implementing the objectives of the CZM program, agencies shall consider ecological, cultural, historic, esthetic, recreational, scenic, open space values, coastal hazards, and economic development. As the project is being proposed by the DDC, the Draft EA should include an assessment as to how the proposed project conforms to each of the CZM objectives and supporting policies set forth in HRS § 205A-2, as amended.

Disclosure of impacts to CZM objectives and supporting policies, as it relates to HRS Chapter 343 requirements, will aid our office in determining impacts to the resources of the coastal zone, and evaluate the feasibility of potential mitigation measures. If a CZMA federal consistency review is needed, then the information provided in the Draft EA can serve as support documentation for this review.

4. Special Management Area (SMA) Use Permitting

We recommend that the CCH Department of Planning and Permitting be consulted on the applicability of SMA Use Permitting.

5. Stormwater Runoff, Erosion Mitigation, and Water Resources

Pursuant to Hawai'i Administrative Rules (HAR) § 11-200.1-18(d)(7) – identification and analysis of impacts and alternatives considered; to ensure that nearshore coastal resources of the North Shore of O'ahu remains protected, the negative effects of stormwater runoff and sediment loading from the proposed project site should be evaluated.

Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, or vulnerability of the nearshore environment to volume or flow rate of stormwater runoff. As this project calls for work in and near the bed and banks of the Ki'iki'i Stream, as well as associated land disturbing activity, the Draft EA should include mitigation measures for the protection of the nearshore coastal ecosystem and the maintenance of water quality, pursuant to HAR § 11-200.1-18(d)(8).

6. Climate Change Adaptation/Sea Level Rise (SLR)

As HRS Chapter 343 Significance Criteria rules require analysis on climate change and SLR impacts, the Draft EA should include an examination of the potential vulnerability of the bridge and roadway to SLR. As project site is located at sea level, and within close

Mr. Jim Niermann  
February 14, 2025  
Page 3

proximity to the coastal area of the Northshore of O‘ahu. The Draft EA should therefore evaluate the project site’s vulnerability to SLR, and other natural threats associated with climate change.

To assess the potential environmental impacts and vulnerability of this site, we suggest the Draft EA refer to the findings of the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report 2017, accepted by the Hawai‘i Climate Change Mitigation and Adaptation Commission.

The Report and the Hawai‘i SLR Viewer at: <https://www.pacioos.hawaii.edu/shoreline/slrhawaii/> identifies a 3.2-foot SLR exposure area across the main Hawaiian Islands, as a starting evaluation point. The Draft EA should provide a map of at least 3.2-foot SLR exposure area in relation to the project area, evaluate potential SLR adaptation measures and safeguards when feasible.

If you have any questions or concerns, please contact Joshua Hekeia at (808) 587-2845 or by email to [Joshua.K.Hekeia@hawaii.gov](mailto:Joshua.K.Hekeia@hawaii.gov). If you wish to respond to this comment letter, please include DTS202501241622HE in the subject line.

Sincerely,

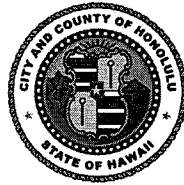


Mary Alice Evans,  
Director

DEPARTMENT OF DESIGN AND CONSTRUCTION  
*KA 'OIHANA HAKULAU A ME KE KĀPILI*  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Ms. Varissa Pata, Principal  
Waialua Elementary School  
67-020 Waialua Beach Road  
Waialua, Hawaii 96791

Dear Ms. Pata:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of (1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response via video call on February 14 and March 31, 2025, regarding the subject project. We acknowledge your comments below (summarized in *italics*) and provide the following response. The meeting minutes from the two meetings are included as an attachment.

*Two-way traffic on the Waialua Beach Road Bridge and roadway should remain open during construction.*

A two-way temporary bypass bridge with 5-foot walkway will be installed on the mauka side of the existing bridge before the demolition and construction of new bridge to minimize traffic impacts for vehicular and pedestrian access across Ki'iki'i Stream. Two-way traffic will be maintained on Waialua Beach Road throughout construction.

*The temporary bypass bridge should accommodate safe travel for bicycles.*

The temporary bypass bridge will have a 5-foot walkway on the mauka side for pedestrians. Bicyclists will be required to walk their bike along the walkway to minimize conflicts with pedestrians.

*Fire truck and vehicular access to the east driveway along the east boundary of the school campus should remain open for the Honolulu Fire Department (HFD) and staff to park. There is no other parking area for staff.*



Fire truck and vehicular access to the east driveway will remain open during the project's construction. During the assembly/installation and disassembly/removal of the temporary bypass bridge, the construction area located directly east of the school campus will encroach into the east fire access driveway. It may be necessary to encroach into the lane for a day or two during installation and removal of the temporary bypass bridge. The project team and contractor will coordinate with Waialua Elementary to schedule the work activities during low school hours, at night, or when school is not in session. The project design team will also coordinate with the Honolulu Fire Department (HFD) to determine whether the encroachment into the east driveway is acceptable or if design adjustments need to be made to meet minimum HFD requirements for road width (e.g., temporarily expanding a section of the east driveway towards the west).

*What is the restoration plan for the disturbed area between the west end of the bridge and fire lane/secondary access road?*

The project design team is assessing whether the new bridge can accommodate a shared-use path along the mauka side of the alignment to connect to the existing shared-use path to the west and east of the bridge and will continue to coordinate with the Waialua Elementary School and the Department of Education (DOE) as the design progresses.

*Vehicular access to the main entrance driveways to the front parking lots and school drop-off/pick-up area of the school campus should remain open.*

The proposed project will not impact vehicular access to the main entrance driveways to the front parking lots and school drop-off/pick-up area.

*The Phase 1 and 3 staging areas (located on the makai dirt shoulder across from Waialua Elementary and adjacent Dole-owned dirt lot) are used by parents as an informal drop-off/pick-up area.*

The project design team will coordinate with Dole to see if the staging area located on the adjacent Dole-owned dirt lot can be expanded further south along Kī'iki'i Stream to reduce the makai dirt shoulder staging area to minimize impacts on parents and students.

*After the existing gate to the fire lane/secondary access lane is removed to accommodate the new construction site fence, a second gate should be installed further south, so that the school can secure the back of campus.*

Ms. Varissa Pata, Principal  
June 20, 2025  
Page 3

A series of gates will be installed on the fire lane/secondary access lane: a construction site gate and a separate gate for the school to secure the back campus. The school will have control of the lane to the back of the school throughout the construction period.

*The maximum dust control measures should be installed along the shared perimeter between Waialua Elementary and the construction site to minimize potential dust impacts to students, teachers, and staff.*

The project design team will include the requirement for the contractor to install the maximum dust control measures along the school perimeter in the contract documents.

*The project design team should send a small group to conduct traffic observations during peak AM and PM times to understand the traffic patterns for vehicles and pedestrians.*

The project design team will send a small group to observe traffic patterns during peak AM and PM times.

*The playground located in the northeast corner of the school campus should remain open.*

The playground will remain open during the project's construction.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,



Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

# MEETING NOTES

Project:	Replacement of Waialua Beach Road Bridge (Bridge No. 605) Over Ki'iki'i Stream
Subject:	Pre-EA Comment from Waialua Public Library
Date/Time:	Wednesday, February 12, 2025, 4:30 p.m.
Location:	Via Phone Call
Attendees:	Waialua Public Library: Tim Littlejohn R. M. Towill Corporation (RMTC): Jim Niermann, Planning Project Manager

## **A. Call Overview**

1. RMTC provided a general overview of the proposed project.

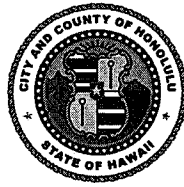
## **B. Issue**

1. Will there be any interruption in utility services (e.g., water, sewer, power, communication)?

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Timothy Littlejohn, Library Manager  
Waialua Public Library  
State of Hawai'i  
P.O. Box 684  
Waialua, Hawai'i 96791

Dear Mr. Littlejohn:

**SUBJECT:** Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of (1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response via phone call on February 13, 2025 regarding the subject project. We acknowledge your comments below (summarized below in *italics*) and provide the following response.

*Will there be any disruptions to utility services in the project vicinity?*

The project design team will coordinate with all agencies and entities that have utilities that are located within the project area (including the Hawaiian Electric Company, the Hawaiian Telcom, Spectrum and the Honolulu Board of Water Supply) to minimize any potential impacts to utility services. There may be some short-term, intermittent interruptions to utility services during connection and disconnection of temporary bypass lines and reestablishment of permanent utility connections. Any interruptions will be of short duration and will be undertaken during non-peak times or nighttime to minimize disruption to residents, schools, businesses and others in the community.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

Mr. Timothy Littlejohn, Library Manager  
June 20, 2025  
Page 2

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles".

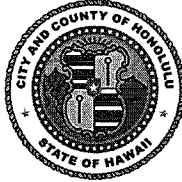
Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
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RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Ms. Mary Alice Evans, Director  
Office of Planning & Sustainable Development  
State of Hawaii  
P.O. Box 2359  
Honolulu, Hawaii 96804

Dear Ms. Evans:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response email dated February 14, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

1. List of Permits and Agency Approvals/Maps & Diagrams

*The Draft EA should discuss the triggers necessitating the development of an Environmental Assessment set forth in HRS Chapter 343, as well as list all required permits and approvals. Furthermore, the Draft EA should include detailed maps and diagrams indicating actions taken within and along the banks of Ki'iki'i Stream, proximity to coastal resources, and land use boundaries.*

The Draft EA will include discussions on the triggers for the EA pursuant to HRS Chapter 343, a list of required permits and approvals, and maps/diagrams to indicate proposed actions with Ki'iki'i Stream in relation to coastal resources and land use boundaries.

2. Coastal Zone Management (CZMA) federal consistency

*We note that the bridge spans Ki'iki'i Stream and is located within close proximity to the nearshore waters of Kaiaka Bay. If federal permits or approvals are required, such as a Department of Army Permit, please consult our office on the applicable rules and regulations on a CZMA federal consistency review.*



Ms. Mary Alice Evans, Director  
June 20, 2025  
Page 2

The project will require federal permits/approvals including, but not limited to, the National Environmental Policy Act, Section 106 of the National Historic Preservation Act of 1966, Section 7 of the Endangered Species Act, Migratory Bird Treaty Act, Section 4(f) of the U.S. Department of Transportation Act, Sections 401 and 404 of the Clean Water Act, Clean Air Act, Section 6(f) of the Land and Water Conservation Fund Act, Fish and Wildlife Coordination Act, CZMA federal consistency review, Floodplain Management Executive Order (EO) 11988, and Protection of Wetlands EO 11990. The State of Hawai'i, Office of Planning and Sustainable Development (OPSD) will be consulted as part of the CZMA federal consistency review.

