HAWAII COMMUNITY DEVELOPMENT AUTHORITY

547 Queen Street, Honolulu, Hawaii 96813
Telephone: (808) 594-0300 Fax: (808) 587-0299
Web site: http://dbedt.hawaii.gov/hcda/

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

STERLING HIGA
CHAIRPERSON

CRAIG K. NAKAMOTO
EXECUTIVE DIRECTOR

June 30, 2026

TO: Mary Alice Evans, Director
Office of Sustainable Development - Environmental Review Program

FROM: Craig K. Nakamoto, Executive Director
Hawaii Community Development Authority
Craig K. Nakamoto

SUBJECT: Iwilei-Kapālama Electrical Infrastructure Improvements
Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI)

The Hawaii Community Development Authority (HCDA) hereby transmits the subject Draft Environmental Assessment, for which it anticipates a Finding of No Significant Impact (DEA-AFONSI). The DEA-AFONSI has been prepared in accordance with Chapter 343, Hawai'i Revised Statutes, Chapter 11-200.1, Hawai'i Administrative Rules. Please publish notice of this DEA-ANFSI in the upcoming issue of *The Environmental Notice*.

Studies prepared in conjunction with this Draft EA include the following:

- Natural Resources Assessment Report
- Archaeological Literature Review and Assessment Report
- Phase I Environmental Site Assessment

These reports have been appended to the DEA.

If you have any questions, please contact our consultant, Ms. Harlee Meyers or Mr. Keola Cheng of Wilson Okamoto Corporation at (808) 946-2277. Thank you.

From: dbedt.opsd.erp@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Tuesday, July 14, 2026 4:29:54 PM

Action Name

Iwilei and Kapālama Electrical Infrastructure

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

Honolulu, Oʻahu

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

N/A - within the Public Right-of-Way

Action type

Agency

Other required permits and approvals

Please see Chapter 4, Section 4.3 for Permits and Approvals

Proposing/determining agency

Hawaii Community Development Authority

Agency jurisdiction

State of Hawaiʻi

Agency contact name

Michelle Kaneko

Agency contact email (for info about the action)

michelle.a.kaneko@hawaii.gov

Email address for receiving comments

publiccomment@wilsonokamoto.com

Agency contact phone

(808) 594-0352

Agency address

547 Queen Street
Honolulu, HI 96813
United States
Map It

Is there a consultant for this action?

Yes

Consultant

Wilson Okamoto Corporation

Consultant contact name

Harlee Meyers

Consultant contact email

hmeyers@wilsonokamoto.com

Consultant contact phone

(808) 946-2277

Consultant address

1907 South Beretania Street, Suite 400
Honolulu, HI 96826
United States
Map It

Action summary

The Hawaii Community Development Authority (HCDA) is proposing an electrical improvement project to support the development of housing at the planned Liliha Civic Center, Mayor Wright Homes, and Kamehameha School Bishop Estate - Kapālama Kai Phase I. The Proposed Project will include a series of electrical enhancements including upgrades to the existing 12-kV electrical systems by undergrounding new 25-kV distribution systems to account for future demand. These upgrades aim to ensure robust and reliable electrical service to support the development of these key housing projects.

Reasons supporting determination

No significant impacts are anticipated to result from the Proposed Project. It is anticipated that the best management practices and mitigation measures discussed in Chapter 3 of the EA will minimize / reduce/ eliminate any potential impacts to the various resource categories presented.

Attached documents (signed agency letter & EA/EIS)

- DEA-Iwilei-Kapalama-Transmittal-Letter-13.pdf
- Final-Draft-EA-31.pdf

Action location map

- Project-Location-Map4.zip

Compliance certification (HRS §368-1.5):

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

Authorized individual

Harlee Meyers

Authorized individual email

hmeyers@wilsonokamoto.com
Authorized individual phone
(808) 946-2277
Authorization
• The above named authorized individual hereby certifies that he/she has the authority to make this submission.

IWILEI – KAPĀLAMA ELECTRICAL INFRASTRUCTURE

DRAFT ENVIRONMENTAL ASSESSMENT

O‘AHU, HAWAI‘I



PREPARED FOR:
MICHELS FOR THE HAWAI‘I COMMUNITY DEVELOPMENT AUTHORITY

PREPARED BY:
WILSON OKAMOTO CORPORATION

JULY 2026

DRAFT ENVIRONMENTAL ASSESSMENT
IWILEI - KAPĀLAMA ELECTRICAL INFRASTRUCTURE

Prepared For:
Michels
For the Hawai‘i Community Development Authority
547 Queen Street
Honolulu, HI 96813

Prepared By:
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai‘i 96826

JULY 2026

PREFACE

This Draft Environmental Assessment (EA) / Anticipated Finding of No Significant Impact (AFONSI) has been prepared pursuant to Chapter 343, Hawai'i Revised Statutes (HRS) and Title 11, Chapter 200.1, Hawai'i Administrative Rules (HAR), Department of Health, State of Hawai'i.

The Hawaii Community Development Authority (HCDA), the state agency responsible for planning, redevelopment, and infrastructure coordination within the designated community development districts, is proposing to undertake a comprehensive electrical improvement project to support the development of housing at the planned Liliha Civic Center, Mayor Wright Homes, and Kamehameha Schools Bishop Estate - Kapālama Kai, Phase 1 (herein referred to as the Proposed Action). The Proposed Action will encompass a series of electrical enhancements including upgrades to the existing 25kV and 12kV electrical distribution systems, undergrounding of existing electrical service lines, and other related infrastructure improvements. This project aims to ensure robust and reliable electrical service to support the development of these key housing projects.

This project must go through the formal EA process because the Proposed Action is an "agency action" which involves the use of state or county lands or the use of state or county funds, outlined in §343-5(1) HRS,

"Propose the use of state and county lands or the use of state or county funds, other than funds to be used for feasibility or planning studies for possible future programs or projects which the agency has not approved, adopted, or funded, or funds to be used for the acquisition of unimproved real property; provided that the agency shall consider environmental factor and available alternatives in its feasibility or planning studies."

The Proposing Agency is the Hawaii Community Development Authority (HCDA) which will be responsible for determining the significance of potential environmental impacts.

This Draft EA includes an assessment of the potential environmental, social, cultural, and economic impacts associated with the Proposed Action. The studies prepared in conjunction with this EA include a Biological Assessment, an Archaeological Literature Review and Assessment, and an Phase I Environmental Site Assessment . The studies are appended to this EA. This Draft EA has also been prepared in consideration of the comments received in response to the Early Consultation Package mailed out on June 9, 2025, to the respective stakeholders listed in Chapter 7 of this EA.

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SUMMARY

This section provides an overview of the contents and purpose of this Draft Environmental Assessment (DEA) for the Iwilei and Kapālama Electrical Infrastructure Project (the Proposed Project). It summarizes the Proposed Project, its potential impacts, and the proposed mitigation measures.

Type of Document:	Draft Environmental Assessment
Project Name:	Iwilei and Kapālama Electrical Infrastructure
Proposing and Determining Agency	Hawaii Community Development Authority (HCDA)
Location:	Honolulu, Oʻahu, Hawaiʻi
Alignment Locations:	Refer to Chapter 1, Table 1-1
Alignment Length:	Approximately 1.14 miles / 6,019 linear feet
Record Free Owner:	City and County of Honolulu, State of Hawaii
State Land Use Classification:	Urban
City & County Development Plan:	Kalihi Neighborhood TOD Plan Downtown TOD Plan
City & County Zoning Designation:	IMX-1, A-2, and BMX-3
SMA:	Not within the SMA
Special District Designation:	Not within a Special District
Flood Zone:	Zone X
Existing Use	The Proposed Project's alignment follows major urban corridors, running along North King Street, Iwilei Road, Kokea Street, Kohou Street, Pua Lane, and North Kukui Street.
Proposed Project	The Hawaii Community Development Authority (HCDA) is proposing an electrical improvement project to support the development of housing at the planned Liliha Civic Center, Mayor Wright Homes, and Kamehameha School Bishop Estate - Kapālama Kai Phase I. The Proposed Project will include a series of electrical enhancements including upgrades to the existing 12-kV electrical systems by undergrounding new 25-kV distribution systems to account for future demand. These upgrades aim to ensure robust and reliable electrical service to support the development of these key housing projects.

Impacts	No significant impacts are anticipated to result from the Proposed Project. It is anticipated that the best management practices and mitigation measures discussed in Chapter 3 of the EA will minimize / reduce/ eliminate any potential impacts to the various resource categories presented. The Proposed Action is an implementation of the first phase of the Iwilei Infrastructure Improvement Master Plan and Liliha Civic Center Master Plan. The Master Plan was assessed through a Final Environmental Impact Statement (FEIS) published in August of 2025. Subsequent to the 2025 FEIS, for further consideration of potential environmental effects for decision making on the projects, it was understood that separate project-specific HRS Chapter 343 documents would be prepared and compliance with other laws and requirements would be demonstrated. As such, the current EA will focus on impacts associated with the proposed electrical infrastructure alignment. Other proposed activities described in the FEIS will not be described and detailed in this EA; however, their potential effects are considered in the evaluation of cumulative effects.
Determination:	Anticipated Finding of No Significant Impacts (AFNSI)
Parties Who Responded During Early Consultation:	**Federal Agencies** U.S. Army Corps of Engineers U.S. Department of the Interior, Fish and Wildlife Service **State Agencies** Department of Accounting and General Services DBEDT, Office of Planning and Sustainable Development (OPSD) Department of Health (DOH) DOH, Hazard Evaluation and Emergency Response Office Department of Transportation (DOT) **City and County of Honolulu** Board of Water Supply Department of Community Services Department of Design and Construction Department of Facility Maintenance Department of Planning and Permitting Honolulu Fire Department Honolulu Police Department **Utility Companies** Spectrum Hawai'i Full list of agencies/parties is referenced in Chapter 7.

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List of Acronyms

Acronym/Abbreviation	Definition
AAQS	ambient air quality standards
ALRFI	Archaeological Literature Review and Field Inspection
AMSL	above mean sea level
ADA	Americans with Disabilities Act
BMP	best management practice
BWS	Board of Water Supply
CCH	City and County of Honolulu
CDP	Census Designated Place
CWA	Clean Water Act
CWB	Clean Water Branch
CWRM	Commission on Water Resources Management
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act of 1972
DLNR	Department of Land and Natural Resources
dBA	maximum a-weighted decibel
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
HAR	Hawaii Administrative Rules
HDD	Horizontal Directional Drilling
HEER	Hazard Evaluation & Emergency Response
HECO	Hawaiian Electric Company
HEPA	Hawaii Environmental Policy Act
HDOH	State of Hawaii Department of Health
HDOT	State of Hawaii Department of Transportation
HRS	Hawaii Revised Statutes
IPaC	Information for Planning and Consultation
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
OPSD	Office of Planning and Sustainable Development
PIFWO	Pacific Islands Fish and Wildlife Office
RHA	Rivers and Harbors Act
ROW	right-of-way
SDWB	Safe Drinking Water Branch
SHPD	State Historic Preservation Division
SMA	special management area
SLR-XA	sea level rise exposure area
SLUD	State Land Use District
State	State of Hawaii
TMK	Tax Map Key

TOD	Transit-Oriented Development
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WoTUS	Waters of the United States

CHAPTER 1: INTRODUCTION

1. INTRODUCTION

The Hawaii Community Development Authority (HCDA) is proposing a comprehensive electrical infrastructure improvement project to support the development of housing at the planned Liliha Civic Center (Liliha CC), Mayor Wright Homes (MWH), and Kamehameha Schools Bishop Estate - Kapālama Kai, Phase 1. The proposed project will include a series of electric enhancements including upgrades to the existing 12kV electrical systems by undergrounding new 25kV distribution systems to account for future demand. These upgrades aim to ensure robust and reliable service to support the development of these key housing projects.

Compliance with the Chapter 343, Hawai'i Revised Statutes (HRS) is required for the Iwilei and Kapālama Electrical Infrastructure Project (herein referred to as the "Proposed Action") due to the use of State and County lands or funds, as outlined in §343-5(1), HRS:

"(1) *Actions which propose the use of state and county lands or the use of state or county funds, other than funds to be used for feasibility or planning studies for possible future programs or projects that the agency has not approved, adopted, or funded, or funds to be used for the acquisition of unimproved real property; provided that the agency shall consider environmental factors and available alternatives in the feasibility or planning studies*."

This Draft EA has been prepared in accordance with Title 11, Chapter 200.1, Hawai'i Administrative Rules (HAR), as an "Agency Action" and includes assessment of potential environmental, social, cultural, and economic impacts associated with the Proposed Action.

Pursuant to HRS § 343-5(b), HCDA is the "Approving Agency" and will determine the significance of potential environmental impacts.

1.1 Background Information

This Draft Environmental Assessment assesses the anticipated environmental effects that the Proposed Action may have on a host of environmental resources. Specifically, this effort encompasses an evaluation of primary, secondary, and cumulative effects, in alignment with Chapter 343, Hawai'i Revised Statutes (HRS), Title 11, Chapter 200.1, Hawai'i Administrative Rules (HAR). The EA identifies measures to reduce impacts to less than significant levels and evaluates a range of reasonable alternatives to the Proposed Action, including the required No Action alternative. As noted in the Preface of this document, this EA is being prepared as an "agency action."

In summary, this EA serves as a disclosure and informational document intended to identify the anticipated environmental effects of implementing the Proposed Action and evaluate the potential of their significance. This EA has been prepared for the Proposed Action for the following purposes:

- To inform and provide the general public, the local community, Federal, State, and City and County of Honolulu (CCH) agencies, as well as any other interested stakeholders, an opportunity to comment on the Proposed Action and its environmental effects, feasible measures to mitigate those effects, as well as the reasonable and feasible alternatives;
- To enable the HCDA to consider the potential environmental consequences of implementing the Proposed Action and pursue the responsible development of the Project Area;
- To enable regulatory agencies to consider the environmental consequences of the Proposed Action for which they have a role in approving or issuing permits; and
- To satisfy Chapter 343, HRS, and Chapter 200.1, HAR, requirements.

Further, this EA serves to evaluate and discuss the Proposed Action's conformance with relevant State and County land use plans, policies, and controls, with the intent of providing both the public and decisionmakers with comprehensive overview of the regulatory compliance associated with the Proposed Action. The following land use plans, policies, and controls are outlined and discussed in Chapter 4 of the EA:

State of Hawai'i

- Hawai'i State Plan, HRS Chapter 226
- Hawai'i State Functional Plans
- State Land Use Law, HRS Chapter 205
  Hawai'i Coastal Zone Management Program, HRS Chapter 205A
- Historic Preservation, HRS Chapter 6E
- Hawai'i Environmental Policy Act, HRS Chapter 343

City and County of Honolulu (CCH)

- City and County of Honolulu General Plan
- Primary Urban Center Development Plan
- City and County of Honolulu Land Use Ordinance

1.2 Project Area and Surrounding Uses

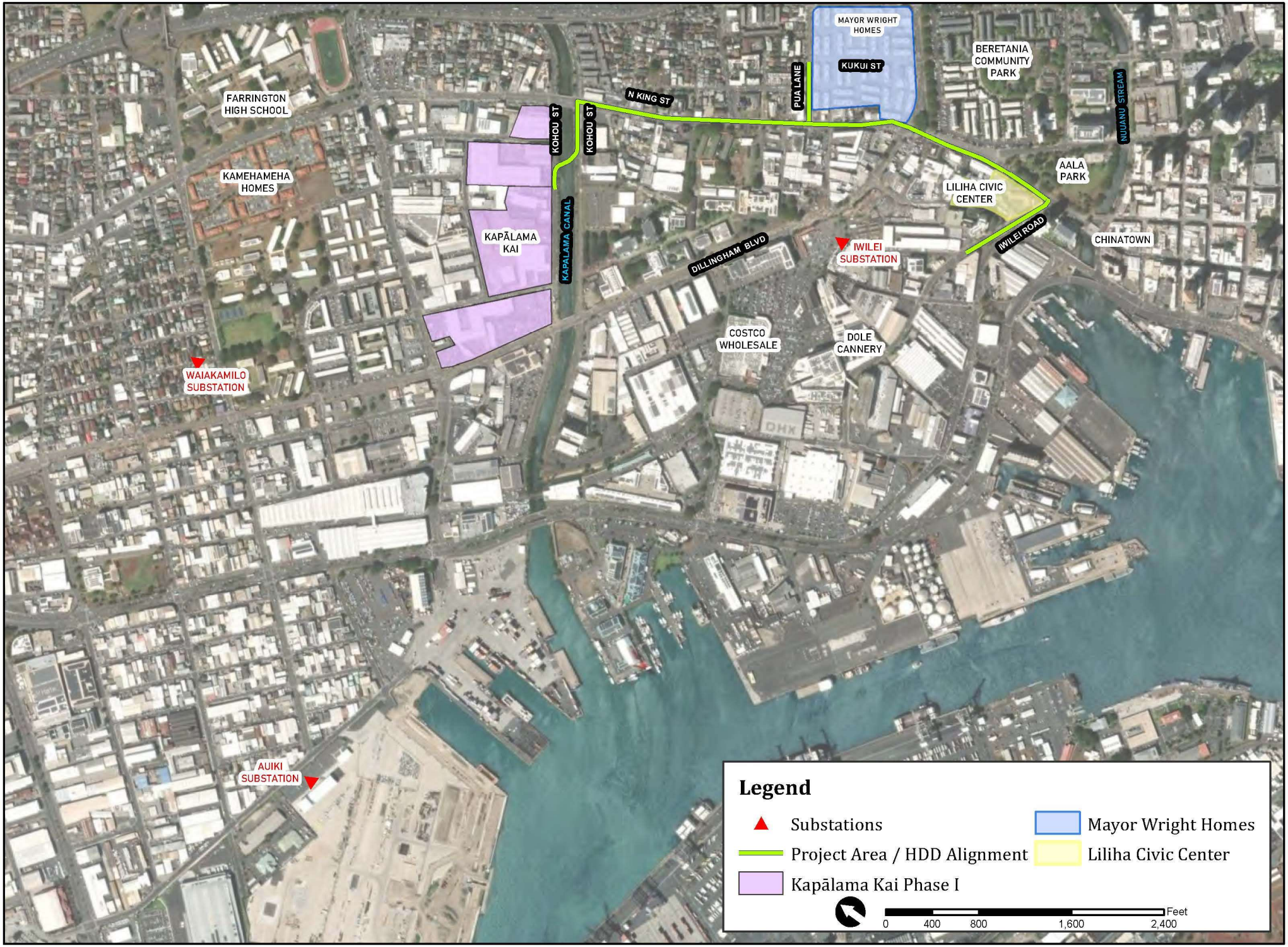
The Project Area for the Proposed Action is located within the Iwilei and Kapālama neighborhoods of Honolulu, O'ahu (See Figure 1-1). This area was identified as a State TOD Priority Area in the *State Strategic Plan for Transit-Oriented Development* (TOD Council). In 2022, Act 184 was enacted, recognizing the construction and improvement of infrastructure within TOD zones as essential to supporting the renewal and redevelopment of these areas. Act 184 amended HRS Chapter 206E to task HCDA with establishing a TOD infrastructure improvement program to assist in providing infrastructure needed in designated TOD areas. The Proposed Action was identified in City and State infrastructure planning for the TOD Area as one of the immediate, critical infrastructure needs to enable planned housing projects in the area moving forward.

The Project Area consists primarily of commercial properties. Adjoining and surrounding properties, as identified by ENPRO Environmental, are listed in Table 4-2 of Appendix D.

The Project Area spans approximately 1.14 miles (about 6,019 linear feet), beginning at Iwilei Road near the proposed Liliha CC. From there, it continues mauka towards North King Street, extends west along North King Street to the intersection with Kokea Street, then traverses south on Kokea Street before crossing the Kapālama Canal and terminating on Kohou Street.

Iwilei-Kapālama Electrical Infrastructure

FIGURE 1-1 PROJECT AREA MAP & SURROUNDING USES



Source: State OP and ESRI

The alignment is divided into the following segments:

Table 1-1: Alignment Location Breakdown		
Street Segment	**Approximate Length (miles)**	**Approximate Length (linear feet)**
North King Street	0.75 mi	3,960 ft
Iwilei Road	0.14 mi	739 ft
Kokea Street & Kohou Street	0.14 mi	739 ft
Pua Lane & North Kukui Street	0.11 mi	581 ft
Total	**1.14 mi**	**6,019 ft**

Key landmarks near the Project Area include Mayor Wright Homes, Kamehameha Homes, Honolulu Community College, Costco, and ʻA'ala Park, all of which contribute to the regionʻs residential, commercial, and institutional landscape. The Project Area is zoned under various City and County of Honolulu classifications, which include the following (see Figure 1-2):

- A-2 Medium Density Apartment District
- BMX-3 Business Mixed Use District
- IMX-1 Industrial Mixed-Use

This zoning diversity allows for a wide range of potential development opportunities. The area is also classified as "Urban" by the State Land Use District (SLUD) (see Figure 1-3). The Urban District generally includes lands characterized by "city-like" concentrations of people, structures, and services.

A portion of the Project Area falls within the adopted Kalihi Neighborhood Transit Oriented Development (TOD) Plan, which was approved by the Honolulu City Council in 2017, while the other portion of the Project Area falls within the boundaries of the adopted Downtown TOD Plan, which was approved by the Honolulu City Council in 2017 and amended in 2020 (see Figure 1-4).

The State TOD Plan is part of an effort for the State of Hawaiʻi to use State facilities and properties as anchor civic institutions to catalyze other public and private investments to create compact, walkable communities, communities that are served by public and multimodal transportation, with ready and affordable access to the necessities of daily life for residents of these communities. In addition, planning for State TOD is an outgrowth of earlier eforts to coordinate a State response to the opportunities offered by rail transit on Oʻahu (State of Hawaiʻi TOD, 2018).

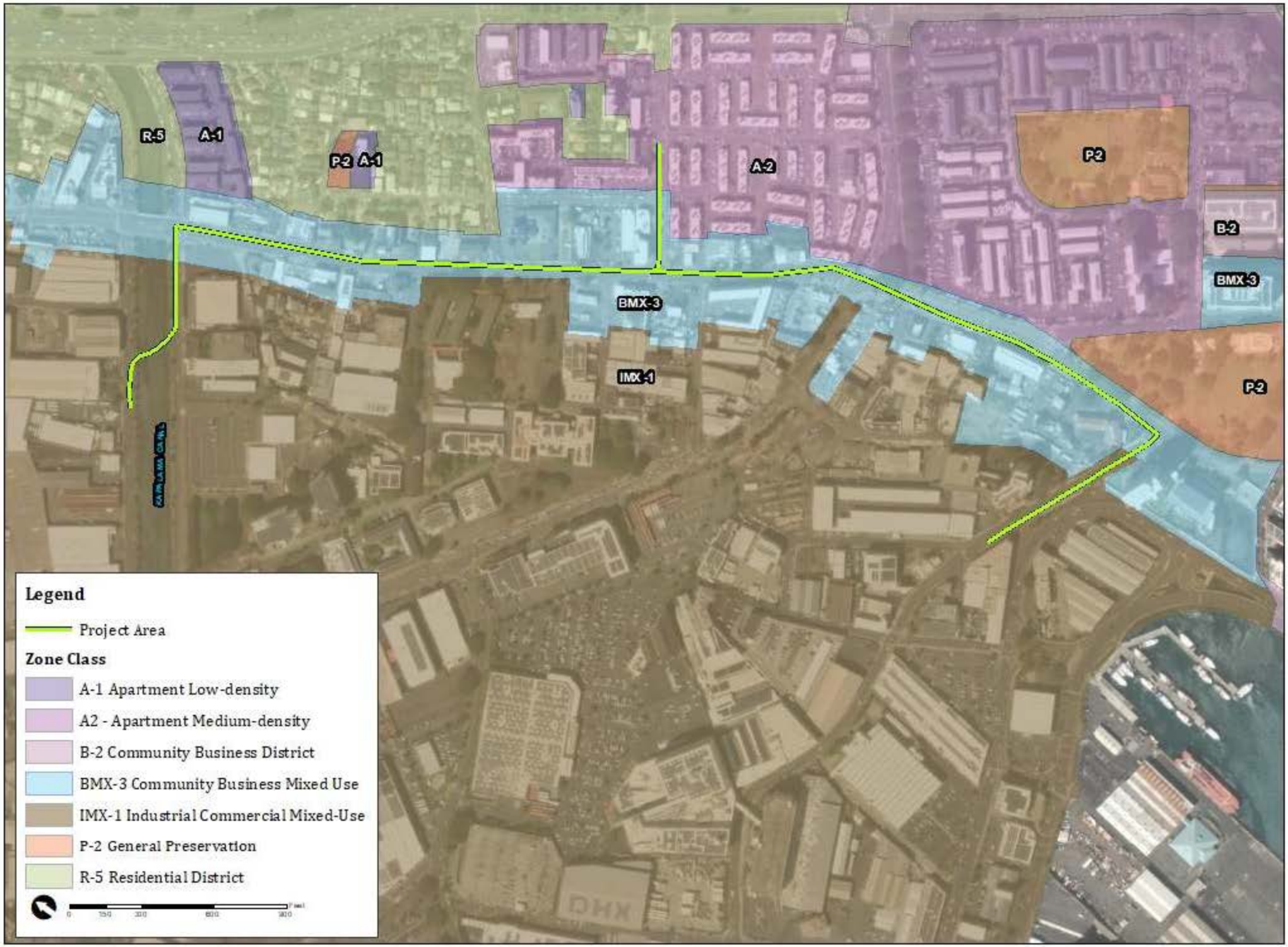
While specific TOD Zoning regulations have not yet been enacted for all areas, the Project Area is within a half-mile radius of future rail transit stations, reinforcing its strategic importance for transit-supportive development. The Project Area does not fall within any special districts, such as the Chinatown and Punchbowl Special Districts, nor is it located within a Special Management Area (SMA).

The project is tied to the housing initiatives under both State and private sponsorship. The Proposed Action reflects the need for upgraded electrical infrastructure to support ongoing urban development. Benefitting developments include Hawaiʻi Housing Finance and Development Corporation's Liliha CC, a mixed-use

project that will combine housing, state offices and office space, commercial uses, and more (DBEDT, 2021). The Hawaii Public Housing Authority Mayor Wright Homes Redevelopment is aimed at increasing residential density in a transit-accessible location. Additionally, the Kamehameha Schools Bishop Estate Kapālama Kai Master Plan is a phased development that includes housing, commercial, and cultural spaces, designed with an emphasis on sustainable and community-oriented growth. These developments are all poised to benefit from the enhanced infrastructure that this project will bring to the area.

Additionally, the HCDA has initiated a service and engineering study with Hawaiian Electric Company (HECO) to evaluate the proposed routing and electrical capacity needed to support the development. HCDA and its consultant, Michels, have been actively coordinating with HECO throughout the planning process to review routing options and ensure that infrastructure requirements are fully understood and incorporated into the project's development strategy.

FIGURE 1-2 ZONING MAP



Iwilei-Kapālama Electrical Infrastructure Project

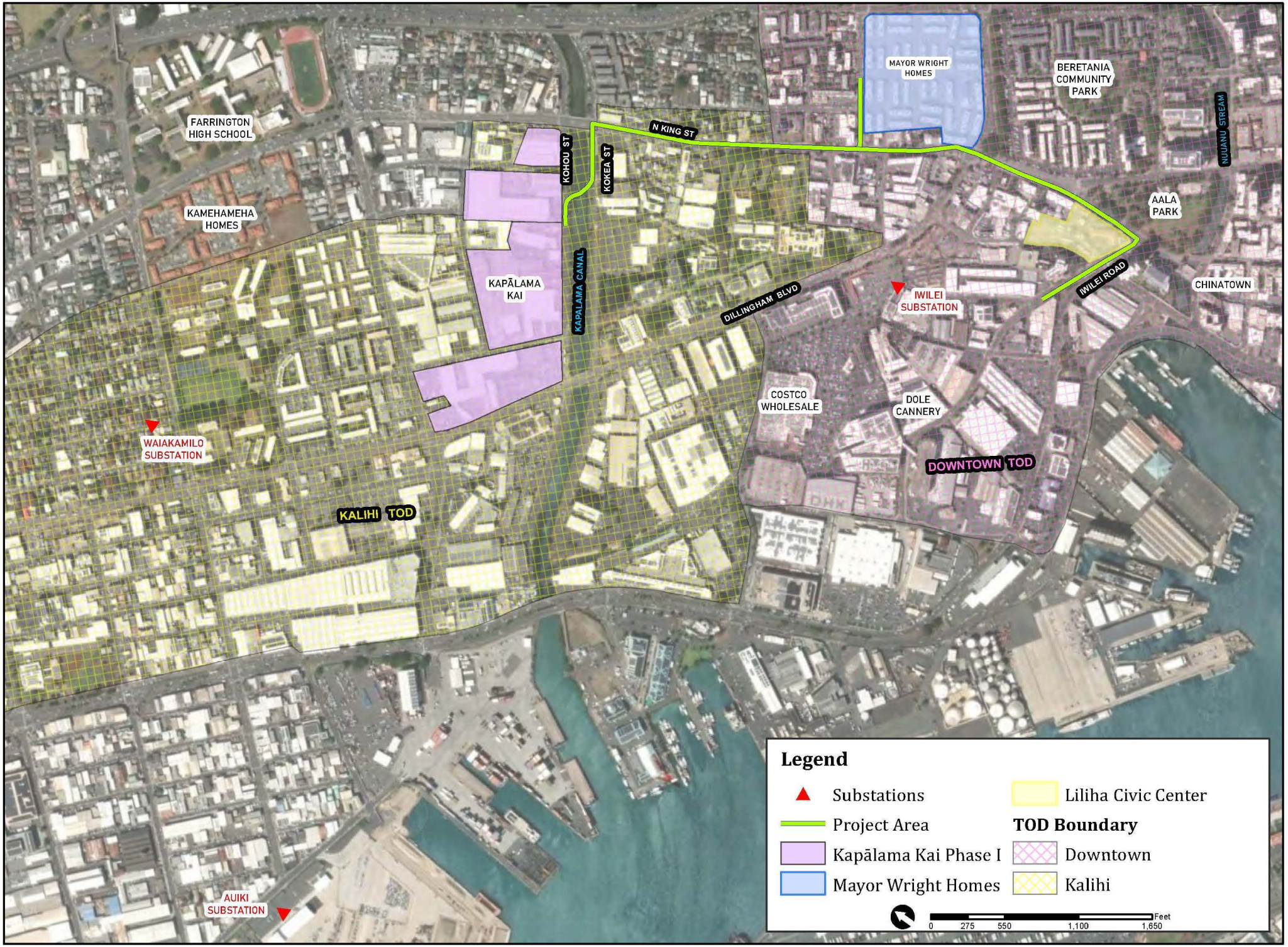
FIGURE 1-3 STATE LAND USE DISTRICT (SLUD) MAP



Source: State OP and ESRI

Iwilei-Kapālama Electrical InfrastructureProject

FIGURE 1-4 TOD BOUNDARY MAP



Source: State OP and ESRI

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CHAPTER 2: PROJECT DESCRIPTION

2. Project Background Information

2.1 Proposed Action

The Proposed Action aims to expand the electrical infrastructure necessary to support the development of new housing projects at the Liliha Civic Center, Mayor Wright Homes, and Kamehameha Schools Bishop Estate - Kapālama Kai, Phase 1. The Proposed Action is important for meeting the increased electrical demand associated with these developments and ensuring a safe, and efficient power supply.

The project involves a series of electrical enhancements including upgrades to the existing 12kV and 25kV electrical distribution systems with the construction of a new underground infrastructure for future planned developments within the area. These upgrades are important to accommodate the additional demand for the new housing developments.

HDD will allow for the installation of underground conduits and cables without the need for extensive trenching, significantly reducing the impact on traffic flow, businesses, and nearby communities. This approach enhances construction efficiency and limits disturbances to existing utilities and roadways. HDD is an efficient method for installing utilities in congested urban and industrial areas. It allows utility lines, such as the underground electrical infrastructure, to be advanced beneath these features, at depths that avoid existing infrastructure (Weis, 2021).

The project originally assessed the feasibility of an overhead crossing to install electrical conduits over the Kapālama Canal. However, due to concerns related to long-term maintenance responsibilities and liability, this option is no longer being pursued. The updated approach now involves using HDD to install the conduits beneath the canal. This method maintains the alignment within the public right-of-way and avoids physical alterations to existing bridge infrastructure. Coordination with HECO will continue to ensure compliance with electrical and safety requirements, while consultation with the Hawaii Department of Transportation (HDOT) and the Department of Design and Construction (DDC) will address permitting and construction considerations. The current project design identifies HDD as the most practical and feasible method for crossing the Kapālama Canal. The HDD alignment will be reviewed by the U.S. Army Corps of Engineers (USACE) to ensure that the proposed activity complies with all applicable federal permitting requirements, including those under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act (CWA).

Overall, the Proposed Action is designed to support and enhance the development of key housing projects while significantly upgrading the electrical infrastructure in Honolulu. By integrating advanced design and construction practices and leveraging Michels' extensive experience, this project will deliver substantial benefits to the community, improving the reliability and capacity of the electrical system and laying a strong foundation for future growth and development in the area.

2.2 Purpose and Need

The planned Liliha Civic Center, Mayor Wright Homes, and Bishop Estate – Kapālama Kai, Phase 1 developments aim to address the growing need for housing in the Project Area. As identified in the 2023 Infrastructure Improvement Master Plan for the Iwilei Area, these locations are anticipated to become key hubs of urban growth and redevelopment. With a mix of publicly and privately owned parcels, the Project Area presents a significant opportunity to expand housing availability while supporting the State and City's long-term TOD and livability goals.

Together, these developments represent a substantial increase in the area's housing capacity. The Liliha CC is expected to provide approximately 600 new housing units in a high-rise, mixed-use format. The redevelopment of Mayor Wright Homes will deliver a total of about 2,448 homes. The mixed-community includes replacement of 364 public housing units, Affordable Rentals, Workforce Housing, and an Affordable For-Sale Component (Mayor Wright Homes Resident's Meeting, 2025). Kapālama Kai, Phase 1, is projected to add between 4,500 and 5,000 housing units as part of a broader, mixed-use development. In total, these projects are anticipated to deliver more than 7,700 new housing units, helping to address Honolulu's housing shortage while advancing the principles of equitable, transit-oriented growth. Table 2-1 below provides an estimation of the future power demand for the three main developments.

Table 2-1 Estimate of Future Power Demand:

Liliha Civic Center	**Est. Load (KVA)**
Residential Units	3,000.0
Commercial / Industrial	1,201.5
Subtotal	4,210.5
Mayor Wright Homes	
Residential Units	12,500.0
Commercial / Industrial	400.0
Subtotal	12,900.0
Bishop Estate, Kapālama Kai, Phase I	
Residential Units	13,300.0
Commercial / Industrial	5,113.0
Subtotal	18,413.0
Total Est. Load	35,523.5

The current electrical infrastructure in the Project Area, including the 25kV and 12kV distribution systems, is insufficient to support the anticipated increase in demand due to these new housing developments. Existing service lines, many of which are overhead, require upgrading or undergrounding to enhance reliability and safety. The proposed project seeks to address these deficiencies by planning, engineering, and constructing the necessary electrical improvements. Sourcing power from the Waiakamilo and Auiki Substations would require additional 46kV feeder lines and PUC approval. None of which is in the scope of this project. Subsequently, all power demand is being sourced from the Iwilei substation, which has the capacity to support the demand listed in the RFP.

The primary need for these electrical improvements stems from the expected increase in demand driven by the new housing projects. Without substantial upgrades, the existing infrastructure will likely be unable to handle the increased load, potentially leading to service disruptions or safety hazards. The planned improvements are crucial to ensure that the new developments are adequately supported by reliable and efficient electrical service, thus enabling the successful realization of the housing initiatives in the Project Area.

By enhancing the electrical infrastructure, the HCDA and its partners aim to facilitate the development of new housing units, aligning with State and City efforts to foster growth around planned transit stations and meet the housing needs of the community. This initiative will not only support the immediate requirements of the new developments but also contribute to the long-term sustainability and resilience of the electrical grid in the region.

2.3 Goals and Objectives

In general, the overarching goals and objectives of the proposed Iwilei and Kapālama Electrical Infrastructure project emphasize the enhancement of currently outdated infrastructure, improving electrical transmission and storage for the Iwilei and Kapālama developments, and promoting the need to update failing utilities in Honolulu's urban neighborhoods.

New and updated infrastructure will support the Liliha Civic Center, Mayor Wright Homes, and Kamehameha Schools Bishop Estate – Kapālama Kai developments through more reliable, safer, and efficient electrical transmission and storage. These improvements will ensure that throughout and post development, these areas will receive adequate power.

Additionally, the current alignment aims to maintain throughways and bridge use both pre and post construction and will aim to minimize traffic disruptions and impacts to the current environment and aesthetics of the area.

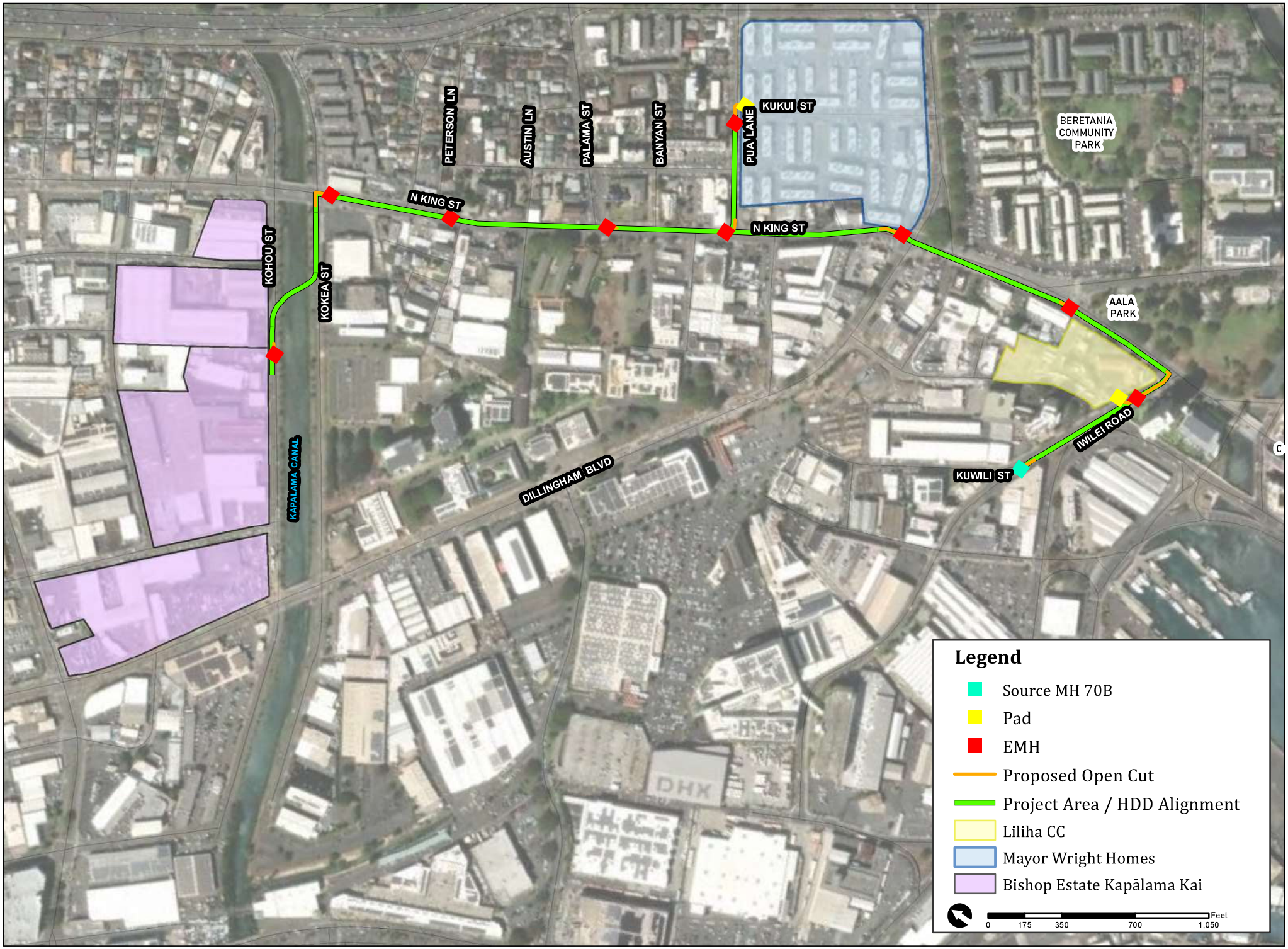
2.4 Proposed Alignment

Iwilei Rd & King St 800' HDD to Liliha Civic Center / Mayor Wright Homes / Kamehameha Schools Bishop Estate

The proposed alignment is approximately 1.12 miles (5,913.6 feet) and follows a route starting from south of the Liliha Civic Center (Liliha CC) via Iwilei Road, then continues east to the intersection of Iwilei Rd and North King St before heading northwest towards Mayor Wright Homes and Kamehameha Schools Bishop Estate along King Street (see Figure 2-1). This alignment was determined to be the most feasible and efficient based on technical, permitting, and operational considerations. It utilizes HDD while adhering to HECO's maximum manhole spacing of 800 feet. Additional utility connections will occur along portions of Pua Lane towards Kukui Street to support infrastructure needs in the surrounding area. This route streamlines permitting through public agencies and ensures a direct connection to the Iwilei Substation, the designated power source for all three developments.