3. Hawai'i Coastal Zone Management (CZM) Program

*The CZM area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" under HRS § 205A-1.*

*Pursuant to HRS § 205A-4, in implementing the objectives of the CZM program, agencies shall consider ecological, cultural, historic, esthetic, recreational, scenic, open space values, coastal hazards, and economic development. As the project is being proposed by the Department of Design and Construction (DDC), the Draft EA should include an assessment as to how the proposed project conforms to each of the CZM objectives and supporting policies set forth in HRS § 205A-2, as amended.*

*Disclosure of impacts to CZM objectives and supporting policies, as it relates to HRS Chapter 343 requirements, will aid our office in determining impacts to the resources of the coastal zone, and evaluate the feasibility of potential mitigation measures. If a CZMA federal consistency review is needed, then the information provided in the Draft EA can serve as support documentation for this review.*

The Draft EA will include an assessment as to how the proposed project conforms to each of the CZM objectives and supporting policies set forth in HRS § 205A-2, as amended. As noted above, the project will require CZMA federal consistency review, and as such, will use the Draft EA as support documentation for the review.

4. Special Management Area (SMA) Use Permitting

*We recommend that the City and County of Honolulu (CCH) Department of Planning and Permitting be consulted on the applicability of SMA Use Permitting.*

Based on the Department of Planning and Permitting (DPP)'s comment letter to the Pre-EA consultation letter, dated February 7, 2025, the proposed project will require a SMA Use Permit for "development" in areas outside of the City right-of-way including the temporary by-pass bridge and construction staging areas.

5. Stormwater Runoff, Erosion Mitigation, and Water Resources  
*Pursuant to Hawai'i Administrative Rules (HAR) § 11-200.1-18(d)(7) identification and analysis of impacts and alternatives considered; to ensure that nearshore coastal resources of the North Shore of O'ahu remains protected, the negative effects of stormwater runoff and sediment loading from the proposed project site should be evaluated.*

*Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, or vulnerability of the nearshore environment to volume or flow rate of stormwater runoff. As this project calls for work in and near the bed and banks of Ki'iki'i Stream, as well as associated land disturbing activity, the Draft EA should include mitigation measures for the protection of the nearshore coastal ecosystem and the maintenance of water quality, pursuant to HAR § 11-200.1-18(d)(8).*

The Draft EA will include the identification and analysis of impacts and alternatives considered, as well as associated mitigation measures to protect nearshore coastal resources and minimize potential discharge of stormwater runoff and sediment from the project site. In addition, an Erosion and Sediment Control Plan (ESCP) will be implemented by the contractor and enforced by the City. The ESCP is required to effectively prohibit the discharge of pollutants from construction sites and land disturbing activities to the municipal storm sewer system and State waters to the maximum extent feasible. A National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges associated with construction activities will also be obtained from the State of Hawai'i, Department of Health, Clean Water Branch. As part of the NPDES permit, the contractor is required to develop a Storm Water Pollution Prevention Plan that identifies potential sources of stormwater pollution at the construction site and describes stormwater control measures to reduce or eliminate pollutants in stormwater discharges from the construction site.

6. Climate Change Adaptation/Sea Level Rise (SLR)  
*As HRS Chapter 343 Significance Criteria rules require analysis on climate change and SLR impacts, the Draft EA should include an examination of the potential vulnerability of the bridge and roadway to SLR. As the project site is located at sea level, and within close proximity to the coastal area of the Northshore of O'ahu. The Draft EA should therefore evaluate the project site's vulnerability to SLR, and other natural threats associated with climate change.*

Ms. Mary Alice Evans, Director  
June 20, 2025  
Page 4

*To assess the potential environmental impacts and vulnerability of this site, we suggest the Draft EA refer to the findings of the Hawai'i Sea Level Rise Vulnerability and Adaptation Report 2017, accepted the Hawai'i Climate Change Mitigation and Adaptation Commission.*

*The Report and the Hawai'i SLR Viewer at: <https://www.pacioos.hawaii.edu/shoreline/slrhawaii/> identifies a 3.2-foot SLR exposure area across the main Hawaiian Islands, as a starting evaluation point. The Draft EA should provide a map of at least 3.2-foot SLR exposure area in relation to the project area, evaluate potential SLR adaptation measures and safeguards when feasible.*

The Draft EA will include an evaluation of the proposed project's vulnerability to SLR, and other natural threats associated with climate change, as well as a map indicating the 3.2-foot SLR exposure area in relation to the project area.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niernann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,



Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

## Jiabao Chen

---

**From:** Yang, Jacob Jinghai <jinghai.yang@honolulu.gov>  
**Sent:** Friday, February 14, 2025 5:15 PM  
**To:** Jiabao Chen; 'jmn@rmtowill.com'  
**Subject:** FW: Waialua Beach Road Bridge Consultation

---

### External Email

Jiabao / Jim,

Forwarding for your info. MED requests to incorporate new street lights or provisions for future street lighting along the new bridge.

Thanks.

Jacob Jinghai Yang, S.E.  
Structural Support Section, Civil Division  
Department of Design and Construction  
City and County of Honolulu  
Ph: 808-768-8824  
Email: [jinghai.yang@honolulu.gov](mailto:jinghai.yang@honolulu.gov)

---

**From:** Trang, Timothy <ttrang@honolulu.gov>  
**Sent:** Friday, February 14, 2025 5:12 PM  
**To:** Lee, Allyn <alee2@honolulu.gov>; Wong, Edward A. <ewong@honolulu.gov>; Koza, Howard <hkoza@honolulu.gov>  
**Cc:** Milles, Haku <dominic.milles@honolulu.gov>; Yonamine, Mark K <myonamine@honolulu.gov>; Yang, Jacob Jinghai <jinghai.yang@honolulu.gov>  
**Subject:** RE: Waialua Beach Road Bridge Consultation

Thanks, Allyn and Ed! Jacob will coordinate with Ed as we move forward with the bridge design.

Thank you,  
**Timothy K. Trang, P.E.**  
Chief  
Civil Division  
Department of Design & Construction  
City & County of Honolulu  
650 South King Street, 15th flr  
Honolulu, Hawaii 96813  
Phone: 808-768-8838  
email: [ttrang@honolulu.gov](mailto:ttrang@honolulu.gov)

---

**From:** Lee, Allyn <[alee2@honolulu.gov](mailto:alee2@honolulu.gov)>  
**Sent:** Friday, February 14, 2025 10:09 AM  
**To:** Wong, Edward A. <[ewong@honolulu.gov](mailto:ewong@honolulu.gov)>; Trang, Timothy <[ttrang@honolulu.gov](mailto:ttrang@honolulu.gov)>; Koza, Howard <[hkoza@honolulu.gov](mailto:hkoza@honolulu.gov)>  
**Cc:** Milles, Haku <[dominic.milles@honolulu.gov](mailto:dominic.milles@honolulu.gov)>; Yonamine, Mark K <[myonamine@honolulu.gov](mailto:myonamine@honolulu.gov)>  
**Subject:** RE: Waialua Beach Road Bridge Consultation

Thanks, Ed.

Allyn

---

**From:** Wong, Edward A. <[ewong@honolulu.gov](mailto:ewong@honolulu.gov)>

**Sent:** Friday, February 14, 2025 10:07 AM

**To:** Lee, Allyn <[alee2@honolulu.gov](mailto:alee2@honolulu.gov)>; Trang, Timothy <[ttrang@honolulu.gov](mailto:ttrang@honolulu.gov)>; Koza, Howard <[hkoza@honolulu.gov](mailto:hkoza@honolulu.gov)>

**Cc:** Milles, Haku <[dominic.milles@honolulu.gov](mailto:dominic.milles@honolulu.gov)>; Yonamine, Mark K <[myonamine@honolulu.gov](mailto:myonamine@honolulu.gov)>

**Subject:** RE: Waialua Beach Road Bridge Consultation

FYI - As-builts were previously forwarded to DDC/CD – Kyle

Before





After



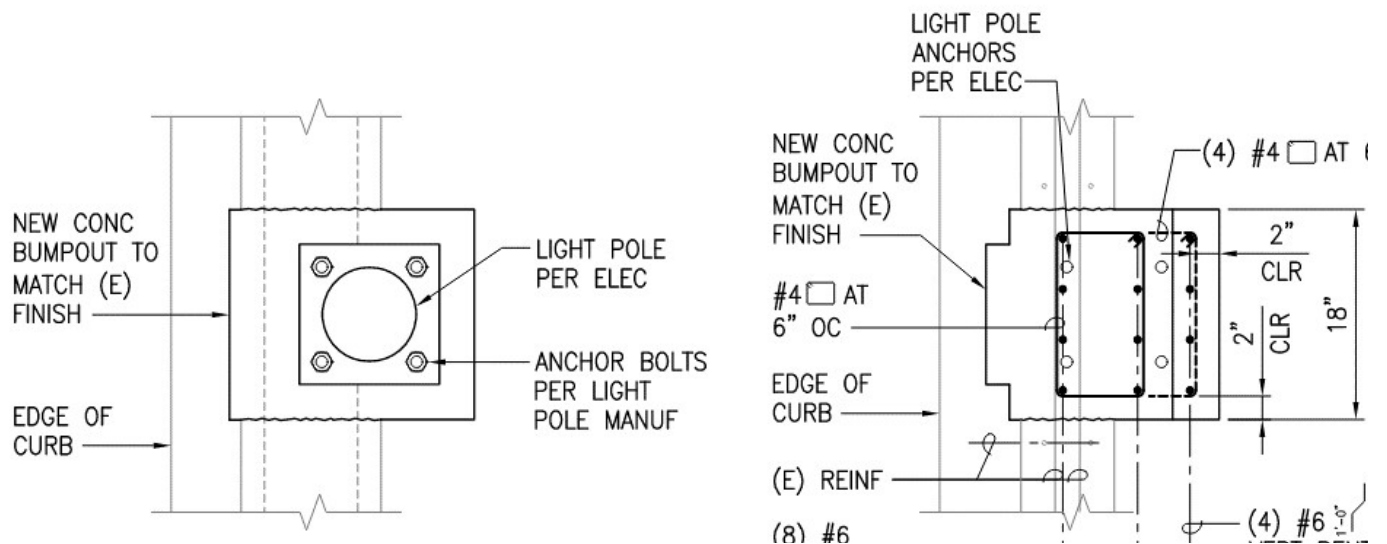
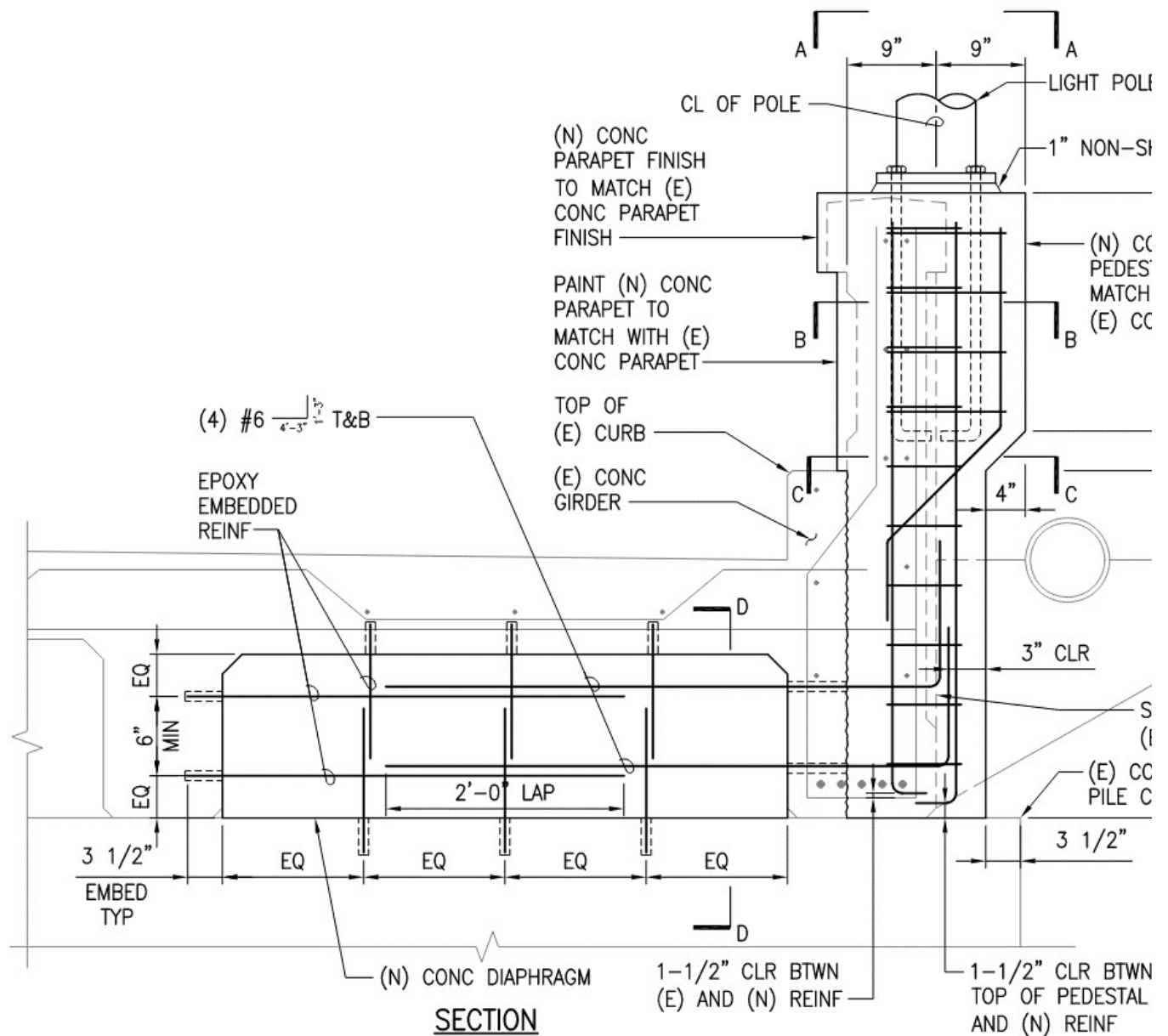


New pole base attached to bridge structure









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**From:** Lee, Allyn <[alee2@honolulu.gov](mailto:alee2@honolulu.gov)>  
**Sent:** Friday, February 14, 2025 8:04 AM  
**To:** Trang, Timothy <[ttrang@honolulu.gov](mailto:ttrang@honolulu.gov)>; Koza, Howard <[hkoza@honolulu.gov](mailto:hkoza@honolulu.gov)>  
**Cc:** Milles, Haku <[dominic.milles@honolulu.gov](mailto:dominic.milles@honolulu.gov)>; Yonamine, Mark K <[myonamine@honolulu.gov](mailto:myonamine@honolulu.gov)>; Wong, Edward A. <[ewong@honolulu.gov](mailto:ewong@honolulu.gov)>  
**Subject:** RE: Waialua Beach Road Bridge Consultation

Hi Tim,

Yes, underground electrical service will be required to power street lights mounted on bridge structure.

At Ed – Please share with CD the plans for the Heeia Stream Bridge along Kam Hwy. This street lighting project was triggered when HECO decided to under its overhead lines along this route. The other utilities followed, using new and existing conduits under the bridge structure.

Thanks,

Allyn

---

**From:** Trang, Timothy <[ttrang@honolulu.gov](mailto:ttrang@honolulu.gov)>  
**Sent:** Thursday, February 13, 2025 4:50 PM  
**To:** Lee, Allyn <[alee2@honolulu.gov](mailto:alee2@honolulu.gov)>; Koza, Howard <[hkoza@honolulu.gov](mailto:hkoza@honolulu.gov)>  
**Cc:** Milles, Haku <[dominic.milles@honolulu.gov](mailto:dominic.milles@honolulu.gov)>; Yonamine, Mark K <[myonamine@honolulu.gov](mailto:myonamine@honolulu.gov)>; Wong, Edward A. <[ewong@honolulu.gov](mailto:ewong@honolulu.gov)>  
**Subject:** RE: Waialua Beach Road Bridge Consultation

Allyn,

Thank you for your comments. Based on our review of Google Earth, the existing power pole with streetlights does not appear to be on the bridge. Are you considering undergrounding the power? What are your thoughts?

Thank you,

**Timothy K. Trang, P.E.**

Chief  
Civil Division  
Department of Design & Construction  
City & County of Honolulu  
650 South King Street, 15th flr  
Honolulu, Hawaii 96813  
Phone: 808-768-8838  
email: [ttrang@honolulu.gov](mailto:ttrang@honolulu.gov)

---

**From:** Lee, Allyn <[alee2@honolulu.gov](mailto:alee2@honolulu.gov)>  
**Sent:** Wednesday, February 12, 2025 2:34 PM  
**To:** Trang, Timothy <[ttrang@honolulu.gov](mailto:ttrang@honolulu.gov)>; Koza, Howard <[hkoza@honolulu.gov](mailto:hkoza@honolulu.gov)>  
**Cc:** Milles, Haku <[dominic.milles@honolulu.gov](mailto:dominic.milles@honolulu.gov)>; Yonamine, Mark K <[myonamine@honolulu.gov](mailto:myonamine@honolulu.gov)>; Wong, Edward A. <[ewong@honolulu.gov](mailto:ewong@honolulu.gov)>  
**Subject:** Waialua Beach Road Bridge Consultation

Tim, Howard,

MED offers this comment.

Please incorporate new street lights or provisions for future street lighting along the new bridge.

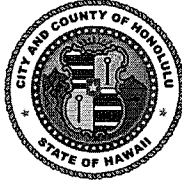
*Ailyn Lee, P.E.*

Mechanical & Electrical Division  
Department of Design & Construction  
City & County of Honolulu  
[alee2@honolulu.gov](mailto:alee2@honolulu.gov)  
ph: (808) 768-8428  
fax: (808) 768-6002

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O


MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

**MEMORANDUM**

TO: Allyn Lee, P.E., Chief  
Mechanical and Electrical Division  
Department of Design and Construction

FROM:   
Haku Milles, P.E., LEED AP, Director  
Department of Design and Construction

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road  
Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response email dated February 12, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*Please incorporate new street lights or provisions for future street lighting along the new bridge.*

We acknowledge your comment and confirm that the project design team will assess incorporating new street lights, underground electrical service and/or other provisions for future street lighting along the new bridge.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

HZ:WH:bm



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

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

RECEIVED  
DEPT OF DESIGN & CONSTR  
C & C OF HONOLULU

2025 FEB -7 PM 2:23

RICK BLANGIARDI  
MAYOR  
MEIA

RECEIVED  
FEB 18 2025  
DDC/CDD



DAWN TAKEUCHI APUNA  
DIRECTOR  
PO'O

BRYAN GALLAGHER, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

REGINA MALEPEAI  
2<sup>ND</sup> DEPUTY DIRECTOR  
HOPE PO'O KUALUA

CO#25-985150  
7/18

February 7, 2025

2025/ELOG-137(MM)

MEMORANDUM

TO: Haku Milles, P.E., LEED AP  
Department of Design and Construction

FROM: Dawn Takeuchi Apuna, Director Designate  
Department of Planning and Permitting (DPP) *CK for*

SUBJECT: Pre-Assessment Consultation  
Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Kiikii Stream (Project)  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of 6-6-021: 001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

*my Dep CD* *Dir* *FVI*  
*Tim* *HK* *PR*

This is in response to your request, (received January 21, 2025), for early consultation comments for the proposed Project on the above parcels. The Project proposes to replace the existing Waialua Beach Road Bridge, a 140-foot-long by 36-foot-wide, four-span reinforced concrete tee beam structure. The parcels are zoned AG-1 Restricted Agricultural District and within the Special Management Area (SMA) and the State Land Use Agricultural District.

An SMA Permit will be required for "development" in areas outside the State rights-of-way. Development would include the temporary by-pass bridge and stockpiling areas. Pursuant to Hawaii Revised Statutes Chapter 205-4.5(a)(7), public roadways are an approved use in the State Land Use Agricultural District and exempt from the requirement of a Special Use Permit.

Additionally, the review should demonstrate conformance with the currently adopted North Shore Sustainable Communities Plan and the 2005 Waialua Master Plan, specifically how the proposed bridge and roadway improvements will be designed to encourage bicycle/pedestrian modes of transportation.