Iwilei-Kapālama Electrical Infrastructure

FIGURE 2-1 PROPOSED HDD ALIGNMENT



2.5 Proposed Alternatives

Several alternatives were considered during project planning to evaluate different ways of meeting the project purpose and need. These alternatives were developed to assess potential design approaches, construction methods, and alignments, and to identify options that would avoid or reduce potential environmental impacts. The alternatives considered include:

- Proposed Action, which involves the installation of underground electrical infrastructure using a combination of trenching and horizontal direction drilling (HDD);
- No Action Alternative, under which the proposed electrical infrastructure improvements would not be constructed; and
- Other design or alignment alternatives evaluated during project planning but not carried forward due to technical, environmental, or feasibility constraints.

This section provides a brief overview of the alternatives considered. A detailed description and comparative evaluation of each alternative, including the reasons for selecting the Proposed Action, is provided in Chapter 5, Alternatives Analysis.

2.6 Construction Methods

A key feature of the Proposed Action is the use of horizontal directional drilling (HDD) to install underground electrical infrastructure while minimizing surface disruption. HDD is a versatile trenchless construction method commonly used in urban and environmentally sensitive settings to install utilities beneath roadways, waterways, and other obstacles without extensive surface excavation. Construction will progress from Iwilei to Pua Lane, however, work within these areas will not occur in a strictly linear sequence and certain locations may be revisited throughout the schedule to complete different tasks. There will be approximately eight (8) construction sites along King Street for drilling pits.

Construction is anticipated to generally progress linearly from the source manhole (MH 70B) along Iwilei Road and northward along North King Street. However, construction sequencing may be adjusted to address technically challenging work areas, including HDD segments with more complex subsurface conditions. The final sequence of construction activities will be determined by the contractor based on engineering, geotechnical, traffic management, and operation considerations.

2.6.1 Horizontal Directional Drilling

For the approximately 1.14-mile project alignment, the Proposed Action will include a combination of HDD and open-cut trenching methods. HDD is anticipated for segments where surface disturbance must be minimized, such as at the Kapālama Canal crossing while open-cut trenching may be used along roadway segments where feasible. Final construction methods for specific segments will be determined during final design.

The Proposed Action is anticipated to include approximately five (5) HDD entry and exit pit locations. Each HDD operation would require a temporary surface work area at the entry and exit locations. Typical HDD entry sites in urban environments occupy approximately 60 feet to 120 feet in length and 20 feet to 40 feet in width, while exit sites generally occupy approximately 20 feet to 40 feet in length and 15 feet to 30 feet in width. HDD bore paths would generally begin at depths of approximately 6 feet below ground surface and taper to the surface at entry and exit angles ranging from approximately 14 to 16 degrees. In addition, approximately four (4) manholes would be constructed along the alignment, with the largest excavation anticipated to measure approximately 8 feet by 17 feet in length.

Construction would utilize a medium-class HDD rig, such as the Vermeer D100 x 140 S3 HDD, which has an operation width of approximately 8.5 feet, a height of 11.5 feet, and a working length of 36.4 feet. Supporting equipment, such as drill rod carriers, vacuum trucks, mud recycling systems, and ancillary equipment would be staged within the temporary work areas. Representative photographs of medium-class HDD rigs and associated support equipment are provided in **Attachment 1.**

Prior to drilling, utility locating and subsurface investigations would be conducted, including vacuum excavation to verify the location of existing underground utilities.

Drilling operations will generate soil cuttings (spoils), with approximately 2,200 cubic yards (CY) of excavated material anticipated during construction. Excavated materials would be managed in accordance with applicable State of Hawai‘i Department of Health (DOH) requirements. Soil characterization and testing, including Phase II Environmental Site Assessment (ESA) sampling where necessary, would be conducted to determine appropriate handling, storage, transportation and disposal methods. Materials suitable for direct disposal would be transported to an approved disposal facility, such as PVT Land Company. Materials requiring additional treatment or drying may be temporarily stockpiled within designated staging areas or at approved off-site facilities prior to disposal.

At the Kapālama Canal crossing, HDD would be used to install the proposed conduits approximately 40 feet beneath the canal. This trenchless construction method would avoid direct disturbance to the canal by eliminating the need for in-water work, excavation within the canal, or placement of fill or structures within the cana bed or banks. Therefore, the HDD crossing is not anticipated to alter the canal bed, canal banks, or existing flow conditions.

2.6.2 Open-Cut Trenching

Approximately 550 linear feet of the Proposed Action would be constructed using conventional open-cut trenching methods where site conditions are suitable and utility conflicts can be avoided. Prior to excavation, existing underground utilities would be identified and verified using utility locating methods and vacuum excavation, as appropriate.

In areas with elevated groundwater, jet grouting may be used to stabilize soils and reduce groundwater infiltration before trench excavation. Open-cut trenching would be performed using a standard excavator under the continuous observation of a qualified spotter to identify unforeseen underground utilities and other subsurface constraints. If archaeological monitoring is required, excavation activities would be conducted in accordance with the applicable monitoring plan.

Open-cut trenches would generally be approximately 3 feet wide and 4 to 6 feet deep, although dimensions may vary based on site-specific conditions and utility installation requirements. Trench lengths would be kept as short as possible to minimize disruptions to vehicular traffic, pedestrian access, and adjacent properties. Temporary trench plating may be used during non-working hours, where necessary, to maintain roadway access and traffic operations.

Groundwater may be encountered during excavation due to shallow groundwater conditions within portions of the Project Area. Where necessary, temporary dewatering methods may be implemented to facilitate construction while minimizing impacts on adjacent infrastructure and maintaining safe working conditions. All dewatering activities would be conducted in accordance with applicable permit requirements and best management practices (BMPs).

2.6.3 Traffic Management and Impacts

The project is located within established transportation corridors in Honolulu and may result in temporary impacts to vehicular, pedestrian, and transit circulation during construction. Accordingly, implementation of an effective traffic management strategy will be important to maintaining mobility and minimizing disruptions within the Project Area.

Temporary lane closures are anticipated on Kuwili Street, Iwilei Road, and North King Street during conduit installation and construction activities. This may create congestion, particularly during peak travel hours. A traffic management plan will be implemented with detours clearly marked and with real-time updates provided through digital platforms. In addition, construction scheduling will avoid peak hours wherever possible.

2.6.4 Construction Staging and Equipment

Construction activities would require temporary staging areas to support equipment, materials, and personnel throughout the duration of construction. Staging areas would generally be located within the existing public right-of-way (ROW), utility corridors, or other approved temporary work areas. Temporary staging areas would be managed to minimize disruptions to adjacent properties, businesses, roadways, pedestrian facilities, and transit operations. Access to adjacent properties would be maintained to the extent practicable throughout construction. Upon completion of construction, temporary staging areas and disturbed surfaces would be restored to conditions equal to or better than those existing prior to construction, as applicable. Final staging locations and configurations would be determined by the contractor in coordination with HCDA, the City and County of Honolulu, and other applicable agencies, as necessary.

Construction equipment may include, but would not be limited to, HDD rigs, excavators, vacuum trucks, drilling fluid recycling systems, drill rod carriers, loaders, dump trucks, compactors, generators, pumps, service vehicles, and other equipment necessary to support underground utility installation. Equipment staged within the Project Area would vary depending on the construction phase, site conditions, and contractor means and methods.

Construction materials, including conduit, electrical cable, manhole components, aggregate, backfill materials, trench plates, and traffic control devices, may be temporarily stored within designated staging areas. Excavated materials may also be temporarily stockpiled within designated work or staging areas pending characterization, reuse, or off-site disposal. Material storage, equipment refueling, and equipment maintenance would be conducted in accordance with applicable federal, state, and local requirements and contractor BMPs to minimize the potential for spills, sediment discharge, and other construction related impacts.

2.6.5 Easement and Access Needs

Temporary and permanent easements will be necessary to accommodate construction activities, staging areas, and the installation of splice vaults. Permanent impacts are expected to be limited due to the use of trenchless construction methods, which minimize surface disturbance and reduce the overall project footprint. Any temporary impacts associated with construction will be minimized through careful planning, coordination, and implementation of appropriate mitigation measures.

2.7 Project Timeline and Construction Costs

The Proposed Action will be developed and constructed in phases to minimize disruptions to surrounding communities and ensure compliance with regulatory requirements. The initial stage of construction, which includes contractor mobilization, site preparation, utility locating, traffic control setup, and establishment of staging areas, is anticipated to begin one month after securing all required permits and approvals, subject to contractor mobilization and agency coordination.

Subsequent phases will follow, contingent on permitting approvals, construction progress, and coordination with HECO and other stakeholders. The overall construction duration is anticipated to be approximately 12 months, although the schedule may be adjusted based on field conditions, permitting timelines, utility coordination, and construction sequencing requirements. Construction is anticipated to begin in late 2026 and continue through mid-2027.

Preliminary, planning-level cost estimates have been developed for the Proposed Action to inform project planning and budgeting. The total estimated construction project cost, including design and construction, is approximately $24 million. These cost estimates are preliminary and provided for informational purposes only. Final project costs would be refined during final design, procurement, and construction, and may vary based on site conditions, final construction methods, material pricing, and regulatory requirements.

2.8 Hours of Operation & Contact Information

Construction activities are generally expected to occur during regular daytime work hours, consistent with applicable CCH regulations. However, limited night or off-hour work may be required at select locations or during specific activities (such as utility tie-ins, traffic-sensitive areas, or coordination with other agencies and utility providers).

To minimize construction-related disruptions, advance notice of major activities, lane closures, and detours will be provided through the HCDA project website. A 24-hour public contact numbers (808) 946-2277, maintained by Michels, will be listed on the HCDA website to allow residents and businesses to report concerns or obtain information during construction.

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CHAPTER 3: EXISTING CONDITIONS, IMPACTS, AND MITIGATION MEASURES

3. EXISTING CONDITIONS, IMPACTS, AND MITIGATION MEASURES

This chapter outlines the existing environment, potential impacts, and proposed mitigation measures within the Project Area. It identifies potential impacts to various environmental resources from the Proposed Action and offers mitigation measures to address these impacts.

On March 23, 2025, a Final Environmental Impact Statement (FEIS) for the Iwilei Infrastructure Improvement Master Plan and Liliha Civic Center Master Plan (herein referred to as the "Iwilei FEIS, 2025") was published on the Environmental Review Program's (ERP) website. This 2025 FEIS will be referenced throughout this chapter for the existing conditions of the Iwilei-Kapālama region, as well as additional resources relevant to this section.

3.1 Climate, Greenhouse Gas Emissions, and Climate Change

3.1.1 Current Climate Conditions

The climate of Oʻahu is generally tropical and fairly consistent throughout the year. Oʻahu experiences two main seasons: the winter season, known as Hoʻoilo, typically spanning from December to March, while the summer season, called Kau, extends from June to October (Kawaharada, 2023). The winter season is characterized by high humidity and increased rainfall, along with relatively cooler temperatures, whereas the summer season features higher temperatures and less rainfall. The average temperatures can range from about 71° Fahrenheit (F) in the cooler months to about 85°F in the warmer months (Rainfall Atlas of Hawaiʻi, 2011).

The Project Area lies on the leeward side of the Koʻolau Mountain Range, where the Kalihi and Kapālama region typically experiences a drier climate with occasional brief mauka shower driven by trade winds. The terrain of the island has a significant impact on the climate, as mountainous features obstruct, deflect, and accelerate wind, creating rainfall patterns. The average annual rainfall around the Project Area is approximately 29 inches, most of which occur during the wet season from December through April (Iwilei FEIS, 2025).

Impacts and Mitigation Measures

No significant adverse impacts to current climate conditions at or in the vicinity of the Project Area are anticipated to result from the construction and operation of the Proposed Project. The Proposed Action will appropriately take into consideration the surrounding environment and is not anticipated to significantly influence or affect temperatures, wind or rainfall levels.

3.1.2 Observed Climate Change

Climate change has been acknowledged as a critical threat to the State of Hawaiʻi (Gove et al., 2022). Multiple environmental stressors occur as a result of climate change including sea level rise, changes in rainfall patterns, changes in atmospheric and ocean temperatures, and extreme weather events. The rapid changes in climate have been highly attributed to the rise in greenhouse gas (GHG) emissions associated with human activities (Jay et al., 2023). Research indicates that climate change resulting from the continued increase of GHGs poses considerable impacts to ecosystem processes, socio-cultural connections, and human health in the State of Hawaiʻi (Gove et al., 2022).

Since 1950, air temperatures in Hawai‘i have risen by approximately 2°F, with a notable acceleration over the past decade (HI-EMA, 2023). According to the Intergovernmental Panel on Climate Change (IPCC), 16 of the last 17 years have been the warmest on record (IPCC, 2021). In its Sixth Assessment Report (AR6), the IPCC outlined five Shared Socio-economic Pathways (SSPs), projecting global temperature increases of up to 4.0°C above pre-industrial levels (1850–1900) under high-emissions scenarios. Rising temperatures pose environmental stress for ecosystems, increase the risk of heat-related illness in humans, and exacerbate over half of known infectious diseases (HI-EMA, 2023).

Sea surface temperatures in Hawai‘i show seasonal variation, with the coolest temperatures typically in March and the warmest in September. However, climate change has intensified and altered this seasonal cycle. Since the mid-20th century, sea surface temperatures in Hawai‘i have risen by approximately 0.15 to 0.25°C per decade, with record highs observed in 2015 (Gove et al., 2022). Projections estimate an increase of about 2°C by 2100, with the rate of warming expected to accelerate after 2050. Rising sea surface temperatures pose significant threats to marine ecosystems, particularly coral reefs.

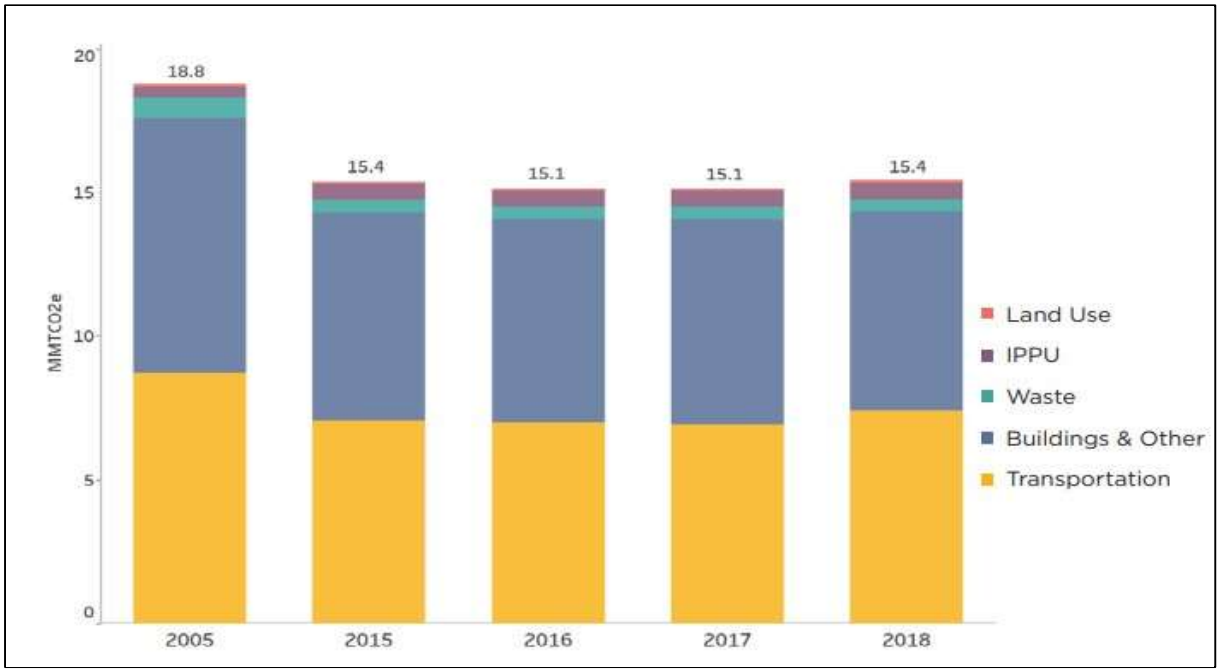
Coral bleaching occurs when stress—primarily from elevated ocean temperatures—disrupts the symbiotic relationship between coral and the algae living in its tissues. The loss of algae exposes the coral’s white skeleton, resulting in a "bleached" appearance. If high temperatures persist, corals may be unable to recover, leading to widespread mortality. Climate change is expected to increase both the frequency and severity of bleaching events (Gove et al., 2022). In addition to rising sea surface temperatures, ocean acidification—driven by increased carbon dioxide absorption—reduces calcium carbonate saturation, weakening the shells and skeletons of many marine organisms (IPCC, 2021). Ocean acidification is projected to intensify under all emissions scenarios outlined in the IPCC Sixth Assessment Report (IPCC, 2021).

Rainfall in Hawai‘i is naturally variable across the islands, but climate change is amplifying these patterns, which are vital for sustaining healthy groundwater and surface water systems (HI-EMA, 2023). Rainfall distribution is largely driven by northeasterly trade winds, resulting in wetter windward areas and drier leeward regions. As the frequency of trade winds declines, Hawai‘i is expected to experience more frequent and prolonged droughts (HI-EMA, 2023). Reduced rainfall will also slow aquifer recharge rates, decreasing the availability of groundwater—Hawai‘i’s primary source of drinking water (HI-EMA, 2023).

Between 2017 and 2021, peak rainfall events on O‘ahu accounted for 34% to 47% of the annual total, and overall rainfall increased by about 80% from 1990 to 2021 (Gove et al., 2022). These increases can lead to excessive runoff, which discharges pollutants into the ocean, negatively affecting ecosystems and human health (Gove et al., 2022).

The connection between people and ecosystems is central to communities across Hawai‘i, where local economy, culture, and traditions are closely tied to the natural environment. Conservation and management efforts support the long-term health of both ecosystems and communities. The 2019 *Ola: O‘ahu Resilience Strategy* outlines 44 actions to address climate challenges by promoting responsible stewardship and sustainable practices, with a focus on climate security, community cohesion, equity, and resilience. Building on these efforts, the City and County of Honolulu (CCH) launched the 2020–2025 Climate Action Plan (CAP) to accelerate greenhouse gas reduction and guide Hawai‘i toward carbon neutrality by 2045. The CAP targets a 45% reduction in GHG emissions by 2025 compared to 2015 levels, focusing on key sectors such as ground transportation, electricity, waste, and wastewater management (**See Figure 3-1**).

Figure 3-1: CCH's GHG Emissions by Sector for 2005, 2015-2018



Impacts and Mitigation Measures

The construction and operation of the Proposed Action is not anticipated to substantially impact climate change or climate change related conditions at or within the vicinity of the Project Area. Fluctuations in climate are dependent on a variety of factors associated with the elevation, distance inland, and trade wind exposure of the project area. The Proposed Action will be designed accordingly and will take into consideration the context of the surrounding environment. The Proposed Action is not anticipated to significantly influence or affect temperatures, wind, or rainfall levels in the Project Area or its broader region. Design efforts for the Proposed Action should consider these potential changes and incorporate appropriate stormwater management measures to mitigate the impacts in the case of a big and heavy rainstorm event that may produce significant runoff.

Construction activities may result in minimal GHG emissions. Construction related emissions may include tailpipe emissions from construction equipment, delivery trucks, earthwork, grading, excavation, concrete work, stockpiling, and transport of building materials and construction spoils and debris. The proposed improvements are not expected to cause a substantial increase in GHG emissions and, therefore, are unlikely to have significant adverse effects on the climate or contribute meaningfully to climate change.

Although the exact nature of climate change remains uncertain, ongoing updates will inform future assessments to guide adaptation efforts. The Proposed Action is expected to remain flexible, aligning with evolving policies and research based on the latest available data.

3.2 Wind

The winds in the Project Area are characterized by a northeasterly trade wind flow for the majority of the year. Winds at the surface can range between 13 and 24 miles per hour (mph) and blow in from the northeast direction (Iwilei FEIS, 2025). Occasionally the Project Area may experience seasonal changes in the prevailing wind direction from the south, also known as Kona Winds. These winds blow onshore for the south shores of O‘ahu. From time to time, severe storms are associated with these Kona Winds, including vog (volcanic smog) and storm systems such as a Kona Low.

Impacts and Mitigation Measures

The Proposed Action is not anticipated to have short-term, long-term, or direct impacts on the regional wind conditions. However, man-made structure and high-rise buildings could be obstacles for wind movement which may create localized wind patterns that impact air quality, ventilation, and comfort. This is an important factor to consider when construction is occurring within the Project Area, as it may impact timelines, accessibility, safety protocols, or coordination with ongoing activities.

Proper planning, monitoring, and communication are essential to minimize disruptions, ensure compliance with regulations, and maintain the overall efficiency and safety of the project.

3.3 Physiography

3.3.1 Geology and Topography

The island of O’ahu is formed by the Wai’anae Mountain Range to the west and the Ko’olau Mountain Range to the east. The Project Area is located within the Iwilei-Kapālama district of Honolulu, on the coastal plain of southern O‘ahu. The area is characterized by low-lying, gently sloping terrain that gradually inclines inland (mauka) toward the Ko‘olau Mountain Range.

The Honolulu Harbor complex, which includes Kapālama is approximately 0.80 miles from the Project Area. This area is located on the flats below Kalihi Valley and was historically used as house sites and lo‘i kalo (taro patch) (Iwilei, FEIS 2025). Makai (seaward) of Dillingham Boulevard and south of Kapālama Canal, the majority of this area was filled and graded, resulting in the current industrial uses. According to the 2025 Iwilei Infrastructure Final Environmental Impact Statement (EIS) Master Plan, the existing topography ranges in elevation from approximately 40 feet above mean sea level (AMSL) in the areas around the Palāma Settlement to less than 5 ft AMSL in low lying areas. Figure 3-2 displays the Project Area with elevation contours in increments of 5 feet (see Figure 3-2). Consisting of fill material, these low-lying areas are mainly on the makai side of Dillingham Boulevard (Iwilei FEIS, 2025).

Impact and Mitigation Measures

Short-term impacts associated with construction of the Proposed Action may include additional site grading, soil disturbance and the import of fill material, which may be required should roadways and multi-modal networks be elevated to address sea level rise (SLR). The Proposed Action will follow standard construction practices and Best Management Practices (BMPs) to stabilize exposed soils and minimize erosion. The use of horizontal directional drilling (HDD) will limit ground surface disruption, reducing the potential for erosion or topographic alteration. Entry and exit pits will be stabilized following construction using appropriate BMPs.

All required permits and approvals will be obtained before construction, in compliance with Hawai‘i Administrative Rules (HAR), Title 11, Chapter 54- relating to Water Quality Standards which address issues related to soil erosion. Construction activities will comply with procedures relevant to CCH's grading ordinance. BMPs include phasing construction activities, replacing ground cover of disturbed areas, and use of temporary silt fences and screens to mitigate potential impacts. Staging areas will be reverted to their original conditions upon completion of the Proposed Action.

In the event that unforeseen subsurface conditions (e.g., soft soils, voids) are encountered, construction methods will be adjusted in consultation with geotechnical professionals to maintain stability and safety.

3.2.2 Soils

The Hawaiian Islands host a diverse and fertile assortment of soils. Three soil suitability studies for Hawai‘i focus on describing the physical attributes of the land and the relative productivity of different land types for agriculture production. These are: 1) the Land Study Bureau (LSB) Detailed Land Classification; 2) U.S. Department of Agriculture (USDA) Natural Resources Convention (NRCS) Soil Survey; and 3) the Agricultural Lands of Importance to the State of Hawai‘i (ALISH).

The USDA NCRS provides access to soil maps and data available through field studies, soil mapping projects, and other technical soil services. According to the USDA NCRS, the soils within the Project Area corridor sit on soil classified as Ewa Silty Clay Loam (EmA), with sections of the Project Area sitting on soil classified as Fill Land, mixed (FL), Hanalei Silty Clay (HnA), and Water (W) (see Figure 3-3). Majority of the Project Area lies within the EmA soil. A description of each classification of soil is provided below (Iwilei FEIS, 2025).

- *Ewa Silty Clay Loam (EmA) – This soil type consists of well drained soils. This soil type is on footslopes at elevations ranging from 0 to 150 feet (45.7 meters). Silty clay loam soils have slopes of 0 to 2 percent. The non-irrigated land capacity classification of 4s indicates moderate limitations, that the soil is suitable for specific, low-impact agricultural practices. This soil type is classified as prime farmland if irrigated. This type of soil can be used to grow sugarcane, truck crops, and supporting pastureland. Native vegetation includes fingergrass, kiawe, koa haole, klu, and ‘uhaloa.*

- *Fill Land, mixed (FL) – This soil type consists of well drained soils formed from fill land. This soil type is found on flats at elevations ranging from 0 to 50 feet (15.2 meters). Fill land, mixed soils have slopes of 0 to 3 percent. Additionally, this soil is mainly used for urban development such as, industrial facilities, housing, etc.*

- *Hanalei Silty Clay (HnA) – This soil type consists of poorly drained soils formed from alluvium derived from basalt. This soil type is found on flood plains on valley floors at elevations ranging from 0 to 430 feet (131.06 meters). Silty Clay soils have slopes of 0 to 2 percent. The non-irrigated land capacity classification of 2w refers to the suitability of the soil for most kinds of field crops without deteriorating over a long period of time. The classification groups arable soils based on their potential and limitations for sustainable production of common cultivated crops.*

- *Water (W) – The "Water" map unit encompasses areas where the land surface is permanently or seasonally covered by water and where soil characteristics are not typically defined due to*

continuous inundation. These areas include natural and man-made water bodies such as ponds, reservoirs, drainage channels, and perennial streams. As classified by the USDA Natural Resources Conservation Service (NRCS), these map units are non-soil areas that are not suitable for conventional agricultural, residential, or structural uses.

The main soil beneath the project area is of the Ewa series. Soils within the Ewa soil series are isohyperthermic Aridic Haplustolls, which is a classification within the Mollisol order, specifically referring to soils having a rich surface layer in organic matter and a relatively thick dark surface layer. The "isohyperthermic" designation indicates a soil temperature regime where the mean annual soil temperature is 22 degrees Celsius or higher, and the difference between mean summer and mean winter soil temperatures is less than five degrees Celsius.

Impact and Mitigation Measures

The Proposed Action will require short-term soil disturbance and removal in the Project Area. Construction activities could temporarily disturb subsurface soils through HDD operations, HDD entry and exit pits, manhole installation, limited open-cut trenching, staging areas, and related construction activities. Approximately 2,200 CY of excavated material are anticipated to be generated during construction. Ground disturbance would occur primarily within previously disturbed urban roadway ROW and utility corridors.

Potential impacts may include but are not limited to:

- Localized displacement or loosening of soil along the bore path.
- Inadvertent return (IR) of drilling fluids to the ground surface or canal.
- Minor ground settlement or loss of support near the drill alignment.
- Temporary soil stockpiling and potential erosion at staging areas.

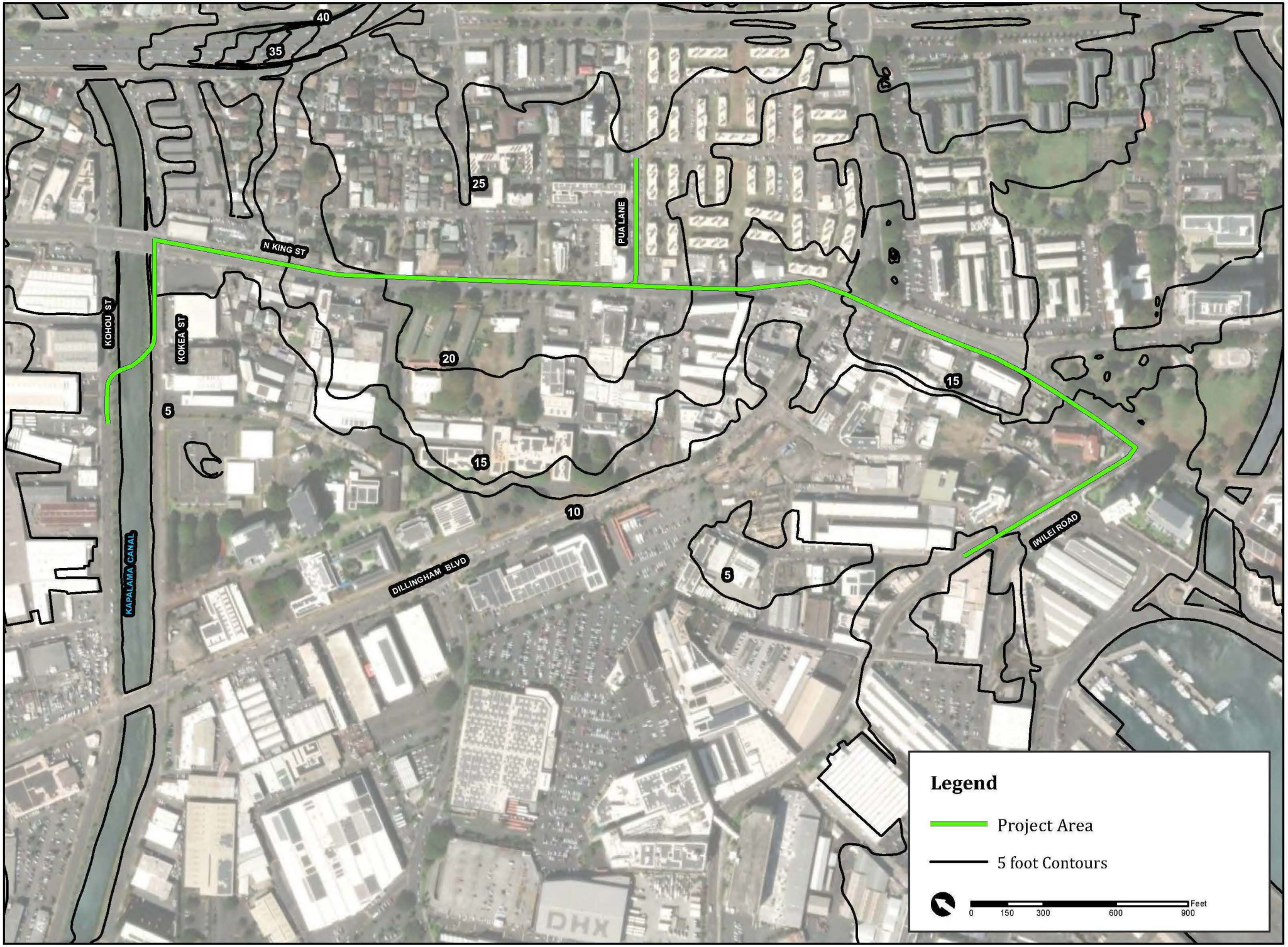
Compared with open-cut trenching, HDD substantially reduces surface disturbance and the risk of widespread erosion or sediment transport (EPA, 2005). During construction, limited ground disturbance may occur at HDD entry and exit pits or staging areas. If contaminated soils are encountered, they will be properly characterized, contained, and disposed of in accordance with DOH, Hazard Evaluation & Emergency Response (HEER) Office guidance and applicable State and Federal regulations. Stockpiling and transport will follow approved handling procedures to prevent the spread of contaminants.

To minimize soil-related impacts during construction activities, BMPs will be implemented in accordance with erosion control measures that are consistent with State, CCH, DOH CWB, and DOH HEER Office regulations to minimize potential impacts.

Mitigation measures will include proper containment and monitoring of drilling fluids to prevent IRs, stabilization and backfilling of entry and exit pits, and use of erosion and sediment control features such as silt fences, wattles, or geotextile coverings. Drilling spoils and fluid residues will be stored in contained areas and disposed of in accordance with applicable regulations. Geotechnical monitoring will be conducted as needed to verify soil stability and address any settlement or void information. With implementation of these measures, construction-related impacts to soils are expected to be minor, localized, and temporary (Weis, 2021).

Iwilei-Kapālama Electrical Infrastructure

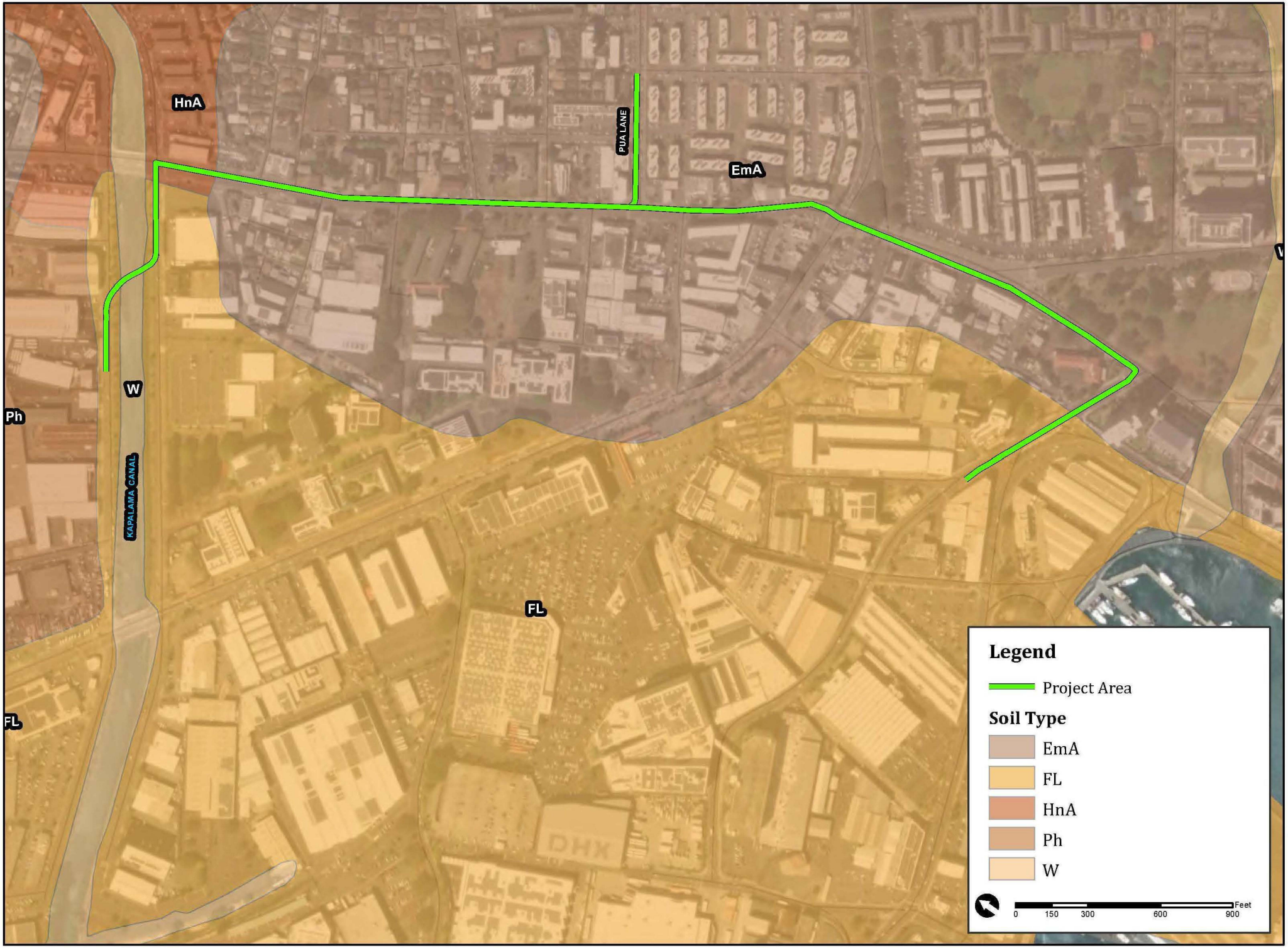
FIGURE 3-2 ELEVATIONS MAP



Source: State OP and ESRI

Iwilei-Kapālama Electrical Infrastructure Project

FIGURE 3-3 SOILS MAP



Source: State OP and ESRI

3.4 Hydrology

Waters of the United States (WOTUS), also referred to as "jurisdictional waters" or "federal jurisdictional waters," are surface waters subject to federal jurisdiction under the Clean Water Act (CWA) and the Rivers and Harbors Act (RHA). Authority over these waters is shared among federal agencies, primarily the EPA and the U.S. Army Corps of Engineers (USACE), the latter of which has permitting authority for activities that may impact jurisdictional waters. These include all tidal waters and certain streams, lakes, reservoirs, and wetlands. However, the revised definition of WOTUS took effect on March 20, 2023, which included jurisdictional waters identified in the rule (see Appendix A, AECOS Inc., Natural Resources Assessment, 2025).

Hawai'i State Waters, fall under jurisdiction authorized under HRS, State Water Code (HRS § 174C-3, 2021) and Water Pollution Chapter (HRS § 342D-1, 2022). The State Water Code defines a "stream" as "…any river, creek, slough, or natural watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted. The fact that some parts of the bed or channel have been dredged or improved does not prevent the watercourse from being a stream" (AECOS Inc., 2025).

A "watercourse…means a stream or any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing [sic] be uniform or uninterrupted" (AECOS Inc., 2025).

Additionally, State waters are defined in the Water Pollution Chapter (HRS § 342D-6, 2022) as "all waters, fresh, brackish, or salt, around and within the State, including but not limited to, coastal waters, streams, rivers, drainage ditches, ponds, reservoirs, canals, ground waters, and lakes; provided that drainage ditches, ponds, and reservoirs, canals, ground waters, and lakes; provided that drainage ditches, ponds, and reservoirs required as part of water pollution control system are excluded" (AECOS Inc., 2025).

3.4.1 Groundwater Resources

The State Department of Land and Natural Resources (DLNR), through the Commission on Water Resource Management (CWRM), has implemented a groundwater hydrologic unit and coding system for managing groundwater resources. Groundwater refers to any water found beneath the surface of the earth and occurs in various forms, depending on the surrounding geology. One type of geological formation is known as aquifers. These water resources can store or transmit water in quantities large enough to provide sufficient supply for community use. The groundwater resources of the Hawaiian Islands are predominantly volcanic rock aquifers and consist of basal water, perched water and dike-impounded water.

According to Hawaii State GIS Program, the Project Area lies within the Kalihi Aquifer Sector (30103). However, the "groundwater beneath the Project Area occurs in two distinct aquifers within the Kalihi Aquifer System of the Honolulu Aquifer Sector" (ENPRO, 2025). These designations were determined and defined by the DLNR (State of Commission 3-4on Water Resource Management, 2019) (see Figure 3-4).

The Kalihi Aquifer is a basal aquifer with a sustainable yield of approximately 9 MGD. As reported in the 2019 Water Resources Protection Plan, withdrawals were about 9.77 MGD, indicating demand slightly above the recommended capacity (Iwilei FEIS, 2025). This aquifer supports both municipal and private potable water needs. "However, for the purposed of DOH Environmental Hazard Evaluations, the site is not considered a drinking water source, as the shallower aquifer is not a drinking water source (ENPRO, 2025).

The Nu'uanu Aquifer System contains basal, perched, and high-level groundwater and is underlain by a thick caprock (hard, resistant, and impermeable) layer. Most withdrawals occur from the basal aquifer

followed by the caprock layer and less contributions from high-level sources. The Nu‘uanu system has a sustainable yield of approximately 14 MGD, but reported use in 2019 was about 15.165 MGD – exceeding its sustainable capacity (Iwilei FEIS, 2025).

The State of Hawaii, Clean Water Branch (CWB) requires that a National Pollutant Discharge Elimination System (NPDES) permit be obtained in the case that land disturbances from construction exceed 1 acre.

Impacts and Mitigation Measures

The Proposed Action is not anticipated to result in significant adverse impacts to groundwater resources. Construction activities will involve subsurface excavation; however, these are expected to be shallow and limited to areas previously disturbed by existing urban infrastructure. BMPs will be implemented to prevent potential contamination of fuel, oil, and other hazardous materials used during construction. These measures may include spill prevention protocols, secondary containment, and immediate spill response procedures. The Proposed Action does not involve groundwater extraction or discharge and is not expected alter groundwater flow or quality. With adherence to the BMPs and compliance with applicable environmental regulations, impacts to groundwater are expected to be minimal and temporary.

Coordination with the CCH Board of Water Supply (BWS) will be essential to ensure that the BWS has access to their water mains traversing through the entirety of the public right-of-way within the vicinity of the Proposed Project Location. These are a part of BWS’ ongoing water system improvement project along North King Street from Liliha Street to Beretania Street.