Mr. Haku Milles  
February 7, 2025  
Page 2

Thank you for the opportunity to comment on this proposal. Should you have any questions, please contact Molly Murai, of our Land Use Approval Branch, at extension 88016 or via email at [molly.murai@honolulu.gov](mailto:molly.murai@honolulu.gov).

cc: R.M. Towill Corporation, Attn: Jim Niemann

DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

**MEMORANDUM**

TO: Dawn Takeuchi Apuna, P.E., Director  
Department of Planning & Permitting

FROM:   
Haku Milles, P.E., LEED AP, Director  
Department of Design and Construction

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road  
Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 7, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*An SMA Permit will be required for "development" in areas outside the State rights-of-way. Development would include the temporary by-pass bridge and stockpiling areas. Pursuant to Hawai'i Revised Statutes Chapter 205-4.5(a)(7), public roadways are an approved use in the State Land Use Agricultural District and exempt from the requirements of a Special Use Permit.*

An SMA Permit will be prepared for all "development" in areas outside of the City-owned Waialua Beach Road right-of-way. We acknowledge that a Special Use Permit will not be required as public roadways are an approved use in the State Land Use Agricultural District.

*Additionally, the review should demonstrate conformance with the currently adopted North Shore Sustainable Communities Plan and the 2005 Waialua Master Plan, specifically how the proposed bridge and roadway improvements will be designed to encourage bicycle/pedestrian modes of transportation.*

Dawn Takeuchi Apuna, P.E., Director  
June 20, 2025  
Page 2

The Draft Environmental Assessment will include an evaluation of the project's conformance with the currently adopted North Shore Sustainable Communities Plan and the 2005 Waialua Master Plan, specifically how the bridge will be designed to encourage bicycle/pedestrian modes of transportation.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

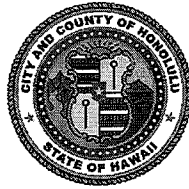
On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

HZ:WH:bm

DEPARTMENT OF TRANSPORTATION SERVICES  
KA 'OIHANA LAWELawe 'ŌHUA  
CITY AND COUNTY OF HONOLULU

711 KAPI'OLANI BOULEVARD, SUITE 1600  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Website: honolulu.gov/transportation

RICK BLANGIARDI  
MAYOR  
MEIA



J. ROGER MORTON  
DIRECTOR  
PO'O

JON Y. NOUCHI  
DEPUTY DIRECTOR  
HOPE PO'O

TP2/25-934356

February 18, 2025

**MEMORANDUM**

TO: Jim Niermann, Senior Planner  
R. M. Towill Corporation

FROM: J. Roger Morton, Director Designate  
Department of Transportation Services

A handwritten signature in black ink, appearing to read "J. Roger Morton", is written over the printed name and title.

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road  
Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys (TMKs): Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for the opportunity to provide written comments regarding the Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream; Tax Map Keys (TMKs): Waialua Beach Road Right-of-Way and portions of (1) 6-6-021; 6-6-022: 001, 004; 6-7-001: 010, 014, 032. We have the following comments.

1. Complete Streets Improvements.

- i. The Waialua Beach Road Bridge over Ki'iki'i Stream and immediately adjacent areas are currently the only gap in the Waialua Beach Road shared-use path that extends approximately 2.5 miles from Weed Circle to Crozier Drive. Completion of this gap will significantly improve safety and connectivity on this crucial walking and bicycling facility for the communities of Waialua and Haleiwa. Completing this gap is also a key priority of the 2019 O'ahu Bike Plan (Project ID-59) and O'ahu Pedestrian Plan (Project ID 2-96). The project should include construction of a shared-use path on the mauka side that connects to the existing shared-use path on each side of the bridge.

- ii. O'ahu Pedestrian Plan proposes a walkway project along the makai side of Waialua Beach Road (Project ID 2-96). The project should include construction of a sidewalk on the makai side that allows for connection to future walkway connections on each side of the bridge.
  - iii. The shared-use path and sidewalk should be designed in accordance with the Honolulu Complete Streets Design Manual.
2. Temporary Bypass Bridge. The temporary bypass bridge shall provide accessibility for pedestrians and cyclists.
  3. Street Usage Permit. A street usage permit from the DTS should be obtained for any construction-related work that may require the temporary closure of any traffic lane, sidewalk, bicycle lane, or pedestrian mall on a City street.
  4. Neighborhood Impacts. The area representatives, neighborhood board, as well as the area guests, businesses, emergency personnel (fire, ambulance, and police), O'ahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details and status throughout the project and the impacts that the Project may have on the adjoining local street area network.
  5. Bus Stops. The Project site is in the immediate vicinity of bus stops. Please coordinate roadway improvements with DTS – Transportation Mobility Division (TMD). Contact DTS-TMD at [TheBusStop@honolulu.gov](mailto:TheBusStop@honolulu.gov)
  6. Disability and Communication Access Board (DCAB). Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.
  7. Federal compliance. This Project is federally funded and must comply with federal requirements, including National Environmental Policy Act.

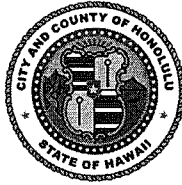
Should you have any questions, please contact Bartholomew Mikitowicz, of my staff, at (808) 768-6681.



DEPARTMENT OF DESIGN AND CONSTRUCTION  
*KA 'OIHANA HAKULAU A ME KE KĀPILI*  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O


MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

**MEMORANDUM**

TO: J. Roger Morton, P.E., Director  
Department of Transportation Services

FROM:   
Haku Milles, P.E., LEED AP, Director  
Department of Design and Construction

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road  
Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 18, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

1. *Complete Streets Improvements.*
  - i. *The Waialua Beach Road Bridge over Ki'iki'i Stream and immediately adjacent areas are currently the only gap in the Waialua Beach Road shared-use path that extends approximately 2.5 miles from Weed Circle to Crozier Drive. Completing this gap is also a key priority of the 2019 O'ahu Bike Plan (Project ID-59) and O'ahu Pedestrian Plan (Project ID 2-96). The project should include construction of a shared-use path on the mauka side that connects to the existing shared-use path on each side of the bridge.*
  - ii. *O'ahu Pedestrian Plan proposes a walkway project along the makai side of Waialua Beach Road (Project ID 2-96). The project should include construction of a sidewalk on the makai side that allows for*

*connection to future walkway connections on each side of the bridge.*

- iii. The shared-use path and sidewalk should be designed in accordance with the Honolulu Complete Streets Design Manual.*

We acknowledge your comments and will coordinate with the Department of Transportation Services (DTS) to incorporate complete street elements into the project description to the maximum extent feasible.

- 2. Temporary Bypass Bridge. The temporary bypass bridge shall provide accessibility for pedestrians and cyclists.*

The temporary bypass bridge will include a 5-ft walkway (on the mauka side) for pedestrians. Bicyclists will be required to walk their bikes along the walkway to minimize potential conflicts with pedestrians.

- 3. Street Usage Permit. A street usage permit from the DTS should be obtained for any construction-related work that may require the temporary closure of any traffic lane, sidewalk, bicycle lane, or pedestrian mall on a City street.*

If the project requires construction-related work that may require the temporary closure of any traffic lane, sidewalk, bicycle lane, or pedestrian mall on a City street, a street usage permit will be obtained from DTS.

- 4. Neighborhood Impacts. The area representatives, neighborhood board, as well as the area guests, businesses, emergency personnel (fire, ambulance, and police), O'ahu Transit Services, Inc. (TheBus and TheHandi-Van, etc.), should be kept apprised of the details and status throughout the project and the impacts that the Project may have on the adjoining local street area network.*

We acknowledge the comment and will coordinate with the community and agencies to provide details/status updates during the project's construction.

- 5. Bus Stops. The Project site is in the immediate vicinity of bus stops. Please coordinate roadway improvements with DTS – Transportation Mobility Division (TMD). Contact DTS-TMD at [TheBusStop@honolulu.gov](mailto:TheBusStop@honolulu.gov)*

J. Roger Morton, P.E., Director  
June 20, 2025  
Page 3

We acknowledge the comment and will coordinate with TMD.

6. *Disability and Communication Access Board (DCAB). Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.*

The project plans will be submitted to the Disability and Communication Access Board (DCAB) for review and approval to ensure full compliance with the Americans with Disabilities Act requirements.

7. *Federal compliance. This Project is federally funded and must comply with federal requirements, including National Environmental Policy Act.*

The project will comply with federal requirements including, but not limited to, the National Environmental Policy Act, Section 106 of the National Historic Preservation Act of 1966, Section 7 of the Endangered Species Act, Migratory Bird Treaty Act, Section 4(f) of the U.S. Department of Transportation Act, Sections 401 and 404 of the Clean Water Act, Clean Air Act, Section 6(f) of the Land and Water Conservation Fund Act, Fish and Wildlife Coordination Act, Coastal Zone Management Act of 1972 federal consistency review, Floodplain Management Executive Order (EO) 11988, and Protection of Wetlands EO 11990.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

HZ:WH:bm

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

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

RICK BLANGIARDI  
MAYOR  
MEIA



SHELDON K. HAO  
FIRE CHIEF  
LUNA NUI KINAI AHI

JASON SAMALA  
DEPUTY FIRE CHIEF  
HOPE LUNA NUI KINAI AHI

February 5, 2025

Mr. Jim Niermann, Senior Planner  
R.M. Towill Corporation  
2024 North King Street, Suite 200  
Honolulu, Hawai'i 96819

Dear Mr. Niermann:

Subject: Preassessment Consultation for Replacement of the Waialua Beach Road  
Bridge (Bridge Number 605) over Ki'iki'i Stream  
Tax Map Keys: 6-6-021: 001; 6-6-022: 001 and 004; and 6-7-001: 010,  
014, and 032

In response to a letter from Director Designate Haku Milles from the Department of Design and Construction (DDC) dated January 17, 2025, regarding the abovementioned subject, the Honolulu Fire Department reviewed the submitted information and requires that all fire apparatus access roads remain open for the project's duration.

Should you have questions, please contact Battalion Chief Pao-Chi Hwang of our Fire Prevention Bureau at 808-723-7151 or [hfdfpb1@honolulu.gov](mailto:hfdfpb1@honolulu.gov).

Sincerely,

A blue ink signature of Craig Uchimura, written in a cursive style.