The Safe Drinking Water Branch (SDWB) of the Hawai‘i DOH maintains an online database identifying contaminated wells throughout the state. According to ENPRO’s review of SDWB’s database on September 30, 2025, no contaminated wells were identified with approximately one mile of the Project Area (ENPRO, 2025).

3.4.2 Surface Water Resources

The Project Area is within the Kapālama and Nu‘uanu Watershed and includes two surface water resources, the Kapālama Canal that is within the Project Area and the partially channelized Nu‘uanu Stream which is adjacent to the Project Area (see Figure 3-5). Both the Kapālama Canal and Nu‘uanu Stream are classified by the Hawai‘i DOH as impaired waterbodies for exceeding water quality standards for total nitrogen, nitrites, nitrates, total phosphorus, and turbidity, with trash as an additional pollutant (Iwilei FEIS, 2025). The Kapālama Canal is a tidally influenced waterway. The portion of the canal located makai of the H-1 Freeway, where the Proposed Action will occur, is subject to tidal fluctuations and is considered waters of the United States and is regulated by the U.S. Army Corps of Engineers (Kapālama Canal Catalytic Project, 2016).The proposed alignment includes a segment along Kokea and Kohou Street that crosses the Kapālama Canal. Both the Kapālama Canal and Nu‘uanu Stream are perennial, meaning they flow year-round, and discharge into the Honolulu Harbor makai of the Iwilei Master Plan Area (Iwilei FEIS, 2025).

The 2022 State of Hawai‘i Water Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and U.S. Congress under §303(d) and §305(b) of the Clean Water Act (P.L. 97-117) identifies both the Kapālama Canal and Nu‘uanu Stream as impaired waterbodies, as classified by the Department of Health (DOH). These waterways exceed water quality standards for total nitrogen, nitrites, nitrates, total phosphorus, and turbidity, with trash also cited as a pollutant. Additionally, the Nu‘uanu Stream contains dieldrin and chlordane and fails to meet standards for total suspended soils during the dry season (State of Hawai‘i Department of Health Clean Water Branch, 2022).

Impact and Mitigation Measures

To ensure minimal potential impacts to surface waters, the Proposed Action will adhere to all requirements of CCH's adopted *Rules Relating to Water Quality*. In addition, projects disturbing over one acre will require an NPDES permit and must follow permit conditions. BMPs for erosion control and sewer connections will help reduce impacts to surface waters and downstream coastal areas.

Although not anticipated, if triggered, a water quality certification pursuant to Section 401 of the Clean Water Act (CWA) will be obtained to ensure discharge, if any, into coastal waters complies with the CWA.

3.4.3 Wetlands

Wetlands are defined as "transitional areas, sandwiched between permanently flooded deepwater environments and well-drained uplands, where the water table is usually at or near the surface or the land is covered by shallow water. They include mangroves, marshes (salt, brackish, intermediate, and fresh), swamps, forested wetlands, bogs, wet prairies, prairie potholes, and vernal pools," according to the U.S. Geological Survey (USGS 2024).

As mentioned in Section 3.3.2, the Kapālama Canal cuts through the ʻewa end of the Project Area, while the Nuʻunau Stream borders its Diamond Head side. Additionally, a drainage channel within the area connects to Kapālama Canal and runs partly along the mauka side of the private road linking Alakawa Street, Dole Thoroughfare, and North Nimitz Highway (Iwilei FEIS, 2025).

Wetlands were once prevalent in Kapālama but were converted to the current commercial and industrial district. Surface water runoff of the watershed and coastal springs are now directed into the canal, which begins on the mauka edge of the Liliha CC project area approximately 0.7 miles inland, and terminates on its makai edge, emptying into the Kapālama Basin / Honolulu Harbor.

A portion of the project location along Kokea and Kohou Street crosses the Kapālama Canal. This canal is classified as an Estuarine and Marine Deepwater (E1UBL) (see Figure 3-6). This refers to an Estuarine (E), subtidal subsystem (1), Unconsolidated Bottom (UB), subtidal water regime (L) system. These areas consist of continuously submerged subtidal estuarine waters where the substrate is primarily composed of unconsolidated materials with at least 25% cover of particles smaller than stone such as mud, sand, or gravel, vegetative cover less than 30%, and where salinity is variable due to tidal influence and freshwater inflow (National Wetlands Inventory Map Report, 2019).

Because the Kapālama Canal has been previously developed and channelized, no natural wetlands remain within the Project Area (Iwilei FEIS, 2025).

Impact and Mitigation Measures

It is anticipated that there will be no short-term, long-term, direct, indirect, or cumulative impacts to wetlands from implementing the Proposed Action given the absence of any naturally occurring wetlands and the distance to the nearest wetlands.

3.4.4 Nearshore Water Quality and Marine Resources

The Project Area is located approximately 0.08 miles from the nearest marine body of water, Honolulu Harbor, and does not contain any nearshore marine resources. DOH classifies the Honolulu Harbor as a Class A water body, which is to be protected for recreational use and aesthetic enjoyment while remaining compatible with the protection and propagation of wildlife. According to Section 11-54-3, HAR Honolulu Harbor is also an exception with the DOH Class A designation.

A portion of the proposed underground electrical alignment would traverse the Kapālama Canal to connect the system between Kohou and Kokea Streets. Although the Kapālama Canal is a man-made, channelized drainage feature within a highly urbanized environment, construction of the electrical crossings has the potential to result in localized and temporary impacts to nearshore water quality. Potential impacts could include short-term increases in turbidity or minor sediment disturbance during construction activities associated with canal crossing.

The Proposed Action will incorporate BMPs to prevent the discharge of sediment, debris, or contaminants into State waters, consistent with the CCH, DOH Clean Water Branch requirements. Should dewatering or discharge activities occur, coverage under a NPDES permit would be obtained prior to construction. Given the canal's channelized condition, absence of natural habitat, and distance from open coastal waters, no adverse impacts to nearshore or marine biological resources are anticipated.

Impacts and Mitigation Measures

No long-term significant adverse impacts on coastal waters in the project area vicinity are anticipated during construction or operation of the Proposed Action.

Construction of the electrical alignment segment crossing the Kapālama Canal may result in short-term, localized impacts to surface water quality. These impacts could include erosion control measures and BMPs in order to mitigate any possible adverse effects relating to runoff.

3.4.5 Water Quality

On September 8, 2025, AECOS biologists F. Muciño, C. Lawlor, B. Deis, and S. Burr collected water samples from the Kapālama Canal within the Project Area. Three sampling stations were established: WQ1, located upstream beneath the North King Street Bridge; WQ2, located midway between the Dillingham Boulevard and North King Street bridges; and WQ3, located downstream near the intersection of Kokea Street and Kokea Place (see Figure 2 in Appendix A). Stations were sampled twice to capture any tidal-driven changes in water quality, twice in the morning close to low tide and once in the afternoon close to high tide. More information of the instruments and analytical methods used in the field and laboratory to analyze these samples are listed in Table 1 of Appendix A.

The purpose of the water quality measurements presented in the AECOS Natural Resources report is to characterize existing conditions, not to establish compliance with state water quality standards. The water quality sampling results presented in the report could be used as part of a larger data set to establish ambient conditions for various parameters in the future.

Impacts and Mitigation Measures

State water quality criteria applicable to estuaries are shown in Table 6 of Appendix A. The tidal influence on the water quality in the Kapālama Canal is evident, as the results of the two events demonstrate. Water quality results showed tidal variation between sampling periods. Parameters such as temperature, salinity, conductivity, pH, DO, DO saturation, turbidity, and TSS were lower during the morning tide, whereas nutrient levels, including ammonia, nitrate + nitrite, total nitrogen,

total phosphorus, and orthophosphate, were elevated in the morning compared to the afternoon flooding tide.

The Proposed Action would be constructed using HDD beneath the canal and would not involve the discharge of dredged or fill material into water of the United States. Accordingly, authorization under Section 404 of the Clean Water Act is not anticipated. However, the project may require review under Section 10 of the Rivers and Harbors Act, and water quality certification under Section 401 of the Clean Water Act, as applicable. Drilling fluid containment and monitoring measures will be used during all HDD operations, including the use of catch basins, secondary containment, and continuous visual monitoring for inadvertent returns. BMPs such as silt fencing, inlet protection, and proper staging of materials will prevent runoff into the canal. Refueling, equipment maintenance, and storage of hazardous materials will be restricted to designated upland areas of at least 50 ft from the canal. If an advertent release occurs, work will cease immediately and containment and cleanup procedures will be implemented in accordance with contingency plan and agency guidance, and, if warranted based on the nature or extent of the release, the DOH Hazard Evaluation and Emergency Response (HEER) Office, in accordance with state and reporting requirements may be contacted.

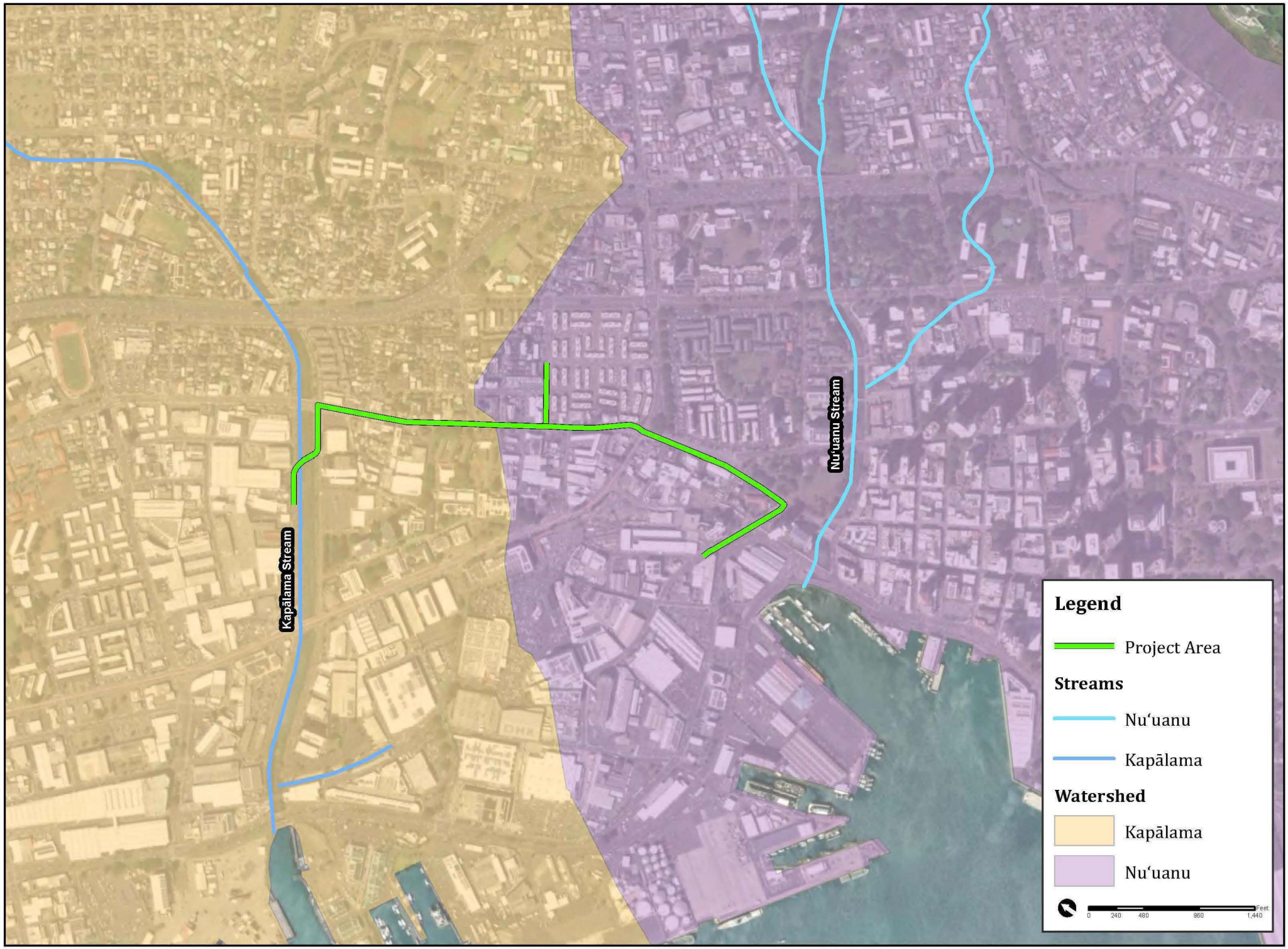
Iwilei-Kapālama Electrical Infrastructure Project

FIGURE 3-4 AQUIFER MAP



Iwilei-Kapālama Electrical Infrastructure Project

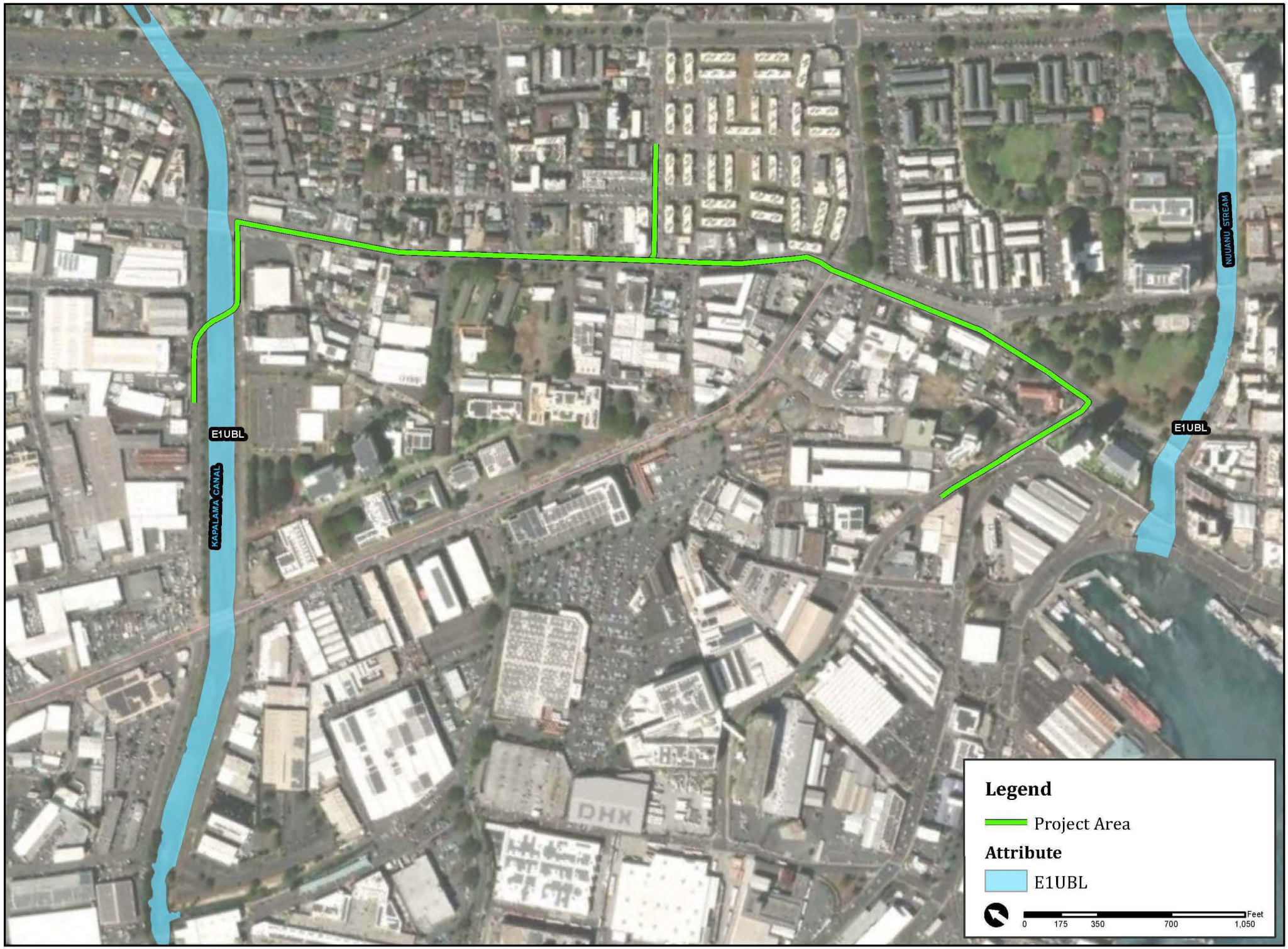
FIGURE 3-5 WATERSHED & STREAM MAP



Source: State OP and ESRI

Iwilei-Kapālama Electrical Infrastructure Project

FIGURE 3-6 WETLANDS MAP



Source: State OP and ESRI

3.5 Natural Hazards

The State of Hawai‘i is vulnerable to a wide range of natural and non-natural hazards that greatly impacts lives, property, community lifelines, natural and cultural resources, and the economy. In addition to the increasing effects of climate change, the risk profile from hazards increases as development and population growth continue to expand.

The Disaster Mitigation Act of 2000 (FEMA, 2025), 44 Code of Federal Regulations Part 201, Hazard Mitigation Planning, required States and Counties to have approved hazard mitigation plans as of November 1, 2004, to receive Pre-Disaster Mitigation funding. The development of State and local hazard mitigation plans remains critical for maintaining eligibility for future Federal Emergency Management Agency (FEMA) mitigation and disaster recovery funding.

The 2018 State Multi-Hazard Mitigation Plan is a comprehensive multi-hazard mitigation strategy to reduce loss of life and property damage. In August 2023, this plan was updated by the State of Hawai‘i Emergency Management Agency (HI-EMA) and titled, The State of Hawai‘i 2023 Hazard Mitigation Plan (SHMP). The 2023 mitigation plan identifies the major natural hazards that affect the state while assessing and analyzing each risk the hazard poses as well as the vulnerability of the state’s population, property, and infrastructure to the specific hazard, and recommends actions that can be taken to reduce the risk and vulnerability to the hazard. In addition, the update of the SHMP demonstrates the State of Hawai‘i’s commitment to mitigate these risks and inform future decision-making.

The CCH also maintains a Local Hazard Mitigation Plan (HMP), that the State of Hawai‘i Emergency Management Agency reviews in accordance with The Disaster Mitigation Act of 2000, 44 Code of Federal Regulations and coordinates with the CCH to ensure compliance with the federal regulations. Identified major natural hazards that could affect the State, and the CCH are climate change effects (including SLR / coastal erosion), floods, tsunamis, strong windstorms / hurricanes, earthquakes, landslides / rockfalls, wildfires, and volcanic hazards.

3.5.1 Sea Level Rise

The island of O‘ahu, home to Honolulu, the state’s capital and most populous city, faces significant threats from sea level rise (SLR) and coastal erosion. With nearly one million residents, O‘ahu comprises approximately 70% of Hawai‘i's total population and is the location of many critical resources, infrastructure, and services. Any major impacts from SLR on O‘ahu could trigger economic and social repercussions that resonate across the entire state, emphasizing the need for proactive planning and mitigation.

Elevated water levels during the spring and summer of 2017 provided a preview of the types of challenges O‘ahu and other Hawaiian Islands may increasingly face. According to the University of Hawai‘i Sea Grant Center for Coastal and Climate Science and Resilience (Hawai‘i Sea Grant CCSR), the University of Hawai‘i at Mānoa’s Sea Level Center and the Pacific Islands Ocean Observing System (PacIOOS), who have been tracking high water levels within the region, have mentioned that these record-high water levels were driven by an unprecedented combination of climate and ocean variability across the Pacific, resulting in localized flooding and coastal erosion across the state of Hawai‘i (Knapman, 2017).

Although coastal erosion is a naturally occurring process, rising sea levels have accelerated erosion rates and increased the extent of coastal flooding in low-lying urban areas. As documented in the 2025 Iwilei Infrastructure and Liliha CC Master Plan, the environmental review determined four distinct flood

mechanisms threatening the Iwilei area: coastal flooding, storm water flooding, riverine flooding, and groundwater flooding (FEIS, 2025).

Global climate models project increasingly frequent El Niño events and stronger tropical cyclones in the waters surrounding Hawai‘i, further intensifying the threat of coastal flooding and erosion. The Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (2017) modeled scenarios of chronic coastal flooding and erosion using projections from the Intergovernmental Panel on Climate Change's (IPCC) 5th Assessment Report. In the high-end scenario, SLR could reach 3.2 feet by the end of the century. On O‘ahu, the Sea Level Rise Exposure Area (SLR-XA) for 3.2 feet of SLR was modeled using data on passive inundation, coastal erosion, and annual high wave runup. According to a 2017 report by the National Oceanic and Atmospheric Administration (NOAA), global sea levels could rise between 6.4 feet (2.0 m) and 8.8 feet (2.7 m) by 2100, which is considered physically plausible.

To address the risks, the City and County of Honolulu (CCH) Climate Commission has provided guidance for using 3.2 feet of SLR as a planning benchmark for most developments. For critical infrastructure with long life spans and low-risk tolerance, such as wastewater treatment plants, the commission recommends using 6 feet of SLR as a planning benchmark. This approach ensures that the infrastructure is prepared to handle higher levels of exposure in the future.

The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (2021) reinforces the growing risks posed by SLR, providing estimates of rising sea levels under various socio-economic scenarios. Coupled with the land subsidence occurring in Hawai‘i, projections indicate that the state could experience up to 3.2 feet of SLR by 2100, according to the most severe Representative Carbon Pathways (RCP) scenarios.

Underground electrical infrastructure systems are particularly vulnerable to SLR because they are often located near coastal areas. Two primary possible threats are: groundwater inundation and accelerated corrosion from saltwater intrusion. Damage often occurs subtly and out of sight, well before surface flooding is visible (Porro, 2025).

Impact and Mitigation Measures

The Proposed Action would not constitute as a source of SLR or associated coastal impacts. Rather, SLR represents a long-term environmental condition that could affect the project area over time. The project area is located within the 3.2-foot and 6.0-foot SLR exposures (SLR-X) areas, which reflect potential future inundation scenarios.

The Proposed Action, while not located along the shoreline, will still be affected by SLR due to the low-lying nature of the Iwilei-Kapālama area and its proximity to the ocean. Projections of SLR in Hawai‘i are visualized in tools like the Pacific Islands Ocean Observing System (PacIOOS) Hawai‘i SLR Viewer, which depicts 3.2-foot and 6-foot SLR exposure areas (see Figure 3-7). The PacIOOS mapping indicates that segments of the Project Area within the Iwilei Road and North King Street corridor (adjacent to ‘A‘ala Park), as well as portions along Kohou Street and Kokea Street near the Kapālama Canal, fall within the 3.2 feet and 6.0 feet above SLR-XA scenarios.

To address potential long-term impacts associated with SLR, the following planning and adaptation measures would be considered during the design, construction, and operational phases of the Proposed Action:

- Integration of SLR Exposure Mapping – incorporate available sea level rise exposure data (e.g., 3.2-foot and 6.0-foot SLR-XA scenarios) into final alignment, design, and infrastructure placement decisions to minimize long-term vulnerability.
- Design for Adaptive Capacity – design underground electrical infrastructure with sufficient flexibility to allow for future retrofits, upgrades, or protective measures should sea level rise conditions intensify over time.
- Coordination with Long-Range Planning Efforts - align project design considerations with applicable City and State climate adaptation strategies, hazard mitigation plans, and previously approved environmental documents for the Iwilei area.
- Avoidance of Highly Vulnerable Areas – where feasible, locate access points, maintenance manholes, and other critical components outside of the most flood-prone, low-lying areas identified through SLR exposure mapping.

Incorporating these planning and adaptation measures would support long-term infrastructure resilience while allowing the Proposed Action to respond to evolving SLR conditions.

3.5.2 Flood Hazard Areas

Flooding in the State of Hawai‘i can be caused by a variety of sources, including heavy rainfall from storms, storm surge, tsunamis, dam failures, and tidal flooding. Coastal flooding will continue to worsen as the sea level continues to rise. For the Project Area, there are four distinct flood mechanisms threatening the area: coastal flooding, storm water flooding, riverine flooding, and groundwater flooding. All these flood hazards are expected to be compounded by SLR. Mitigation measures shall be implemented during the construction and use of the project.

According to the 2023 SHMP, the County of Honolulu is the most vulnerable to flooding according to statistics that reflect event-based 1% annual chance flooding. In addition, the CCH is vulnerable to flooding from storms, storm surge, high surf, and on rarer occasions, tsunamis. Flooding causes millions of dollars of damage every year, and from about 1915 to 2018, floods caused by rainstorms, tsunamis, and hurricanes have claimed more than 140 lives and inflicted more than $200 million dollars of direct and indirect damage in the CCH (DEM, 2020).

The Federal Emergency Management Agency (FEMA) prepared a Baseline Level Engineering (BLE) analysis for several flooding sources on O‘ahu which include the Kapālama Canal and Nu‘uanu Stream. Based on this analysis, new detailed studies and the preparation of the new Flood Insurance Risk Map (FIRM) for Kapālama Canal and Nu‘uanu Stream were developed (FEIS, 2025). According to the Preliminary FEMA Flood Insurance Rate Maps referenced in the *Iwilei Infrastructure and Liliha CC Master Plan FEIS*, the majority of the Iwilei Master Plan Area located makai of Dillingham Boulevard was mapped within the Special Flood Hazard Area (SFHA) Zone AE.

Subsequent updates to the FEMA flood mapping have reclassified much of this area as Zone X reflecting the refined flood modeling and improved topographic data, according to *O‘ahu’s Preliminary FIRM Maps* (Wai Hālana, 2024). While earlier mapping identified portions of the area within regulatory flood hazard zones, the updated designation indicates reduced regulatory flood risk under current FEMA criteria. The Project Area is currently located within Zone X (see Figure 3-8).

- *Flood Zone X* – Zone X is an area determined to be outside of the 0.2 percent annual chance of flooding (or 500-year flood plain) and a Non-Special Flood Hazard Area.

Impacts and Mitigation Measures

Construction activities are not expected to increase flood risk or alter floodplain functions, provided that grading, drainage, and erosion control measures are implemented and in compliance with County of Honolulu floodplain management standards and DOH stormwater BMPs.

To minimize potential impacts related to flooding and to support long-term infrastructure resilience, the following flood hazard mitigation measures would be considered during the Project's design, construction, and operational phases:

- Incorporation of current FEMA FIRM data and available flood hazard information into the final project design to ensure that infrastructure placement accounts for mapped flood risk.
- Avoidance of low-lying or flood-prone areas, where practicable, when locating critical access points such as maintenance manholes.
- Design allowances for surface runoff and localized ponding, including appropriate grading and drainage considerations within the public right-of-way.
- Routine inspection and maintenance programs to identify and address signs of water intrusion, corrosion, or drainage issues.
- Adaptive maintenance planning to allow for future modifications or protective measures should flood conditions change over time.

Implementation of these measures would reduce potential flood-related risks while supporting the continued reliability and functionality of the Proposed Action within a highly urbanized environment.

3.5.3 Tsunami

Tsunamis are large sea waves generated by natural disturbances that displace a large mass of water from their equilibrium position. These disturbances can result from faulting, landslides, or volcanic activities occurring both above and below the sea surface. The impact of tsunamis is measured by run-up height and inundation limits, which help determine the extent of devastation. This devastation includes loss of property, death, and major damage to public infrastructure. Tsunamis are categorized into three common types:

1. Tsunamis induced by earthquakes (most common cause), resulting from tectonic displacement of the Earth's crust;
2. Landslides, occurring either above or below the sea surface, which can disrupt the equilibrium of the sea level; and
3. Submarine volcanic explosions, which can also displace large amounts of water.

Since the early 1800's, approximately 50 tsunamis have impacted the State of Hawai'i. One of the most notable events was the 1946 tsunami, which reached wave heights of 11 meters and resulted in 6 deaths on O'ahu alone (Dudley, 2021). Additional tsunamis affected O'ahu in 1952, 1957, 1960, and 2011. There are no records of inundation of lands within Kalihi-Palama during any of the recorded tsunami (Iwilei FEIS, 2025).

The Pacific Disaster Center (PDC) indicates portions of the Project Area are within the three tsunami evacuation designations:

- Extreme Tsunami Evacuation Zone
- Tsunami Evacuation Zone
- Tsunami Safe Zone

For most Tsunami Warnings, evacuate out of the red zone; in the unlikely case of an "Extreme Tsunami Warning", evacuate out of the red and yellow zones. The evacuation zone is a guideline and should be considered the minimum safe evacuation distance.

The Tsunami Safe Zone (TSZ): Evacuate to this area.

Next is the Tsunami Evacuation Zone (TEZ): For any Tsunami Warning evacuate out of these areas.

The Extreme Tsunami Evacuation Zone (TEZ), which is based on the historical tsunami impacts on the State of Hawai'i and the Island of O'ahu over the past 100 years. This designation is used for most tsunami warnings (Iwilei FEIS, 2025). Evacuate out of these areas for an "Extreme Tsunami Warning."

The Evacuation Zone system helps people know the minimum safe distance from the shoreline to be safe from an incoming tsunami. Areas within one mile of the shoreline and less than 25ft above sea level are at greatest risk. The remaining segments of the Project Area are included in an Extreme Tsunami evacuation zone and safe zones. This terminology is unique to Hawai'i, and in the case of an extreme tsunami this area must also be evacuated.

The Project Area crosses several tsunami hazard designations (see Figure 3-9).

Impact and Mitigation Measures

The CCH has emergency operations plans for evacuating areas potentially affected by a tsunami. Due to the Proposed Action being located within the Tsunami Evacuation Zone and the Extreme Tsunami Evacuation Zone as defined by the Tsunami Evacuation Zone maps for O'ahu, citizens will evacuate during Tsunami Warnings.

The Project Area is in a zone with minimal risk of flooding due to the proximity to bodies of water. Construction of the Proposed Action is not anticipated to lead to increased flooding or heightening the severity if one occurs.

3.5.4 Hurricanes and Tropical Storms

Hawai‘i’s location in the central Pacific exposes it to tropical cyclones (hurricanes) that form primarily during the June through November hurricane season. Although the islands are less frequently impacted than other Pacific regions, hurricanes and tropical storms can bring strong winds, heavy rainfall, high surf, and coastal flooding. The Central Pacific Hurricane Center (CPHC) monitors and issues forecasts for these weather systems. While most storms weaken before reaching the islands, those that make landfall have caused widespread property damage, power outages, and infrastructure disruption. Climate studies suggest that warming ocean temperatures may increase the intensity of tropical cyclones that affect Hawai‘i, even if their overall frequency remains low. Hurricanes are classified into one of five categories according to the Saffir-Simpson Hurricane Scale. This scale provides some indication of the potential damage and flooding a hurricane will cause upon landfall.

Since 1980, two major hurricanes have made landfall in Hawai‘i, each causing significant damage. Hurrican ‘Iwa (1982), a Category 1 storm with sustained winds between 75 and 95 mph, and Hurricane ‘Iniki (1992), a Category 4 storm with winds reaching 131 to 155 mph, both severely impacted the islands. On O‘ahu the most extensive damage occurred along the Wai‘anae Coast as the hurricane passed between Kaua‘i and O‘ahu (Iwilei FEIS, 2025).

Tropical cyclones, which include hurricanes and tropical storms, form over warm tropical or subtropical waters. According to the National Weather Service (NWS), tropical cyclones are characterized by organized deep convection and closed surface wind circulation around a well-defined center. Hurricanes have sustained wind speeds of 74 mph or higher, while tropical storms have wind speeds between 39 and 73 mph (NWS, 2025). In a typical season, the Central Pacific Hurricane Warning Center expects four to five tropical cyclones, with August and September being the most active months (Belles, J., 2025). However, hurricanes rarely impact Hawai‘i directly due to the presence of dry air, cooler water, large volcanic mountains, and wind shear, which often cause the cyclones to downgrade to tropical storms as they approach the islands. The most recent event, Hurricane Lane (2018) did not make landfall, but still caused significant floodings, landslides, and road closures.

Impact and Mitigation Measures

Construction activities could indirectly exacerbate wind and hurricane hazards through dust exposure; loose materials may also become hazards if they are not secured prior to the event of a storm and become flying debris. To minimize this hazard, construction materials and equipment would be stored properly when not in use, consistent with construction BMPs. In the event of a hurricane, all applicable and appropriate steps would be taken to protect construction crew and materials.

The Proposed improvements are mostly underground and will not be in direct risk to hurricane or wind hazards in the long-term. Regardless, construction BMPs will be integrated into management plans to reduce the risk of possible exposure to these hazards.

3.5.5 Earthquake and Seismic Hazards

The Hawaiian Islands, apart from Hawaii Island, do not have significant seismic risk. Hawaiian earthquakes fall into three different categories, volcanic, tectonic, and mantle. Tectonic earthquakes are responsible for the majority of non-damaging (under 5) earthquakes in Hawaii. Like all of O‘ahu, the project area is designated by the International Building Code (IBC) as Seismic Zone 2a. Current building codes, including the International Building Code (IBC), include minimum design criteria for structures to address the

potential for damage due to seismic disturbances specific to each seismic zone. Zone 2a corresponds to minimal damage to buildings with good design and construction, and moderate damage to poorly built structures.

The United States Geological Survey (USGS) has created seismic hazard maps to visualize the results of their risk analysis, which helps predict the probable locations and severity of future damaging earthquakes in terms of ground shaking. According to the USGS Seismic Hazard Map, O'ahu has a minimal general seismic risk. This level of risk corresponds to Seismic Design Category (SDC) B, which indicates potential effects of shaking that include moderate shaking felt by everyone, movement of some heavy furniture, fallen plaster, and minor damage. USGS database shows 0.00% chance of a major earthquake (above 5.0) within 50km of Project Area within the next 50 years.

Impact and Mitigation Measures

The Proposed Action does not have any relation to the occurrence or severity of seismic risk. Project design will meet Seismic Zone 2a requirements, and applicable IBC, federal, state and CCH standards. Seismic Design Category A corresponds to buildings in areas where expected ground shaking will be minor and contains good soils (Building Code Resources, 2025) However, the Proposed Action may be impacted in the event of an earthquake. Electrical infrastructure can be compromised in the event of ground shaking and surface faulting. Resulting disruption to electrical services could result in loss of electrical energy for surrounding residents and businesses. Resilient planning regarding appropriate depth, displacement of soil, tunnel diameter, and pipe thickness in the design process will account for the appropriate probability of a seismic event.

3.5.6 Wildfire

Based on data from the Hawai‘i State GIS Program, the entire Project Area falls within a low wildfire risk classification, indicating that the likelihood of wildfire occurrence or spread in this area is minimal due to the urbanized landscape and limited vegetative fuel (see Figure 3-10).

Impact and Mitigation Measures

The Proposed Action is not anticipated to increase the occurrence or severity of wildfire risk. However, due to its urban fringe location, the project area may be impacted by wildfire events. BMPs will be implemented to manage and reduce fire hazards to the Project Area, following practices outlined in the Fire Management Handbook from the State Department of Land and Natural Resources (DLNR).

3.5.7 Volcanic Hazards

Although the Project Area is not directly threatened by active volcanoes on Oahu, it is essential to monitor volcanic activity on other islands and be prepared to mitigate the potential impacts of Vog on the environment and public health, should the need arise.

Impact and Mitigation Measures

The construction of the Proposed Action is not anticipated to have any impact on the occurrence or severity of volcanic activity. As Oahu does not have any active volcanoes, the project area is not in the immediate area of effect for volcanic hazards

Iwilei-Kapālama Electrical Infrastructure Project

Figure 3-7 SEA LEVEL RISE EXPOSURE AREA (XA)



Source: State OP and ESRI

Iwilei-Kapālama Electrical Infrastructure Project

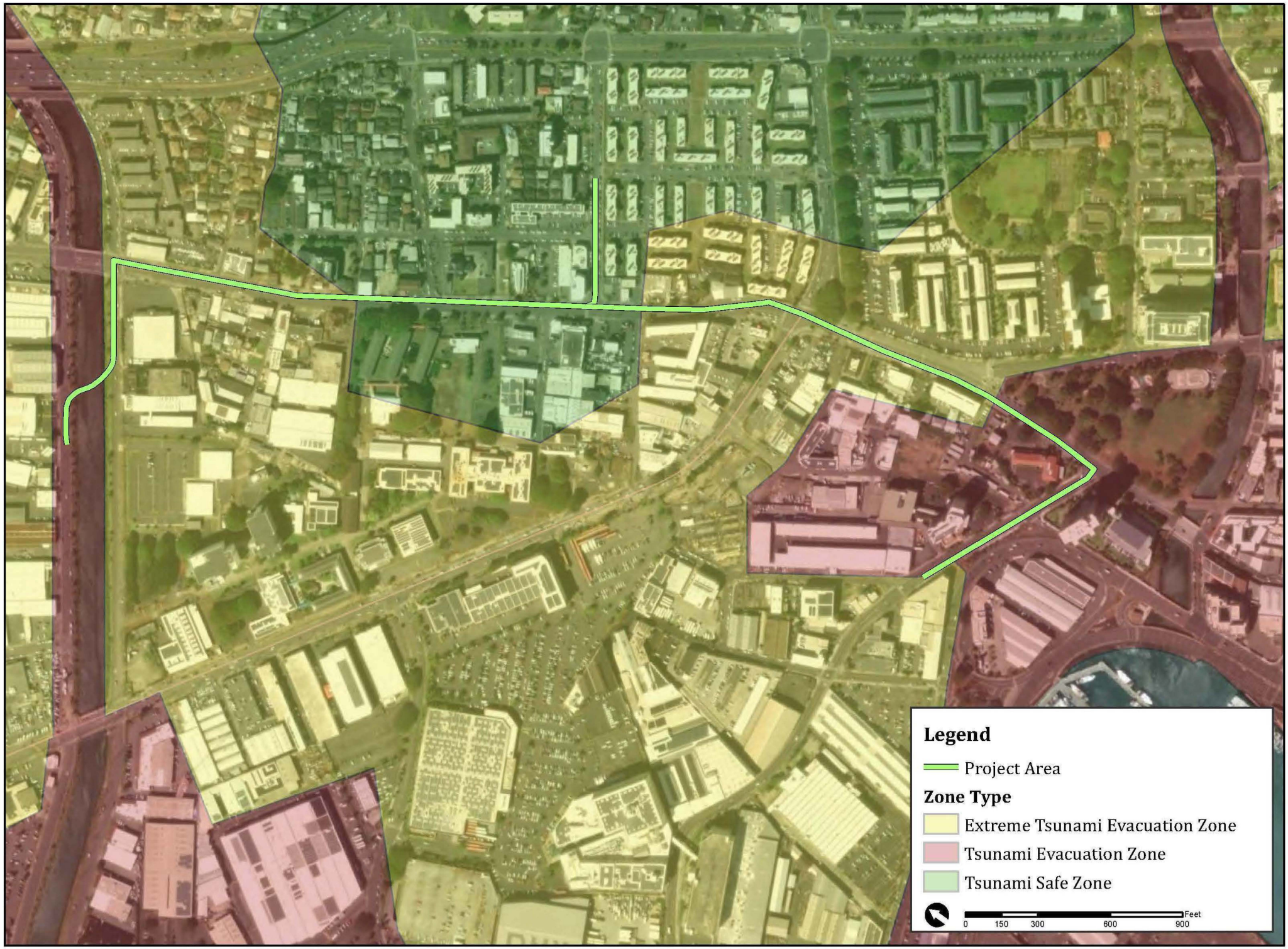
FIGURE 3-8 FLOOD INSURANCE RATE MAP (FIRM)



Source: State OP and ESRI

Iwilei-Kapālama Electrical Infrastructure Project

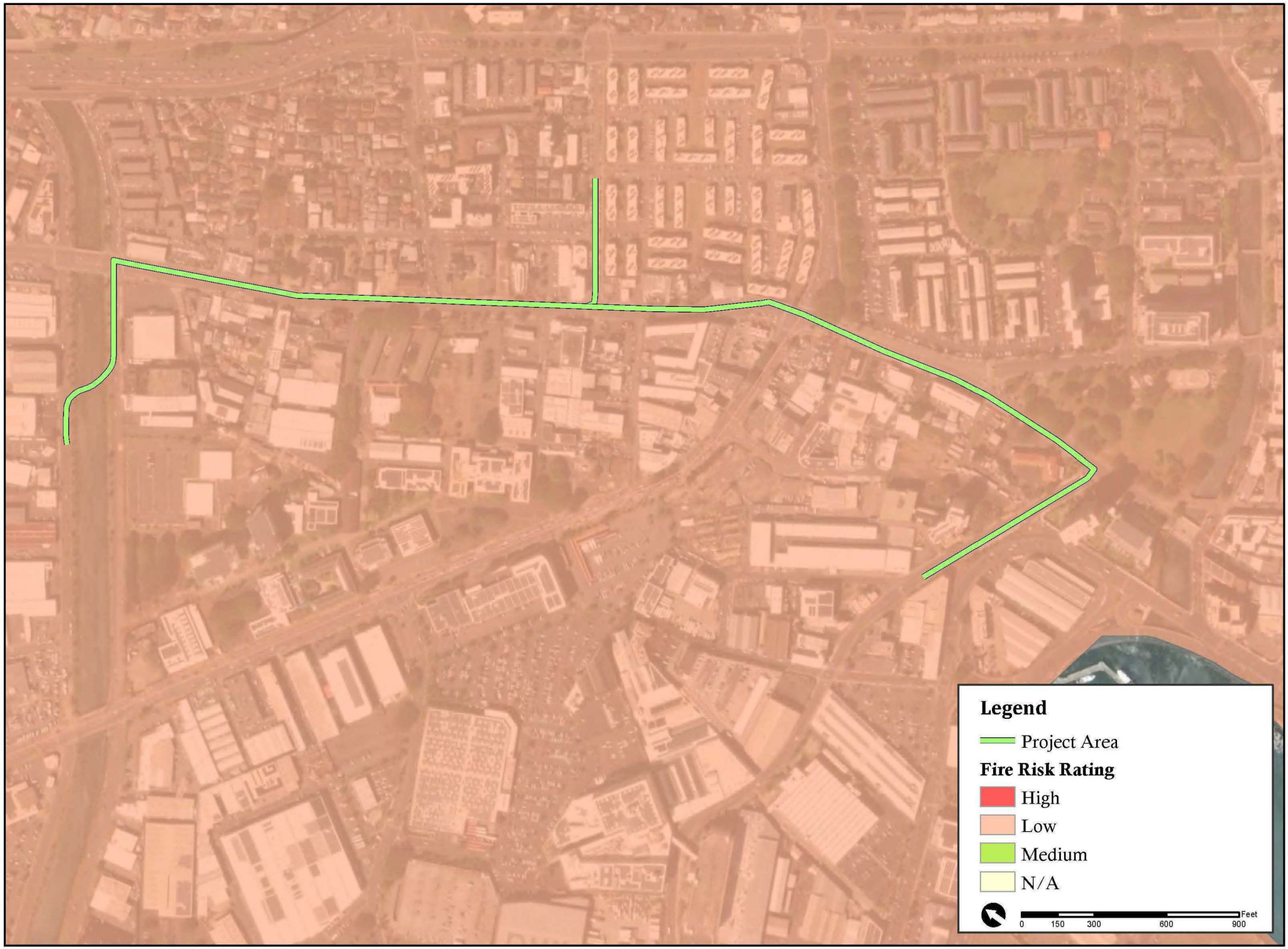
FIGURE 3-9 TSUNAMI EVACUATION ZONE MAP



Source: State OP and ESRI

Iwilei-Kapālama Electrical Infrastructure Project

FIGURE 3-10 FIRE RISK ASSESSMENT MAP



Source: State OP and ESRI

3.6 Biological Resources

The Project Area is located within a highly urbanized portion of the Iwilei-Kapālama district of Honolulu and has been extensively developed and disturbed over time. This section describes the existing biological conditions within the Project Area and evaluates the potential impacts of the Proposed Action on flora and fauna, including consideration of the applicable federal and state regulations intended to protect biological resources.