CRAIG UCHIMURA  
Assistant Chief

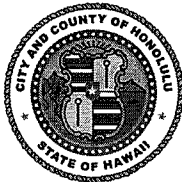
CU/MD:sk

cc: Mr. Haku Milles P.E., LEED AP  
Director Designate, DDC

DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O


MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

**MEMORANDUM**

TO: Sheldon Kalani Hao, Fire Chief  
Honolulu Fire Department

FROM:   
Haku Milles, P.E., LEED AP, Director  
Department of Design and Construction

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road  
Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 5, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*...the Honolulu Fire Department reviewed the submitted information and requires that all fire apparatus access roads remain open for the project's duration.*

The fire apparatus access road located along the east boundary of the Waialua Elementary School campus will remain open for the project's duration.

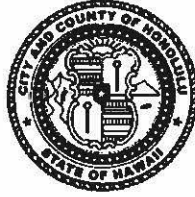
We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niemann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

HZ:WH:bm

HONOLULU POLICE DEPARTMENT  
KA 'OIHANA MĀKA'I O HONOLULU  
**CITY AND COUNTY OF HONOLULU**

801 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 529-3111 • WEBSITE: [www.honolulu.org](http://www.honolulu.org)



RICK BLANGIARDI  
MAYOR  
MEIA

ARTHUR J. LOGAN  
CHIEF  
KAHU MĀKA'I

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

OUR REFERENCE **EO-SH**

**February 7, 2025**

**SENT VIA EMAIL**

Mr. Jim Niemann  
[jimn@rmtowill.com](mailto:jimn@rmtowill.com)

Dear Mr. Niemann:

This is in response to the letter from the Department of Design and Construction dated January 17, 2025, requesting input for the proposed replacement of the Waialua Beach Road Bridge over Ki'iki'i Stream in Waialua.

The Honolulu Police Department (HPD) has reviewed the information provided and has some concerns at this time. During the building of the temporary bridge, demolition of existing bridge, and subsequent construction of the new bridge, the HPD recommends the contractor work with the neighborhood board and the Department of Transportation Services to help facilitate the communication of information regarding road closures, alternate routes, and other issues that would affect vehicular and pedestrian traffic as the road way is heavily utilized by residents and visitors alike.

If there are any questions, please call Acting Major Joel Gonsalves of our District 2 (Wahiawā) at (808) 723-8700.

Sincerely,

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

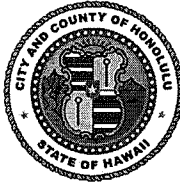
**GLENN HAYASHI**  
Assistant Chief of Police  
Support Services Bureau



DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

**MEMORANDUM**

TO: Arthur J. Logan, Chief of Police  
Honolulu Police Department

FROM:   
Haku Milles, P.E., LEED AP, Director  
Department of Design and Construction

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge  
(Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated February 7, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*...the Honolulu Police Department has reviewed the information provided and has some concerns at this time. During the building of the temporary bridge, demolition of existing bridge, and subsequent construction of the new bridge, the HPD recommends the contractor work with the neighborhood board and the Department of Transportation Services to help facilitate the communication of information regarding road closures, alternate routes, and other issues that would affect vehicular and pedestrian traffic as the road way is heavily utilized by residents and visitors alike.*

We acknowledge your comment and confirm that the contractor will coordinate with the North Shore Neighborhood Board and the Department of Transportation Services to inform and communicate the community of any potential traffic impacts during the project's construction.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

HZ:WH:bm



January 29, 2025

Mr. Jim Niermann  
R.M. Towill Corporation  
2024 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Niermann:

Subject: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki' Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032  
Plan Review and Comment

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In response to the City and County of Honolulu, Department of Design and Construction letter dated January 17, 2025, Reference CDD-SS-25-933051, it has been determined that the area is currently clear of utility gas facilities.

Thank you for the opportunity to comment on the Environmental Assessment for Waialua Beach Road Bridge. Should there be any questions, or if additional information is desired, please call Christian Feria at (808) 596-1269.

Sincerely,

Hawaii Gas

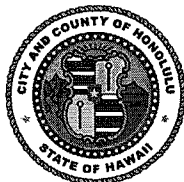
Keith K. Yamamoto  
Manager, Engineering

KKY:krs

**DEPARTMENT OF DESIGN AND CONSTRUCTION**  
**KA 'OIHANA HAKULAU A ME KE KĀPILI**  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Keith K. Yamamoto, Manager, Engineering  
Hawaii'i Gas  
P. O. Box 3000  
Honolulu, Hawaii'i 96802

Dear Mr. Yamamoto:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response letter dated January 29, 2025, regarding the subject project. We acknowledge that the Hawaii'i Gas has no comments on the proposed project.

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles".

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

**From:** [James Niermann](#)  
**To:** [Liu, Rouen](#)  
**Cc:** [Castillo, Carlos](#); [Kuwaye, Kristen](#); [Roxanne Lee](#)  
**Subject:** Re: Waialua Beach Road Bridge Replacement - Pre Assessment Consultation  
**Date:** Monday, February 24, 2025 8:26:45 PM

---

Aloha Rouen,

Acknowledging receipt of your email. Thanks for providing comments on the project. We'll keep you informed as the project progresses.

Best regards

Jim Niermann, AICP, LEED AP BD+C  
Planning Project Coordinator  
<mailto:JimN@rmtowill.com>

R. M. Towill Corporation  
2024 North King Street Suite 200  
Honolulu, Hawaii 96819  
voice: 808 842 1133 cell: 808 381 5445 fax: 808 842 1937 web: [www.rmtowill.com](http://www.rmtowill.com)

---

**From:** Liu, Rouen <rouen.liu@hawaiianelectric.com>  
**Sent:** Monday, February 24, 2025 6:22 PM  
**To:** James Niermann <JimN@rmtowill.com>  
**Cc:** Castillo, Carlos <carlos.castillo@hawaiianelectric.com>; Kuwaye, Kristen <kristen.kuwaye@hawaiianelectric.com>  
**Subject:** Waialua Beach Road Bridge Replacement - Pre Assessment Consultation

**CAUTION:** External Email

Dear Mr. Niermann,

Thank you for the opportunity to review and comment on the subject project. Hawaiian Electric Company has no objections to the proposed project. However, please note that if Hawaiian Electric has existing infrastructure on the subject property, continued access will be necessary for the maintenance of our infrastructure.

We greatly appreciate your efforts to keep us informed throughout the planning process and ask that you continue to provide updates as the proposed project progresses.

Should you have any questions or require further clarification, please do not hesitate to contact me at (808) 772-2135.

Sincerely,  
Rouen Liu (WA3 – PTA)  
Permits Engineer  
Hawaiian Electric Company  
PO Box 2750  
Honolulu, HI 96840-0001

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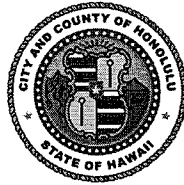
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DEPARTMENT OF DESIGN AND CONSTRUCTION  
*KA 'OIHANA HAKULAU A ME KE KĀPILI*  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Ms. Shelee Kimura, President and CEO  
Hawaiian Electric Company, Inc.  
P. O. Box 2750  
Honolulu, Hawaii 96840

Dear Ms. Kimura:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach  
Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of  
(1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response email dated February 24, 2025, regarding the subject project. We acknowledge that the Hawaiian Electric Company (HECO) has no objections to the proposed project, as well as acknowledge your comment below (in *italics*) and provide the following response.

*...please note that if Hawaiian Electric has existing infrastructure on the subject property, continued access will be necessary for the maintenance of our infrastructure.*

The project design team will coordinate with HECO throughout the project design phase. The project will require relocation of various HECO poles, anchor and guy wires, and overhead lines to accommodate the temporary bypass bridge that will be located *mauka* of the existing Waialua Beach Road Bridge. There will be continued access for maintenance to the relocated HECO infrastructure throughout the construction period.

We appreciate HECO's cooperation on the project and value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.



Ms. Shelee Kimura, President and CEO  
June 20, 2025  
Page 2

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles", with a stylized flourish at the end.

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

**From:** Donaldson, James A <James.Donaldson@charter.com>  
**Sent:** Thursday, February 6, 2025 1:29 PM  
**To:** James Niermann <jimn@rmtowill.com>  
**Subject:** Project: Replacement of Waialua Beach road bridge #605 over Ki'iki'i stream

CAUTION: External Email

Aloha Jim,  
  
I can assist you with this request, and thank you for reaching out. For future project request please email : [Haw.engineering.research@charter.com](mailto:Haw.engineering.research@charter.com) – this is our main request email.

**Project: Replacement of Waialua Beach road bridge #605 over Ki'iki'i stream**

In the letter received you mention the existing utilities will be temporarily relocated, do you mean these 2 HECO poles #32 & 31 along the bridge?  
If yes, we will be affected, as we are currently attached to these poles, with fiber cables and coax cable.  
I have attached our asbuilt map of the surrounding area, and our contractors notes, please advise if you have any other questions at this moment , I will be happy to assist.

Thank you,



**James Donaldson** | OSP Engineering | Construction Coordinator  
151 Pali'i St , Mililani Hi 96789  
**T:** 808-292-7721  
**E:** james.donaldson@charter.com

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CATV MAP







**GENERAL CONTRACTOR'S NOTES:**

- 1. THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY AND INCIDENT TO THE DUE AND LAWFULL PROSECUTION OF THE WORK.**
- 2. THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THESE UTILITIES AS A RESULT OF THEIR OPERATIONS. ADJUSTMENTS TO THE NEW DUCTLINE ALIGNMENT, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES.**
- 3. THE CONTRACTOR SHALL BRACE ALL POLES OR LIGHT STANDARDS NEAR THE NEW DUCTLINE, MANHOLE OR HANDHOLE DURING ITS OPERATIONS.**
- 4. THE CONTRACTOR SHALL SAW-CUT A.C. PAVEMENT, CONCRETE GUTTER, AND CONCRETE SIDEWALK WHEREVER NEW MANHOLES, HANDHOLES, PULLBOXES OR DUCTLINES ARE TO BE PLACED AND SHALL RESTORE TO EXISTING CONDITION OR BETTER.**
- 5. THE UNDERGROUND PIPES, CABLES, OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM THEIR SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREAS. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.**
- 6. THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE COST FOR SUPPLEMENTARY MEASURES, WHICH WILL BE REQUIRED BY THE CITY AND COUNTY, SHALL BE BORNE BY THE CONTRACTOR.**
- 7. THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE OF HAWAII, DEPARTMENT OF HEALTH.**
- 8. PRIOR TO THE EXCAVATION OF THE DUCTLINE, THE CONTRACTOR SHALL REQUEST THAT SPECTRUM OCEANIC CABLE COMPANY TO LOCATE EXISTING DUCTLINE WHEREVER REQUIRED.**
- 9. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. ANY WORK INVOLVING EXISTING CABLES OR DUCTS SHALL BE DONE IN THE PRESENCE OF THE SPECTRUM OCEANIC INSPECTOR OR THEIR REPRESENTATIVE. TEMPORARY CABLE AND DUCT SUPPORT SHALL BE PROVIDED WHEREVER NECESSARY.**

- 10. THE CONTRACTOR SHALL NOTIFY THE SPECTRUM OCEANIC INSPECTOR 72 HOURS PRIOR TO THE START OF WORK ON CATV INFRASTRUCTURE, POURING CONCRETE, OR BACKFILLING. SPECTRUM OCEANIC'S INSPECTOR(S): PERRY SAMUELU AT 387-2496 OR PAUL CASPILLO AT 479-1637.**
- 11. WHEREVER CONNECTIONS TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES PRIOR TO EXCAVATION OF THE MAIN TRENCHES TO VERIFY THEIR LOCATIONS AND DEPTHS.**
- 12. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND FURNISH ALL LABOR AND EQUIPMENT NECESSARY TO INSTALL THE DUCTLINE IN PLACE COMPLETE.**
- 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT ALL REQUIRED LINES AND GRADES AND SHALL PRESERVE ALL BENCH MARKS AND WORKING POINTS NECESSARY TO LAY OUT THE WORK CORRECTLY. THE NEW DUCTLINE SHALL BE ADJUSTED BY THE CONTRACTOR TO SUIT THE EXISTING CONDITIONS AND THE DETAILS AS DESCRIBED IN THE PLANS.**
- 14. THE LOCATION OF CATV FACILITIES SHOWN ON PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AS TO ITS ACTUAL FIXED LOCATION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN CLOSE PROXIMITY OF CATV FACILITIES.**
- 15. THE CONTRACTOR SHALL OBTAIN EXCAVATION PERMIT CLEARANCE FROM SPECTRUM OCEANIC'S ENGINEERING SECTION LOCATED AT 200 AKAMAINUI ST., MILILANI TECH PARK.**
- 16. FOR ANY FIELD ASSISTANCE OR VERIFICATION OF CATV FACILITIES, THE CONTRACTOR SHALL CALL SPECTRUM ENGINEERING & CONSTRUCTION SERVICES AT 625-8570 OR  
EMAIL: HAW.ENGINEERING.RESEARCH@CHARTER.COM**
- 17. ANY WORK REQUIRED TO RELOCATE CATV FACILITIES SHALL BE DONE BY SPECTRUM OCEANIC CABLE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIREMENTS AND ASSOCIATED COSTS.**
- 18. ANY DAMAGE TO SPECTRUM OCEANIC'S FACILITIES SHALL BE REPORTED TO SPECTRUM OCEANIC'S TOC DEPARTMENT AT 625-8169.**
- 19. THE CONTRACTOR SHALL TUNNEL UNDER EXISTING CONCRETE CURB AND GUTTER AS NECESSARY TO EXTEND CONDUIT INTO EXISTING CATV PULLBOX AND INTO THE PROPOSED POWER SUPPLY PULLBOX.**
- 20. ALL EXISTING IMPROVEMENTS THAT ARE DISTURBED DURING THE CONSTRUCTION PHASE SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION AT NO COST TO THE CITY IN ACCORDANCE WITH CITY'S STANDARDS.**

- 21. AT LOCATIONS WHERE EXISTING CATV PULLBOX REPLACEMENT IS PROPOSED, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTION NOT TO DAMAGE THE EXISTING CABLES IN THE PULLBOX. ALL DAMAGES TO EXISTING CABLES SHALL BE REPAIRED BY SPECTRUM OCEANIC CABLE AND PAID FOR BY THE CONTRACTOR.**
- 22. COORDINATE ALL PENETRATION OF TELEPHONE PULLBOXES WITH HAWAIIAN TEL INSPECTOR.**
- 23. SMOOTH FINISH INSIDE WALL OF EXISTING PULLBOXES AND HAND-HOLES TO ITS ORIGINAL CONDITION OR BETTER.**
- 24. ALL NEW CONCRETE ENCASED CONDUIT SHALL BE PVC PIPE-SCHEDULE 40. ALL NEW DIRECT-BUIRED CONDUIT SHALL BE PVC PIPE-SCHEDULE 80. USE OF ANY OTHER MATERIAL TYPE (GTS, ETC.) SHALL BE LIMITED TO MATCHING EXISTING FACILITES. CONNECTION OF DISSIMILAR MATERIALS TO REQUIRE APPROVAL FROM SPECTRUM OCEANIC INSPECTOR AND ENGINEERING DEPT.**
- 25. THE CONTRACTOR SHALL PLACE POLY CORD THROUGH OUT PROJECT, AND SECURE IN MANHOLES, HANDHOLES, AND PULLBOXES.**
- 26. FOR 3" CONDUITS OR LARGER, THE CONTRACTOR SHALL INSTALL NEPTCO WP1800 MULETAPE OR APPROVED EQUAL IN ALL DUCTLINES, LEAVE MULETAPE IN PLACE FOR FUTURE USE AS A PULL OR FISH LINE, UNLESS OTHERWISE NOTED. REFERENCE GTE MATERIAL CODE NO. 571154. ALL DUCTS SHALL BE CAPPED TO PREVENT ENTRY OF FOREIGN MATERIAL DURING CONSTRUCTION AND AT COMPLETION OF INSTALLATION. ENDBELLS ARE REQUIRED FOR CONDUITS 2" AND LARGER.**
- 27. PENETRATION INTO PULLBOXES IF NECESSARY TO BE FROM FACTORY INSTALLED OPENING OR FROM BRICKS POSITION. PENETRATION FROM PULLBOX WALLS IS NOT ACCEPTABLE.**
- 28. BENDS IN THE DUCT ALIGNMENT, DUE TO CHANGES IN GRADE SHALL HAVE A MINIMUM RADIUS OF 20-FEET. ALL 90-DEGREE C-BENDS AT A POLE OR AT THE BUILDING FLOOR SLAB PENETRATION, SHALL HAVE A BEND RADIUS OF 10 TIMES THE DIAMETER OF THE DUCT OR GREATER.**
- 29. MINIMUM LENGTH OF CONDUIT USED SHALL NOT BE LESS THAN 5-FEET IN LENGTH. USE OF PARTIAL CONDUIT SECTIONS ALLOWABLE IS AT SPECTRUM OCEANIC INSPECTOR(S) DISCRETION.**
- 30. ALL CONDUITS SHALL ENTER THROUGHT THE END "SHORT WALL" OF THE PULL-BOX. ENTRY SHALL BE AT 90 DEGRESS (PERPENDICULAR) TO WALL FACE WITH BENDS NO LESS THAN 12" FROM EXTERIOR WALL.**
- 31. A MINIMUM OF (2) PRECAST SECTIONS MUST BE USED ON ALL 2X4 OR 2X6 PULLBOXES.**



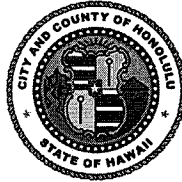
- 32. ALL NEW CONSTRUCTION SHALL UTILIZE CONCRETE PRECAST BASE UNLESS OTHERWISE APPROVED OR SPECIFIED BY SPECTRUM OCEANIC INSPECTOR(S).**
- 33. FOR PULL-BOX LOCATIONS WHERE VEHICULAR INTRUSION POSSIBLE, CONCRETE COLLAR REQUIRED PER SPECTRUM OCEANIC STANDARDS AND SPECIFICATIONS MANUAL. EXAMPLES INCLUDE, BUT NOT LIMITED TO, ROLLED/RIBBON CURBS, CURB / HEADERS LESS THAN 5" IN HEIGHT, VEHICLE TRAVELWAYS WITH NO DEFINED CURB / HEADER, ETC.**
- A. NON SIDEWALK AREAS, SEE CHAPTER 2, FIGURE 18.1c, 19.1c AND 20.1b IN THE SPECTRUM SPECIFICATIONS MANUAL.**
- 34. WHEN THREE (3) OR MORE 4" CONDUITS ENTER ONE END WALL OF ANY PULLBOX, ONLY BRICK BASES WILL BE ALLOWED UNLESS OTHERWISE INSTRUCTED/APPROVED BY SPECTRUM OCEANIC INSPECTOR(S).**
- 35. TWO MINIMUM LAYERS OF BRICKS TO BE USED LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX. TOP LAYER OF BRICK TO BE FLUSH WITH TOP OF CONDUIT OR HIGHER.**
- 36. FOR UPGRADE/REPAIRS TO EXISTING PULL-BOXES, BRICKS MAY BE USED AND SHALL ALWAYS BE AT LEAST TWO LAYERS LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX.**
- 37. AT NO TIME SHALL CEMENT MORTAR, WOOD, OR ANY OTHER MATERIAL BE USED BETWEEN PRECAST SECTIONS.**
- 38. LEVELING OR RAISING OF BOXES TO GRADE MUST BE DONE:**
- A. PRE-CAST BASE(S) – USING GRAVEL LAYER UNDER BASE (TYPE 3B OR EQUIVALENT APPROVED BY SPECTRUM OCEANIC INSPECTOR)**
- B. BRICK BASE(S) – ADJUSTMENTS TO BRICKWORK SECTION. THE PERMANENT INSTALLATION OF WOODEN WEDGES TO ACCOMPLISH THIS PURPOSE WILL NOT BE ACCEPTED.**
- 39. 5/8" x 8' COPPER GROUND RODS SHALL BE PLACED IN ALL PULLBOXES UNLESS OTHERWISE DIRECTED BY SPECTRUM OCEANIC CABLE. GROUND RODS WILL BE PLACED IN THE CORNER 3" TO 4" FROM THE WALL AND AWAY FROM ANY CONDUIT WITH NO MORE THAN 8" STICKING UP ABOVE GROUND.**
- 40. TRENCHING TO BE CONDUCTED BY HAND DIGGING NEAR AND ACROSS EXISTING UTILITY LINES.**
- 41. MINIMUM CLEARANCE BETWEEN STREET LIGHT STAND AND FIRE HYDRANTS SHALL BE THREE FEET.**
- 42. UNDERGROUND UTILITIES SHOWN HEREON IS FOR INFORMATION ONLY. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INSTALLATION.**