On October 31, 2025, a Natural Resources Assessment Report was completed by AECOS Inc. to conduct biological surveys (terrestrial and aquatic) of the Project Area. The terrestrial part included a botanical and avian survey and assessment, with particular attention paid to sensitive biological resources and environments. Sensitive biota includes species under the federal Endangered Species Act (ESA) of 1973, as amended (ESA)(USFWS, 2021), or HAR (HDLNR, 1998, 2015), as well as biological communities considered special or otherwise worthy of preservation, regardless of legal status. In addition, the aquatic assessment included water quality sampling, jurisdictional determination and delineation of a section of Kapālama Canal, and a biota survey evaluation. The findings of these efforts are summarized in this section 3.6.

3.6.1 Flora

According to the AECOS report, plant species were identified as they were encountered during wandering transects that covered the survey area.

In total, 88 species of vascular plants were recorded. Of the species recorded, five are indigenous (Ind; native, but also distributed elsewhere in the Pacific), representing 6% of the total number species. One endemic species (End; native and unique to the Hawaiian Islands) was recorded along with two species (2%) that were early Polynesian introductions or "canoe plants." The remaining 80 species (915) are post-Contact introductions, including 70 naturalized species that grow in the wild and 10 ornamental species typically cultivated for landscaping purposes. See Table 3 of Appendix A for a list of the plant species recorded in the Project Area during the September 8, 2025 survey.

Native plant species are rare in the Project Area and include *moa* (*Psilotum nudum*), *uhaloa* (*Waltheria indica*), *naupaka* (*Scaevola sericea*), and *milo* (*Thespesia populnea*). The only endemic species documented within the survey area was *Gossypium tomentosum* (*maʻo),* which was located along King Street. These species are not federally listed, and no federally listed species were observed during this survey (AECOS Inc., 2025).

The vegetation found along the banks of the Kapālama Canal is dominated by mangrove (*Rhizophora mangle)*. Along the water edge are grasses (*Poaceae*) and pickleweed (*Batis maritima*). The sidewalk margins along King Street are characterized by ornamental plantings, weedy grasses, and lawn areas, with no single species dominant. ʻAʻala Park, consisting primarily of maintained lawn, borders the east side of the King Street near the point where the Project alignment turns onto Iwilei Road.

Street trees are present along portions of the project alignment, primarily within sidewalk areas and streetscape corridors within the Iwilei-Kapālama area. These trees are generally ornamental, non-native species associated with roadway and park landscaping (e.g., near ʻAʻala Park) and do not represent native plant communities or sensitive habitats. The Proposed Action would be implemented primarily within existing paved roadways and public rights-of-way. While construction activities my occur near existing street trees, direct impacts are expected to be minimal. Temporary disturbances to tree root zones could

ocur during trenching or underground installation activities; however, standard construction practices would be employed to avoid or minimize impacts to tree trunks and major root systems where practicable.

Impacts and Mitigation Measures

All of the survey area has been altered and developed and naturalized flora dominates (AECOS, 2025). Although scattered and sparse, these plants are all common species, and most members of their respective populations are numerous outside of the Project Area. No plants proposed or listed as threatened or endangered species as set forth in the ESA of 1973 as amended were seen in the Project Area.

If construction activities require temporary disturbance or removal of any street trees, coordination with the CCH Department of Parks and Recreation and/or the Department of Facility Maintenance would occur, and appropriate tree protection, relocation, or replacement measures would be implemented in accordance with applicable City requirements. With these measures in place, the Proposed Action is not expected to result in significant adverse impacts to street trees or urban vegetation.

3.6.2 Fauna

According to the AECOS report, a total of ten different bird species from seven different families were recorded during the survey, all of which are alien introductions to the Island. Avian species identified within the Project Area during the September 8, 2025 survey, can be found on Table 4 of Appendix A.

The only mammal observed in this urban environment during AECOS' survey was a domestic dog (*Canis lupus familiaris)*. No mammalian species currently proposed for listing or listed under either federal or state endangered species statutes (HDLNR 1998, 2015; USFWS, nd-a) were recorded in the Project Area. Although rare on Oʻahu, the endangered Hawaiian hoary bat (*Lasiurus semotus)* may use resources in the area.

The aquatic fauna of Kapālama Canal consists primarily of freshwater and brackish-water species typical of Hawaiʻi's estuarine environments (see Table 5 of Appendix A). Two native fish species, ʻamaʻama (*Mugil cephalus*) and ʻāholehole (*Kuhlia xenura),* were observed and are commonly found in estuaries throughout the islands, including highly modified systems such as Kapālama Canal. The aquatic community also includes sponges and several non-native fish species, such as the liberty/Mexican molly hybrid (*Poecilia* sp. hybrid complex [*salvatoris/mexicana*]) and blackchin tilapia (*Sarotherodon melanotheron*). No federal or state-listed threatened or endangered aquatic species (USFWS, nd-b; HDNLR, 2015) are known to be present in the Kapālama Canal.

On Oʻahu, endangered Hawaiian waterbirds include the Hawaiian Common Gallinule (*Gallinula galeata sandvicensis*, or *ʻalae ʻula*), Hawaiian Coot (*Fulica alai*, or *ʻalae keʻokeʻo)*, and the Hawaiian Stilt (*Himantopus mexicanus knudseni*, or *aeʻo)*. The banks of Kapālama Canal are largely dominated by red mangrove, which does not provide suitable nesting habitat for these species; however, native waterbirds may occasionally use or visit the open-water areas. Additionally, the *ʻAukuʻu* or Black-crowned Night Heron (*Nycticorax nycticorax*), Mallard (*Anas platyrynchos)*, and Hawaiian Duck-Mallard hybrid, are waterbird species that might utilize the Kapālama Canal and are common to Oʻahu. However, none of these birds are listed as endangered or threatened species under federal or state listings (AECOS, 2025).

Among the bird species known to occur in urban Honolulu is the Manu-o-Kū (White Tern, Gygis alba), which is frequently observed in the downtown and surrounding areas. Unlike, many seabirds, the Manu o Kū nests in trees within urban environments, often laying a single egg directly on a tree branch without

constructing a nest. The species is protected under State law and disturbance to active nesting sites is prohibited. Suitable nesting habitat typically includes large trees with horizontal branches. While the Manu o kū may occassionally fly over the Project Area, the project corridor consists primarily of urban roadways and developed areas wtih limited suitable nesting habitat and is outside of the Manu o kū nesting map (Hui Manu-o-Kū, 2016).

An additional resource of potential concern is critical habitat. Federally delineated Critical Habitat is not present in the Project Area (USFWS, nd-c).

Impacts and Mitigation Measures

For avian resources, specifically seabirds, it is possible that Hawaiian Petrel (*Puffinus sandwichesis)*, Band-rumped Storm-Petrel (*Hydrobates castro)*, and Newell's Shearwater (*Puffinus newelli*) over-fly the Project Area between April and the middle of December each year in small numbers. These nocturnal flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. No suitable nesting habitat exists within or close to the Project Area for any of these three seabird species. However, if night-time construction activity or equipment maintenance is proposed during the construction phases of the Project, all such lighting must be shielded and, when large flood/work lights are used, these should be placed on poles high enough to allow the lights to be pointed directly downward. DLNR recommends avoiding construction needing lighting between September 15 and December 15.

Potential threats to waterbird species can be minimized to the maximum extent practicable by implementing the following measures during construction within the Project Area:

- No feeding of waterbirds, especially if they approach for handouts.
- Secure all food rubbish in closed trash receptacles.

Regarding the Manu o Kū, although suitable nesting habitat within the immediate project corridor is limited, the Manu o Kū may occur in nearby areas such ʻAʻala Park. Prior to construction, a visual survey of nearby trees will be conducted, where practicable, to identify any active nests. If an active nest is identified, appropriate avoidance measures will be implemented in coordination with the Hawaiʻi Department of Land and Natural Resources (DLNR), including establishing a buffer or adjusting construction activities as needed. In the event that a Manu o Kū is observed to be injured or harassed during construction, work will be halted in the immediate area and appropriate wildlife authorities will be contacted:

- To report an injured Manu o Kū or a chick that fell from its nest – (808) 379-7555
- To report a case of a disturbed or harassed Manu o Kū due to human activity, contact the State of Hawaiʻi Division Conservation and Resources Enforcement – (808) 643-3567

No mammalian species are currently proposed for listing or listed under either federal or state endangered species statutes (HDLNR 1998, 2015; USFWS, nd-a) were recorded in the Project Area.

3.7 Historic and Archaeological Resources

Honua Consulting (Honua) conducted an Archaeological Literature Review and Assessment (ALRA) September 2025. The results of the ALRA are summarized below. Appendix B contains the complete

ALRA. The ALRA (Appendix B) provides a comprehensive summary of the principal types and distribution of archaeological sites documented within the Project Area.

The Project Area includes a linear corridor along the N. King Street ROW, makai of the H-1 Interstate, between the Kapālama Drainage Canal (to the northwest) and the Iwilei Road (to the southeast). Additionally, the Project area includes part of the Honolulu Rail transit-oriented (TOD) district and the redevelopment of Mayor Wright Homes, the construction of the Liliha CC, and the development of the Kamehameha Schools Bishop Estate - Kapālama Kai Phase 1 residential project.

The objectives of the ALRA were:

1) Documentation and description of the parcel's land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes;

2) Identification of any archaeological historic properties or component features in the Project Area; and

3) Providing information relevant to the likelihood of encountering historically significant cultural deposits in subsurface context during future construction.

This ALRA is not an archaeological inventory survey (AIS) and is not intended for formal review by the State Historic Preservation Division (SHPD). However, the ALRA has been prepared in compliance with the HRS Chapter 6E-8 and the HAR Chapter 13-275 as well as other (e.g., environmental) regulations and can be used to support the project proponent's consultation with the SHPD to satisfy environmental review under HRS Chapter 343.

Documented archaeological resources within the Project Area can be divided into the following: 1) Traditional Background of the Project Area; 2) Historic Period of the Project Area; 3) Summary of Historic Properties; and 4) Current Project Area.

3.7.1 Traditional Background of the Project Area

This section provides an overview of the traditional, historical and cultural context of the Project Area. It draws upon moʻolelo (stories), oral histories, and archival sources to describe the traditional land use, cultural practices, and historical significance associated with the Project Area. The Project Area can be divided into two ahupuaʻa boundaries: the Honolulu Ahupuaʻa (which includes the "Nuʻuanu Ahupuaʻa") and Kapālama Ahupuaʻa (see Figure 3-11).

Nuʻuanu Ahupuaʻa

As mentioned in the report of section 2.1.1 (see Appendix B), the ahupuaʻa boundaries are dependent on which source one cites and what time period is referenced. "For example, the Hawaiʻi State GIS layer considers Nuʻuanu Valley and Stream (including the eastern half of the Project Area) as part of the large ahupuaʻa of Honolulu. Under this configuration, there is no Nuʻuanu Ahupuaʻa, which almost certainly does not reflect how pre-Contact Hawaiians viewed this landscape" (ALRA, Honua Consulting, 2025).

During the mid-nineteenth century Māhele, Native Hawaiian land claimants commonly referred to lands now within Nuʻuanu as part of the broader ʻāina of Honolulu (traditionally known as Kou). Prior to the late eighteenth-century invasions by Kahekili Maui and later Kamehameha of Hawaiʻi, it is likely that early inhabitants recognized the eastern portion of the Project Area as belonging to

the near-coastal zone of Nuʻuanu Ahupuaʻa, reflecting its position within the stream's floodplain. Among the traditional land divisions within and surrounding the Honolulu District (also known traditionally as Kona Moku), Nuʻuanu, meaning "cool height," is regarded as one of the most storied and culturally significant. On Oʻahu, its cultural, historical, and archaeological richness is matched only by areas such as Honolulu proper, Waikīkī, and Mānoa.

One of the most significant events in the history of Oʻahu, and indeed the Hawaiian Islands, was the 1795 Battle of Nuʻuanu, during which Kamehameha I secured control over Oʻahu. This decisive conflict occurred in the uplands of Nuʻuanu and was traditionally referred to by Hawaiians as Kaleleakeʻanae, or "the leap of the mullet fish" (Sterling and Summers 1978:318, citing W.D. Alexander), a name recalling the Oʻahu warriors who fell or leapt from the pali cliffs during the battle. Following this period, many aliʻi nui (high chiefs) established their residences in the cool uplands of Nuʻuanu, drawn to the area's temperate climate and significance in Hawaiian history.

Table 1 and Figure 17 (see Appendix B), provides a summary and illustration of the numerous traditional cultural and natural resources within Nuʻuanu, including significant wahi pana (storied or legendary places).

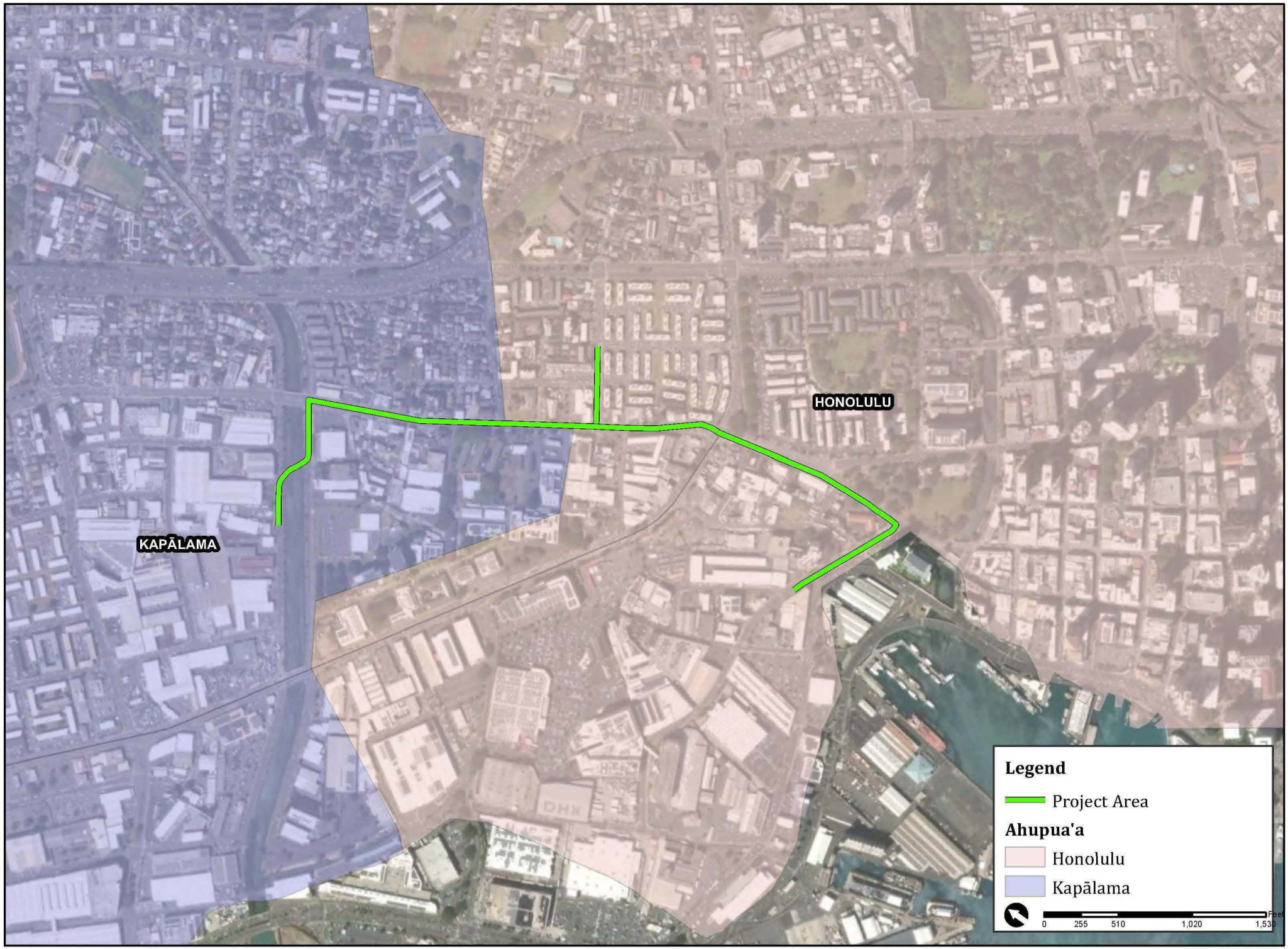
"Several heiau have been recorded in Nuʻuanu, including Mākūkū in the upper reaches of the valley near the stream of the same name, two unnamed heiau in the lower central valley, and Kaheiki along the lower Nuʻuanu (ALRA, Honua Consulting, 2025).

Similar to other ahupuaʻa within Kona Moku, the upland forests of Nuʻuanu served as an important source of native, endemic, and Polynesian-introduced plant species. These resources provide essential materials, including food during times of scarcity, medicinal plants, and trees for waʻa (canoe) building, as well as plants used in religious and cultural practices, such as hula. The upper forest region also contained high-quality basalt, which was quarried to produce koʻi (adzes) and other traditional tools.

In addition to its upland forest resources, Nuʻuanu's lower valley and coastal plain supported extensive areas traditional cultivation and settlement. Handy (1940; Handy and Handy 1972) provides one of the most comprehensive early accounts of native land use in Nuʻuanu, describing the valley's agricultural productivity, its network of streams and terraces, and its unique geographic connections between the Koʻolau uplands and Honolulu Harbor.

Iwilei-Kapālama Electrical Infrastructure Project

FIGURE 3-11 AHUPUA'A MAP



Source: State OP and ESRI

Moʻolelo of Nuʻuanu

Most moʻolelo associated with Nuʻuanu pertain to locations in the upland areas, well mauka of the current Project Area. Additional moʻolelo not summarized in this section are provided in Table 1 found in Appendix B.

Two upcountry ʻili, Kahapaʻakai ("salt place") and Luakaha (place of relaxation), are associated with significant early historical events. Kahapaʻakai is remembered as the site where Oʻahu warriors gathered and prepared for battle. It is linked to Kākuhihewa, Oʻahu's last native paramount chief, as well as to the Battle of Nuʻuanu, during which Kamehameha I conquered Oʻahu. Some accounts (e.g., Beckett and Singer 1999) describe Kahapaʻakai as a distinct location featuring a koʻa (shrine), petroglyphs, and a spring, though its precise location has not been publicly disclosed. Luakaha, meanwhile, is best known as the location of Kaniakapūpū. For the complete moʻolelo and associated narratives refer to Appendix B.

As documented in numerous previous studies (e.g., Genz and Hammatt 2011; Burke et al. 2012; Belluomini et al. 2015; Shideler et al. 2017; Uyeoka et al. 2020) and well-known compilations (e.g., Sterling and Summers 1978; Pukui 1983; Kawarahada 1996), Nuʻuanu is associated with a wide range of oral-historical traditions. These include the named winds and rains of the valley, accounts of the famous Nuʻuanu Pali and the ancient trail system connecting it to Honolulu, as well as references to heiau once distributed throughout the valley. Numerous battles are also recounted in connection with the area, most notably those involving Kamehameha I, but also earlier and later conflicts associated with Kalaniʻōpuʻu, Kakuhihewa, and Kūʻaliʻi. In addition, Nuʻuanu features prominently in legends of moʻo (supernatural water guardians) such Hauola and Hapuʻu, and in other traditional sagas, including those of Keaomelemele, the goddess Haumea and her attendant Kaliʻu, and Kaupē, the cannibal chief.

Kapālama Ahupuaʻa

The western portion of the Project Area lies within the lower Kapālama Ahupuaʻa. Before urban development in the historic period, the area makai of the current shoreline was either submerged or located directly along the western edge of Honolulu Harbor, now known as the Kapālama Basin. Table 2 and Figure 22 (see Appendix B) summarize and illustrate the traditional cultural and natural resources associated with Kapālama, including significant wahi pani. Figures 18 through 21 in Appendix B, presented in the ALRA, show historic maps from 1817 to 1855 that provide additional context for this discussion. The western portion of the Project Area was historically part of an extensive floodplain and agricultural complex, where loʻi kalo (taro terraces) drained into and through two or three loko iʻa (fishponds), in the area now occupied by the Honolulu Harbor piers and Sand Island.

The place name Kapālama, meaning "the lama wood enclosure" (Pukui et al. 1974:87), is rooted in moʻolelo describing the area as a place where high chiefs were protected and purified prior to marriage. According to Thrum, Kapālama was also the name of Lepe-a-Moa's grandmother, further emphasizing the area's cultural and genealogical significance.

There are two main streams, Kapālama and Niuhelewai that wrap around a major ridgeline known as Kalaepōhaku. Although these streams did not converge in their makai portions, they once watered an extensive loʻi kalo and settlement area that stretched from School Street to the shoreline.

Moʻolelo of Kapālama

This section of moʻolelo associated with Kapālama is partially adapted from *A compilation of Cultural, Historical, and Archaeological Resources of Kona Moku (*Uyeoka et al. 2020:56-61). Refer to Appendix B for excerpts and summaries from the legends of Lepeamoa, Palilia, and Kaulu. Additional moʻolelo not included are also listed in Appendix B listed in Table 2.

In the legend of Palilia, the hero possessed a war club with magical powers that could carry him great distances in a single fight. Palilia traveled to the plain of Keahumoa in ʻEwa to take part in athletic competitions hosted by the Oʻahu chief Ahuapau, whose residence was said to be Kalaepōhaku, near Wailuakio in Kapālama (Fornander 1918:142). Kalaepōhaku Peak, meaning "the stone promontory," refers to a rocky elevation in southeastern Kāpalama, near the present-day intersection of School and Alaneo Streets.

For the complete moʻolelo and associated narratives of the Legend of Lepeamoa and Kaulu, refer to Appendix B.

3.7.2 Historic Period of the Project Area

This section will outline key developments that occurred in and around the Project Area during the Historic Period. As with the preceding discussion, the narrative is organized into two parts, Nuʻuanu, followed by Kapālama, although many historical events and developments within these areas are closely interconnected.

Beginning in the 1840s, the concept of private property was introduced to Hawaiʻi through formation of the Board of Commissioners to Quiet Land Titles, and the adoption of the Māhele (division of Hawaiian lands), or Māhele ʻĀina. In 1845, King Kamehameha III waived his right to full authority over the land, portioning out land for his personal use (crown lands) and dividing the rest into governmental land, land for the aliʻi and konohiki (land overseers usually of high rank or connection to high ranking individuals), and land for commoners (kuleana land) (Alexander 1891; Board of Commissioners 1929; Moffat and Fitzpatrick).

Following thereafter, Land Commission Awards (LCAs) were awarded to commoners as kuleana parcels for fee ownership. LCAs therefore record who resided on the land and how the land was used. For the most part, however, LCAs awarded to aliʻi did not systematically record information about traditional land use.

Māhele ʻĀina in Lower Nuʻuanu

Based on Monahan's (2018a) study of the Mayor Wright Homes property, a 15.3-acre block bounded by North King Street, Liliha Street, Vineyard Boulevard, and Pua Lane, traditional land use in this area appears representative of much of the current Project Area during traditional and early historic times. The study also highlights the richness of historical data that can emerge from detailed analysis of a relatively small parcel.

From this single 15.3-acre block, a substantial amount of historical information has been derived. Table 3 and Figure 23 (see Appendix B) summarize and illustrate the LCA, and other historical land ownership data associated with the Mayor Wright Homes property. Figure 23 graphically presents LCAs, Land Grants – representing parcels purchased from the government, for which detailed land-use information is often limited – and Land Court Applications, which reflect post Māhele quiet title actions undertaken to formalize ownership of kuleana (LCA) parcels.

Bushnell and McAllaster's (2017) historical study of the Oʻahu Railway & Land Company (OR&L Co.) terminal and freight yard block provides a valuable overview of mid-nineteenth century LCA data for the area surrounding the Liliha CC parcel. It should be noted, however, that these records are complex and should be interpreted as presenting a generalized understanding, rather than definitive conclusions, of land use patterns in this portion of Honolulu during that period. The study also contributes additional historical insights relevant to the development and land tenure history of the Liliha CC vicinity.

During the 1870s, newspaper accounts from Honolulu reflect considerable activity in the buying and selling of LCA parcels within and near the present-day Mayor Wright Homes property. For instance, an 1873 issue of *The Pacific Commercial Advertiser* included an advertisement offering for sale "4 Kalo Patches" located at "Kapahaha, Liliha Street." Similarly, in 1881, the same publication featured a notice from a Mrs. Kaaea Akepo, seeking to sell "that valuable piece of land, with buildings thereon, situated at Kapahaha, Kapālama-Kai, known as the '*The Old King Street Laundry.*'"

As mentioned in the ALRA, the boundary between lower Nuʻuanu and Kapālama becomes somewhat indistinct and difficult to define makai of School Street. Along this traditional area once stood several royal residences (see Appendix B; Section 2.2.3 – *Royal Residences in Lower Nuʻuanu and Kapālama)*. As noted by historian Ralph Thomas Kam (2013), large residential complexes belonging to Queen Liliʻuokalani's residence, with Princess Ruth's estate identified immediately to the west.

There are additional properties that collectively illustrate the historical evolution of the Iwilei-Kapālama area; and they are:

- Royal Residences in Lower Nuʻuanu and Kapālama that was once a kind of "suburb for the elite of Honolulu."
- St. Louis College established in 1883 by Reverend Hermann.
- Pālama Settlement was founded by the Hawaii Evangelical Association in 1905 and would later move to a new site at the corner of Vineyard and Pālama Street in 1925.
- ʻAʻala Park which was a sparsely inhabited park that was known mainly for the many wash houses (laundries) operating adjacent with the Nuʻuanu Stream.

More detailed information about the Nuʻuanu area is provided in Appendix B.

Māhele ʻĀina in Lower Kapālama

As mentioned in Section 2.2.7 in the ALRA, "at the mid-nineteenth century Māhele, the ahupuaʻa of Kapālama, along with many other lands in the islands, was awarded as part of Land Commission Award (LCA) 7714-B to Moses Kekūāiwa, son of Kekūanaoʻa and Kīnaʻu, who had earlier been married to Kamehameha I. The land passed down in turn to his sister Victoria Kamāmalu, to her brother Lot Kamehameha, to his half-sister Ruth Keʻelikōlani, and then to her first cousin, Bernice Pauahi Bishop. The will of Mrs. Bishop set many of her lands aside as a trust to provide financial aid to educational and charitable institutions, including the founding of Kamehameha Schools to educated Hawaiian youth."

An 1885 map prepared by J.F. Brown (Registered Map 1039) depicts lower Kapālama and Iwilei, on both side of Kapālama Stream, as being densely occupied with LCAs and traversed by an extensive network of ʻauwai (traditional irrigation ditches). This concentration of small parcels,

many of which are identified taro patches within the Kapālama area, attests to the region's historical suitability for settlement and cultivation. Reflecting its importance, the LCAs shown on the Figure 33 map (see Appendix B), were awarded not only to makaʻāinana (commoners) but also to aliʻi nui (high chiefs) and their konohiki (land stewards). (See also Section 2.3 – *Other Historical Maps and Aerial Images* in Appendix B).

More detailed information about the Kapālama area is provided in Appendix B.

Iwilei

According to the Office of Hawaiian Affairs (OHA) Information Sheet (Coleman 2012), Iwilei is identified as both ʻāpana and an ʻili, traditionally considered part of the makai portion of the Kapālama Ahupuaʻa. though more recent accounts place it within Honolulu Ahupuaʻa. As a coastal area, Iwilei's history is interconnected with neighboring ahupuaʻa, Kalihi, Nuʻuanu, and Kewalo, and closely tied to the former Māmala Bay (Honolulu Harbor). The Nuʻuanu Stream, which once flowed in Māmala Bay, created rich marine and estuarine environments supporting diverse flora and fauna, with the village of Kou situated nearby.

The area was historically nourished by both Nuʻuanu and Kapālama Streams, which, together with extensive ʻauwai, sustained broad expanses of loʻi kalo across inland Kapālama and Kalihi. Along the coast, Iwilei formed part of a larger complex of fishponds, reefs, and fishing grounds extending from ʻEwa to Maunalua, renowned for abundant resources such as aku (bonito), lobsters, crabs, and limu, including manauea (Gracilaria coronopifolia).

During the late 1800s and early 1900s, Hawaiʻi experienced rapid urbanization. While Honolulu emerged as the island's commercial and financial center, Iwilei developed into a major industrial hub. The harbor grew increasingly active as a maritime port, and the construction of the new infrastructure, buildings, commercial establishments, and transportation facilities, permanently transformed the character of Iwilei and its surrounding areas.

More detailed information and stories about the Iwilei area is provided in Appendix B (Sections 2.2.9-2.2.13).

3.7.3 Summary of Historic Properties

Due to over a century of urban development, no above ground archaeological remains of traditional Hawaiian sites are present within the Project Area. Previously identified traditional sites have been limited to subsurface contexts, typically discovered through archaeological monitoring or inventory surveys conducted prior to ground-disturbing activities. Traditional Hawaiian sites identified in the Project Area environs include the following on Table 3-1:

Table 3-1: Traditional Hawaiian Sites

SIHP#50-80-14-07933	In 2016, at the American Savings Bank property, a cluster of at least seven individuals, along with some pig and dog bones possibly representing buried animals associated with human burials, was identified by Belluomini et al. (2016) within an LCA (731 to Palile). The age of this site was interpreted as pre-Contact to post-Contact (Historic Period).
SIHP #50-80-14-05368 SIHP # 50-80-14-05966	Fishpond sediments from previously utilized ponds that were drained and filled many years ago for urbanization: Kuwili Fishpond (#05368) and Kawa Fishpond (#05966).
SIHP # 50-80-14-07426 SIHP #50-80-14-08034	Anthropogenic wetland sediments interpreted as traditional Hawaiian loʻi kalo areas. Several studies have documented the presence of a laterally-extensive subsurface soil deposit interpreted as representing former wetlands on either side of the Kapālama Stream that may

	have been used for traditional Hawaiian agriculture during late pre-Contact to early historic-period times (#07426). Monahan (2018a) identified a similar subsurface site (#08034) on the grounds of Mayor Wright Homes, interpreted as probable remnants of traditional Hawaiian loʻi kalo.

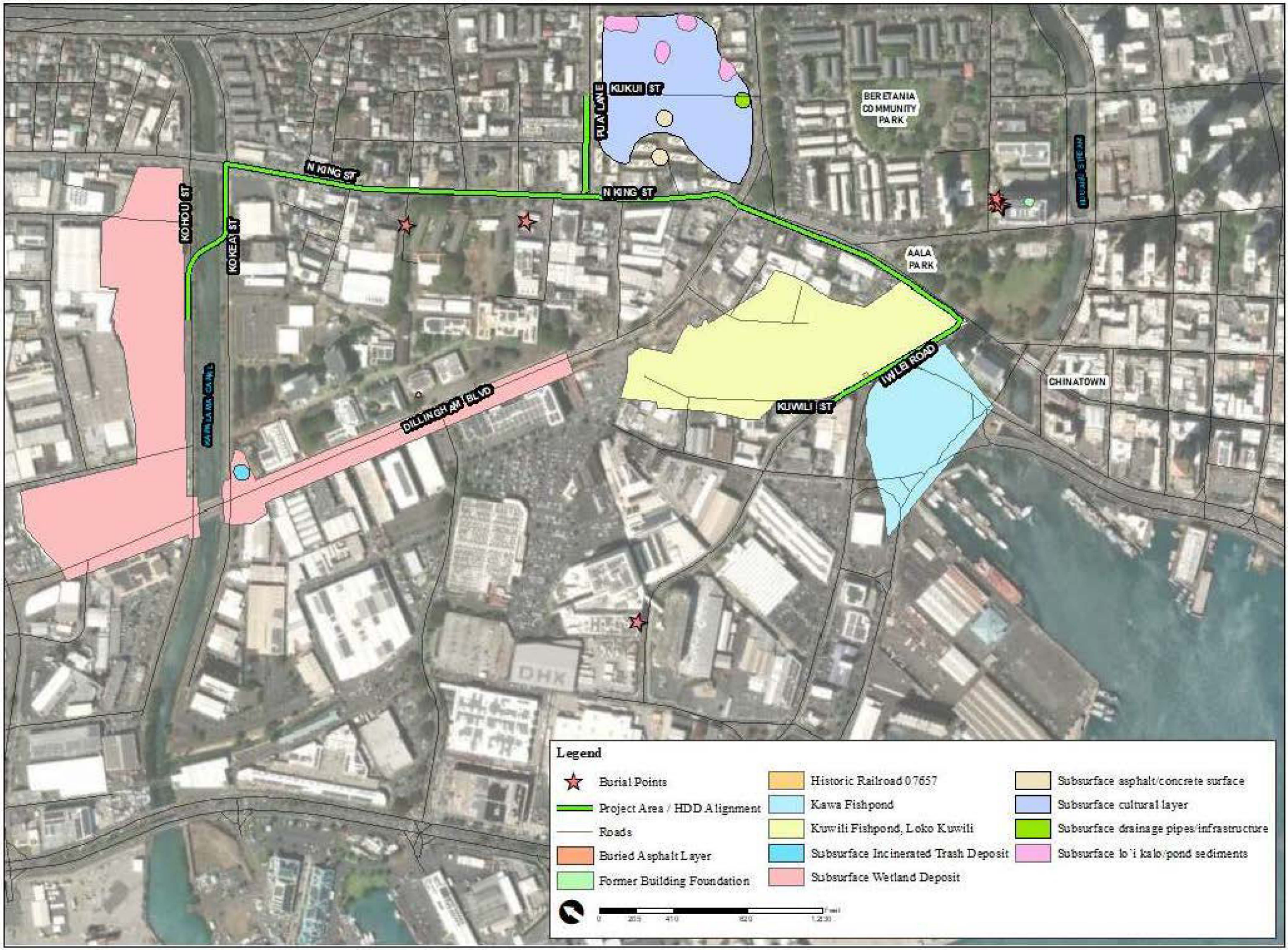
Historic-period sites have been identified in both subsurface and above-ground contexts (see Figure 3-12). Table 3-2 below provides the primary types of historic-period sites identified within the Project Area environs which include: 1) human burials and isolated or fragmentary human skeletal remains, 2) other varied subsurface discoveries, and 3) architectural resources, such as buildings. See historic-period sites below:

Table 3-2: Historic Period Properties

SIHP#50-80-14-03373	(1) Multiple human burials and additional isolated and fragmentary human skeletal remains in association with historic artifacts interpreted as victims of nineteenth-century epidemics (Dunn et al. 1991)
SIHP #50-80-14-04929	(2) Historic-period burial in a coffin found during excavation on Austin Lane is interpreted as probably associated with Kaumakapili Church cemetery, which was used from the 1870s to at least 1921 (Jourdane 1994; Hammatt 1995)
SIHP #50-80-14-07515	(3) Located along Dillingham Blvd, newly identified historic property related to creation of Kapālama Drainage Canal during 1920s and in-filling of surrounding area for purposes of urban development. (Medina et al. 2013)
SIHP #50-80-14-07506	(4)Located within the City Center portion of Honolulu high-Capacity Transit Corridor Project, A subsurface incinerated trash deposit; wetland sediments identified along Dillingham Bldv; incinerated trash deposits encountered within HCC campus at corner of Diligham Blvd and Kokea St. (Hammatt 2013)
SIHP #50-80-14-05942	(5) Identified previously recorded Honolulu Rapid Transit & Land Company (HRT&L) trolley along with numerous artifacts in associated. (West et al. 2002)
SIHP # 50-80-14-01380	(6) OR&L Office Building
SIHP # 50-80-14-01302	(7) Pālama Fire Station
SIHP # 50-80-14-09851	(8) Kaumakapili Church and grounds
SIHP # 50-80-14-07808 SIHP # 50-80-14-07807	(9) Kapālama Drainage Canal (#07808) and (10) bridges (#07807) spanning it

In general, historic-period sites and features are more likely to be documented in subsurface contexts in the project-area environs, compared with traditional Hawaiian materials. Thus, this general category of finds (i.e., subsurface sites and features from historic-period times) – characterized by item numbers (3)-(5) in the table above, has the highest potential for discovery in the project area.

FIGURE 3-12 HISTORIC PROPERTIES AND BURIAL POINTS



Impacts and Mitigation Measures

Pursuant to Chapter 6E, HRS, consultation was conducted with the State Historic Preservation Division (SHPD) regarding the Proposed Action. An ALRA Based on available information and the archaeological assessment, the Proposed Action is not anticipated to affect any above-ground historic properties, as none are present in or near the Project Area. SHPD consultation will be initiated to determine whether archaeological monitoring or other measures are required for proposed ground-disturbing activities. The significance of any potential subsurface impacts will be addressed following SHPD guidance.

The Proposed Action, which consists mostly of trenchless, directional drilling (i.e., horizontal drilling and installation of conduit) is expected to have minimal impact on archaeological resources since ground disturbance is limited to entry and exit pits. Most drilling occurs well below the surface, reducing the likelihood of encountering subsurface cultural materials. The ALRA indicates the results of prior archaeological studies which indicated the following:

1. Due to over a century of urban development within the Project Area, there are no remaining surface archaeological features associated with traditional Hawaiian sites. Sites of this period, where identified, are found exclusively in subsurface contexts.
2. The primary types of subsurface traditional Hawaiian sites documented in the Project Area and surrounding the vicinity include:
    - Human burials and isolated or fragmentary skeletal remains;
    - Fishpond sediments, representing former loko iʻa that were later drained and filled during urbanization; and
    - Anthropogenic wetland sediments, interpreted as remnants of traditional loʻi kalo areas.
3. Historic period sites have been identified in both subsurface and surface contexts. Excluding standing architectural resources, the most common historic-period site type consists of:
    - Human burials and isolated or fragmentary skeletal remains, and
    - Various subsurface deposits, including fill layers and other cultural materials associated with historic-era land alteration.

Based on the available evidence from the ALRA, the following recommendations are provided:

1) The Proposed Action is anticipated to have no effect on above-ground archaeological historic properties, as none are present within or adjacent to the Project Area; and
2) Consultation with SHPD is recommended to obtain guidance regarding any archaeological investigations that may be required to address ground-disturbing activities associated with the Proposed Action.

Based on the recommendations of the ALRA summarized above, the HCDA consulted with the SHPD pursuant to Chapter 6E, HRS (see Appendix C). The consultation letter documents the Project Team's assessment of the potential effects to historic properties and concludes that the Proposed Action would result in no historic properties affected. The SHPD's response to the consultation request is pending and will determine whether the SHPD concurs with this finding or requires additional archaeological investigations, monitoring, or other measures pursuant to Chapter 6E, HRS.