- 43. FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE WORKING DAYS ADVANCE NOTICE IS REQUIRED. THREE WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION BY A DESIGNATED REPRESENTATIVE. CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE ANY EXISTING CABLES OR DUCTS. SPECTRUM OCEANIC'S INSPECTOR OR DESIGNATED REPRESENTATIVE IS REQUIRED TO BE AT ANY JOB SITE WHENEVER THERE WILL BE A BREAKAGE INTO OR ENTRY INTO ANY STRUCTURE THAT CONTAIN SPECTRUM OCEANIC'S FACILITIES.**
- 44. CONCRETE STRENGTH SHALL BE 3000 PSI IN 28 DAYS.**
- 45. CURING AND BACKFILLING. MAINTAIN CONCRETE IN A MOIST CONDITION FOR 24 HOURS MINIMUM FOR 3,000 PSI AND 48 HOURS MINIMUM FOR 2,500 PSI BEFORE COMPACTED. BACKFILLING: 72 HOURS MINIMUM BEFORE PERMITTING MOTOR TRAFFIC LOAD ON DUCTLINE. CURING METHOD SHALL MEET SPECTRUM OCEANIC INSPECTOR'S APPROVAL.**
- 46. INSTALL 4-MIL. THICK ORANGE COLOR WARNING TAPE 4-INCH WIDE ENTIRE LENGTH OF TRENCH WHEN PLACING CATV CONDUITS. TAPE SHOULD READ "CAUTION BURIED CABLE LINE BELOW". MANUFACTURED BY HARRIS INDUSTRIES, INC. CATALOG NUMBER UT-43 OR EQUIVALENT TAPE. TAPE TO BE INSTALLED 12-INCHES ABOVE CONDUIT OR IF CONCRETE JACKET INVOLVED THEN 12-INCHES ABOVE JACKET.**
- 47. AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL WITH A SQUARE FRONT NOT LESS THAN 12-INCH LONG AND HAVING A DIAMETER OF 1/4-INCH LESS THAN THE INSIDE DIAMETER OF DUCT, SHALL BE PULLED THROUGH EACH DUCT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH TO MAKE CERTAIN THAT NO PARTICLES OF EARTH, SAND, OR GRAVEL HAVE BEEN LEFT INSIDE. DUCTS SHALL BE COMPLETELY DRY AND CLEAN.**
- 48. METALLIC ENTRANCE CONDUITS SHALL BE GROUNDED.**
- 49. ALL CONDUITS WITHIN A BUILDING SHALL:**
- A) BE INSTALLED IN THE SHORTEST AND STRAIGHTEST POSSIBLE RUN.**
  - B) HAVE NO SECTION LONGER THAN 100-FEET NOR CONTAIN MORE THAN TWO 90-DEGREE BENDS. AN APPROVED SIZED JUNCTION BOX OR GUTTER BOX SHALL BE PLACED IF THIS IS EXCEEDED.**
  - C) ALL BENDS SHALL BE LONG SWEEP-RADIUS BENDS BUT THE INSIDE RADIUS OF THE BEND MUST NEVER BE LESS THAN TEN TIMES THE DIAMETER OF THE CONDUIT.**
- 50. ALL CONSTRUCTION MUST BE INSPECTED AND APPROVED BY SPECTRUM OCEANIC PRIOR TO THE INSTALLATION OF ANY OF ITS FACILITIES AND THE ENERGIZING OF ITS SYSTEM.**
- 51. CONTRACTOR AND/OR CUSTOMER SHALL PROVIDE SPECTRUM OCEANIC WITH SUFFICIENT INSTALLATION TIME IN THEIR OCCUPANCY TIME TABLE.**

DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
MAYOR  
MEIA



HAKU MILLES, P.E.  
DIRECTOR  
PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Spectrum  
151 Pali'i Street  
Mililani, Hawaii 96789

Dear Spectrum:

SUBJECT: Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of (1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response email dated February 6, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*In the letter received you mention the existing utilities will be temporarily relocated, do you mean these 2 HECO poles #32 & 31 along the bridge? If yes, we will be affected, as we are currently attached to these poles, with fiber cables and coax cable. I have attached our asbuilt map of the surrounding area, and our contractors notes, please advise if you have any other questions at this moment, I will be happy to assist.*

One of the Hawaiian Electric Company poles, identified as Pole #21 on the CATV as-built plan provided in your email (and identified by HECO as Pole P71), will be replaced by the project. Pole #22 in the CATV as-built plan, located directly *makai* of the Waialua Beach Road bridge on the west side of Ki'iki'i Stream will not be affected by the project.

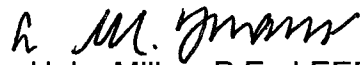
The project design team will coordinate with Spectrum throughout the project design phase to accommodate Spectrum's utility infrastructure and operational requirements in the project plans.

We appreciate Spectrum's cooperation on the project and value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

Spectrum  
June 20, 2025  
Page 2

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles".

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

---

**From:** Dan Nellis <Dan.Nellis@dole.com>  
**Sent:** Thursday, January 23, 2025 3:49 PM  
**To:** James Niermann <JimN@rmtowill.com>  
**Subject:** Waialua Beach Road Bridge

**CAUTION:** External Email

Jim,

I received a notice from C&C Honolulu DDC regarding this bridge reconstruction project. The attachment shows the project location and it looks like the project encroaches on two Dole owned parcels, i.e., TMK 67001014 and 66022001. Please give me a little time information on this. Email or call me at the contact number below.

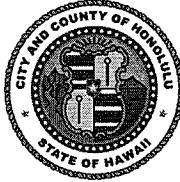
Thanks,  
Dan

**Daniel X. Nellis**  
**General Manager**  
**Dole Food Co. Hawaii**  
**1116 Whitmore Ave.**  
**Wahiawa, HI, 96786**  
**office ph. (808)621-3201**

**DEPARTMENT OF DESIGN AND CONSTRUCTION  
KA 'OIHANA HAKULAU A ME KE KĀPILI  
CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: [honolulu.gov](http://honolulu.gov)

RICK BLANGIARDI  
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PO'O

MARK YONAMINE, P.E.  
DEPUTY DIRECTOR  
HOPE PO'O

CDD-SS 25-941195

June 20, 2025

Mr. Daniel Nellis, General Manager  
Dole Food Co. Inc.  
1116 Whitmore Avenue  
Wahiawā, Hawai'i 96786

Dear Mr. Nellis:

**SUBJECT:** Pre-Assessment Consultation for Replacement of Waialua Beach Road Bridge (Bridge No. 605) over Ki'iki'i Stream  
Tax Map Keys: Waialua Beach Road Right-of-Way and portions of (1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032

Thank you for your response email dated January 23, 2025, regarding the subject project. We acknowledge your comments below (in *italics*) and provide the following response.

*I received a notice from C&C Honolulu DDC regarding this bridge reconstruction project. The attachment shows the project location and it looks like the project encroaches on two Dole owned parcels, i.e., TMK 67001014 and 66022001. Please give me a little time information on this.*

The project's tentative construction schedule is estimated to start in October 2027 and end in June 2030; however, the schedule is subject to change based on permitting, design, and the scheduling of work activities.

The project will require the use of portions of Dole Food Co. (Dole)-owned parcels, including TMK parcels (1) 6-7-001: 014, 017, and 6-6-022: 001 for construction staging and the planned temporary bypass road and bridge. The project design is still in early phases of development, so the extent of the encroachment is not yet known. The Project Team will contact you to share the current project plans and start coordinating measures to minimize impacts to Dole's operations. We appreciate Dole's cooperation and support for the project and look forward to working with you.



Mr. Daniel Nellis, General Manager  
June 20, 2025  
Page 2

We value your participation in the environmental review process. Your response and this letter will be reproduced in the forthcoming Draft Environmental Assessment.

On behalf of the Department of Design and Construction, R. M. Towill Corporation will be preparing environmental documentation for the project. Should you have any questions, please contact Jim Niermann, R. M. Towill Corporation at (808) 842-1133, or by email at [jimn@rmtowill.com](mailto:jimn@rmtowill.com).

Sincerely,

A handwritten signature in black ink, appearing to read "H. Milles".

Haku Milles, P.E., LEED AP  
Director

HZ:JY:bm

## **Appendix 6**

Waialua Elementary and Department of Education Meetings (February 14 and March 31, 2025)

# MEETING NOTES

Project:	Replacement of Waialua Beach Road Bridge (Bridge No. 605) Over Ki'iki'i Stream
Subject:	Consultation with Waialua Elementary School (WES)
Date/Time:	Friday, February 14, 2025, 11:30 a.m.
Location:	Via Microsoft Teams
Attendees:	DOE: Ernest Muh, Complex Area Superintendent for Leilehua-Mililani-Waialua Marjorie Pudiquet, Administrative Services Assistant, Waialua Elementary School Project Coordinator WES: Varissa Pata, Principal Waialua Elementary School Clayton Haida, Waialua Elementary School, Project Inspector R. M. Towill Corporation (RMTC): Jim Niermann, Planning Project Manager Roxanne Lee, Planner

## A. Meeting Overview

1. RMTC provided a general overview of the proposed project. However, the project is still in the early planning and design phase and preliminary drawings are not yet completed.
2. WES identified initial concerns regarding the proposed project's potential impacts to the WES' students and operations.

## B. Issues

1. WES emphasized the importance to the community to maintain two lanes of traffic with uninterrupted flow on Waialua Beach Road.
2. WES asked about accommodating bicycles on the temporary bridge as lots of students ride bicycles to the school. RMTC noted that the temporary bridge will have a 5-ft walkway on the mauka side.
3. Project should maintain access to the fire/service road is essential to the school for fire/emergency service vehicle access and for staff parking behind the school. They have no other parking available for staff.
4. Project should maintain uninterrupted access to the main entrance driveways to the front parking lot for parent drop-off and pick-up is essential.

## C. Next Steps

1. RMTC will schedule a follow-up meeting with WES, DOE, City and County of Honolulu Department of Design and Construction, and KAI Hawai'i after the preliminary design drawings are completed.