In addition, HCDA recommends archaeological monitoring for identification purposes only, focused on pilot hole locations or other limited open-cut excavations, should such work proceed. The purpose of monitoring would be to provide additional assurance that any previously

unidentified subsurface cultural materials encountered during construction are appropriately identified, documented, and managed in accordance with HRS Chapter 6E.

Although the Project Area has been extensively developed and previously disturbed by urban infrastructure and utilities, ground-disturbing activities associated with the Proposed Action will be monitored to ensure protection of any inadvertent archaeological discoveries. If previously unidentified cultural or archaeological materials, such as subsurface features, human remains, or artifacts, are encountered during construction, all work in the immediate area will be halted and SHPD will be notified pursuant to HRS §6E-43.6 and HAR §13-275-280. Construction may resume only after SHPD provides direction and appropriate treatment measures have been implemented. With adherence to these protocols, no significant adverse impacts to archaeological resources are anticipated.

3.8 Air Quality

Air quality is defined by any chemical, physical, or biological pollutants that impact the air as well as the health and safety of humans and the environment, which includes plants and animals. Ambient concentrations of air pollutants are determined by emission sources and transport of emissions from distant sources. Sources relevant to the Proposed Action include mobile sources such as vehicles and construction equipment, as well as stationary sources such as pump station generators.

The State of Hawai'i, Clean Air Branch (CAB) plans, operates, and maintains the statewide ambient air quality monitoring network in the State. Primary services are provided by its Engineering, Monitoring, and Enforcement sections. The CAB conducts engineering analysis, permitting, monitoring investigations, and enforcement of federal and state air pollution control laws and regulations (SOH CAB, 2025). The DOH manages the State and Local Air Monitoring Stations (SLAMS), Special Purposed Monitoring Stations, and the National Core Multi-Pollutant Monitoring Station (NCore).

Ambient air quality is characterized in terms of compliance with the National Ambient Air Quality Standards (NAAQS) and State Ambient Air Quality Standards (SAAQS). The Clean Air Act requires the EPA to set NAAQS for seven criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), lead (Pb), ozone (O3), and particulate matter (PM10 and PM2). Furthermore, Hawai'i has established SAAQS for hydrogen sulfide (H2S) related to volcanic activity on Hawai'i Island. When concentrations of criteria pollutants are below NAAQS, the areas are designated as being in "attainment" by the EPA. If the concentration of criteria pollutants in an area exceeds NAAQS, the area is designated as being in "nonattainment". Hawai'i is currently classified as in "attainment" for all Federal and State standards. Air quality in Honolulu is primarily impacted by vehicle emissions and operational power plants.

Impact and Mitigation Measures

Short-term impacts to air quality are anticipated during construction activities, including site preparation, grading, ground disturbance, as a result of temporary particulate emissions and exhaust generated by construction traffic and onsite equipment. However, because the proposed electrical utility installation will primarily employ HDD methods, ground disturbance and associated dust generation will be substantially minimized compared to conventional open-trench construction. Emissions will be limited to localized exhaust from HDD machinery and support equipment during active drilling operations.

To minimize these effects, Best Management Practice (BMPs) will be implemented in accordance with applicable regulations. All construction activities with HAR Title 11,

To minimize these effects, Best Management Practice (BMPs) will be implemented in accordance with applicable regulations. All construction activities with HAR Title 11, Chapter 54 (Ambient Air Quality Standards) and HAR 11-60, HAR Air Pollution Control to ensure air quality impacts remain minor and temporary.

No significant long-term impacts to air quality are anticipated during the operational phase. Once installed, the underground electrical utility system will not generate air emissions.

Table 3-3 depicts the State and National Standards below.

Table 3-3: National and State Ambient Air Quality Standards

Air Pollutant	Averaging Time	Standards		
		Hawai'i State Standard	Federal Primary Standard[s]	Federal Secondary Standard[s]
Carbon Monoxide	1-hour	9 ppm	35 ppm	None
	8-hour	4.4 ppm	9 ppm	
Nitrogen Dioxide	1-hour	--	0.100 ppm	--
	Annual	0.04 ppm	0.053 ppm	0.053 ppm
PM_{10}	24-hour	150 µg/m^3	150 µg/m^3	--
	Annual[c]	50 µg/m^3	--	--
$PM_{2.5}$	24-hour	--	35 µg/m^3	35 µg/m^3
	Annual		9.0 µg/m^3	15 µg/m^3
Ozone	8-hour	0.08 ppm	0.070 ppm	0.070 ppm
Sulfur Dioxide	1-hour	--	0.075 ppm	--
	3-hour	0.5 ppm	--	0.5 ppm
	24-hour	0.14 ppm	--	--
	Annual	0.03 ppm	--	--
Lead	Rolling 3-month	1.5 µg/m^3 [d]	0.15 µg/m^3	0.15 µg/m^3
Hydrogen Sulfide	1-hour	0.025 ppm	None	None

**Source: HDOH, State of Hawai'i Annual Summary 2015 Air Quality Data, December 2016.*

[a] Primary Standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children and the elderly.

[b] Secondary Standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

[c] Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, EPA revoked the annual PM10 standard effective December 17, 2006. However, the state still has an annual standard.

[d] The state standard is based on calendar quarter.

ppm - parts per million.

µg/m3 - Micrograms per cubic meter.

3.9 Noise

Noise is regulated at both the Federal and State levels to protect public health and welfare. The Noise Control Act of 1972 (42 U.S.C. §§4901–4918) established the national policy to promote an environment free from noise that can have impacts on health (mentally and emotionally) and safety. Although the U.S. EPA retains oversight, primary enforcement responsibility has been delegated to State and local agencies.

In Hawai‘i, the DOH Noise Section administers these regulations, issues noise permits, and enforces compliances to minimize noise impacts to the surrounding community pursuant to the HRS Chapter 342F and the HAR Title 11, Chapter 46 (Community Noise Control). These rules and regulations establish maximum permissible sound levels for various zone districts (i.e., residential, commercial, industrial, etc.) and require that construction activities comply with applicable daytime and nighttime noise limits. Construction projects with an estimated cost over $250,000 and noises expected to exceed 78 decibels (dBA) are required to have an approved Community Noise Permit (DOH Noise, 2025).

The noise descriptor currently used by federal agencies (such as the Federal Housing Administration (FHA) or the US Department of Housing and Urban Design (HUD) to assess environmental noise is the Day-Night Average Sound Level (DNL). DNL represents a 24-hour, time-weighted average of “A-weighted” sound levels (dBA), which reflect the frequency range most sensitive to human hearing.

By definition, the DNL incorporates all sound occurring over a 24-hour period, with noise events between 10:00 PM and 7:00 AM increased by 10decibels (dB) to account for greater nighttime sensitivity. Within the Project Area, which is classified as a Class A zoning district under HAR 11-46, the maximum permissible sound levels are 55 dBA during daytime hours (7:00 AM – 10:00 PM) and 45 dBA during nighttime hours.

To assess potential noise impacts from construction activities, noise-sensitive receptors within and adjacent to the Project Area include nearby residential uses, schools, community facilities, and public parks. These receptors are located along portions of Iwilei Road, North King Street, and near the Kapālama Canal, including residential neighborhoods and community-service facilities such as the Mayor Wright Homes area and the proposed Liliha CC site. ‘A‘ala Park, located on the eastern side of the Project Area, also represents a noise-sensitive land use due to its recreational function.

The main sources of noise around the Project Area include traffic from nearby roads and the H-1 Freeway. Other potential noise contributors in the area are local land uses such as churches, schools, a recycling facility, and a service station, as well as Costco. The project area is also situated more than five miles from Hickam Air Force Base and over three miles from Daniel K. Inouye International Airport.

Impact and Mitigation Measures

The Proposed Action will take necessary measures to ensure all equipment is in good working order and will not cause unwarranted construction noise. Short-term increases in ambient noise levels are anticipated during construction. Noise will primarily result from heavy equipment operation, vehicle traffic, and HDD drilling activities. These impacts will be temporary and localized to the immediate construction area. Given that the Project Area is within an existing urban and industrial corridor, background noise levels are already elevated due to roadway traffic, nearby commercial activity, and ongoing construction in the vicinity.

The loudest equipment will be the jet grout rig, the vacuum trucks and HDD rig. The Vermeer D100x140 S3 horizontal directional drill (HDD) rig produces a noise level at the operator's ear of

approximately 82 dB(A) to 84 dB(A). Support equipment, such as the jet grout and vacuum trucks are louder, may produce higher noise levels, often up to 90 dB(A) depending on the model.

To minimize noise impacts, construction activities will comply with HAR 11-46 and will obtain a Noise Permit from DOH prior to commencing construction activities that exceed permissible noise levels. Work will be limited to daytime hours, except where specific permits or agency coordination allow otherwise. All construction equipment will be maintained in good working condition, fitted with proper mufflers, and operated to minimize unnecessary idling. Advanced public notification will be provided to nearby businesses and residents if there are any high-noise activities (i.e., HDD drilling start up, pavement cutting) are anticipated.

Once operational, no long-term noise impacts are expected during operation. Once construction is completed, the underground electrical utility will not generate ongoing noise. Occasional short-term noise from maintenance vehicles or inspections may occur but will be minimal and consistent with surrounding urban noise levels.

Nighttime construction is currently anticipated, and a noise variance will be obtained from the Department of Health.

3.10 Transportation

The Iwilei-Kapālama area contains multiple transportation systems that are key components of the built environment. These systems are regulated to ensure the safe and efficient movement of people and goods during both construction and operation. In Hawai‘i, roadway use, and traffic management are governed by the CCH Department of Transportation Services (DTS) and the Hawai‘i Department of Transportation (HDOT). Construction-related traffic control measures must comply with the Manual on Uniform Traffic Control Devices (MUTCD), published by the Federal Highway Administration (FHWA) under 23 Code of Federal Regulations (CFR), Part 655, Subpart F, and applicable City standards, including the Traffic Management Manual (TMM).

For projects within urban corridors such as Iwilei-Kapālama, temporary roadway closures, lane restrictions, and detours are subject to review and approval by DTS and HDOT to ensure that access for vehicles, pedestrians, bicyclists, and emergency services is maintained. The Proposed Action will outline procedures to minimize disruptions and maintain safety through construction from the project's Traffic Control Plan (TCP).

3.10.1 Public Transportation

The Iwilei and Kapālama area has a strong network of roadway facilities that provide local and regional access to freeways, highways, and major arterials central to the Honolulu area. However, the area lacks a safe connected network and streetscape for pedestrians and cyclists, as well as safe connections to major activity and employment centers in the surrounding region. The public transportation network has a large amount of industrial and commercial activity with intermittent gaps in the bicycle and pedestrian networks. Thus, the area is categorized as having an automotive dominated network.

TheBus and The Handi-van provide public transport within the area. Current bus routes that serve the Project Area include Routes 7, 20, 40, 42, 51, and the new Route A. The project is anticipated to cause road closures within the Project Area. HDD alignments and cuts will cause road closures and will temporarily affect traffic and the transportation network of the area. The appropriate agencies and permits will be contacted and obtained.

The project is also located within the Kalihi and Downtown Transit-Oriented (TOD) districts. Various substations are located in proximity to the Project Area, including the Waiakamilo Substation (located west of the Project Area) and the Iwilei Substation (located south of the Project Area).

Impact and Mitigation Measures

The Proposed Action will occur along an active urban corridor. The Project Area is served by multiple public bus routes operated by the CCH DTS under the *TheBus* system. Temporary and localized impacts to public transportation may occur where lane closures, detours, or construction staging coincide with existing bus stops or transit corridors. Equipment operation and traffic control measures may require temporary relocation or suspension of select bus stops to maintain safe passenger access.

3.10.2 Existing Roadways and Traffic

A Transportation Assessment Report (TAR) was not prepared specifically for this project. However, the 2025 FEIS for the broader Iwilei-Kapālama area includes transportation analyses and findings that encompass the Project Area. The conclusions of the 2025 FEIS remain applicable and provide relevant baseline information on existing roadway conditions, traffic volumes, and multimodal access within the project corridor.

Pedestrian facilities within the Project Area consist primarily of sidewalks and marked crosswalks along the Iwilei Road and North King Street, with intermittent sidewalks along Kokea Street and Kohou Street. A designated bicycle lane is present along Iwilei Road; however, no dedicated bicycle facilities are provided along North King Street, Kokea Street, or Kohou Street, where bicyclists generally share travel lanes with vehicular traffic. As noted in the 2025 Iwilei-Kapālama FEIS, pedestrian and bicycle connectivity within the district remains limited and lacks continuous, safe multimodal connections to surrounding residential areas and employment centers.

Impacts and Mitigation Measures

Construction activities will temporarily affect roadway operations along limited segments of Kokea Street and Kohou Street near the Kapālama Canal crossing, where HDD entry and exit pits, staging areas, and equipment laydown will occur. These activities may require partial lane closures, temporary detours, and intermittent traffic control during drilling and installation. While these impacts are expected to be temporary and localized, minor delays in traffic flow may occur during peak travel periods. Construction vehicles, including drill rigs will increase truck movements in the area but are not anticipated to significantly degrade overall roadway capacity.

Because the Project Area is located within an established industrial and commercial corridor already characterized by high volumes of vehicular traffic, the temporary disruptions will be short-term and manageable with proper coordination and phasing. Emergency vehicle access and local business access will be maintained at all times.

A TCP will be prepared in coordination with the CCH DTS and HDOT. The TCP will detail specific lane closure procedures, detour notes, construction signage, and flagging operations, consistent with the MUTCD and the City TMM. To minimize traffic congestion and maintain roadway safety:

- Construction will be scheduled during off-peak hours where feasible.

- Advanced public notices will be provided to nearby businesses and residents prior to any lane closures or traffic pattern changes.
- On-street parking restrictions will be clearly marked, and flaggers will assist in maintaining safe traffic flow through work zones.
- Coordination with emergency services and public transit providers will ensure continued access throughout construction.

Upon completion, all roadways, sidewalks, and curbs affected by construction will be restored to preconstruction conditions or better. No long-term changes to traffic volumes, patterns, or roadway configurations are anticipated once installation is complete.

The Proposed Action is not anticipated to significantly impact state highway facilities. However, any work done within the ROW that crosses state roadways shall obtain all required construction plan approvals.

3.10.3 Parking and Access Roads

The Project Area is located within the urbanized portion of the Iwilei-Kapālama area that is characterized by a mix of commercial, industrial, and institutional land uses. Roadways in the vicinity include North King Street, Kokea Street, Kohou Street, and Iwilei Road, which serves as primary access routes for local businesses, schools, and residences. Parking within the corridor consists primarily of on-street parallel stalls and limited private or off-street lots associated with adjacent properties and businesses. Pedestrian sidewalks and driveways connect directly to these roadways.

Impacts and Mitigation Measures

During construction, temporary disruptions to access may occur for vehicles, delivery trucks, and pedestrians near active work zones. Although the project will remain within the existing roadway right-of-way, construction activities such as trenching, HDD operations, and staging may temporarily affect on-street parking and driveway access. Traffic control measures will be implemented to maintain safe passage for vehicles and pedestrians. Short-term closures or lane shifts may be required to facilitate construction activities, but local access to business and residences will be maintained at all times.

No long-term loss of parking or access is anticipated with the Proposed Action, as all improvements will occur underground and the roadway surface will be restored to pre-construction conditions following completion.

To minimize temporary impacts on parking and access, the following BMPs will be implemented:

- Advance public notice and coordination with affected property owners, businesses, and agencies prior to construction.
- Preparation of TCPs in compliance with CCH standards.
- Use of flaggers, signage, and barricades to safely direct vehicular and pedestrian traffic.
- Staging and equipment storage within designated areas to avoid blocking driveways or parking stalls.

With the implementation of these measures, the Proposed Action is not anticipated to have significant long-term impacts on parking availability or roadway access with the Project Area.

3.11 Hazardous Materials and Toxic Waste

Pursuant to HRS Chapter 128D, the Hawai‘i Environmental Response Law, and implementing regulations under HAR Chapter 11-451 and HAR 11-260 through 11-280, activities that may involve the release, handling, or disposal of hazardous substances must be managed to prevent adverse impacts to human health and the environment. For the purposes of this EA, “hazardous substance” follows the definition provided in HRS § 128D-1, which includes any substance designated as hazardous under Federal or State law (State of Hawai‘i, 2010 Chapter 128D), due to its potential to cause harm to human health or the environment, including petroleum products, volatile organic compounds, and heavy metals.

The eastern portion of the Project Area is located within the Iwilei District, which is subject to the Programmatic Environmental Hazard Evaluation and Environmental Hazard Management Plan (EHE/EHMP) prepared under the oversight of the Hawai‘i Department of Health Hazard Evaluation and Emergency Response (DOH HEER) Office. The Programmatic EHE/EHMP Document for the Iwilei District, identifies areas of potential soil and groundwater contamination associated with historical industrial and commercial land uses and establishes procedures for managing environmental hazards during ground-disturbing activities (Department of Health, 2015). The purpose of this Programmatic EHE/EHMP is to specify consistent and effective practices for managing the following contaminants of concern (COCs) if these are encountered during minor subsurface activities within the Iwilei District:

- Petroleum-contaminated soil (PCS) and debris-contaminated soil (DCS) normally containing high levels of metals,
- Petroleum- or dissolved metals-contaminated groundwater, or
- Elevated soil vapors

The areas covered by the Programmatic EHE/EHMP within the Iwilei District consist of two distinctly separate parcels – Iwilei District North (IDN) and Iwilei District South (IDS).

The Federal Environmental Protection Agency (EPA) and Hawai‘i universal waste regulations streamline hazardous waste management standards for federally designated “universal wastes,” which include batteries, pesticides, and mercury-containing materials. Universal waste is considered hazardous; however, they are subject to less restrictive waste disposal regulations than for hazardous waste.

Hazardous waste associated with construction, including used oils, antifreeze, and solvents are handled and disposed of by licensed contractors.

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

The Project Area is historically an industrial area associated with former fuel storage, rail operations, and warehouse uses. In a comment letter during the Early Consultation Process, the DOH HEER Office identified several sites with contamination in the surface and/or subsurface soils and, in some cases, in the groundwater that is adjacent to the Project Area. Although no visible evidence of contamination currently exists within the roadway right-of-way, there remains potential for encountering contaminated materials during subsurface work given the area’s industrial legacy and depth of existing utilities.

ENPRO Environmental (ENPRO) conducted a Phase I Environmental Site Assessment (ESA) on September 2, 5, and 8, 2025 to identify Recognized Environmental Conditions (REC), Controlled RECs (C-RECs), Historical RECs (H-RECs), and Vapor Encroachment Condition (VECs) associated within the Project Area. Definitions for each category are provided in Appendix D of this EA. The Phase I ESA encompasses the Iwilei-Kapālama DB Electrical Infrastructure Improvements Alignments, in Honolulu, Hawai‘i (the subject property), also listed as the Project Area throughout this Draft EA. The subject property includes:

- North King Street, from Iwilei Road to Kohou Street
- Pua Lane, from North King Street to North Kukui Street
- Iwilei Road, from North King Street to Kuwili Street

As mentioned previously, the purpose of the Phase I ESA was to identify RECs, if any, as part of due diligence prior to electrical utility work in the Project Area. The result of the ESA is included herein as Appendix D and summarized below. REC's are indicated by REC categories: **Release, Condition Indicative of a Release, and Conditions Posing a Threat of Future Release.**

Historic Use: Historic roadway and fill material: Urban generated fill material is suspect in soil underlying the roadway and project alignment. Urban generated fill is associated with potential debris from the historic Chinatown fire, roadway use and industrial activities and may contain contaminants such as heavy metals, PAHs and PCBs.

- Condition Indicative of Release

Adjoining and/or Nearby Site Contamination Likely to Impact the Subject Property (Project Area)

Potential dry cleaner: Drycleaners are environmentally significant because they commonly use chlorinated solvents such as perchloroethylene, which are toxic, persistent, and can readily contaminate soil and groundwater through spills, leaks, or improper waste disposal.

- Condition Indicative of Release

Junk Yard: Junkyards are often considered environmentally significant due to the potential for release of petroleum products, heavy metals, and other hazardous substances from vehicle fluids, batteries, and scrap materials. Spills, leaks, or improper storage of these materials can result in contamination of soil and groundwater over time.

- Condition Indicative of Release
- Conditions Posing a Threat of Future Release

Lumber Yard: Lumber yards may involve the storage or treatment of wood with chemical preservatives such as creosote, pentachlorophenol, or chromated copper arsenate. These substances can leach into soil or groundwater through spills, runoff, or improper handling of treated materials.

- Condition Indicative of Release
- Conditions Posing a Threat of Future Release

Railroad: Railroad roundhouses and associated facilities such as car shops, boiler shops, paint shops, machine shops, and foundries are considered environmentally significant due to their historical use of petroleum products, solvents, paints, and heavy metals. Activities such as equipment maintenance, metalworking, and fuel or lubricant storage commonly resulted in spills, leaks, and disposal of hazardous

materials that may have impacted soil or groundwater quality. Releases are known to have occurred at the site.

- Release
- Conditions Posing a Threat of Future Release

Current and Former Gas Stations at:

- Tom's Chevron, 743 North King Street
- Kokea Service Station, 1065 North King Street
- Shell Service Station, 1101 North King Street

Regulatory records were not readily accessible for these sites. Gas stations, particularly those constructed with single-wall steel underground storage tanks common in the 1970s and 1980s, are considered environmentally significant due to the high risk of fuel leaks and releases from corroded or failing tanks and piping.

- Condition Indicative of Release
- Conditions Posing a Threat of Future Release

Former auto/motorcycle repair at:

- Sub's Auto Repair, 587B North King Street
- Palama Auto Company, 1138 North King Street
- Motor Service Repair Company, 1138A North King Street
- Wholesale Auto Repair, 1138B North King Street

Auto and motorcycle repair facilities are considered environmentally significant because they commonly store and use petroleum products, solvents, degreasers, and other hazardous materials during maintenance operations. Spills, leaks, or improper disposal of these substances can result in contamination of soil or groundwater over time.

- Condition Indicative of Release
- Conditions Posing a Threat of Future Release

Storage Tank: Leaded gasoline release from a storage tank at 373 North Nimitz Highway

- Release
- Conditions Posing a Threat of Future Release

Gasoline: Gasoline and related constituents were detected along 938 Kohou Street's eastern boundary from a former gas station release. Previous investigations at 1020 Liliha Street indicate the presence of petroleum, solvent, pesticide, and metals at the site.

- Release
- Conditions Posing a Threat of Future Release

Historical Recognized Environmental Conditions (H-RECs)

No Further Action (NFA) Date	H-RECs

2002	A former 2,000-gallon leaking underground storage tank (LUST) at 888 Iwilei Road was removed and remediated under the HDOH oversight.
1995	The former gasoline underground storage tank (UST) release at 1036 North King Street was fully investigated and closed by DOH with confirmation sampling showing no remaining petroleum impacts.
1994	A documented 1987 gasoline release was fully remediated, and post-remediation confirmation sampling demonstrated that soil and groundwater contaminant concentrations met applicable DOH cleanup criteria, and DOH issued a formal NFA determination providing regulatory closure.
Unknown	All documented releases from 666 North King Street were fully investigated and closed by the Hawai‘i DOH with No Further Action determinations, and no contaminants remained above applicable environmental action levels.
July 2023	DOH issued an NFA determination for Pier 42 as all constituents from the petroleum release decreased and remained below DOH Tier 1 Environmental Action Levels (EALs).

Controlled Recognized Environmental Conditions (C-RECs)

Concern	Summary
Lead and barium in soil	Shallow soils at 710 North King Street previously contained elevated lead and barium, but all affected soil was removed and replaced with clean fill during redevelopment; remaining low-level contamination is confined beneath the new building and pavement and managed under a long-term Environmental Hazard Management Plan (EHMP)
Petroleum hydrocarbons, metals, and pesticides	The Iwilei Center property (866 & 850 Iwilei Rd, 505 Kaaahi St) was historically impacted by petroleum hydrocarbons, metals, and pesticides from former industrial uses; it was investigated and remediated under the Hawaii DOH Voluntary Response Program, received a 2024 Letter of Completion, and is now managed under EHMP and 2025 Environmental Covenant that maintain engineering and institutional controls.
Residual pesticide, solvent, and petroleum	The 2014 HART Programmatic EHMP identifies residual pesticide, solvent, and petroleum contamination along the rail alignment from historical

	agricultural, industrial, and military uses requiring soil and groundwater management to prevent exposure and migration during construction.
Petroleum and metal	HDOH identified widespread petroleum and metal contamination in the Iwilei District from historical fuel or storage and industrial activities; residual impacts remain in soil, groundwater, and vapor but are managed under state oversight through engineered and administrative controls to prevent exposure during future subsurface work as described in the Iwilei District Programmatic EHMP.
Small volume of petroleum-impacted soil	Two petroleum releases were confined at 1010 North King Street in 1998 and 2007, both investigated and closed with DOH NFA determinations, with only a small volume of residual petroleum-impacted soil remaining in place beneath asphalt as depths greater than three meters and assessed as posing no significant risk under current commercial/industrial use.

***De Minimis* Condition**

Concern	Category	Routine Solution	Phase II ESA
Surface staining: Minor oil staining was observed throughout the Project Area	*De minimis*	**X**	
Roadway: Roadways are considered environmentally significant due to historical maintenance activities and vehicle emissions that can result in the accumulation of lead and other heavy metals in adjacent soils. Leaded gasoline use prior to its phase-out, along with surface sealing, striping, and equipment maintenance operations, often contributed to residual contamination along road corridors and right-of-way areas.	*De minimis*	**X**	

Business Environmental Risk (BER)

Concern	Category	Routine Solution	Phase II ESA

Contaminants of emerging concern (CECs): CECs may be present on the subject property, but are not covered under the scope of the Practice until they are defined as hazardous substances under federal regulation.	BER	**X**	
Sensitive Ecological Areas: According to the ERIS Database Report, the Kapalama Canal was depicted as a sensitive ecological area.	BER	**X**	
Suspect asbestos-containing material (ACM): ACM may be present on the subject property.	BER	**X**	
Suspect lead-containing paint (LCP): LCP may be present in paint used for roadway markings.	BER	**X**	

Vapor Encroachment Screening (VECs)

Summary: Potential VECs evaluated included all RECs, including H-RECs and C-RECs, with identified releases of petroleum products or other potentially volatile contaminants of concern.

Because there are no structures on the Project Area and the Project Area is intended to remain in use as a roadway, there are no VECs identified. However, the following sites are known or suspected to be sources of VOC contaminants and, therefore, many warrant further assessment via soil vapor sampling and analysis to address potential worker safety issues:

- 393 North King Street
- 710 North King Street
- 866 Iwilei Road
- 938 Kohou Street
- 615 North King Street

No buildings, structures, or other improvements were observed at the Project Area during ENPRO's site reconnaissance, except for the roadway and utility infrastructure. The entirety of the Project Area was paved with asphalt and concrete for motor vehicle and pedestrian traffic. Below summarizes the site inspection and findings of environmental conditions at the Project Area.

Subject Property Observations

Item	Observation Description	Finding
Roads	Roads or paths with no apparent outlet, which are considered to have potentially been used as an avenue for releases or the disposal of hazardous substances or petroleum products, were not observed on the subject property.	Not a REC

Storage Tanks	Above-ground storage tanks (ASTs), underground storage tanks (USTs), associated dispensers, and/or piping used to contain hazardous substances or petroleum products were not observed on the interior or exterior portions of the subject property. Evidence of the USTs was observed at three gas stations adjacent to the project site. No visible evidence of contamination, such as odors or staining, was observed.	REC
Odors	Strong, pungent, or noxious odors were not noted on the interior or exterior portions of the subject property during the site reconnaissance.	Not a REC
Standing Surface Water or Pools of Liquid	Standing surface water, pools, catchment structures, and/or sumps containing liquids likely to be hazardous substances or petroleum products were not observed on the interior or exterior portions of the subject property during the site reconnaissance.	Not a REC
Drums, Totes, and Bulk Containers	Drums, totes, and/or bulk containers were not observed on the interior or exterior portions of the subject property.	Not a REC
Hazardous Substances or Petroleum Products Not Connected to Identified Uses	Hazardous substances or petroleum product containers unrelated to identified sites uses were not observed on the interior or exterior portions of the subject property.	Not a REC
Unidentified Substance Containers	Containers of unidentified substances suspected of being hazardous substances or petroleum products were not observed on the interior or exterior portions of the subject property.	Not a REC
Polychlorinated Biphenyls (PCBs)	Numerous pole-mounted transformers, owned by HECO, were observed along the length of the subject property. According to HECO's response to ENPRO's inquiry, these transformers are PCB-free, except for vaulted transformers 30959, 30960, and 30978 at 333 North King Street that did not have test data.	Not a REC
Heating/Cooling	Heating and cooling systems including elements such as natural gas furnaces, heating oil fueled boilers, electric baseboards, and/or municipally supplied stream were not observed on the subject property.	Not a REC
Stains or Corrosion	Stains or corrosion indicative of hazardous substances or petroleum products were not observed on floors, walls, or ceilings.	Not a REC

Drains and Discharge Features	Drains and other discharge features were not observed on the interior or exterior portions of the subject property, except for storm drains discharging to the Pacific Ocean along the entire subject property.	Not a REC
Pits, Ponds, or Lagoons	Pits, ponds, and lagoons were not observed on the subject property.	Not a REC
Stained Concrete or Pavement	Minor staining of pavement was observed throughout the subject property (see Photo 32 of Appendix B in the ENPRO report). Staining was more concentrated in portions of the right hand lanes that were periodically used for parking.	*De minimis* condition
Stained Soil or Stressed Vegetation	Stained soil and stressed vegetation were not observed on the exterior portion of the subject property.	Not a REC
Solid Waste or Fill Dirt	Areas that appeared to be graded by non-natural causes, filled with fill of unknown origin, mounds, depressions, or other features suggesting trash, construction debris, demolition debris, or other solid waste disposal were not observed on the subject property.	Not a REC
Wastewater	Wastewater or other liquids, including stormwater, that discharges into a drain, ditch, underground injection system, or stream on or near the subject property were not observed during the site reconnaissance. The storm drain inlets along the length of the subject property direct stormwater to the municipal drainage system and eventually discharges to the Pacific Ocean.	Not a REC
Wells	Dry wells, irrigation wells, injection wells, abandoned wells, or monitoring wells were not observed on the interior or exterior portions of the subject property. A total of four monitoring wells were observed at the three gas stations adjacent to the subject property. An additional three monitoring wells were observed on an Iwilei Road adjacent property.	REC
Septic Systems or Cesspools	Septic systems, cesspools, and/or leach fields were not observed on the subject property.	Not a REC
Wetland Areas or Surface Waters	A detailed wetland evaluation was beyond the scope of this investigation. Areas that may be wetlands or nearby surface water bodies were not observed on or near the subject property, except for the Kapalama Canal. There were no obvious signs of filling of wetlands or discharges (e.g., oily sheen) to the canal.	Not a REC

In summary, ENPRO's assessment has not revealed evidence of additional RECs beyond those identified in the table above. The primary RECs, HRECs, CRECs are summarized in Table 9-1 of Appendix D, with recommended actions provided in Section 9.1 of ENPRO's report.

Impact and Mitigation Measures

Construction activities such as HDD, trenching, and utility tie-ins may temporarily disturb subsurface soil or groundwater that contain residual contaminants. Approximately 2,200 CY of excavated material are anticipated to be generated during construction. Without proper controls, this could result in worker exposure or release of contaminated materials to the environment. The Proposed action will not involve the long-term storage or generation of hazardous substances beyond routine construction-related materials (i.e., fuels, hydraulic fluids).

Because the work is confined to the existing roadway corridor and will utilize the HDD method, the potential to create new sources of contamination is considered minimal.

To minimize potential impacts, the following best BMPs and regulatory compliance measures will be implemented:

- Develop a site-specific Environmental Health and Safety Plan in coordination with the DOH HEER Office prior to construction.
- Manage, characterize, and dispose of any contaminated soils in accordance with HRS 128D and HAR 11-260 through 11-280.
- Temporarily stockpile excavated material on impermeable liners and cover to prevent runoff.
- Collect and dispose of contaminated groundwater at a DOH-approved facility if encountered.
- Maintain spill prevention and response protocols, ensuring immediate cleanup and reporting of any releases.

The ESA has revealed no evidence of RECs in connection with the Project Area, however, this assessment does reveal numerous RECs that were found on adjoining properties that may impact the Project Area, as mentioned in Table 3-4. Based on the findings of the ESA, ENPRO recommends the following additional actions and/or investigations:

- Historic urban fill material underlying roadway: conduct soil sampling for heavy metals, PAHs, and PCBs throughout the subject property (Project Area).
- Adjoining properties: conduct additional soil sampling in the vicinity of the adjacent properties which may impact the subject property (Project Area).
- Conduct soil vapor sampling, where appropriate, if warranted based on initial soil data or field observations, (in the vicinity of known or suspected sources of volatile organic compounds) to address potential workers safety issues.
- Follow applicable Programmatic EHE/EHMPs.

A Phase II ESA investigation may be conducted in-situ, prior to construction, or during construction via stockpile sampling and analysis.

With the implementation of these measures, the Proposed Action is not expected to result in any significant adverse impacts associated with hazardous substances. After construction, landscaping and drainage improvements will provide permanent post-construction pollution control measures

and minimize the potential for soil erosion. With implementation of soil characterization procedures, proper material handling and disposal practices, spill prevention measures, construction BMPs, and compliance with applicable regulatory requirements, no long-term impacts on soil are anticipated during the operation of the Proposed Action.

3.12 Visual and Aesthetic Resources

Hawai‘i’s visual resources are important to the State’s tourism industry and quality of life enjoyed by its residents. These resources encompass a wide range of natural and developed areas, including diverse land uses, water bodies, and vegetation types. Visual resources also include urbanized areas, ranging from small rural towns to the metropolitan center of Honolulu.

The Project Area is located within a highly urbanized corridor characterized by commercial, industrial, and transportation-related uses. The visual environment is defined by paved roadways, overhead utility lines, warehouses, and light-industrial buildings with limited landscaping. The Project Area does not contain designated scenic lookouts, view planes, or visual resources identified in the CCH Primary Urban Center Development Plan (PUCDP). Overall, the visual character reflects an urban-industrial setting with limited but notable mauka view opportunities toward the Ko‘olau Range.

Toward mauka, intermittent long-range views of the Ko‘olau Mountain Range can be seen between buildings and along roadway corridors such as Kokea Street and King Street, especially near open intersections or where building setbacks are wider. These views provide a scenic backdrop to the otherwise developed setting. Toward the makai, views are generally more enclosed and characterized by urban features, with limited visibility toward the harbor or ocean due to existing structures and elevation changes.

A portion of the Project Area is identified as an important viewing stream corridor. The Kapālama Canal, a part of the western edge of the Project Area, was identified to offer largely unobstructed views of the Ko‘olau Range. Although existing development on the mountain modifies views of the natural environment, these views are still valued. These views are currently considered unobstructed.

Impact and Mitigation Measures

The Proposed Action is not expected to have a significant impact on the existing views in the area. Short-term, temporary visual impacts may occur during construction, including the presence of construction equipment, lane closures, temporary barriers, and material staging areas. These activities may slightly detract from visual quality of the surrounding area but will be localized and temporary, limited to the duration of active construction.

The Proposed Action involves the installation of underground electrical infrastructure with existing roadway right-of-way. No above-ground structures or new permanent features are proposed. As a result, no long-term visual obstruction of existing mauka views or changes to the area’s visual character are anticipated. Following completion, the roadway and adjacent sidewalks will be restored to preconstruction conditions, maintaining the existing visual environment.

To minimize temporary impacts on visual and aesthetic resources during construction, the Proposed Action will implement BMPs to maintain a clean and orderly work environment. Coordination with applicable agencies and adjacent property owners will be conducted to ensure timely restoration of the work area and to maintain consistency with the surrounding urban visual character.

3.13 Infrastructure and Utilities

The Proposed Action will occur within a highly developed urban corridor containing multiple existing utility systems, including electrical, water, sewer, storm drain, telecommunications, and gas lines. Utilities within the right-of-way are owned and maintained by various public agencies and private utility providers, including Hawaii Electric Company (HECO), the Board of Water Supply (BWS), and the CCH Department of Environmental Services (ENV).

Subsurface utility congestion is common throughout the Iwilei-Kapālama district, with multiple utility crossings along Kokea Street, Kohou Street, North King Street, and Iwilei Road. Aboveground features include existing utility poles, streetlights, and signal boxes. The area is served by municipal water and wastewater system and does not contain private or isolated utility infrastructure.

3.13.1 Water System

The Board of Water Supply (BWS) owns and operates the water system in the Project Area (Iwilei FEIS, 2025). The Iwilei-Kapālama water system is part of the BWS municipal network, which supplies potable water through a grid of distribution mains and lateral connections located within the roadway right-of-way. The Project Area still includes sections served by 6-inch waterlines and several locations with dead-end 8-inch pipes, both of which present capacity limitations within the existing system (Iwilei FEIS, 2025).

The 2025 Iwilei FEIS mentions, The Iwilei Master Plan Area is located within the Primary Urban Center Development Plan (PUCDP) boundary and is served by the Metro Law water system. This water system is one of the largest and most complex distribution networks managed by the BWS. It covers much of the makai portion of urban Honolulu, extending from Salt Lake to Hawai‘i Kai, and accounts for roughly 38 percent of O‘ahu’s total island-wide water demand. In 2012, the system’s average daily demand was approximately 55.6 million gallons per day (mgd).

In regard to the Proposed Action, it will not directly affect the Low water system’s operations or supply capacity. However, because the Project Area lies within this major service network, coordination with the BWS will be essential to avoid potential conflicts with existing transmission and distribution lines during construction. The Proposed Action will not introduce new water demands or alter service pressure, and all work will occur within existing roadway right-of-way.

Impact and Mitigation Measures

Construction of the Proposed Action may temporarily affect existing water infrastructure or require coordination with BWS to avoid conflicts with water mains and laterals. Excavation and HDD operations within the right-of-way have the potential to intersect or cross beneath existing water lines. Any accidental damage could result in temporary service interruptions or the need for emergency repairs.

No long-term or operational impacts to the water system are anticipated. The Proposed Action will not increase water demand, alter service capacity, or require new connections to the potable water network. Upon completion, the underground electrical improvements will coexist with existing BWS facilities, consistent with utility separation standards.

Prior to construction, consultation and coordination with the BWS to identify and confirm the exact locations and depths of existing water mains and laterals through record drawings and utility locating (potholing). Construction plans will maintain required horizontal and vertical clearance from BWS facilities. If temporary water service interruptions become necessary, affected customers will be notified in advance, and service will be restored promptly.

All construction will comply with BWS design and construction standards, and any disturbed water facilities will be repaired or replaced with equal or better condition. Spill prevention and containment measures will be implemented to ensure that no hazardous materials or drilling fluids enter storm drains or the water system.

With adherence to these measures and coordination with BWS and other utility providers, the Proposed Action is not anticipated to result in any significant adverse impacts to the municipal water system.

3.13.2 Drainage System

The Kapālama Canal and Nu‘uanu Stream are the two major drainageways that flow through the Project Area and empty into the Honolulu Harbor. “The existing backbone drainage systems consist of drain lines owned by CCH, State, and private entities (Iwilei FEIS, 2025). A portion of the Project Area is located within a highly urbanized low-lying area characterized by impervious surfaces such as paved roadways, sidewalks, and parking lots. Stormwater within the area is collected through a municipal storm drainage system

According to the 2025 Iwilei FEIS, the drainage system has various deficiencies and constraints due to the limited capacity of the major drainageways, a flat low-lying terrain, and a high-water table. Additional factors, including tidal influences, blockage of shallow drains, and malfunctioning private pump system (only one of the two private pumps is operational), may be contributing to existing flooding conditions. The Iwilei Master Plan Area, which also encompasses the Project Area of the Proposed Action, is subject to four primary flood hazards: coastal flooding, storm water flooding, riverine flooding, and groundwater flooding.

As mentioned in section 3.5.2, according to the FEMA Flood Map Service Center and FIRM map, Figure 3-8, the majority of the Project Area is within Zone X. This zone indicates areas outside the 0.2% annual chance floodplain and considered to have minimal risk of flooding under current conditions. However, localized flooding and ponding have been documented within the Iwilei-Kapālama corridor due to tidal influences, limited drainage capacity, and low-lying topography (Iwilei FEIS, 2025). These conditions suggest that, while the area is not mapped within a high-risk flood zone, it remains susceptible to periodic flooding under heavy rainfall or high-tide events.

Impact and Mitigation Measures

Short-term drainage impacts may occur during construction due to temporary surface grading, equipment staging, and soil disturbance near roadway inlets (openings or structures that allow stormwater runoff from rain or surface flow to enter the underground drainage system) and existing drainage lines. HDD operations are largely subsurface and are not expected to permanently alter existing drainage patterns. However, localized ponding may occur if inlets are blocked by sediment or debris during construction.

Construction activities may also generate sediment-laden runoff that could enter nearby drains or surface waters if not properly controlled. These effects will be temporary and limited to the duration of ground-disturbing activities.

Typical BMPs will include the installation of silt fences, inlet protection devices, and sediment barriers around active work zones and drainage inlets, as well as proper containment of excavated material and stockpiles. Regular inspection and maintenance will be performed to ensure BMPs remain effective, especially after heavy rainstorm events. Coordination with the CCH Department of Facility Maintenance (DFM) or Department of Design and Construction (DDC) will occur as

needed to ensure drainage structures remain functional during construction. Upon completion of work, all disturbed areas and affected drainage facilities will be cleaned, restored, and stabilized to preconstruction condition or better to prevent erosion or ponding.

3.13.3 Storm Water

Storm water discharges associated with construction activities are regulated under Hawai‘i Administrative Rules (HAR) Chapter 11-55, Appendix C, which governs the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Associated with construction Activity. The NPDES permits contains limits on what can be discharged into the water of the United States (Iwilei FEIS, 2025). Projects that disturb one acre or more of land are required to obtain NPDES coverage from the DOH Clean Water Branch. Compliance requires development and implementation of Storm Water Pollution Prevention Plan (SWPPP) that includes BMPs to control erosion, sedimentation, and pollutants in runoff.

Additionally, the CCH adopted its Storm Water Best Management Practices (SW-BMP) for New and Redevelopment guidelines on August 16, 2017. These standards apply to all land-disturbing and development activities and set forth minimum post-construction BMP requirements, such as retention systems, biofiltration features, or alternative compliance measures to manage and treat storm water runoff (Iwilei FEIS, 2025).

Impacts and Mitigation Measures

Short-term storm water impacts may occur during construction due to ground disturbance, soil exposure, and equipment operation at HDD entry and exit pits, staging areas, and materials stockpiles. Without proper controls, sediment and other pollutants could be entrained in storm water runoff and discharged into the municipal drainage system or nearby surface water. However, the use of HDD methods will substantially reduce surface disturbance compared to traditional open-trench construction, thereby minimizing the potential for erosion and runoff. Construction-related storm water impacts will be temporary and localized to the active work zones.

To minimize the potential for stormwater dischargers during construction, the contractor will obtain a NPDES General Permit coverage under HAR Chapter 11-55, Appendix C and implement a SWPPP prior to construction. The SWPPP will identify site-specific BMPs designed to prevent pollutants from entering State waters. BMPs will include the installation of silt fences, inlet protection devices, sediment barriers, and spill prevention measures, as well as proper storage of fuels and materials. Regular inspections will be conducted to ensure BMPs remain effective, especially following rainfall events.

No long-term adverse storm water impacts are anticipated. The Proposed Action is not anticipated to increase impervious surface area or alter existing runoff patterns. Once construction is complete, storm water will continue to flow into the existing municipal drainage system under baseline conditions. The Proposed Action will adhere to these standards to ensure long-term compliance with City and State storm water management requirements.

3.13.4 Electrical System

The Project Area is served by existing electrical distribution lines operated by the Hawaiian Electric Company (HECO), which provides service to surrounding commercial, industrial and residential users within the Iwilei-Kapālama corridor. Majority of electric power on O‘ahu is produced by fossil fuel-based generation facilities located primarily on the island’s west side and transmitted eastward through two major power transmission corridors. These regional systems interconnect HECO substations distributed across

the island. The electrical distribution network consists of a combination of underground and overhead lines typically supported by joint use wood poles. The broader transmission network includes regional transmission and sub-transmission lines, some of which are carried on metal poles for structural support.

Presently, HECO serves its residential, commercial, and government customers in the Iwilei Master Plan Area, which covers the Project Area for this Proposed Action, from its 12-kV distribution system (Iwilei FEIS, 2025). Over time, the system has become capacity constrained due to increasing electrical demand associated with redevelopment, transit-oriented development (TOD) planning, and growth in the surrounding Iwilei-Kapālama and Liliha CC areas. The Proposed Action is consistent with the ongoing grid modernization and urban utility planning efforts intended to enhance system reliability, improve safety, and accommodate increased electrical demand associated with planned housing and redevelopment in the Iwilei-Kapālama area.

Impacts and Mitigation Measures

Short-term construction impacts may include temporary power interruptions during cutover and tie-in activities. These effects will be temporary and minimized through advanced coordination with HECO and affected customers.

To minimize potential construction-related impacts to the electrical system and surrounding community, the Proposed Action will implement standard BMPs and coordination procedures. Construction scheduling and tie-in activities will be closely coordinated with HECO to minimize service interruptions and avoid disruption to customers. Affected agencies, businesses, and property owners will be notified in advance of any planned outages or access restrictions. Appropriate traffic control measures will be maintained throughout construction to ensure safe passage for vehicles and pedestrians near active work zones. Construction materials and equipment will be staged within designated areas to avoid obstructing driveways, utilities, or public access. Upon completion of work, all disturbed roadway surfaces, sidewalks, and surrounding areas will be restored to pre-construction conditions or better, ensuring that electrical improvements are completed safely and with minimal inconvenience to the public. With the implementation of these measures, the Proposed Action is not anticipated to have any significant adverse impacts on the existing electrical system or surrounding community.

3.13.5 Telecommunication System

According to the Iwilei Master Plan FEIS, telecommunication services are provided by Hawaiian Telcom and Spectrum via their overhead lines mounted onto the same wooden poles that support the HECO 12-kV and 4kV distribution systems. Existing Hawaiian Telcom and Spectrum telecommunications infrastructure primarily consists of a mix of twisted copper pair and coaxial cables, supplemented by fiber optic trunk lines used for high-bandwidth transmission. However, in recent years, both companies have shifted toward a "fiber-to-the-premises" (FTTP) model, expanding the use of fiber optic cables for regional and local distribution as well as direct service connections to customers. Portions of the Project Area also contain underground duct systems constructed by utilities to house trunk cables that support higher-capacity regional telecommunications distribution.

Impacts and Mitigation Measures

Construction activities may result in temporary disruptions to telecommunications service if existing lines or conduits are exposed or relocated. HDD operations, trenching for lateral connections, or installation of new conduits could require coordination with Hawaiian Telcom and

Spectrum to avoid interference with existing facilities. These impacts are expected to be short-term and localized, limited to the duration of active construction in each segment.

To minimize potential conflicts, coordination with Hawaiian Telcom and Spectrum prior to construction to identify existing duct lines, confirm connecting points, and schedule any required service interruptions. Work near existing lines will be performed under the supervision of the respective utility representatives, following applicable safety and clearance standards. Any temporary service outages will be scheduled and communicated to affected users in advance. Upon completion, all telecommunications infrastructure will be restored, and disturbed areas will be returned to preconstruction condition or better.

No long-term adverse impacts to the existing or future telecommunication systems are anticipated with the Proposed Action.

3.14 Public Services and Facilities

The following section describes the public services and facilities that currently serve the Project Area and evaluates the potential impacts associated with the Proposed Action.

3.14.1 Police Services

Police protection in the Project region is provided by the Honolulu Police Department (HPD). The project area is located within two Honolulu Police Department (HPD) districts: District 1 – Downtown and District 5 – Kalihi. District 1 encompasses the general Downtown and Central Honolulu area, including Chinatown. District 5 encompasses the Kalihi area, from upper Kalihi to lower Nu‘uanu and Kapālama, and spans westward to Moanalua and Daniel K. Inouye Airport. HPD is headquartered in the Alapa‘i Police headquarters on South Beretania Street within this District 1, located approximately 2.4 miles east of the Project Area.

Impacts and Mitigation Measures

The construction and operation of the Proposed Action are not anticipated to increase strain on police services. The Proposed Action will not increase the on-site population and will not create long-term demand for additional police protection services. In the short term, HPD may receive increased calls regarding construction-related traffic. In addition, HPD may be required to assist with project-related construction and traffic flow. Potential traffic impacts will be mitigated through the implementation of construction staging and traffic management plans. With the proposed mitigation measures, significant project-related impacts on HPD services are not expected. No long-term, secondary, or cumulative impacts on police protection are anticipated or expected, and no mitigation measures are necessary or recommended.

The Proposed Action is not anticipated to increase the strain on police services. In addition, the Proposed Action, in and of itself, will not increase the on-site population, as it consists solely of installing underground conduit and manhole systems. However, the project is intended to support planned housing and the TOD development in the Iwilei-Kapālama area, which may increase population density over time. Any long-term increases in demand for polices services associated with future development will be addressed through separate planning, entitlement, and service coordination processes, which are beyond the scope of this project.

3.14.2 Fire Protection Services

Fire protection is provided by the Honolulu Fire Department (HFD). The Project Area has 3 fire stations located within a two-mile radius. The Kalihi Kai Fire Station, Station 31, located approximately 1.1 miles west of the Project Area on Waiakamilo Road. The Kuakini Fire Station, Station 4, is located on Olona Lane, approximately 4 miles northwest of the Project Area. The Central Fire Station, Station 1, is located near to the Project Area, and is located approximately 1.4 miles east.

Impacts and Mitigation Measures

There is the potential in which unavoidable occurrences from residents and/or businesses within the Project Area will need fire protection services. In the short-term, the Proposed Action may have minor adverse impacts such as temporary traffic disruptions, which could affect emergency vehicle access and response times in localized areas near active construction zones. These effects are expected to be temporary and limited in scope, as access to adjacent properties and at least one travel lane in each direction will remain open during construction, unless otherwise coordinated with emergency service providers.

The Proposed Action is not anticipated to create an increased demand for existing fire protection services. In addition, the Proposed Action would not increase the population and therefore would not increase on demand for fire protection services. No direct, secondary, or cumulative impacts on fire protection are anticipated or expected, and no mitigation measures are necessary or recommended.

All construction and electrical work will comply with applicable safety and fire protection regulations, including the Hawai‘i State Fire Code (HAR §3-200.1, based on the 2018 International Fire Code as amended) and the National Electrical Code (NFPA 70), as adopted by the CCH. These codes establish standards for electrical safety, fire prevention, and protection of life and property during installation and operation of underground systems.

To minimize temporary impacts during construction, coordination with the HFD to review construction schedules, emergency access routes, and traffic control plans will be implemented. At least one travel lane will remain open for emergency vehicle passage, and temporary traffic control measures will be implemented in accordance with CCH standards. Construction and staging areas will be located to avoid blocking hydrants, fire lanes, or emergency access points, and portable fire extinguishers will be maintained at all active work zones in compliance with OSHA 29 CFR 1926.150 (Fire Protection and Prevention).

Civil drawings will be submitted to HFD for review and approval, and on-site fire protection requirements coordinated with the Fire Prevention Bureau of the HFD. With adherence to these regulations and BMPs, the Proposed Action is not anticipated to result in any significant adverse impacts to fire protection services or emergency response capabilities in the Iwilei-Kapālama area.

3.14.3 Medical Services

The nearest full-service hospitals to the Iwilei-Kapālama Project Area with emergency health care services are the Queen’s Medical Center, Kuakini Medical Center, and Straub Medical Center. Also located within the Project Area is the Kalihi-Pālama Center (KPHC) at the corner of North King Street and Pua Lane, which “offers a range of medical and social services directed toward low-income ethnic minorities and the homeless” (Iwilei FEIS, 2025). The Kuakini Medical Center is the closest emergency room from the Project Area, which is approximately 1 mile or approximately 6 minutes away (Iwilei FEIS, 2025).

Pre-hospital emergency medical care and emergency ambulance service on O‘ahu is provided by the CCH’s Emergency Services Department, Emergency Medical Services (EMS) Division. The CCH has 23 EMS ambulance units under four districts. The Project Area is within District 2 and is covered by the EMS Unit Medic 33 and Medic 44, located at 1930 Dillingham Blvd, at the Deelite Bakery (Former) which is located approximately 1.5 miles west of the ewa side of the Project Area . All ambulance units are designated as advanced life support (ALS) units, meaning they are staffed by at least one paramedic.

Impacts and Mitigation Measures

In the short-term, the Proposed Action may have minor adverse impacts such as temporary traffic disruptions, which could affect emergency vehicle access and response times in localized areas near active construction zones. These effects are expected to be temporary and limited in scope, as access to adjacent properties and at least one travel lane will be maintained throughout construction.

To minimize temporary construction-related effects, coordination with the EMS Division and nearby hospitals to provide advance notice of construction schedules, detours, and lane closures will be implemented. Traffic control plans will comply with CCH standards, ensuring safe and efficient passage for emergency vehicles. Construction materials and equipment will be staged to avoid obstructing intersections, access roads, or driveways.

The Proposed Action will not increase the population in the vicinity or demand for emergency medical services. Therefore, existing medical services and facilities are anticipated to be adequate to accommodate the project. Although there may be an unavoidable and occasional need for emergency health care services by resident and/or businesses, the Proposed Action is not expected to significantly increase the need for emergency services and is not expected to have a long-term adverse impact on emergency medical providers or their ability to service the community. No secondary or cumulative impacts on emergency services are anticipated. Therefore, no additional mitigation measures are proposed.

Adherence to these coordination measures and implementation of BMPs, the Proposed Action is not anticipated to result in any significant adverse impacts to medical services or emergency medical response capabilities in the Iwilei-Kapālama area.

3.14.4 Education

The Project Area is part of the State Department of Education’s (DOE) Honolulu District. The Project Area is within a densely developed urban corridor served by several educational institutions, including Ka‘iulani Elementary, Farrington High School, and Hawai‘i Community College – Honolulu Campus, all within approximately 1 to 2 miles of the Project Area. Much of the Project Area falls within the McKinley High School Complex and Farrington High School Complex (Iwilei FEIS, 2025).

Impact and Mitigation Measures

The Proposed Action is not creating residential units. Therefore, educational facilities are not anticipated to be impacted.

In the short-term, construction activities will be confined to public roadways and previously disturbed corridors and will not occur directly on or adjacent to any school property. The Proposed Action will not affect access to school driveways or pedestrian routes, nor will it alter enrollment capacity, staffing, or educational programming.

In the long term, the Proposed Action will have beneficial effects by improving system reliability and supporting redevelopment that enhances community infrastructure, indirectly benefitting schools and public facilities through improved electrical resilience. The Proposed Action will also enhance public safety near school zones by reducing the risk of downed electrical lines and improving the overall streetscape.

To minimize short-term construction impacts, coordinate with the Hawai‘i DOE and nearby schools to provide advance notice construction schedules, potential traffic detours, and pedestrian access adjustments. Traffic control plans will ensure continued access for school buses, students, and staff and will comply with the CCH construction safety standards. Staging areas will be located to avoid interference with school access points or pedestrian crossings.

With the implementation of these measures and adherence to BMPs, the Proposed Action is not anticipated to result in any significant adverse impacts on education services or access to nearby schools and educational facilities.

3.14.5 Parks and Recreational Facilities

The CCH Department of Parks and Recreation (DPR) operates parks, recreational facilities, and programs across the island of O‘ahu. In addition to playgrounds, campgrounds, beach parks, and botanical gardens, the department provides year-round recreation programs for all ages including concerts, fairs, competitions, and cultural exhibitions. CCH manages several recreational facilities near the project area, including:

- ‘A‘ala Park
- Auld Lane Mini Park
- Beretania Community Park
- Kauluwela Community Park
- Kānoa Street Mini Park

There is one DOE public school right along the Project Area alignment with recreational space, Princess Victoria Ka‘iulani Elementary School. This recreational space includes an open grass field, two tennis courts, and two basketball courts.

The Project Area is also near Pālama Settlement, a non-profit, community-based social service agency that provides social programs and recreational facilities to serve low-income and public housing residents of the Kalihi and Pālama neighborhoods (Iwilei FEIS, 2025). Recreational facilities at Pālama Settlement include a swimming pool, gymnasium, ball courts, and athletic fields. Pālama Settlement’s Recreational Division provides sports and fitness programs for all ages, in addition to many arts and crafts classes (Palama Settlement, 2017).

Impact and Mitigation Measures

In the short term, construction of the Proposed Action may have minor adverse impacts such as temporary lane closures, construction noise, or dust that could affect access to nearby parks or recreational facilities. These effects will be temporary and localized to active construction areas and will be managed through standard construction BMPs. Construction activities will not occur within ‘A‘ala Park, however, signage and temporary barriers may be installed along adjacent work areas within the public right-of-way to ensure a safe separation between park users and construction zones. All disturbed above-ground areas within the right-of-way will be restored to their original condition upon completion.

To minimize short-term impacts, coordination with the Department of Parks and Recreation (DPR) to provide advance notice of construction activities that may temporarily affect park access or parking. Dust and noise control measures will be implemented in accordance with HAR Chapter 11-60.1 (Air Pollution Control) and HAR Chapter 11-46 (Community Noise Control). Construction work hours will comply with City regulations to avoid disruption during periods of peak recreational use.

The Proposed Action is not anticipated to result in any significant adverse impacts to public parks or recreational facilities in the Iwilei-Kapālama area.

3.14.6 Solid Waste Collection and Disposal

Solid waste collection services for the Kapālama area are provided by the CCH Department of Environmental Services (ENV), Refuse Division. The waste is collected by CCH crews and disposed of at adjacent refuse collection yards. The nearest refuse collection yard is the Honolulu Refuse Collection Yard on Middle Street.

On O‘ahu, disposed solid waste is taken to three main locations. A waste-to-energy combustor, H-POWER (Honolulu Program of Waste Energy Recovery) located at the Campbell Industrial Park receives all residential and commercial packer truck wastes on the island and incinerates about 1,800 tons of combustible waste per day, or processes over 700,000 tons of waste annually, producing up to ten percent of O‘ahu’s electricity (Iwilei FEIS, 2025).

The Waimānalo Gulch Landfill (WGL) is CCH’s primary solid waste disposal facility, located mauka of Farrington Highway near Kahe Point. WGL accepts residential, commercial, and nonhazardous industrial solid waste, demolition debris and ash and residue from H-POWER waste-to-energy facility. Wastewater treatment sludge, septic tank waste and cesspool contents area also accepted, provided such disposal is in accordance with WGL’s operating guidelines. The WGL site also handles special wastes such as spent lime, contaminated foods and asbestos.

PVT Land Company, Ltd. (PVT) in Nānākuli, is the only construction and demolition waste landfill on O‘ahu. PVT also receives asbestos and other contaminated materials but diverts up to 80 percent of the construction and demolition waste it collects (PVT Land Company Ltd., 2016). There are other companies on O‘ahu who recycle deconstructed materials in order to divert them from the landfills and others who mitigate hazardous construction waste.

Impact and Mitigation Measures

The Proposed Action is not anticipated to significantly impact solid waste management services or operations in the vicinity of the project. In the short term, construction activities will generate temporary construction-related waste, which will require disposal at approved facilities. In response to this, to the extent practicable, construction debris generated by project construction activities will be recycled, as appropriate, and will be properly handled during transit in accordance with HAR 11-58.1 (Solid Waste Management Control), the CCH Refuse Division requirements, and the industry’s best practices. Project-related waste will only be a small portion of the island-wide total and is not expected to impact CCH solid waste facilities significantly. Recyclable materials (i.e., scrap metal, conduit remnants, wood pallets) will be separated where feasible and disposed of through approved recycling programs.

The Proposed Action is not anticipated to have any significant long-term impact on solid waste management in the area. Once operational, the Proposed Action is not anticipated to generate solid waste. And in the case of regular or repair maintenance, any solid waste generated will be disposed of properly.

3.15 Socio-Economic Characteristics

The Project Area is within one census designated place. Urban Honolulu has an approximate population of 350,964 with a median household income of $84,907.

Table 3-6 displays the demographic characteristics of Urban Honolulu Census Designated Place (CDP) and O‘ahu based on the 2022 American Community Survey.

Table 3-6: Urban Honolulu CDP and O’ahu Demographic Characteristics

Subject	Urban Honolulu CDP		City and County of Honolulu	
	Number	Percent	Number	Percent
Total Population	350,964	100	995,638	100
Age				
Under 5 years	15,474	4.4	56,026	5.6
5-19 years	48,211	13.7	169,513	17.0
20-64 years	207,376	59.1	574,785	57.7
65 years and over	75,262	21.4	195,314	19.6
Race				
White	54,137	15.4	184,765	18.6
Black or African American	6,013	1.7	22,194	2.2
American Indian and Alaskan Native	744	0.2	2,235	0.2
Asian	185,705	52.9	407,657	40.9
Native Hawai’ian or other Pacific Islander	32,360	9.2	94,864	9.5
Hispanic or Latino				
Two or more races	21,982	6.3		
	64,013	18.2	17,397	1.7
Household				
Total Households	**137,203**	**100**	**333,700**	**100**
Married-couples	54,470	39.7	169,591	50.8
Female householder, no partner present	38,554	28.1	41,846	12.5
Male householder, no partner present	33,478	24.4	18,047	5.4
Non-family household	10,702	7.8	104,216	31.2
Average household size	3.17		2.93	
Housing Occupancy and Tenure				
Total Housing Units	**156,211**	**100**	**369,775**	**100**
Occupied Units	137,216	87.8	333,700	90.2
By owner	17,152	11.0	196,384	58.8

By renter	62,570	40.1	137,316	41.1
Vacant Units	18,995	12.2	36,075	9.8

3.16 Secondary Impacts

According to HAR §11-200.1-2, "secondary or indirect impact or effect" means "an effect that is caused by the action and is later in time or farther removed in distance but is still reasonably foreseeable in the future."

As a utility infrastructure improvement project, the Proposed Action is limited to construction and installation activities and will not directly induce population growth, new land development, or changes in land use intensity within the Iwilei-Kapālama district.

In short-term, secondary impacts could include localized increases in noise, dust, traffic congestion, and construction-related emissions generated by heavy equipment and vehicle trips. These effects will be temporary and minor, occurring only during the active construction phase. All work will be conducted in accordance with applicable environmental regulations, including HAR Chapter 11-46 (Air Pollution Control) and HAR 11-46 (Community Noise Control), and managed through implementation of BMPs to minimize off-site effects.

In the long-term, the Proposed Action may have beneficial secondary effects by improving system reliability and supporting redevelopment within the Iwilei-Kapālama TOD corridor. The Proposed Action will support the development of housing at the planned Liliha CC, Mayor Wright Homes, and Kamehameha Schools Bishop Estate-Kapālama Kai and facilitate a more resilient urban infrastructure and reduce visual and safety impacts associated with overhead utility lines.

Because the Proposed Action will not generate new housing, expand urban boundaries, increase service demand beyond existing and planned growth, no significant secondary or growth-induing impacts are anticipated. Any future redevelopment supported by improved electrical infrastructure would undergo separate environmental review under HRS Chapter 343 and HAR Chapter 11-200.1, as applicable.

3.17 Cumulative Impacts

According to HAR Chapter 200.1 "Cumulative impact" relates to the impact on the environment that results from the incremental impact of a Proposed Action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The Proposed Action represents a localized utility improvement within the broader Iwilei-Kapālama district. The cumulative impacts analysis considers how Proposed Action's potential effects may combine with past, present, and reasonably foreseeable future actions in the surrounding area.

The Iwilei-Kapālama district has a long history of industrial, commercial, and transportation-related uses, with extensive infrastructure already in place. Recent and ongoing efforts by HCDA and other agencies-such as road and drainage upgrades, TOD infrastructure planning, and utility coordination, reflect a gradual transition from industrial to mixed-use, transit-oriented development. The Proposed Action contributes to this transition by replacing aging overhead utilities with more efficient and resilient underground systems.

Planned projects in the vicinity include the Liliha CC Redevelopment, the Mayor Wright Homes Redevelopment, and the Kamehameha Schools Bishop Estate – Kapālama Kai, each of which will rely on improved infrastructure capacity and reliability. These projects are anticipated to occur within the same general timeframe and geographic area as the Proposed Action. When considered together, these initiatives

will enhance urban livability and support the long-term revitalization goals outlined in the Iwilei-Kapālama TOD Plan and the Primary Urban Center Development Plan (PUCDP).

Construction of the Proposed action, in combination with other planned projects, may temporarily contribute to localized traffic congestion, noise, dust, and access disruptions within shared roadway corridors. However, these impacts will be temporary and managed through coordination among project proponents, adherence to CCH traffic control standards, and implementation of BMPs.

In the long-term, cumulative impacts are expected to be beneficial. The undergrounding of electrical systems will improve service reliability, reduce visual clutter, and enhance resilience against storm or flood events. In combination with concurrent infrastructure upgrades and redevelopment, the Proposed Action will help establish a modern, efficient utility network that supports the district's transformation into a safe, livable, and transit-oriented community.

Given the Proposed Action's limited scope, short duration, and location within existing developed corridors, the Proposed Action will not contribute to significant adverse cumulative impacts on natural, cultural, or socioeconomic resources. Instead, it forms part of a broader set of improvements that collectively advance the City and State's long-term urban revitalization and sustainability objectives.

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CHAPTER 4: PLANS, POLICIES, AND CONTROLS

4. Relationship to Plans, Policies, and Controls

Pursuant to HAR Section 11-200.1-24, this section describes the relationship of the Proposed Action to "*land use and natural or cultural resource plans, policies, and controls for the affected area*." Discussed is how the Proposed Action *"may conform or conflict with objectives and specific terms of approved or proposed land use and resource plans, policies, and controls, if any, for the affected area."* Where a conflict or inconsistency exists, described is the extent to which the Proposed Action has been reconciled *"with the plan, policy, or control, and the reasons why*" the proposing agency (City and County Department of Environmental Services) *"…has decided to proceed, notwithstanding the absence of full reconciliation."*

The relationship of the Proposed Action to the applicable land use and natural or cultural resources plans, policies, and controls for the affected area is described below, and identifies those that are supported by the Proposed Action.

4.1 State Land Use Plans and Policies

4.1.1 Hawai‘i State Plan

The Hawai‘i State Plan, Chapter 226, HRS, as amended, provides goals, objectives, policies, and priorities for the State. The purpose of the Hawai‘i State Plan is to set forth a plan that shall serve as a guide for the future long-range development of the State; identify the goals, allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improve coordination of Federal, State, and County plans, policies, programs, projects, and regulatory activities; and, to establish a system for plan formulation and program coordination to provide for an integration of all major State, and County activities. The State Plan is divided into three sections:

- Part 1 is Overall Theme, Goals, Objectives and Policies.
- Part 2 is Planning Coordination and Implementation.
- Part 3 is Priority Guidelines.

§226-4 State goals.

In order to ensure, for present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:

(1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i’s present and future generations.

(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.

(3) Physical, social, and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

Discussion:

The Proposed Action will support the objectives or policies outlined above for the physical environment related to scenic, natural beauty, and historical resources. The Proposed Action supports this objective by contributing to the long-term preservation of the surrounding urban environment, which includes historical and culturally significant sites in the Iwilei and Kapālama areas. Placing electrical utilities underground reduces visual intrusions that can detract from the character of historic districts and minimizes the physical impact on above-ground historical features. The aesthetic visual environment of Iwilei and Kapālama will also be enhanced by the undergrounding of electrical utilities.

§226-5 Objectives and policies for population

Objective A. It shall be in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.

(1) Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.

(3) Promote increased opportunities for Hawai'i's people to pursue their socio-economic aspirations throughout the islands.

(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.

Discussion:

The Proposed Action will support the objectives and policies of the State with regards to population. The Proposed Action of undergrounding and improving electrical infrastructure in the Iwilei and Kapālama areas enables more resilient, reliable, and future-ready urban development. These infrastructure improvements lay the groundwork for higher-density, transit-oriented communities that can accommodate population growth in a sustainable way. Enhanced electrical capacity and reliability are essential for both residential and commercial development, which in turn expands economic and social opportunities for local residents. The project aligns with smart growth principles that manage population increases without encroaching on open space or overburdening existing systems elsewhere in the state.

The project also modernizes critical infrastructure necessary to support high-density, mixed-use development envisioned in area and regional plans. These upgrades ensure that the electrical grid can meet future demand and are consistent with broader land use and infrastructure planning efforts tied to the area's transformation into a more livable, transit-oriented urban district.

§226-6 Objectives and policies for the economy – in general

Objective A. Planning for the State's economy in general shall be directed toward achievement of the following objectives:

> (1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people.
>
> (2) A steady growing and diversified economic base that is not overly dependent on a few industries and includes the development and expansion of industries on the neighbor islands.

Objective B. To achieve the general economic objectives, it shall be the policy of this State to:

(1) Promote and encourage entrepreneurship within Hawai'i by residents and nonresidents of the State.

(3) Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.

(4) Transform and maintain Hawai'i as a place that welcomes and facilitates innovative activity that may

lead to commercial opportunities.

(8) Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.

(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.

(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.

(12) Encourage innovative activities that may not be labor-intensive but may otherwise contribute to the economy of Hawaii.

(13) Foster greater cooperation and coordination between the public and private sectors in developing Hawai'i's employment and economic growth opportunities.

(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.

(15) Maintain acceptable working conditions and standards for Hawai'i's workers.

(18) Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy, particularly with respect to emerging industries in science and technology.

(19) Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.

(21) Foster a business climate in Hawai'i- including attitudes, tax and regulatory policies, and financial and technical assistance programs-that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.

Discussion:

The Proposed Action supports the objective by creating a more reliable and modern electrical infrastructure in the Iwilei and Kapālama areas, which is essential for fostering a stable business environment. Improved utilities attract private investment and reduce operational risks for small businesses and startups.

In upgrading electrical infrastructure in a way that aligns with environmental and social sustainability goals. With undergrounding utilities, the visual environment is enhanced, public safety is improved, and there is an increase in system resiliency to climate-related hazards, such as high winds and flooding. The project additionally supports the creation of infrastructure necessary for long-term, transit-oriented development that aligns with environmental planning principles.

In the event of disruptions to overseas transportation, the Proposed Action supports the objective by improving the reliability and resilience of critical electrical infrastructure in the Iwilei-Kapālama areas. Maintaining basic services such as power is essential to ensure that economic activities, supply chains, and

essential facilities continue to function.

Additionally, the Proposed Action enables construction activity that aligns with the State's broader growth and development goals, particularly in areas designated for urban intensification and transit-oriented development.

The Proposed Action will generate opportunities during the construction phase and subsequent operations. This initiative will directly and indirectly contribute to the local economy throughout the construction period. A portion of the expenditures associated with the Proposed Action will be allocated towards purchasing materials from local suppliers, stimulating economic activity. Employing a local workforce will enable the circulation of income within the community, benefiting local retail businesses. Moreover, the Proposed Action will provide valuable work experience, contributing to the development of a skilled local labor force.

By adhering to relevant labor laws, regulations, and industry best practices regarding worker safety, the Proposed Action will maintain and improve acceptable working conditions and standards. Although the primary focus of the Proposed Action is on upgrading electrical infrastructure, it will indirectly support the economic base by ensuring efficient electrical enhancements for the region. A sufficient electrical system is crucial for supporting other industries and businesses, as it promotes community development, environmental stewardship, and a favorable living environment – all essential factors for economic growth and diversification.

§226-10.5 Objectives and policies for the economy – information industry

Objective A. Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawai‘i as a leader in broadband and wireless communications and applications in the Pacific Region.

Objective B. To achieve the information industry objective, it shall be the policy of this State to:

(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawai‘i and between Hawai‘i and the world, and make high speed communication available to all residents and businesses in Hawaii.

(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai‘i to accommodate future growth and innovation in Hawaii's economy.

(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry.

Discussion:

The Proposed Action will support the objectives or policies outlined above for the economy related to telecommunications and information technology industries.

The Proposed Action aligns with and supports key industry objectives of the Hawai‘i State Plan by facilitating essential infrastructure improvements that enable enhanced telecommunications capabilities.

- Promotes the attainment of high-speed electronic and wireless communication by providing resilient underground utility corridors that can accommodate advanced broadband and wireless technologies.
- Encourages the continued development and expansion of telecommunications infrastructure through modernization of existing utility infrastructure, supporting future growth and innovation in Hawai‘i’s economy.
- Supports public-private cooperation by creating a stable and well-designed infrastructure environment conducive to information industry development and maintenance.

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

Objective A. The land-based, shoreline, and marine resources objectives are:

(1) Prudent use of Hawai‘i's land-based, shoreline, and marine resources.

(2) Effective protection of Hawai‘i's unique and fragile environmental resources.

Objective B. To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:

(1) Exercise an overall conservation ethic in the use of Hawai‘i's natural resources.

(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.

(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

(8) Pursue compatible relationships among activities, facilities, and natural resources.

Discussion:

The Project Location is located approximately 0.82 miles (1.32 km) from the shoreline of Honolulu Harbor. By enhancing the electrical infrastructure within the Iwilei and Kapālama neighborhoods, the Proposed Action ensures the prudent use of land resources in undergrounding the new 25kV distribution systems. The Proposed Action takes into consideration the physical attributes of the area in its planning and design, minimizing environmental disturbance by locating improvements within existing urban corridors. By implementing best management practices, it helps prevent costly or irreparable environmental damage while maintaining a balance between necessary infrastructure and the natural environment.

Furthermore, the Proposed Action fosters compatible relationships among activities, facilities, and natural resources, contributing to sustainable development that respects Hawai‘i’s land-based, shoreline, and marine resources values.

§226-12 Objectives and policies for the physical environment – scenic, natural beauty, and historic resources.

Objective A. Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.

Objective B. To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:

(1) Promote the preservation and restoration of significant natural and historic resources.

(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.

(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.

(5) Encourage the design of developments and activities that complement the natural beauty of the islands.

Discussion:

The Proposed Action supports this objective by contributing to the long-term preservation of the surrounding urban environment, which includes historical and culturally significant sites in the Iwilei and Kapālama areas. Placing electrical utilities underground reduces visual intrusions that can detract from the character of historic districts and minimizes the physical impact on above-ground historical features. The aesthetic visual environment of Iwilei and Kapālama will also be enhanced by the undergrounding of electrical utilities.

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

Objective A. Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:

(1) Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.

(2) Greater public awareness and appreciation of Hawai'i's environmental resources.

Objective B. To achieve the land, air, and water quality objectives, it shall be the policy of this State to:

(2) Promote the proper management of Hawai'i's land and water resources.

(3) Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.

(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.

(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.

(6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.

(7) Encourage urban developments in close proximity to existing services and facilities.

Discussion:

The Proposed Action supports this objective by upgrading and undergrounding electrical infrastructure in a way that reduces environmental impacts on land and water resources. By relocating power lines underground, the project minimizes potential soil erosion, contamination risks, and disruption to natural drainage patterns. This approach contributes to better management and protection of Hawai‘i’s land and water resources. Undergrounding electrical infrastructure reduces the risk of contamination and physical disruption to the surface, groundwater, and coastal water systems. In addition, the Proposed Action also reduces vulnerabilities to natural hazards such as hurricanes, flooding, and earthquakes. This infrastructural improvement enhances community resilience, protects property, and reduces risks to life by maintaining critical electrical service during and after disaster events, consistent with the State Plan’s goal of hazard mitigation.

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

Objective A. Planning for the State’s facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.

Objective B. To achieve the general facility systems objective, it shall be the policy of this State to:

(1) Accommodate the needs of Hawai‘i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.

(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.

Discussion:

The Proposed Action supports this objective by coordinating the project with state and county planning efforts. This ensures that facility improvements align with broader capital improvement priorities and meet the needs of Hawai‘i’s residents. By integrating infrastructure development into comprehensive planning frameworks, the project contributes to efficient resource use and supports the well-being of the community consistent with the State Plan. The upgraded systems, as proposed by the project, can better integrate emerging technologies like renewable energy and electric vehicle charging.

§226-18 Objectives and policies for facility systems – energy.

Objective A. Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:

(1) Dependable, efficient, and economical statewide energy and telecommunication systems capable of supporting the needs of the people.

(2) Increased energy self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation;

(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;

(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and

(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.

Objective B. To achieve energy objectives, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable energy services to accommodate demand.

Objective C. To further achieve the energy objectives, it shall be the policy of this State to:

(2) Ensure a sufficient supply of energy to enable power systems to support the demands of growth.

Discussion:

The Proposed Action supports the sufficient supply of energy to enable power systems to support the demands of growth through upgrading the electrical infrastructure to improve reliability and capacity. These improvements help ensure that the power system can meet the increased demand from planned housing developments and community growth in the Iwilei and Kapālama area. The Proposed Action aligns with the policy's intent to maintain adequate energy supply for growth.

§226-19 Objectives and policies for socio-cultural advancement – housing.

Objective A. Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:

(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more rental and for sale affordable housing is made available to extremely low-, very low-, lower-, moderate-, and above moderate-income segments of Hawaii's population.

(2) The orderly development of residential areas sensitive to community needs and other land uses.

(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.

Objective B. To achieve the housing objectives, it shall be the policy of this State to:

(1) Effectively accommodate the housing needs of Hawai'i's people.

(2) Stimulate and promote feasible approaches that increase affordable rental and for sale housing choices for extremely low-, very low-, lower-, moderate-, and above moderate-income households.

(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.

(4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.

(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.

(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.

(7) Foster a variety of lifestyles traditional to Hawai‘i through the design and maintenance of neighborhoods that reflect the cultures and values of the community.

Discussion:

The Proposed Action supports the above socio-cultural advancement objectives and policies by enabling reliable and adequate utility infrastructure critical for urban redevelopment and housing growth. This Proposed Action specifically:

- Advances the coordinated development of essential facility systems to meet current and future community needs.
- Ensures a sufficient, dependable energy supply to support planned growth in housing developments such as Liliha Civic Center, Mayor Wright Homes, and Kapālama Kai Phase I.
- Directly facilitates affordable and diverse housing opportunities by providing necessary infrastructure for new and rehabilitated residential areas.
- Enhances community livability through improvements that allow housing designs to align with the local cultural and environmental values.

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

Objective A. Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:

(1) Efficient, effective, and responsive government services at all levels in the State.

(2) Fiscal integrity, responsibility and efficiency in the state government and county governments.

Objective B. To achieve the government objectives, it shall be the policy of this State to:

(1) Provide for necessary public goods and services not assumed by the private sector.

(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.

(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.

Discussion:

The Proposed Action aligns with the objective of providing necessary public goods and services that the private sector may not fully assume. Electrical infrastructure, especially when improved and undergrounded for reliability and safety, is a critical public utility service that supports community functioning and economic activity. By upgrading this infrastructure, the action helps fulfill the State’s responsibility to ensure essential public services are maintained and enhanced. The Proposed Action demonstrates

responsiveness to public concerns regarding infrastructure resilience, safety, and neighborhood quality of life.

PART III. PRIORITY GUIDELINES

Part III of the Hawai‘i State Plan establishes the overall priority guidelines to address areas of statewide concern. Under HRS § 226-102, "*The State shall strive to improve the quality of life for Hawai‘i's present and future population through the pursuit of desirable courses of action in seven major areas of Statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation*."

§226-104 Population growth and land resources priority guidelines.

Objective A. Priority guidelines to effect desired statewide growth and distribution:

(1) Encourage planning and resource management to ensure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai‘i's people.

(2) Manage a growth rate for Hawai‘i’s economy that will parallel future employment needs for Hawai‘i’s people.

(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.

Objective B. Priority guidelines for regional growth distribution and land resource utilization:

(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.

(10) Identify critical environmental areas in Hawai‘i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.

(12) Utilize Hawai‘i’s limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.

(13) Protect and enhance Hawai‘i’s shoreline, open spaces, and scenic resources.

Discussion:

The Proposed Action will support the population growth and land resources priority guidelines.

By providing enhanced electrical services, the Proposed Action will contribute to better resource and energy management, ensuring that the growing population's energy needs are met in a manner that aligns with

available and planned resource capacities. It ensures the provision of adequate utility services to accommodate housing projects aligned with community needs and economic development goals.

Proper energy and electrical services are a critical aspect of infrastructure that supports and facilitates the distribution of future growth throughout the State. By efficiently utilizing land resources for essential electrical services, the Proposed Action will contribute to the wise use of limited land resources in the region. This approach allows land to be allocated effectively for supporting projected population and economic growth needs while ensuring the protection of the environment and preserving critical areas, such as the shoreline and conservation lands, for the benefit of future generations.

§226-106 Affordable housing.

Priority guidelines for the provision of affordable housing:

(1) Seek to use marginal or non-essential agricultural land and public land to meet housing needs of low and moderate-income and gap-group households.

(4) Create incentives for development which would increase home ownership and rental opportunities for Hawai'i's low and moderate-income households, gap-group households, and residents with special needs.

(6) Encourage public and private sector cooperation in the development of rental housing alternatives.

(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.

(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.

Discussion:

The Proposed Action supports the objectives and policies outlined above by enabling key housing developments within the Liliha Civic Center, Mayor Wright Himes, and Kapālama Kai areas - targeted for low-and moderate-income households, including gap groups and residents with special needs. By providing essential utility improvements, the project facilitates public-private cooperation in rental housing development and supports multi-agency coordination necessary for successful housing delivery.

Additionally, the action advances the State's goal to prioritize quality, affordable housing for Hawai'i residents, thereby contributing to efforts that increase homeownership and rental opportunities for the local population.