# MEETING NOTES

**Project:** Replacement of Waialua Beach Road Bridge (Bridge No. 605) Over Ki'iki'i Stream

**Subject:** Consultation with Department of Education (DOE) and Waialua Elementary School (WES)

**Date/Time:** Monday, March 31, 2025, 9:00 a.m.

**Location:** Via Microsoft Teams

**Attendees:**

- DOE: Roy Ikeda, Interim Public Works Manager, Planning Section
  - Cori China, Office of Facilities and Operations, Facilities Development Branch, Planning Section
  - Ernest Muh, Complex Area Superintendent for Leilehua-Mililani-Waialua
  - Marjorie Pudiquet, Administrative Services Assistant, Waialua Elementary School Project Coordinator
- WES: Varissa Pata, Principal Waialua Elementary School
  - Clayton Haida, Waialua Elementary School, Project Inspector
- Department of Design and Construction (DDC): Tim Trang, P.E., Chief, Civil Division, CCH-DDC
  - Howard Koza, P.E., Assistant Chief, Civil Division
  - Kyle Hoi, S.E., Structural Support Section, Civil Division
  - Jacob Yang, S.E., Structural Support Section, Civil Division
  - Hui Zhang, Ph.D., S.E., Structural Support Section, Civil Division, Project Manager for DDC on this project
- KAI Hawai'i (KAI): Mike Hunnemann, P.E., Principal
  - Bryan Lum, P.E., Principal
  - Jiabao Chen, P.E., Project Manager
- Okahara & Associates (OA): Charles Jury, P.E., Vice President
  - Norman Leong, P.E., Senior Civil Engineer
- R. M. Towill Corporation (RMTc): Jim Niermann, Planning Project Manager
  - Roxanne Lee, Planner

## A. Project Overview

1. Jim provided a presentation of the project including the scope, phasing/sequencing (e.g., temporary bridge, staging, new bridge), and project schedule. See attached presentation slides.

## **B. Issues and mitigation discussion**

1. Communication, point-of-contact (POC)
  - a. Project Team POCs
    - i. Jim Niermann / RMT: [jimn@rmtowill.com](mailto:jimn@rmtowill.com) environmental review / design process)
    - ii. Jiabao Chen / KAI: [JChen@kaihawaii.com](mailto:JChen@kaihawaii.com) (during project design)
    - iii. Hui Zhang / DDC PM (design): [hui.zhang@honolulu.gov](mailto:hui.zhang@honolulu.gov)
    - iv. During construction, the City will assign a new Construction Management POC, and the contractor will have a POC.
  - b. WES POC - Varissa Pata: [varissa.pata@k12.hi.us](mailto:varissa.pata@k12.hi.us)
  - c. DOE POCs
    - i. Roy Ikeda: [Roy.Ikeda@k12.hi.us](mailto:Roy.Ikeda@k12.hi.us)
    - ii. Cori China: [cori.china@k12.hi.us](mailto:cori.china@k12.hi.us)
2. Use of school property for staging / proximity to student-use areas
  - a. Phase 1 (temporary bridge installation) and Phase 3 (temporary bridge removal) staging areas are tentatively located on the makai dirt shoulder of Waialua Beach Road in front of WES and the Dole-owned dirt lot adjacent to the school and stream. Phase 1 and Phase 3 will each take approximately 1 month to complete.

The staging area located on the adjacent Dole-owned dirt lot will be used to assemble and install the temporary bypass bridge mauka of the existing bridge. The existing makai fence line in front of WES will be removed and a new construction site fence with dust screens will be installed along a temporary alignment around the work area. The construction work will encroach into the fire lane / secondary access to the back of campus and will require removal of the existing security gate on that road.

    - i. WES noted that these staging areas are used by parents that do not want to wait in the queue to drop-off/pick-up students at the front parking lot. KAI will consult with Dole to see if they can expand the mauka dirt lot staging area further south along Ki'iki'i Stream to reduce the makai dirt shoulder staging area.

- ii. WES requests that a temporary gate be placed on the fire lane / secondary access road south of the temporary construction fence so that they can secure the back of their campus. OA noted that they will assess/revise the design to have a series of gates: a construction site gate and separate gate for the school to secure the back campus.
    - iii. WES noted that the fire lane / secondary access is used by WES staff for parking during the school year. There is no other parking area for staff. OA will ensure that the fire lane / secondary access road remains open for staff access and to meet the Honolulu Fire Department's requirements for minimum access width.
    - iv. The temporary bypass bridge will be assembled on the Dole-owned dirt lot and pushed (launched) across the stream with a heavy vehicle. When the vehicle is launching the temporary bypass bridge, it will likely block the fire lane for extended periods of time. The project team should consider requiring the contractor to conduct this work at night or when school is not in session.
    - v. KAI is coordinating with ACROW, the temporary bridge manufacturer, to see if they can reduce the length of the temporary bridge assembly staging area on the adjacent Dole-owned lot in order to reduce the encroachment into the WES fire lane.
  - b. Phase 2 (existing bridge demolition / new bridge construction) staging areas will be directly adjacent to the west and east of the work area for the new bridge.
  - c. Contractor will develop a construction management plan (CMP) that includes best management practices (BMPs) to minimize potential noise, dust, and other impacts. The contractor is unknown at this time and will be selected during the bid process.
  - d. DOE requested more information on the restoration plan for the disturbed area between the west end of the bridge and fire lane / secondary access (e.g., extension of pedestrian walkway, other improvements, or restore to existing conditions). RMTC noted that the project team is assessing whether it is feasible to install a shared-use path along the mauka side of the bridge that connects to the existing shared-use path to the west and east of the bridge. OA noted that if the shared-use path has a curb and extends to WES, then that would eliminate access to the informal drop-off/pick-up area on Dole's property. If there is a dropped curb in front of the shared-use path, it may create a safety concern since the walkway will not be guarded from cars. OA will further review/coordinate the issue with DDC.
3. Access during construction



- a. Waialua Beach Road and temporary bridge
    - i. WES noted that heavy military convoy vehicles use the existing bridge, and the temporary bridge should be designed to accommodate them. KAI noted that the temporary bridge is designed for current design live load limits and as long as the military vehicles are within the national standards for heavy load vehicles, the temporary bridge should be able to accommodate them.
  - b. Pedestrian and bicycle access
    - i. A majority of the WES students live to the west of the bridge and do not cross it to go to school. However, Hale'iwa students cross over the bridge to attend Waialua Intermediate and High School. The project team will coordinate with Waialua Intermediate and High School.
    - ii. WES does not have crossing guards for student drop-off/pick-up.
4. Construction impacts
- a. Noise
    - i. The noise levels will be typical of a construction site. High noise levels will occur during demolition and installation of the drilled shafts. If the contractor exceeds the noise limits set by the Department of Health, they will be required to obtain a noise variance permit.
    - ii. Contractor will coordinate high noise generating work activities with WES to try and schedule them when school is out of session or during low-use school hours.
  - b. Dust
    - i. Dust control measures include dust screens, sprinkling water to dampen dirt, properly maintaining construction vehicles etc. Dust screens can also act as a visual screen to hide the construction work site.
    - ii. WES requests that the maximum dust control measures are implemented along their perimeter to prevent health and safety issues with dispersion of dust by the kindergarten playground in the front, as well as other school facilities. OA will include a requirement for the contractor to install the maximum dust BMPs along the WES perimeter in the contract documents.
  - c. Traffic

- i. DOE recommends the project team send a small team to conduct traffic observations during peak AM and PM times to understand the traffic patterns for vehicles and pedestrians.
- ii. Traffic speeds may be reduced to 20 mph through the work area during the period of construction.
- iii. WES uses the existing school traffic signal, which appears to be broken. The project team will install a new school traffic signal, similar to the existing one, during the project's construction.

#### 5. School schedule considerations

- a. WES students are in school session from August to May, Monday to Friday, 7:50 AM – 2:10 PM Major school breaks include one week in October for fall break, two weeks at the end of December and first week of January for Christmas/New Year, one week in March for spring break, and two months in June and July for summer break<sup>1</sup>.
- b. WES afterschool and summer programs have low volumes of students.
- c. WES school testing occurs in April /May during the mornings (before 11 AM). WES recommends that during in-session school days, loud construction activities be undertaken after 11 a.m. when testing is being conducted.

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<sup>1</sup> <https://www.hawaiipublicschools.org/DOE%20Forms/2025-26calendar.pdf>

# **Appendix 7**

Additional Pre-EA Consultation Documentation

## Roxanne Lee

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**From:** Yent, Martha E <martha.e.yent@hawaii.gov>  
**Sent:** Tuesday, December 3, 2024 12:23 PM  
**To:** James Niermann  
**Cc:** Jiabao Chen; Roxanne Lee  
**Subject:** Re: Waialua Beach Road Bridge (Bridge No. 605) Replacement Project - LWCFA Consultation

**CAUTION:** External Email

Aloha Jim,

There are no LWCF Section 6(f) protected properties in your project area. The nearest LWCF properties are Haleiwa Boat Harbor and Haleiwa Ali'i Beach Park.

Mahalo, Martha

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**From:** James Niermann <JimN@rmtowill.com>  
**Date:** Tuesday, December 3, 2024 at 7:57 AM  
**To:** Yent, Martha E <martha.e.yent@hawaii.gov>  
**Cc:** Jiabao Chen <JChen@kaihawaii.com>, Roxanne Lee <RoxanneL@rmtowill.com>  
**Subject:** [EXTERNAL] Waialua Beach Road Bridge (Bridge No. 605) Replacement Project - LWCFA Consultation

Aloha Martha,

R. M. Towill Corporation and KAI Hawaii, Inc. are supporting the City and County of Honolulu, Department of Public Works with environmental review (343 EA, NEPA) for the replacement of the Waialua Beach Road Bridge over Ki'iki'i Stream. The project is located Tax Map Plats (1) 6-6-22 (Waialua Beach Road right-of-way) and portions of (1) 6-6-021:001; 6-6-022: 001, 004; 6-7-001: 010, 014, 032. The project location is shown below. The project does not encroach on public parks, forests, wildlife refuges or developed recreation areas, and we do not believe that it involves Land and Water Conservation Fund Act (LWCFA) Section 6(f) properties.

For our records, could you please verify that LWCFA funds were not used on the properties within the project boundary and the project is not subject to the provisions of Section 6(f)(3) of the LWCFA?

If you have any questions about the project, please contact me by email or at (808) 381-5445.

Thank you for your assistance.