§226-108 Sustainability.

Priority guidelines and principles to promote sustainability:

(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State.

(3) Promoting a diversified and dynamic economy.

(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.

(6) Considering the principles of the ahupua‘a system.

Discussion:

Proper electrical infrastructure is crucial for respecting and promoting living within the natural resources and limits of the State. The Proposed Action aims to accommodate the electrical needs of the community in a manner that is environmentally responsible and within the carrying capacity of the region's resources. Responsible electrical services help prevent pollution, preserve the environment, and ensure the well-being of both current and future generations. Moreover, the Proposed Action will support sustainable economic development and growth through the creation of short-term construction.

§226-109 Climate change adaptation.

Priority guidelines for climate change adaptation:

(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.

(8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities.

(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.

Discussion:

The Proposed Action will support the priority guidelines related to climate change adaptation by promoting a balanced integration of economic, social, community, and environmental objectives. The Proposed Action enhances infrastructure resilience by protecting critical utility systems from climate-related hazards, such as storms and flooding, thereby strengthening sector resilience essential to public health and safety. Additionally, the Proposed Action also exemplifies effective coordinated and adaptive implementation of sustainable infrastructure improvements.

4.1.2 State Functional Plans

The Hawai‘i State Plan directs appropriate State agencies to prepare Functional Plans which address statewide needs, problems, and issues, and recommend policies and actions to mitigate those problems. The Functional Plans are prepared to further define and implement statewide goals, objectives, policies, and priority guidelines contained in the Hawai‘i State Plan. Thirteen Functional Plans were prepared to implement the State Plan provisions in the areas of agriculture, conservation lands, education, employment, energy, health, higher education, historic preservation, housing, human services, recreation, tourism, and transportation.

8. Historic Preservation State Functional Plan (1991):

Purpose: Preservation of historic properties, records, artifacts and oral histories; provide public with information/education on the ethnic and cultural heritages and history of Hawai‘i.

Discussion: The Proposed Action supports the Historic Preservation State Functional Plan by incorporating consultation with the State Historic Preservation Division (SHPD) and implementing appropriate

procedures to address potential impacts to archaeological resources. An Archaeological Literature Review and Assessment (ALRA) determined that no above-ground historic properties are present within the project area (see Appendix B). Through compliance with applicable regulatory requirements and implementation of appropriate protocols, the Proposed Action supports the preservation of historic and cultural resources.

9. Housing State Functional Plan (1991):

Purpose: Provide affordable rental and for-sale housing; increase homeownership and amount of rental housing units; acquiring public and privately-owned lands for future residential development; maintain a statewide housing data system.
Discussion: The Proposed Action supports the Housing State Functional Plan by providing essential electrical infrastructure needed to serve planned residential development within the Iwilei-Kapālama area. While the project does not construct housing, it facilitates the development of new housing units by enabling adequate utility service within an existing urban district designated for redevelopment. Accordingly, the Proposed Action supports the State's objectives to increase housing availability and accommodate future residential growth.

4.1.3 State Land Use District

The State Land Use Law, Chapter 205, HRS, is intended to preserve, protect and encourage the development of lands in the State for uses that are best suited to the public health and welfare of Hawai'i's people. Under Chapter 205, HRS, all lands in the State of Hawai'i are classified by the State Land Use Commission (LUC) into one of four major categories of State Land Use Districts. These districts are identified as the Urban District, Agricultural District, Conservation District, and Rural District. Permitted uses within the districts are prescribed under Title 12, Chapter 205 (Land Use Commission), HRS, and the State Land Use Commission's Administrative Rules prescribed under Title 15, Subtitle 3, Chapter 15 HAR.

Discussion: The Project Area, Iwilei-Kapālama, is situated within State Land Use Urban Districts (see Figure 1-3). HRS 205-4.5 states permissible uses within urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated. Thus, the goals of the Proposed Action are consistent with Chapter 205, HRS, by enhancing essential public infrastructure with an urbanized area designated for such uses.

4.14 Hawai'i Coastal Zone Management Program

The National Coastal Zone Management (CZM) Program was created through passage of the Coastal Zone Management Act of 1972. The U.S. Congress enacted the CZM Act to assist states in better managing coastal and estuarine environments. The Act provides grants to states that develop and implement Federally approved CZM plans. The goal of the CZM Act is to "*preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone.*" Hawai'i's CZM Act, adopted as Chapter 205A, HRS, provides a basis for protecting, restoring and responsibly developing coastal communities and resources. In Hawai'i, the "coastal zone management area" means all lands of the State and the area extending seaward from the sea.

The Proposed Action's conformance with the ten objectives and numerous policies of the State of Hawai'i CZM Program, HRS § 205A-2, as amended, is set forth below. The Proposed Action is not located within the Special Management Area as designated by the CCH.

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.

Policies:

(A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations.

Discussion:

The Proposed Action will support the objectives and policies of the Hawai'i Coastal Zone Management Act for historic resources. As discussed in Section 3.6 (Historic and Archaeological Resources), Honua prepared an Archaeological LRFI report for the Proposed Action to identify and analyze resources. No adverse impacts are anticipated to result from the Proposed Action to historical or archaeological resources. As proposed ground disturbance is currently unknown and traditional use of the property is documented through LCA located within the vicinity of the Project Site, it is currently recommended that the project proceed under an archaeological monitoring program, in accordance with HAR 13-279 (Rules for Archaeological Monitoring Studies and Reports). Should any unidentified resources be encountered during construction, all work will cease, and the State Historic Preservation Office (SHPO) will be contacted for review and approval of mitigation measures.

Scenic and Open Space Resources

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

Policies:

(B) Ensure that new developments are compatible with their visual environment by designing and locating those developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

(D) Encourage those developments that are not coastal dependent to locate in inland areas.

Discussion:

The Proposed Action will support any of the objectives and policies of the Hawai'i Coastal Zone Management Act for scenic and open space resources. The Proposed Action is located within an existing urbanized area and does not encroach upon or alter natural landforms. It will not obstruct public views to or along the shoreline, and its scale and design are compatible with the surrounding built environment, thereby meeting the policy intent. In addition, the Proposed action is situated inland within an existing urban corridor and is not coastal dependent, aligning with the policy to direct such development away from the shoreline to protect coastal resources.

Coastal Systems

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

Policies:

(D) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Discussion:

The Proposed Action will support plans and policies regarding coastal zone management. The Project Area is not located within an SMA zone. To ensure no damage comes to the coastal environment all relevant planning practices and technology will be utilized. All applicable construction best managements practices will be implemented regarding runoff to ensure any potential impacts to coastal ecosystems are mitigated. All regulations put forth by HAR 11-55 Water Pollution control will be adhered to.

Coastal Hazards

Objective: Reduce hazard life and property from coastal hazards.

Policies:

(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint pollution hazards;

(B) Control development in areas subject to storm waves, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

(C) Ensure that developments comply with requirements of the Federal Floor Insurance Program; and

(D) Preventing coastal flooding from inland projects.

Discussion:

The Proposed Action will support the objectives and policies of the Hawai'i Coastal Zone Management Act for coastal hazards. As discussed in Section 3.4 (Natural Hazards), no significant impacts on natural hazard conditions at the Project Site are anticipated to result from the construction or operation of the Proposed Action.

The Project Site is partially located along the shoreline; it is within the Tsunami Evacuation Zone and Extreme Tsunami Evacuation Zone, according to the Tsunami Evacuation Zone maps for O'ahu. Evacuation to a Safe Zone is recommended in the event of a tsunami, in accordance with guidance from the CCH Department of Emergency Management and International Tsunami Information Center. All of the Proposed Action's features will be designed in compliance with the CCH's building code. Impacts from natural hazards can be further mitigated by adherence to appropriate civil defense evacuation procedures.

Flood Insurance Rate Maps (FIRM) for the area, prepared by the Federal Emergency Management Agency (FEMA), designate the majority of Project Site within Flood Zone AE. Flood Zone AE is described as areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Flood Zone AE is also considered a Special Flood Hazard Area (SFHA) on which the rules and regulations of the National Flood Insurance Program (NFIP) are enforced. Additionally, the Project Site is adjacent to coastline areas which are susceptible to coastal flood and wave action.

In addition to the rules and regulations of the NFIP, best management practices (BMPs) are recommended. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks so that impacts of flooding are not exacerbated from construction.

Management Development

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

Policies:

(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.

(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion:

The Proposed Action will support the objectives and policies of the Hawai'i Coastal Zone Management Act for managing development. However, this EA has been prepared under the procedural provisions of HRS, Chapter 343, and HAR, Title 11, Chapter 200.1, which allows for public review and participation. The EA will inform interested parties of the Proposed Action and seek relevant public comment on subjects of concern for EA documentation.

The filing and publication of a Draft EA with the OEQC is followed by a 30-day public comment period. All relevant public comments received during the 30-day public comment period receive a written response for inclusion and use in the preparation of the Final EA. Accordingly, the preparation of this EA, and disclosure of anticipated effects of the project, will comply with the policy on managing development, and be reviewed by the public and various state and county agencies through this EA process.

The Early Consultation/Pre-Assessment process included efforts to inform the community and solicit input in scoping the EA for the Proposed Action. The Early Consultation/Pre-Assessment Package for the Proposed Action was mailed out on July 20, 2023, to the following agencies, organizations, and stakeholders listed in Section 7.1.

Public Participation

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

Policies:

(A) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;

(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:

The Proposed Action will have no significant impact on the objectives and policies of the Hawai'i Coastal Zone Management Act for public participation. However, this EA has been prepared under the procedural provisions of HRS, Chapter 343, and HAR, Title 11, Chapter 200.1, which allows for public review and participation. Accordingly, the preparation of this EA, and disclosure of anticipated effects of the project, will comply with the policy on managing development, and be reviewed by the public and various state and county agencies through this EA process.

In addition, following the publication of the Draft EA through the State Environmental Review Program's *The Environmental Notice*, a 30-day public comment period follows whereby the public can participate and provide comments on the Proposed Action. Comments and responses will be included in the Final EA. If deemed necessary by the DEM, a public informational meeting could be held during the 30-day public comment period to address community concerns and provide more information about the project.

See Section 7.1 for a list of the agencies, organizations and individuals that have been consulted for the Proposed Action.

Marine Resources

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

Policies:

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources.

Discussion:

The Proposed Action will have no significant impact on the objectives and policies of the Hawai'i Coastal Zone Management Act for marine and coastal resources. However, appropriate best management practices and erosion control measures will be implemented to ensure that marine and coastal resources are not significantly impacted by construction activities.

4.1.5 Hawai'i Environmental Policy Act

The Hawai'i Environmental Policy Act, codified as Chapter 344, HRS, was enacted to establish a policy to encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of

humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawai‘i.

§344-4 Guidelines. In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines of the Hawai‘i Environmental Policy Act:

(1) Population:

(A) Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation.

(B) Recognize optimum population levels for counties and districts within the State, keeping in mind that these will change with technology and circumstance, and adopt guidelines to limit population to the levels determined.

Discussion:

The Proposed Action will support the Hawai‘i Environmental Policy Act’s objectives regarding Population by providing essential electrical infrastructure within an existing urbanized area planned for future development. While the project does not directly increase population, it supports redevelopment in an existing urbanized district designated for higher-density growth.

(2) Land, water, mineral, visual, air and other natural resources:

(A) Encourage management practices which conserve and fully utilize all-natural resources.

(B) Encourage management practices which conserve and protect watersheds and water sources, forest, and open space areas.

(F) Maintain an integrated system of state land use planning which coordinates the state and county general plans.

(G) Promote the optimal use of solid waste through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized.

Discussion:

The Proposed Action will support the Hawai‘i Environmental Policy Act’s objectives regarding Land, water, mineral, visual, air, and other natural resources. By installing the underground electrical infrastructure within the existing urban roadway corridors, this avoids expansion into undeveloped areas and minimizing impacts to natural resources, watersheds, and open spaces. The use of HDD beneath the Kapālama Canal further protects surface water resources by avoiding in-water disturbance. Construction-related materials will be managed in accordance with applicable regulations. In addition, recyclable materials will be separated for recycling where feasible.

(3) Flora and Fauna:

(A) Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard.

Discussion:

The Proposed Action will support the Hawai‘i Environmental Policy Act’s objectives regarding Flora and fauna. A Natural Resources Assessment was prepared by AECOS to evaluate potential impacts to biological resources within the Project Area (see Section 3.6). The Proposed Action does not involve the introduction of new plants or animal species and does not include vegetation planting components. Disturbed areas within the right-of-way will be restored following construction.

(4) Parks, Recreation, and Open Space:

(A) Establish, preserve, and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses.

(C) Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people.

Discussion:

The Proposed Action will support the Hawai‘i Environmental Policy Act’s objectives regarding Parks, recreation, and open space. The Proposed Action supports the preservation of parks and open space by confining work to existing roadway corridors and avoiding direct impacts to park lands, shoreline areas, or designated open space. Construction adjacent to parks will be temporary, and access would be maintained. The project does not involve shoreline development or open space conversion and therefore is consistent with this guideline.

(6) Transportation:

(A) Encourage transportation systems in harmony with the lifestyle of the people and environment of the State.

(B) Adopt guidelines to alleviate environmental degradation caused by motor vehicles.

(C) Encourage public and private vehicles and transportation systems to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.

Discussion:

The Proposed Action will support the Hawai‘i Environmental Policy Act’s objectives regarding Transportation by confining construction to existing roadway corridors and avoiding long-term changes to traffic patterns or vehicle use. Temporary construction impacts will be managed through temporary traffic control measures and BMPs in accordance with applicable CCH requirements to maintain safe and efficient access.

(7) Energy:

(A) Encourage the efficient use of energy resources.

Discussion:

The Proposed Action will support the Hawai‘i Environmental Policy Act’s objectives regarding Energy by proving underground electrical infrastructure within an existing urban area and supporting reliable electrical services for future development. The project does not introduce new energy generation facilities

or long-term energy-intensive uses. Construction-related energy consumption will be temporary and typical of similar infrastructure projects.

(8) Community Life and Housing

(A) Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods which reflect the culture and mores of the community.

(B) Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education, and recreation.

(C) Encourage the reduction of environmental pollution which may degrade a community.

(D) Foster safe, sanitary, and decent homes.

(E) Recognize community appearances as major economic and aesthetic assets of the counties and the State; encourage green belts, plantings, and landscape plans and designs in urban areas; and preserve and promote mountain-to-ocean vistas.

Discussion:

The Proposed Action will support the Hawai'i Environmental Policy Act's objectives regarding Community life and housing by providing essential underground infrastructure within the existing urban roadways and does not alter neighborhood character or land use patterns. By supporting infrastructure within established communities, the project is consistent with maintaining existing neighborhood structure while accommodating planned development. In addition, while the Proposed Action does not directly create community facilities, it supports development in an area designated for housing and mixed-use activities.

The Proposed Action will be constructed using standard BMPs to control dust, noise, and stormwater runoff. Underground placement of infrastructure, avoids additional above ground visual clutter and supports orderly utility development within the urban corridor.

Lastly, the Proposed Action supports the guidelines of (Policy 4) and (Policy 5) by providing essential underground electrical infrastructure needed to serve planned residential development in the area. The project does not introduce new above-ground structures and will maintain existing streetscape conditions, thereby avoiding adverse effects on community appearance, scenic resources, or visual character.

(10) Citizen Participation

(B) Provide for expanding citizen participation in the decision-making process so it continually embraces more citizens and more issues.

Discussion:

The Proposed Action will support the Hawai'i Environmental Policy Act's objectives regarding Citizen participation. Public involvement related to the Proposed Action includes the preparation of the Early Consultation Package and the published Draft EA to inform interested parties of the Proposed Action while seeking relevant public comments on subjects of concern for EA documentation. This Final EA incorporates consideration of agency and public comments received during the review period and documents responses, where appropriate.

4.2 City and County of Honolulu Land Use Plans and Policies

4.2.1 City and County of Honolulu General Plan

The CCH last updated its General Plan in January 2022. The General Plan is intended to be a dynamic document, expressing the aspirations of the residents of O‘ahu. It sets forth the long-range objectives and policies for the general welfare and, together with the regional development plans, provides a direction and framework to guide the programs and activities of the CCH. It is a written commitment by the CCH government to a future for the island of O‘ahu that it considers desirable and attainable.

The General Plan is a two-fold document: First, it is a statement of the long-range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of O‘ahu. These objectives contain both statements of desirable conditions to be sought over the long run and statements of desirable conditions that can be achieved within an approximately 20-year time horizon. Second, the General Plan is a statement of broad policies that facilitate the attainment of the objectives of the General Plan.

The General Plan is a guide for all levels of government, private enterprise, neighborhood and citizen groups, organizations, and individual citizens in eleven areas of concern:

1. Population;
2. Economic Activity;
3. Natural Environment;
4. Housing;
5. Transportation and utilities;
6. Energy;
7. Physical development and urban design;
8. Public safety;
9. Health and Education;
10. Culture and recreation; and
11. Government operations and fiscal management.

The Proposed Action is relevant and consistent with the goals, objectives, policies, and actions of the *City and County of Honolulu General Plan* as outlined in Table 4-6 below:

Section I: Population

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

1. Allocate efficiently the money and resources of the City in order to meet the needs of O‘ahu's current and future population.

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

Discussion:

The Proposed Action will support Objective A of Section I of the CCH’s General Plan related to population by upgrading the electrical system in line with land use and development plans, public resources are used effectively to ensure long-term reliability and sustainability, serving both current and future residents.

The Proposed Action promotes balanced development by ensuring the electrical infrastructure in Iwilei-Kapālama can accommodate planned growth without overburdening existing systems. Thus, this enables future development to proceed in an orderly, regulated way that aligns with the City's broader environmental, economic, and social goals. The Proposed Action is a proactive step in addressing infrastructural needs in alignment with the City's adopted land use policies.

The Proposed Action is within the Iwilei-Kapālama urban core, which is within existing growth boundaries. The Proposed Action supports the City's strategy to direct development inward rather than outward. With the enhancement of electrical infrastructure within the Iwilei-Kapālama area, the Proposed Action reduces pressure to expand development outward into agricultural lands or open space, thereby supporting the intent of geographic growth boundaries and preserving environmental and agricultural resources.

Objective B. To establish a pattern of population distribution that will allow people of Oʻahu to live, work, and play in harmony.

1. Facilitate the full development of the primary urban center through higher-density redevelopment and the provision of adequate infrastructure.

4. Direct growth according to Policies 1, 2, and 3 above by providing development capacity and needed infrastructure to support a distribution of Oahu's resident population.

Discussion:

The Proposed Action will support Objective B of Section I of the CCH's General Plan related to population distribution. The enhancements to the existing 12kV electrical system by undergrounding new 25kV distribution systems will contribute by providing the necessary infrastructure to support the electrical needs of the growing population in the Honolulu area and the needs of development of housing at the planned Liliha Civic Center, Mayor Wright Homes, and Kapālama Kai Phase I. As the population in the region continues to grow, it is critical to have a reliable electrical system to accommodate the growing need of energy generated by residents. The Proposed Action addresses this need by establishing an upgraded the existing electrical system, which is essential for supporting the distribution of O'ahu's resident population and facilitating responsible growth within the region.

Section II: Economic Activity

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

1. *Support a strong, diverse, and dynamic economic base that protects the natural environment and is resilient to changes in global conditions.*
2. *Encourage the viability of businesses and industries, including support for small businesses, which contribute to the economic and social well-being of Oʻahu residents.*

Discussion:

The Proposed Action will support Objective A of Section II of the City and County of Honolulu's General Plan related to economic activity. The Proposed Action upgrades electrical infrastructure in the Iwilei-

Kapālama area, supporting economic diversification by providing reliable and modern energy services essential for a variety of business and industries. Improved infrastructure also attracts and sustains commercial and industrial activities in the area, generating jobs.

Electrical improvements of the Proposed Action contribute to a strong and diverse economy by enhancing reliability and capacity of essential services for the area's businesses and industries. In turn, modernizing infrastructure prompts renewable and sustainable energy generation to be incorporated, thus supporting the City's goals for economic and environmental goals.

The Proposed Action can also potentially facilitate the growth of non-polluting industries by providing reliable, modern, and potentially cleaner energy sources. Enhanced infrastructure supports sectors like healthcare and technology that require dependable power, and it can integrate renewable energy systems.

Objective B. To maintain a successful visitor industry that creates living wage employment, enhances quality of life, and actively supports our unique sense of place, natural beauty, Native Hawaiian culture, and multi-cultural heritage.

1. Preserve scenic qualities of O'ahu for residents and visitors alike.

Discussion:

The Proposed Action supports Objective B of Section II of the CCH's General Plan related to the viability of Oahu's visitor industry. The Proposed Action supports the Honolulu General Plan by:

- Allocating resources efficiently to meet current and future population needs in the Primary Urban Center.
- Providing infrastructure capacity to enable higher-density redevelopment and planned housing projects.
- Strengthening the economic base by ensuring reliable utility service that supports local businesses and community well-being.
- Enhancing scenic quality through the removal of overheardlines and poles, reducing visual clutter in the urban streetscape.

Objective G. To bring about orderly economic growth on O'ahu.

2. Advance the equitable distribution of City capital spending, employment opportunities, infrastructure investments, and other benefits throughout communities based on need and regardless of income level. Allow infrastructure and business activity in urban fringe areas appropriate to population needs.

Discussion:

The Proposed Action supports Objective G of Section II of the CCH General Plan related to economic activity. The Proposed Action represent targeted infrastructure investment in an established urban area to meet identified housing and population needs. By enhancing electrical capacity to support affordable and mixed-use housing projects, the action aligns with equitable distribution of infrastructure benefits based on community need.

The Proposed Action also indirectly ensures that capital improvements and essential services are equitably distributed to communities in need, while also enhancing the functionality and viability of commercial and industrial areas within the Iwilei-Kapālama area.

Section III: Natural Environment

Objective A. To protect and preserve the natural environment.

1. Protect O'ahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.

3. Preserve, protect, and restore stream flows and stream habitats to support aquatic and environmental processes and riparian, scenic, recreational, and Native Hawaiian cultural resources.

4. Require development projects to give due consideration to natural features and hazards such as slope, inland and coastal erosion, flood hazards, water-recharge areas, and existing vegetation, as well as to plan for coastal hazards that threaten life and property.

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

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

8. Protect plants, birds, and other animals that are unique to the State of Hawai'i and the Island of O'ahu.

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

Discussion:

The Proposed Action will support Objective A of Section III of the CCH General Plan related to natural environment. The Proposed Action supports environmental protection by upgrading infrastructure within an already urbanized area, which helps concentrate development and reduce pressure to expand into environmentally sensitive or undeveloped lands, protecting streams and aquatic habitats through erosion control and runoff management; and addressing natural hazards in project design. In addition, the enhanced electrical system can incorporate energy-efficient technologies and place for climate change by incorporating hazard mitigation and environmental protection measures.

The Proposed Action gives due consideration to the natural features and environment of the site and surrounding area through this environmental assessment. Potential impacts to the natural setting will be mitigated through BMPs during the implementation of the Proposed Action. This will minimize any potential impacts to plants, birds, and other animals unique to the island of O'ahu and State of Hawai'i. The Proposed Action will adhere to County, State, and Federal guidelines for noise, air, and water pollution.

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

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

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

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

Discussion:

The Proposed Action will support Objective B of Section III of the CCH General Plan related to the natural environment. As discussed in Section 3.11 (Visual Resources), the Proposed Action is not expected to have significant long-term impacts on the natural landmarks and scenic views of O‘ahu. Undergrounding the utilities will assist in reducing visual clutter and minimizing view obstruction from public areas. These measures preserve O‘ahu’s valued scenic views and natural landmarks while delivering necessary infrastructure upgrades within developed urban corridors. During construction there may be some disturbances, but these areas will be restored to previous conditions once complete.

Section IV: Housing and Communities

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

1. Support programs, policies, and strategies that will provide decent and affordable homes for local residents, especially those in the lowest income brackets.

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

12. Promote higher-density, mixed-use development where appropriate, including rail transit-oriented development, to increase the supply of affordable and market housing in convenient proximity to jobs, schools, shops, and public transit.

13. Encourage the production and maintenance of affordable rental housing.

14. Encourage the provision of affordable housing designed for the elderly and people with disabilities in locations convenient to critical services and to public transit.

Discussion:

The Proposed Action will support Objective A of Section IV of the CCH General Plan related to housing. The Proposed Action supports this objective by enabling development and providing essential infrastructure for planned developments such as, Liliha Civic Center, Mayor Wright Homes, and Kapālama Kai Phase I, including affordable and diverse housing types. Reliable and modern utilities are critical to facilitating residential growth that meets varied needs and price points, contributing to a balanced housing mix aligned with city goals.

Improved infrastructure enables housing programs and policies to be effectively implemented, particularly benefiting low-income residents by facilitating decent, safe, and affordable homes in targeted urban areas.

The Proposed Action also supports innovative residential developments by providing modern, efficient, and reliable utilities essential for sustainable building designs and smart growth. Improved infrastructure enables more efficient land use and resource sustainability, helping developers implement innovations that reduce costs and enhance community quality, convenience, and identity.

The Proposed Action also directly supports higher-density, mixed-use, and transit-oriented development by providing the necessary utility capacity and reliability. This allows for facilitating sustainable urban growth close to jobs and transit, making affordable and market housing more feasible and convenient.

Objective C. To provide residents with a choice of living environments that are reasonably close to employment, schools, recreation, and commercial centers, and that are adequately served by transportation networks and public utilities.

1. Ensure that residential developments offer affordable housing to people of different income levels and to families of various sizes to alleviate the existing condition of overcrowding.

3. Encourage the co-location of residential development and employment centers with commercial, educational, social, and recreational amenities in the development of desirable communities.

4. Encourage residential development in suburban areas where existing roads, utilities, and other community facilities are not being used to capacity, and in urban areas where higher densities may be readily accommodated.

5. Support mixed-use development and higher-density redevelopment in areas surrounding rail transit stations.

7. Encourage public and private investments in older communities as needed to keep the communities vibrant and livable.

Discussion:

The Proposed Action will support Objective 3 of Section IV of the CCH General Plan related to housing. The Proposed Action supports this objective by upgrading electrical infrastructure in the Iwilei-Kapālama area, a key urban hub near jobs, schools, transit, and commercial services. Modern, reliable utilities are essential for supporting housing diversity and urban livability, ensuring that current and future populations have access to well-serviced, conveniently located living environments.

The Proposed Action enables higher-density and mixed-income housing developments by ensuring utility capacity, thus directly supporting the construction of affordable, diverse housing options that can accommodate families of various sizes and relieve overcrowding.

Also, by enhancing electrical utility infrastructure in the Iwilei-Kapālama area, a region targeted for transit-oriented, mixed-use development, the Proposed Action enables co-located residential, commercial, and institutional uses, making it feasible to develop walkable, amenity-rich communities.

The Iwilei-Kapālama area is also part of Honolulu's Transit-Oriented Development (TOD) corridor near planned and existing rail stations. Upgrading electrical infrastructure in this location supports mixed-use and higher-density development by ensuring sufficient utility capacity and reliability for future development projects. This aligns directly with the City's TOD and smart growth policies.

Section 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.

5. Support the rail transit system as the transportation spine for the urban core, with links to the airport and maritime terminals, which will work together with other alternative modes of transit and transit-oriented development to reduce automobile dependency and increase multi-modal travel.

15. Advance the transition to electric and alternative fuel infrastructure to provide adequate and accessible charging spaces and renewal fueling stations for ground transportation on O'ahu.

Discussion:

The Proposed Action will support Objective A of Section V of the CCH General Plan related to transportation and utilities. The Proposed Action upgrades electrical infrastructure in the Iwilei-Kapālama area, which is within the urban core and near existing and planned rail transit stations. Improving electrical capacity supports transit-oriented development and the reliable operation of transit facilities, thereby indicating supporting the rail system as the urban spine. This infrastructure upgrade aligns with efforts to reduce automobile dependency and promote multi-modal travel. Environmental, social, cultural, and climate change impacts are taken into full consideration during planning and implementation of the Proposed Action.

The Proposed Action upgrades electrical capacity in the urban core, which can indirectly support the transition to electric alternative fuel infrastructure by ensuring sufficient electrical supply for future charging stations and related facilities within planned developments.

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

9. Require the safe use and disposal of hazardous materials.

Discussion:

The Proposed Action will support Objective B of Section V of the CCH General Plan related to water resources and waste disposal. As discussed in Section 3.11 (Hazardous Substances and Toxic Waste), the contractor will adhere to the DOH, Hazard Evaluation and Emergency Response guidelines for any potentially encountered hazardous contaminants or spills. All applicable CCH and Prevention Control BMPs will also be implemented to ensure that accidental releases are minimized and contained. Any hazardous materials that may be identified prior to or during construction of the Proposed Action will be disposed of properly. Design features specific to the reduction of the potential effects of hazardous spills will be implemented, where appropriate.

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

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

2. Provide improvements to utilities in existing neighborhoods to reduce substandard conditions, and increase resilience to use fluctuations, natural hazards, extreme weather, and other climate impacts.

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

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

Discussion:

The Proposed Action will support Objective C of Section V of the CCH General Plan related to utilities. The upgrade of the existing electrical infrastructure for the future planned housing development within the Iwilei-Kapālama neighborhoods will contribute to the overall efficiency and reliability of the electrical system, enabling it to support the anticipated future demand. The Proposed Action demonstrates an effort to facilitate the orderly upgrade and enhancement of the existing electrical system within the Iwilei-Kapālama neighborhoods. By improving electrical infrastructure and reliability, the Proposed Action aligns with this objective, leading to more resilient and efficient utility systems that better serve the needs of the community while considering climate impacts and resource availability.

Objective D. To maintain transportation and utility systems which support Oʻahu as a desirable place to live and visit.

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

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

3. Require the installation of underground utility lines wherever feasible.

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 Oʻahu's coastal areas and avoid the placement of future public infrastructure in threatened areas.

Discussion:

The Proposed Action will support Objective D of Section V of the CCH General Plan related to transportation and utility systems. The project will improve the reliability, resiliency, and capacity of the electrical distribution system serving the Iwilei- Kapālama area through the installation of new underground electrical infrastructure. By utilizing existing roadways right-of-way, the project supports the efficient use of transportation corridors while minimizing disruptions to existing transportation facilities. The Proposed Action also evaluates potential social, cultural, economic, and environmental impacts through the EA process, implements underground utility infrastructure where feasible, and considers sea level rise and coastal hazards during the project planning and environmental review. The SLR vulnerability is discussed in Section 3.4 of the EA

Section VI: Energy

Objective A. To increase energy self-sufficiency through renewable energy and maintain an efficient, reliable, resilient, and cost-efficient energy system.

3. Ensure access to an adequate reserve of fuel and energy supplies to aid disaster response and recovery.

7. Manage resources and development of communities in line with long-term efficiency and sustainability goals and targets in the areas of energy, carbon emissions, waste streams, all utilities, and food security.

Discussion:

The Proposed Action supports Objective A of Section VI of the CCH General Plan related to energy. The Proposed Action supports several policies related to energy by upgrading electrical infrastructure in the urban core to meet future demand for planned housing projects.

Upgrading electrical infrastructure can facilitate integration of renewable energy sources and improve system efficiency and resilience. The Proposed Action aligns with the goal of increasing energy self-sufficiency while ensuring reliability and cost-effectiveness of the energy system. This is crucial for increasing reliability and resilience of the energy system during disasters. Therefore, the Proposed Action also ensures energy access in emergencies. The project also aligns with long-term sustainability by improving energy efficiency, reducing potential outages, and supporting cleaner energy transition.

Objective B. To conserve energy through the more efficient management of its use and through more energy-efficient technologies.

5. Encourage the implementation of an adaptable and reliable electrical grid, energy transmission, energy storage, microgrids, and energy generation technologies.

Discussion:

The Proposed Action will support Objective B of Section VI of the CCH General Plan related to energy. Upgrading the electrical infrastructure in the Iwilei-Kapālama area directly aligns with promoting a more adaptable and reliable electrical grid and improved energy transmission. These improvements can also facilitate integration with energy storage, microgrids, and newer generation technologies, supporting this objective.

Section VII: Physical Development and Urban Design

Objective A. To coordinate changes in the physical environment of O‘ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

1. Provide infrastructure improvements to serve new growth areas, redevelopment areas, and areas with badly deteriorating infrastructure.

2. Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and other public facilities and services.

4. Facilitate and encourage compact, higher-density development in urban areas designated for such uses.

6. Facilitate transit-oriented development in rail transit station areas to create live/work/play multi-modal communities that reduce travel and traffic congestion.

7. Encourage the clustering of development to reduce the cost of providing utilities and other public services.

10. Discourage uses which are major sources of noise, air, and light pollution.

11. Implement siting and design solutions that seek to reduce exposure to natural hazards, including those related to climate change, flooding, and sea level rise.

13. Promote opportunities for the community to participate meaningfully in planning and development processes, including new forms of communication and social media.

Discussion:

The Proposed Action will support Objective A of Section VII of the CCH General Plan related to physical development and urban design. The upgrade of the existing electrical infrastructure within the Iwilei and Kapālama neighborhoods are intended to improve reliability of electrical services in anticipation for increased future demand. By providing better electrical infrastructure, the Proposed Action will help to create resilient and better managed urban areas.

The Proposed Action's impacts on nearby water, drainage, electrical, and communication systems have been evaluated under Section 3.13 (Infrastructure and Utilities). Communication and coordination with the appropriate agencies will be conducted prior to the development of the Proposed Action. Additionally, as discussed in Section 3.1.2 (Observed Climate Change) and Section 3.4 (Natural Hazards), the design and construction of the Proposed Action will conform with guidance set forth by the best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.Overall, the project ensures that new growtth areas within the designated urban core have the reliable, modern utility systems needed for well-planned and sustainable development.

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

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

3. Prepare for the anticipated impacts of climate change and sea level rise on existing communities and facilities through mitigation, adaptation, managed retreat, or other measures in exposed areas.

Discussion:

The Proposed Action will support Objective B of Section VII of the CCH General Plan related to climate change. As discussed under Section 3.1.2 (Observed Climate Change), the Proposed Action will be appropriately designed to take into consideration the context of the surrounding environment. The Proposed Action is not anticipated to significantly influence or affect temperatures, wind, or rainfall levels at the Project Site or within the greater region. It is anticipated that the Proposed Action will be flexible in order to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.

Objective C. To develop Honolulu (Waialae-Kahala to Halawa), Aiea, and Pearl City as the Island's primary urban center.

1. Provide downtown Honolulu and other major business centers with a well-balanced mixture of uses.

2. Encourage the development of attractive residential communities in downtown and other business centers.
3. Maintain and improve downtown as the financial and office center of the island, and as a major retail center.
5. Foster the development of Honolulu's waterfront as the State's major port and maritime center, as a people-oriented mixed-use area, and as a major recreation area with accommodation for sea level rise.

Discussion:

The Proposed Action will support Objective C of Section VII of the CCH General Plan related to physical development and urban design. The Proposed Action is in the Iwilei-Kapālama area—which is part of the broader downtown Honolulu regions, which supports a well-balanced mixture of uses by ensuring that the utility capacity can accommodate diverse commercial, residential, and industrial activities.

Through the Proposed Action, Downtown Honolulu's role as the island's business hub increases and prompts further growth. Through these enhancements, the functionality and attractiveness of mixed-use urban centers is strengthened. Electrical infrastructure improvements in the Iwilei-Kapālama area, which include waterfront and industrial zones near Honolulu Harbor, support this objective by providing the necessary utility capacity and reliability for port operations.

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

3. Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.

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

Discussion:

The Proposed Action will support Objective G of Section VII of the CCH General Plan related to physical development and urban design.

As previously stated in Section 3.12 (Visual and Aesthetic Resources), the Proposed Action shall account for preserving the views of the natural environment and is not expected to have a significant impact on the visual resources of the area. The Proposed Action consists of undergrounding a new 25kV distribution systems to expand capacity of the electrical system. Furthermore, construction of the Proposed Action will not significantly alter the topography in such a way that would diminish the aesthetic character of the area.

Section VIII: Public Safety

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

1. Keep up-to-date and enforce all City and County safety regulations.

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

8. Foster disaster-ready communities and households through implementation of resilience hubs and other resiliency strategies.

9. Plan for the impacts of climate change and sea level rise on public safety, in order to minimize potential future hazards.

Discussion:

The Proposed Action will support Objective B of Section VIII of the CCH General Plan related to public safety. The Proposed Action will be conducted following all building codes and OSHA/HIOSH standards to ensure the security of public health and safety are protected during construction and through day-to-day operations. Impacts from natural hazards will be further mitigated by adherence to appropriate civil defense evacuation procedures.

The Project Site is within Zone AE on the Floor Insurance Rate Map (FIRM) by the Federal Emergency Management Agency (FEMA). Zone AE is an area where flood hazards are minimal, but possible; therefore, applicable best management practices (BMPs) are recommended. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks so that impacts of flooding are not exacerbated from construction.

As discussed under Section 3.1.2 (Observed Climate Change), the Proposed Action will be appropriately designed to take into consideration the context of the surrounding environment. The Proposed Action is not anticipated to significantly influence or affect temperatures, wind, or rainfall levels at the Project Site or within the greater region. It is anticipated that the Proposed Action will be flexible in order to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.

Section X: Culture and Recreation

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

2. Identify and, to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.

Discussion:

The Proposed Action will support Objective 2 of Section X of the CCH General Plan related to culture and recreation. As described in Section 3.6, there are no known or identified cultural, historic, architectural, and archaeological resources at the Project Site, which has been heavily disturbed. It is unlikely that the Proposed Action would significantly impact resources currently located on the property or in adjacent areas. Should any unidentified resources be encountered during construction, all work will cease, and the State Historic Preservation Office will be contacted for review and approval of mitigation measures.

Section XI: Government Operations and Fiscal Management

Objective B. To ensure fiscal integrity, responsibility, and efficiency by the City and County government in carrying out its responsibilities.

2. Allocate fiscal resources of the City and County to efficiently implement the policies of the General Plan and Development Plans.

Discussion:

The Proposed Action will support Objective B of Section XI of the CCH General Plan related to government operations and fiscal management. The Proposed action aligns with this objective by directing fiscal resources toward infrastructure improvements that support multiple General Plan policies, including those related to urban development, resilience, and utility modernization. By funding projects that help implement land use and sustainability goals, the City demonstrates efficient allocation of public resources in accordance with its policy framework.

Objective C. To achieve equitable outcomes for City programs, policies, and allocation of resources throughout the Oʻahu community.

1. Promote policies that actively address and eliminate disparate outcomes for historically underserved communities.

2. Seek equitable distribution of City investments towards promoting employment opportunities, infrastructure, and other community benefits appropriate to the community needs and proportionate to the population size.

3. Promote adherence to processes that advance procedural, distributional, structural, intergenerational, and cultural equity within the City.

Discussion:

The Proposed Action will support Objective 3 of Section XI of the CCH General Plan related to government operations and fiscal management. The Proposed Action supports this objective by investing in electrical infrastructure improvements in Iwilei and Kapālama , areas undergoing redevelopment and historically marked by industrial use and underinvestment. Enhancing critical utilities in these neighborhoods helps ensure that residents and businesses in these areas have equitable access to modern, reliable infrastructure, aligning with the City's commitment to more equitable distribution of public resources and outcomes across O'ahu. This infrastructural investment supports the City in reducing infrastructure inequalities that can lead to disparate social and economic outcomes. The Proposed Action also support economic development and service reliability.

4.2.2 Primary Urban Center Development Plan (2004)

The Project Site is located within the Primary Urban Center Development Plan area. It is one of a set of eight community plans intended to help guide public policy, investment, and decision-making over the next 25 years. Each plan addresses one of eight regions of Oʻahu, responding to specific conditions and community values of each region. The Proposed Project's conformance with the objectives and policies of the Central Oʻahu Sutainable Communities Plan is set forth in Table 4-7 below.

3. Land Use Policies and Guidelines

3.1 Protecting and Enhancing Natural, Cultural, and Scenic Resources

Policies:

(3) Preserve panoramic views of natural landmarks and the urban skyline. Preserve views of the Koolau and Waianae Mountain Ranges, Punchbowl, Diamond Head, Pearl Harbor, and other natural landmarks. Maintain important view corridors within and across urban Honolulu and keep Downtown as the most prominent feature of the urban skyline. Views along the Pearl Harbor shoreline and the Pearl Harbor Historic Trail toward the mountains, shoreline, significant landmarks, and adjacent communities should be created and maximized wherever possible and appropriate.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines for Protecting and Enhancing Natural, Cultural, and Scenic Resources policies. The Proposed Action includes a section of the Kapālama Canal. The Kapālama Canal is deemed a significant viewing stream corridor with nearly uninterrupted views of the Koolau Mountain Range. The Proposed Action involves installing underground electrical infrastructure which looks to preserve and maintain these scenic views of the Koolaus from the Kapālama Canal.

3.1.3 Guidelines

3.1.3.3 Urban Skyline and Mauka-Makai Views

Policies:

(3) Preserve the following panoramic views establishing building height limits and setbacks that are based on view plane analyses to determine the sight lines and desired view dimensions and characteristics:

- From Ala Wai Canal Promenade toward the Koolau Range
- From Ala Moana Beach Park toward the Koolau Range
- From Kewalo Basin toward the Koolau Range and Punchbowl
- From Kakaako Waterfront Park toward Punchbowl and the Koolau Range
- From Punchbowl Lookout toward Diamond Head

(4) Preserve and enhance significant *mauka* or *makai* view corridors along major collector streets through a combination of zoning controls and streetscape improvements.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines for Protecting and Enhancing Natural, Cultural, and Scenic Resources, pertaining to urban skyline and mauka-makai views. The Proposed Action involves supporting the objective by undergrounding electrical infrastructure. Thus, this project reduces visual clutter and view corridors.

3.3 In-Town Housing Choices

3.3.1 Policies

(5) Expand the capacity of infrastructure, including water supply, sewers, and storm drains. Government needs to lead both planning and investment in renewing and expanding infrastructure. To remedy district- or neighborhood-scale infrastructure constraints is beyond the

capability of individual landowners. Likewise, paying for relief lines and larger-scale projects that will benefit multiple landowners requires government leadership in providing long-term financing and apportioning costs.

(10) Provide for high-density housing options in mixed-use developments around transit stations. This type of "transit-oriented development" facilitates transit use and allows for increased densities without generating increased vehicular congestion.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines for Neighborhood Planning and Improvement, pertaining to its policies. The Proposed Action supports the objective by enhancing electrical infrastructure, aligning with the Government's needs to lead both planning and investment in renewing and expanding infrastructure. There is also indirect support for transit-oriented development (TOD) projects in the adjacent areas. While the project does not directly plan or promote TOD projects, by enabling infrastructure capacity, TOD projects benefit and are indirectly supported.

3.4 The Pacific's Leading City

3.4.2 Policies

3.4.2.1 Honolulu and Pearl Harbor Waterfronts

(3) Redevelop the Downtown/Iwilei waterfront. Reroute through traffic to a new Sand Island parkway and harbor tunnel thoroughfare, and replace the *makai* portion of Nimitz Highway with a new shoreline pedestrian promenade and mixed-use commercial/recreational/residential complexes**.** Adopt appropriate measures to enhance the attractiveness of the Nimitz corridor and public and private responsibilities to implement and maintain such improvements. By creating a new parkway across Sand Island and a tunnel beneath the Harbor entrance, Airport-to-Waikiki traffic (and all other through-traffic not destined for the Iwilei/Downtown area) will bypass this unsightly industrial section and significantly reduce the traffic demand on Nimitz Highway through town. This will enable the Ewa-bound *mauka* section of the highway to be converted to a two-way local access street. It will also allow the Waikiki-bound *makai* section to be converted to a major shoreline promenade and waterfront activity area, providing space for restaurants, shops, indoor and outdoor entertainment, and recreation areas. This area would also hold potential for development of low- to mid-rise housing.

Discussion:

The Proposed Action supports this policy by providing essential underground electrical infrastructure needed to accommodate planned residential development within the Downtown/Iwilei area. While the Proposed Action does not directly implement the transportation improvements or waterfront promenade envisioned by this policy, it facilitates the broader goal of redevelopment by ensuring adequate electrical capacity for new housing.

The policy identifies the waterfront area as suitable for mixed-use redevelopment, including low- to mid-rise residential uses. The Proposed Action directly supports this residential component by upgrading electrical distribution systems necessary to serve planned housing projects, including those within the Iwilei-Kapālama corridor.

Additionally, the undergrounding of electrical infrastructure contributes to improved visual quality and supports the long-term vision of a more attractive and pedestrian-oriented urban environment. By enabling residential growth and supporting infrastructure modernization within the urban core, the Proposed Action is consistent with and supports the intent of this policy.

3.4 The Pacific's Leading City

3.4.2 Policies

3.4.2.4 Military, Airport, Harbor, and Industrial Areas

(5) Support industrial uses in Kalihi-Palama industrial districts. Commercial uses along the Nimitz, Dillingham, King, Kalihi, and Waiakamilo corridors should be recognized and encouraged. In industrial districts where residential uses have endured for many years – i.e., Kalihi Kai and Kapālama – such uses should be allowed to continue, and should be rehabilitated and improved.

(6) Promote compatibility with the surrounding urban and natural environment. Where industrial uses are mixed with or adjacent to residential communities or natural areas, mitigate visual, noise, and other environmental impacts by adopting performance standards.

Discussion:

The Proposed Action supports the Primary Urban Center Development Plan by providing essential underground electrical infrastructure needed to accommodate planned residential development in the Iwilei-Kapālama area. The project facilitates urban redevelopment and housing growth within the urban core, while supporting the continuation and improvement of residential uses in historically mixed industrial districts. Additionally, underground utilities improve visual quality and compatibility with surrounding land uses. Overall, the Proposed Action aligns with the Plan's intent to enhance livability and support sustainable urban development.

3.5 Develop a Balanced Transportation System

3.5.2 Policies

(1) ***Implement land use strategies to achieve a balanced transportation system.*** To improve the quality of life in the PUC and to accommodate growth, development initiatives and regulatory controls should promote the growth of sustainable and appropriate alternative urban travel modes such as transit, walking, and bicycling.

(3) ***Implement Transportation Demand Management strategies.*** Due to limited land area and high costs, it is increasingly necessary to shift from increasing roadway and parking capacity to policies and practices that reward use of transit and other alternative modes.

(6) ***Enhance and improve pedestrian mobility.*** Create special pedestrian districts and corridors and a regional network of pedestrian facilities. Comprehensively address pedestrian safety concerns related to vehicle speeding and excessive volumes on local streets and neighborhood collector streets.

Discussion:

The Proposed Action is generally consistent with, but does not directly implementation, the Primary Urban center Development Plan policies related to a balanced transportation system. The project does not include

transportation system improvements, Transportation Demand Management (TDM) strategies, or bicycle and pedestrian facility enhancements. Rather, it provides underground electrical infrastructure necessary to support planned residential development within the urban core.

By enabling residential growth in an area served by existing transit routes, pedestrian networks, and bicycle facilities, the Proposed Action indirectly supports the Plan's objectives of promoting alternative transportation modes and reducing reliance on automobile travel. Construction activities will be temporary and conducted within existing rights-of-way, with roadways and pedestrian pathways restored following construction. Overall, the Proposed Action is consistent with the intent of these policies, but does not have a direct role in their implementation.

3.5.3 Guidelines

(1) Identify and stimulate transit-oriented development on potential infill and redevelopment properties within the rapid transit corridor. Examples of development stimulators include tax incentives, development code amendments, and public infrastructure investments

(3) Implement the Honolulu Bicycle Master Plan's three priority projects: (1) "Lei of Parks," a shared-use path connecting the City's major parks and open spaces; (2) Bike Friendly Route No. 1, a continuous, cross town bicycle lane, connecting to the Kalanianaole Highway Bikeway in the east and the Pearl Harbor Bike Path in the west; and (3) a series of bicycle access improvements around the various colleges and universities.

(4) Establish pedestrian districts where walking is intended to be a primary mode of travel, such as within Downtown and Waikiki. Develop specific facility standards for these districts; encourage midblock pathways or arcades; and implement sidewalk improvements, such as widening, paving, and landscaping.

(5) Work with residents and school organizations to improve pedestrian safety through planning and education efforts, including the development of traffic management plans, construction of traffic calming devices, and the improvement of neighborhood sidewalks and crosswalks.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines in developing a balanced transportation system, pertaining to its guidelines for doing so. Public infrastructure investments such as upgraded electrical systems are critical to enabling high-density, mixed-use development near rapid transit stations. By providing essential utility upgrades in key transit corridor areas, the Proposed Action supports this policy objective aimed at stimulating transit-oriented development through public infrastructure investment. While the Proposed Action does not directly build or designate bicycle paths, it supports the implementation of the Bicycle Master Plan's priority projects by providing critical electrical infrastructure needed for safe, accessible, and well-maintained bike facilities. Enhancing electrical infrastructure allows and providing reliable electrical power to support pedestrian-scale lighting, safety systems, and security features essential for vibrant and safe pedestrian districts.

The Proposed Action does not directly engage in community planning or education efforts; it supports pedestrian safety improvements by ensuring electrical infrastructure can power critical safety devices and systems involved in traffic management and pedestrian protection.

4. Infrastructure and Public Facilities

4.1 Water Allocation and System Development

4.1.2 Policies

(3) Implement upgrades and capacity improvements to serve projected population increases.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines, pertaining to infrastructure and public facilities in respect to water allocation and system development. The Proposed Action looks to improve the existing electrical system, addressing plans for future planned housing developments within the Iwilei and Kapālama area. This upgrade of electrical infrastructure and capacity looks to serve projected population increases in the near future.

4.3 Electrical Power

4.3.2 Policies

(1) Support retention and upgrade of the Waiau and Honolulu Power Plants as part of a strategic plan to improve the reliability of the PUC's electrical power system.

(2) Planning and building of new or relocated transmission lines should take into consideration system and cost concerns, and the impacts on the environment. Options to place utility lines underground should be considered, and priorities should be established.

Discussion:
The Proposed Action will support the Primary Urban Center Development Plan guidelines, pertaining to infrastructure and public facilities in respect to electrical power. While the Proposed Action does not directly involve power generation or system-wide energy planning, the project contributes to the overall system performance by upgrading and undergrounding electrical infrastructure to serve planned residential development. The incorporation of underground utility lines directly supports guidelines promoting consideration of environmental impacts and system efficiency, while also reducing visual clutter and enhancing resilience. Enhancing electrical infrastructure complements strategic efforts to maintain and upgrade key power powers like Waiau and Honolulu, contributing to the overall reliability of the PUC's electrical system. Modernizing and upgrading existing electrical infrastructure contributes to efficient and environmentally cautious methods of energy utilization in the Iwilei and Kapālama areas.

Overall, the Proposed Action is consistent with and supports the intent of these policies by strengthening the electrical infrastructure needed to accommodate growth in the PUC.

4.3.3 Guidelines

(1) In planning new or relocated substations or transmission lines, the selection of the site or route of such facilities should avoid or mitigate adverse impacts on scenic and natural resources.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines, pertaining to infrastructure and public facilities in respect to electrical power. The Iwilei and Kapālama areas are primarily urban and industrial in character, with limited exposure to significant scenic or natural

resources. However, infrastructure improvements, including new or relocated substations or transmission lines, still have the potential to affect nearby features such as the Kapālama Canal, coastal view corridors, and proximity to planned open space, recreation areas, or civic corridors. By carefully planning electrical upgrades, especially utilizing an underground infrastructure, the Proposed Action can align with the directive to avoid or minimize impacts.

4.4 Telecommunications Facilities

4.4.2 Policies

(1) Minimize the visual impacts and potential health hazard of new facilities.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines, pertaining to infrastructure and public facilities in respect to telecommunications facilities policies. The Proposed Action supports this policy by offering the opportunity to modernize aging infrastructure while incorporating safeguards and design features to minimize both visual impacts and potential health concerns.

4.5 Solid Waste

4.5.2 Policies

(1) Reduce the solid waste stream by encouraging recycling and reuse.

(2) Reduce dependence on landfills by encouraging alternative waste disposal technologies.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan policies, pertaining infrastructure and public facilities in respect to solid waste policies. While the primary focus of the Proposed Action is on upgrading electrical infrastructure, the construction and undergrounding process of such will involve excavation, removal of outdated equipment, construction of new facilities, and installation—all of which generate solid waste. The Proposed Action supports the objective of reducing the solid waste stream, including implementing recycling and reuse practices during the planning, construction, and operational phases of the project. Proper implementation of sustainable construction protocols would directly align with this Development Plan goal. And while the improvements to electrical infrastructure are not waste disposal technologies, the construction and operation of modernized electrical systems can facilitate and support alternative waste disposal methods.

4.6 Stormwater Systems

4.6.2 Policies

(1) Require methods of retaining or detaining stormwater for gradual release into the ground as the preferred strategy for the management of stormwater. Where feasible, utilize open spaces including parking lots, landscaped areas, parks, and golf courses to detain or infiltrate stormwater flows to reduce their volume and runoff rates. (City Council Resolution No. 94-296).

(2) Manage stormwater flows through best management practices to minimize stormwater runoff and peak discharge rates.

(3) Preserve stream and estuarine habitats.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines, pertaining to infrastructure and public facilities in respect to stormwater system policies. The Proposed Action will adhere to the stormwater management objective by reducing runoff and helping to recharge groundwater in heavily urbanized Iwilei and Kapālama areas. Through the implementation of Best Management Practices (BMPs), the Proposed Action will support the following objective.

The Proposed Action does not directly implement habitat restoration or preservation measures; however, it has been designed to avoid and minimize impacts to aquatic resources. To note, the crossing of the Kapālama Canal will be conducted using HDD, thereby minimizing disturbance to the canal. In addition, standard BMPs will be implemented during construction to control erosion, sedimentation, and pollutant runoff. By avoiding direct impacts and minimizing potential effects to nearby aquatic environments, the Proposed Action is consistent and indirectly supports the intent of this policy.

4.6.3 Guidelines

(3) Establish best management practices to guide stormwater management within the PUC.

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan guidelines, pertaining to infrastructure and public facilities in respect to stormwater system policies by implementing standard construction BMPs to control erosion, sedimentation, and stormwater runoff during project activities. While the project does not involve the design or construction of stormwater infrastructure, it will comply with applicable regulatory requirements and incorporate measures to minimize potential impacts to drainage systems and receiving waters. Accordingly, the Proposed Action is consistent with and indirectly supports the intent of these guidelines.

4.2.3 Primary Urban Center Development Plant (2025)

Guiding Principles:

***(1) Support Complete Neighborhoods**. Support the PUC's vibrant and distinct neighborhoods. Create new, and enhance existing neighborhoods with an appropriate mix.*

***(2) Focus on Sound Infrastructure**. Plan for and invest in functional, resilient, and well-maintained infrastructure. Coordinate infrastructure investments and new growth. Look for opportunities to "dig once" when reglacing aging infrastructure and upgrading streets.*

***(3) Grow sustainability Practices.** As development in the PUC advances, make decisions and take measurable actions to reduce carbon emissions, retain stormwater onsite, promote green construction and landscaping practices, increase the urban tree canopy, reduce urban heat island effect, and increase natural areas. Focus higher-density development in appropriate areas*

including: TOD areas near rail or high-frequency bus service, along walkable mixed-use corridors, and in centers of activity and commerce.

(5) Increase Agency Coordination. *Bolster inter-governmental collaboration and partnerships between City agencies and State agencies to solve cross-cutting challenges such as housing affordability, transportation safety and accessibility, sea level rise and climate change actions, and economic development.*

(6) Creating housing solutions. *Champion policies that result in safe, healthy, resilient, and affordable housing options. Actively seek to expand the diversity of housing choices in the PUC to relieve housing shortfalls and meet the needs of residents. Continue to expand efforts and programs to address the causes of homelessness.*

(7) Expand economic diversity. *Retain sufficient industrial land and office uses to support and expand economic activity in the PUC, especially near the airport, harbor, and downtown business districts. Encourage and attract emerging industries through allowing for increased mixed-uses, co-working environments, and flexible spaces. Promote the PUC's vital role in commercial, industrial, transportation, and government functions, and as the Pacific's leading business and travel destination.*

(8) Create a healthy, age-friendly PUC for kupuna to keiki. *Support strategies from the City's Age-Friendly Honolulu Action Plan to provide abundant services and safe gathering places that serve all ages. Encourage new development to pursue universal design principles for the benefit of all age groups and users. Create policies and guidelines to support public health and to invest in neighborhoods equitably. Foster a sense of community and care for our neighbors.*

(9) Enhance multi-modal transportation. *Improve the quality and safety of the pedestrian environment and continue to expand safe facilities for all users. Acknowledge and plan for evolving mobility choices, including bicyclists, shared mobility, electric vehicles, and autonomous vehicles. Continue to provide excellent transit service through TheBus, TheHandi-Van, and rail service. Maintain a balanced freight network.*

(10) Prepare for sea level rise and climate change. *Mitigate the root causes of climate change and plan for and adapt to sea level rise and other climate change hazards, in accordance with guidance from the City's Climate Change Commission, and best available science. Work cooperatively to evaluate options and implement best practices. Put in place a Climate Adaptation Strategy and outline capital improvements, infrastructure assessments, and other measures needed to address the long term effects of climate change.*

(12) Malama Honua. *Care for the earth by supporting resource conservation. Recognize the gifts of the 'āina as finite and in need of protection and restoration, including, natural resource and habitat areas, streams, beaches, and forest watersheds that lead to the ocean. Protect important views to provide a respite and connection to nature. Protect drinking water, ocean resources, and conservation lands.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s guiding principles. The Proposed Action aligns with the majority of overarching guidelines set forth for improving the PUC and communities within it to meet various environmental, community, and

infrastructural needs. Electrical enhancements, as proposed by the project, are essential to facilitating "Complete Neighborhoods" by providing reliable power necessary for residential, commercial, and community facilities. The Proposed Action also anticipates population growth from future housing developments in the area, leveraging opportunities to minimize disruption. Modernizing electrical infrastructure supports sustainable practices enabling renewable integration, stormwater management, and green infrastructure projects, especially in TOD areas by ensuring robust electrical service that accommodates mixed-used, higher-density growth. The creation and maintenance of quality open and green spaces are encouraged by the Proposed Action by facilitating an enhanced electrical system.

Growth + Development

GOAL GD-1: Direct higher density growth to mixed-use Transit Oriented Development (TOD) areas

Policies:

GD-1.1*: Focus higher intensity mixed-use development and supporting public infrastructure around rail stations*

GD-1.2*: Create mixed-use TOD neighborhoods with meaningful character and a sense of place.*

GD-1.3*: Refine the discretionary TOD permitting process to balance higher-density entitlements with commensurate community benefits.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s growth + development, Goal GD-1: Direct higher density growth to mixed-use Transit Oriented Development (TOD) areas. Enhancing electrical infrastructure directly supports and encourages higher density growth and mixed-use development that is projected and planned for TOD areas by ensuring sufficient utility capacity, system reliability, and anticipation of population growth and increased energy needs. By undergrounding electrical infrastructure, visual clutter is removed and helps create an aesthetic appeal to TOD areas. The Proposed Action also supports resilience and safety, as utilities are less vulnerable to extreme weather events and disasters, reducing outages. This reliability is essential for neighborhoods intended to accommodate more residents and services in a compact, mixed-use format. The Proposed Action prompts investment and enhances the appeal and strength of the Iwilei and Kapālama areas, especially TOD designated areas.

GOAL GD-2: Invest in bus transit-supportive corridors and adjacent mixed-density neighborhoods.

Policies:

GD-2.1: *Support mixed-use infill development and increase bus services along key underutilized commercial corridors.*

GD-2.2: *Promote moderate-scaled residential infill while preserving affordability in mixed-density neighborhoods.*

***GD-2.4**: Provide green space and landscaping improvements in mixed-density in-town neighborhoods, especially those lacking parks.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s growth + development, Goal GD-2: Invest in the bus transit-supportive corridors and adjacent mixed-density neighborhoods. Electrical infrastructural improvements will serve as a foundation for residential infills by providing reliable, updated electrical infrastructure that meets modern building codes, safety standards, and increased demand from new housing developments. The Proposed Action will also improve the public realm and transit support by clearing visual clutter and street-level obstructions, thus creating a more walkable environment that encourages pedestrian activity. And while the action does not directly increase bus frequency or routes, it creates conditions conducive to expanding transit use and service improvements along corridors targeted for revitalization.

GOAL GD-3: Plan for context-appropriate infill and redevelopment in lower-density places.

Policies:

***GD-3.1** Allow gradual addition pf house-form multiunit dwellings and small apartment buildings near lower-intensity commercial corridors.*

***GD-3.2** Continue to improve multimodal access and connectivity in lower-density neighborhoods.*

***GD-3.4** Improve infrastructure capacity planning for areas of low to moderate growth to meet demand for ADUS and modest infill development.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s growth + development, Goal GD-3: Plan for context-appropriate infill and redevelopment in lower-density places. The Proposed Action supports this objective by providing the essential infrastructure improvements that make thoughtful, context-sensitive infill and redevelopment feasible in lower-density areas. The project directly addresses infrastructure capacity needs by increasing the system's capacity and reliability, aligning with the goal of preparing for incremental growth and modest infill development. The project facilitates planned growth in adjacent areas, including proposed future housing developments like Mayor Wright Homes and the Liliha Civic Center. The Proposed Action also invites safer, more inviting streetscapes, while also enabling infrastructural coordination between utilities and streetscape reconstruction. Barriers to development are reduced significantly as energy and electrical infrastructural needs are anticipated and met with the Proposed Action.

GOAL GD-4: Avoid Development in Sensitive or Protected Areas on Steep Slopes

Policies:

***GD-4.1:** Continue to discourage new development beyond the Urban Growth Boundary and on very steep slopes.*

GD-4.2: *Decrease building and structure encroachments on streams and wetlands (except for those essential to flood control).*

Discussion:

The Proposed Action will not significantly impact the Primary Urban Center Development Plan (2025)'s growth + development, Goal GD-4: Avoid development in sensitive or protected areas on steep slopes.

GOAL GD-5: Manage Growth and Public Investment for the benefit of all PUC residents

Policies:

GD-5.4 *Align infrastructure expansions with growth areas.*

Discussion:

The Proposed Action supports the Primary Urban Center Development Plan (2025)'s growth + development, Goal GD-5: Manage growth and public investment for the benefit of all PUC residents by expanding and upgrading electrical infrastructure within the Iwilei-Kapālama, which has been identified for growth and an increase in residential development. By aligning infrastructure improvements with areas of planned development, the project ensures adequate utility capacity to support future housing and contributes to the efficient and coordinated provision of services within the PUC.

Placemaking + Character

GOAL PL-1: Enhance the PUC's Unique Places.

Policies:

PL-1.4: Preserve cultural and archaeologically significant resources in the PUC.

PL-1.5: Continue to preserve cultural and archaeologically significant resources in the PUC.

PL-1.6: Enhance key mauka-makai view corridors.

Discussion:

The Proposed Action will not significantly impact the Primary Urban Center Development Plan (2025)'s placemaking + character, Goal PL-1: Enhance the PUC's unique places. An Archaeological Literature Review and Assessment (ALRA), completed in September 2025 (see Appendix B), identified no above-ground historic properties within or adjacent to the Project Area. In addition, consultation with the State Historic Preservation Division (SHPD) has been conducted to address any requirements associated with ground-disturbing activities (see Appendix C). While the project does not directly implement urban design or placemaking elements, the undergrounding of the electrical infrastructure reduces visual clutter and contributes to improved visual quality within the urban environment. Overall, the Proposed Action generally supports the intent of these policies by preserving existing resources and minimizing visual impacts.

Focus Areas

Iwilei/North Vineyard Corridor: A high-density mixed-use district emerges around transit and North Vineyard / North King Streets in Iwilei, negotiating the area's infrastructure and adaptation constraints.

- ***TRANSFORM:*** *vacant and underutilized lands adjacent to the Kuwili (Iwilei) Skyline station into a vibrant TOD District.*
- ***INFILL:*** *intensely urban, highly walkable mixed use development mauka of rail.*
- ***ENHANCE / INVEST:*** *in new public parks and street connections. Major investments are required in utility, street, sidewalks, and drainage/pumping infrastructure.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s focus areas, Iwilei / North Vineyard Corridor: A high-density mixed-use district emerges around transit and North Vineyard / North King Streets in Iwilei, negotiating the area's infrastructure and adaptation constraints. The Proposed Action supports high-density, mixed-use future development planned in the Iwilei and Kapālama areas, especially development pertaining to TOD District. The project enhances electrical infrastructure which directly contributes to investment and infill in the Iwilei and Kapālama areas.

Kapālama: This mixed-use district is catalyzed by transit-oriented development and sustained infrastructure investment, overcoming the area's various development constraints.

- ***TRANSFORM:*** *vacant and underutilized lands adjacent to the Kapālama station into a vibrant TOD District.*
- ***INFILL:*** *intensely urban, highly walkable mixed use development.*
- ***ENHANCE/INVEST:*** *in a multitude of community benefits and supporting amenities including parks and streets.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s focus areas, Iwilei / North Vineyard Corridor: A high-density mixed-use district emerges around transit and North Vineyard / North King Streets in Iwilei, negotiating the area's infrastructure and adaptation constraints. The Proposed Action supports high-density, mixed-use future development planned in the Iwilei and Kapālama areas, especially development pertaining to TOD District. The project enhances electrical infrastructure which directly contributes to investment and infill in the Iwilei and Kapālama areas.

Housing

GOAL H-1: Encourage development of a wide range of housing types in proximity to transit.

Policies:

H-1.1: *Enable and incentivize residential infill development in transit-accessible planned growth areas.*

H-1.3: *Encourage a greater variety of housing types, including low or middle-density multi-family housing, ADUs and ʻohana units, mid-rise apartment buildings, and shared housing models.*

Discussion:

The Proposed Action will not significantly impact the Primary Urban Center Development Plan (2025)'s housing, Goal H-1: Encourage development of a wide range of housing types in proximity to transit. The Proposed Action supports this objective by upgrading critical infrastructure that enables the development of diverse housing options near transit in the PUC. By providing the necessary electrical infrastructure, the Proposed Action improves infrastructural capacity and reliability which reduces development constraints and helps to anticipate energy needs of planned future housing developments in the area. The project also provides essential utility infrastructure for diverse housing options, flexible and compact development, transit-oriented growth, and sustainable building and site design practices.

GOAL HC-3: Support initiatives that improve community engagement, health, and equity.

Policies:

HC-3.3: *Increase disaster preparedness in the community.*

HC-3.4: *Increase community resilience to climate-based hazards.*

Discussion:

The Proposed Action will not significantly impact the Primary Urban Center Development Plan (2025)'s healthy communities, Goal HC-3: Support initiatives that improve community engagement, health, and equity. The Proposed Action increases the community's resilience against natural disasters and climate-based hazards, as the electrical infrastructure will be less prone to outages during these times. Climate protection measures will be adopted for the improved utilities.

Sea Level Rise + Coastal Hazards Planning

GOAL SLR-1: Adapt regulatory standards to improve resilience to climate change and coastal hazards.

Policies:

SLR-1.4: *Consider the SLR-XA compound hazards individually and together to determine appropriate adaptation measures.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s sea level rise + coastal hazards planning, Goal SLR-1.4: Adapt regulatory standards to improve resilience to climate change and coastal hazards. In Section 3.5.1 of this Draft EA, under Impacts and Mitigation Measures, to address the potential long-term impacts and determine the appropriate adaptation measures for SLR-XA, BMPs have been recommended to support long-term infrastructure resilience while allowing the Proposed Action to respond to the evolving SLR conditions.

GOAL SLR-2: Conduct long-range planning to increase area-wide adaptation and resilience.

Policies:

SLR-2.4: *Incorporate sea level rise / coastal hazard considerations in the planning, design, and maintenance of facilities and infrastructure.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s sea level rise + coastal hazards planning, Goal SLR-2: Conduct long-range planning to increase area-wide adaptation and resilience. As discussed in Section 3.5.1, the Proposed action would not constitute as a source of SLR or associated with coastal impacts. To address potential long-term impacts associated with SLR, BMPs have been taken into consideration under the 'Impacts and Mitigation Measures' Section of 3.5.1.

GOAL SLR-3: Coordinate infrastructure planning for sea level rise across agencies.

Policies:

SLR-3.1: *Support collaborative resilience planning for new and existing infrastructure.*

Discussion:

The Proposed Action will not significantly impact the Primary Urban Center Development Plan (2025)'s sea level rise + coastal hazards planning, Goal SLR-3: Coordinate infrastructure planning for sea level rise across agencies.

Water Resources

GOAL WR-2: Protect ground and surface water quality from polluting land uses.

Policies:

WR-2.1*: Protect drinking water aquifers, and surface and nearshore waters from contamination by developed land uses, urban runoff, underground fuel storage, and illegal dumping.*

WR-2.3: *Effectively manage stormwater flows with appropriate on-site and area-wide best practices.*

Discussion:

The Proposed Action supports policies related to protecting water resources and managing stormwater by incorporating construction BMPs and environmental protection measures designed to minimize impacts to groundwater, surface waters, and downstream receiving waters. In addition, applicable erosion and sediment control measures will be implemented during construction to effectively manage stormwater runoff. The policy regarding enhancement of stream ecological functions is not applicable because the Proposed Action does not involve stream restoration or habitat enhancement activities.

Economic Development

GOAL ED-1: Support employment and busieness growth in the PUC's transit-rich, mixed-use, and industrial areas.

Policies:

ED-1.1: *Accommodate and encourage commercial job growth in dense, transit-rich locations.*

ED-1.2: *Enhance the ability of new and small businesses to thrive and grow in the PUC.*

ED-1.3*: Maintain industrial use as the primary land use in key PUC locations with easy access to the port and airport.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s economic development, Goal ED-1: Support employment and business growth in the PUC's transit-rich, mixed-use, and industrial areas. The Proposed Action supports this objective by improving the reliability, capacity, and resilience of infrastructure needed to attract, sustain, and grow employment in Honolulu's transit-connected, mixed-use, and industrial areas. It is foundational to enabling a more productive and economically vibrant Primary Urban Center (PUC). The enhanced electrical infrastructure prompts commercial expansion by increasing electrical capacity of the current system. Transit-oriented development (TOD) is facilitated in the Iwilei and Kapālama area, including the commercial and mixed-use developments within the TOD district. Enhanced infrastructure contributes to safe and attractive commercial areas like the Iwilei and Kapālama area, being considered TOD and is a key industrial zone.

GOAL ED-2: Create a balanced and diversified PUC economy.

Policies:

ED-2.1: *Support growth in key industries such as information and technology, green industries, education and training, creative media, made in Hawai'i products, and other sectors identified by City and State Economic Development initiatives.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s economic development, Goal ED-2: Create a balanced and diversified PUC economy. A reliable and efficient electrical system is fundamental to creating a diversified economy within the PUC. The Proposed Action will enable infrastructure for growing industries, anticipating the increase in demand for electricity from population growth, TOD, and growing industries within the area.

GOAL ED-3: Ensure city services and infrastructure support broad economic prosperity.

Policies:

ED-3.2*: Ensure major public infrastructure needs are funded equitably, including with contributions from new developments*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s economic development, Goal ED-3: Ensure city services and infrastructure support broad economic prosperity. The Proposed Action supports this objective by embodying principles of equitable infrastructure funding, including leveraging contributions from new developments that benefit from the electrical upgrades.

Public Services

GOAL PS-1: Support civic and public institutions in the PUC.

Policies:

PS-1.1: *Provide for adequate civic and public safety facilities and essential services in the PUC.*

Discussion:

The Proposed Action will support the Primary Urban Center Development Plan (2025)'s public services, Goal PS-1: Support civic and public institutions in the PUC. The Proposed Action supports this objective by strengthening the electrical infrastructure that underpins the provision of adequate civic and public safety facilities and essential services in the PUC. The project also helps in providing essential infrastructure improvements that contribute to a high-quality, reliable environment for public schools and educational institutions in the PUC.

GOAL PS-2: Plan for emergency management and hazard mitigation in the PUC.

PS2-.1: *Increase resilience to disruptive hazard events through coordinated effort.*

PS-2.2: *Strengthen pre- and post- disaster planning.*

Discussion:

The Proposed Action supports Goal PS-2 by improving the reliability and resiliency of the electrical distribution system serving the PUC. The project will provide critical infrastructure necessary to support existing and planned development within the Iwilei-Kapālama area while enhancing the ability of the utility system to withstand and recover from disruptive hazard events. In addition, the project incorporates consideration of natural hazards, including sea level rise and flooding, during planning and environmental review, thereby supporting broader emergency management and hazard mitigation objectives.

GOAL PS-3: Maintain efficient energy and telecommunications systems in the PUC.

PS-3.1: *Site energy and telecommunications systems appropriately to avoid hazards and adverse visual impacts.*

Discussion:

The Proposed Action support Goal PS-3 by improving the reliability, resiliency, and capacity of the electrical distribution system serving the PUC. The project includes the installation of underground electrical infrastructure within existing roadway corridors and right-of-way, which minimizes visual impacts while supporting the efficient delivery of utility services.

4.2.4 Kalihi Transit-Oriented Development Plan (2017)

The City and County of Honolulu's Kalihi Neighborhood Transit-Oriented Development (TOD) Plan (2017) is a strategic framework aimed at transforming Kalihi into a vibrant, sustainable, and transit-accessible community centered around future rail stations. The plan emphasizes high-density mixed-use development, affordable housing, enhanced pedestrian and transit connectivity, and local economic growth. It prioritizes community engagement and environmental sustainability through green building and energy-efficient infrastructure. Overall, the plan guides coordinated development to reduce car reliance, improve quality of life, and revitalize the Kalihi neighborhood as a key part of Honolulu's urban core.

Guiding Principles

(1) Revitalize Kalihi into a More Livable Community. Promote redevelopment/re-use depending on the unique conditions around each station. Invest in the community by enhancing existing facilities and encouraging new development that supports the community vision and capitalizes on transit access.

Discussion:

The Proposed Action will not significantly impact the Kalihi Neighborhood Transit-Oriented Development Plan (2017)'s guiding principles. The Proposed Action provides fundamental and foundational electrical infrastructure that is imperative to the guiding principles of the Kalihi community and neighborhood's goals for transit-oriented development. Enhanced electrical infrastructure will serve as a tool for revitalization for the Kalihi community, while also keeping the essence of the history and attributes of the community. The quality of public spaces will be improved with reliable and efficient electrical improvements, while also facilitating a convenient and accessible transportation network. The project's proximity to Honolulu Harbor and ports allows for improved connections to the waterfront. By undergrounding electrical utilities, streetscape will be improved, and pedestrian safety will increase.

2. Land Use

2.4 Goals and Policies

Goals and Land Use

LU-G4: Guide transformation of the Kapālama district into a new mixed-use high intensity/ high-rise, pedestrian-oriented neighborhood, capitalizing on its pivotal location adjacent to Downtown/Chinatown and role as the gateway to the Kalihi neighborhood.

LU-G5: Expand housing opportunities with a range of housing types—townhomes, mid-rise, and high-rise—to create a new mixed-income neighborhood in Kapālama with a full range of amenities and services, including parks and open space, a promenade along the canal and a walkable street grid. (Affordable housing policies are described in Chapter 5 of the Kalihi TOD Plan).

Discussion:

The Proposed Action will support the Kalihi Neighborhood Transit-Oriented Development Plan (2017)'s land use goals by providing critical electrical infrastructure necessary to accommodate existing and planned development within the Kapālama and Kalihi areas. The project will improve the reliability, resiliency, and capacity of the electrical distribution system needed to accommodate future housing, mixed-use development, and community-serving uses within the PUC. By

supporting infrastructure improvements within an of creating vibrant, livable, and transit-supportive neighborhoods while accommodating future growth and redevelopment.

Kalihi Station

LU-P5: *Preserve the current residential zoning in the area mauka of Dillingham Boulevard within the Medium Density Residential designation, as shown on Figure 2-4, and encourage multi-family housing that can accommodate large household sizes.*

Discussion:

The Proposed Action will support the residential development objectives of the Kalihi Station Area by providing critical electrical infrastructure necessary to accommodate future housing development within the PUC. Improved utility capacity and reliability will help support planned residential growth and associated neighborhood-serving uses envisioned by the Kalihi Neighborhood TOD Plan. Policies related to property maintenance programs, code enforcement, and home improvement assistance are not applicable to the Proposed Action.

Kapālama Station Area

LU-P8: *Promote the development of the Kapālama station area as a mixed-use walkable district with an educational hub at Honolulu Community College and a full complement of uses:*

- *A residential neighborhood with a range of housing types and affordability levels to accommodate people who work in the Kalihi corridor, Honolulu Community College students, seniors seeking housing near transit, families and professionals working Downtown;*

- *An employment center focused on high-tech, lab, and research and development uses, as well as spaces for small emerging businesses;*

- *Local-serving retail, destination shopping (e.g. big box stores) and entertainment activities; and*

- *New parks and open spaces that balance the high-intensity development and create identity for the district.*

LU-P12*: Establish a TOD Zone that extends approximately a five- to seven-minute walking distance around each station, as shown in Figure 2-4, to foster transit-oriented development, prioritize streetscape and other public realm improvements, and focus community investment.*

Discussion:

The Proposed Action will support the land use policies for the Kapālama Station Area by providing critical electrical infrastructure necessary to accommodate the mixed-use, residential, commercial, educational, and employment-generating development envisioned within the TOD area. The project will improve the reliability, resiliency, and capacity of the electrical distribution system needed to support future housing and community growth while facilitating continued investment within the Kapālama district. By supporting infrastructure improvements within an established urban area, the Proposed Action is consistent with the TOD Plan's vision for a vibrant, walkable, transit-oriented community.

5. Public Facilities, Services, and Infrastructure

5.3 Goals and Policies

Goals – Public Facilities and Services

Affordable Housing and Social Services

PF-G3*: Contribute to the achievement of the City's affordable housing development production goals, as expressed by the Consolidated Plan, Mayor's Office of Housing, and other affordable housing planning documents and initiatives.*

PF-G5*: Support maintenance of existing, and development of new, affordable housing units and associated services for low- and very-low income households.*

PF-G6*: Encourage mixed-income housing and distribute affordable housing throughout the planning area. Mitigate the potential for gentrification and avoid displacing low- and moderate-income residents.*

Discussion:

The Proposed Action will support the Kalihi Neighborhood Transit-Oriented Development Plan (2017)'s goals for public facilities, and infrastructure, pertaining to affordable housing and social services by providing critical electrical infrastructure necessary to accommodate future residential development within the Kapālama area. Improved utility capacity and reliability will help support the provision of community services associated with future residential growth. Accordibngly, the Proposed Action is consistent with the TOD Plan's objectives to expand housing opportunities and support the long-term needs of residents within the PUC.

Infrastructure

PF-G7*: Facilitate the development of infrastructure—including sewer, water, drainage, and high-speed broadband internet systems— that is designed and timed to be consistent with project capacity requirements and development occupancy.*

Discussion:

The Proposed Action will support the Kalihi Neighborhood Transit-Oriented Development Plan (2017)'s goals for public facilities, and infrastructure, pertaining to infrastructure. The project is intended to improve the reliability, resiliency, and capacity of the electrical distribution system to meet an anticipated future demand associated with planned development. In addition, the project incorporates environmental protection measures and planning considerations intended to minimize impacts to environmental resources during construction and operation.

Policies - Public Facilities and Services

Affordable Housing and Social Services

PF-P4*: Within ¼-mile of the stations, invest public affordable housing funds and encourage affordable housing development through implementation and expansion of the City's inclusionary*

housing rule, incentives for TOD housing, and participation in the Housing Choices Voucher and Section 8 programs.

PF-P8: *Support development of permanent affordable housing services, especially for homeless individuals and families:*

• Encourage the provision of appropriate supportive services for tenants at all functional levels.

• Encourage the creation of single-room occupancy (SRO) or efficiency units that can meet the housing needs of individuals, seniors, immigrants, formerly homeless, students, and single parents with a child.

• Review development standards, which currently permit group living facilities as a conditionally permitted use in most residential and mixed-use districts, to identify obstacles to the creation of SROs or efficiency units, and consider whether such obstacles should be removed or altered.

• In order to meet the needs of extremely low-income individuals and households, identify sites and long-term funding to support the development and ongoing provision of services for new affordable housing.

Discussion:

The Proposed Action will support the Kalihi Neighborhood Transit-Oriented Development Plan (2017)'s policies for affordable housing and social services by providing critical electrical infrastructure necessary to accommodate future housing development within the Kapālama area. Improved utility capacity and reliability will help support the development of housing opportunities envisioned by the TOD Plan, including affordable housing. Policies related to homeless services, social service programs, senior services, and community organization initiatives are not applicable to the Proposed Action.

Infrastructure

PF-P12*: Require development and redevelopment projects to comply with best practices for low impact development-based stormwater management.*

Discussion:

The Proposed Action will support the Kalihi Neighborhood Transit-Oriented Development Plan (2017)'s policies for infrastructure through the implementation of applicable stormwater management measures and construction BMPs designed to minimize erosion, sedimentation, and runoff during construction activities. Compliance with applicable stormwater management requirements will help protect water quality and support the responsible management of stormwater within the Project Area.

4.2.5 City and County of Honolulu Zoning

The purpose and intent of the CCH Land Use Ordinance (LUO) is to regulate land use in a manner that will encourage orerly development in accordance with adopted land use policies, including the Oʻahu General

Plan and development plans, and to promote and protect the public health, safety, and welfare. The LUO promotes and protects the public by:

- Minimizing adverse effects from the use of inappropriate location, use or design of sites and structures;
- Conserving the city's natural, historic, and scenic resources to encourage design which enhances the physical form of the city; and
- Assisting the public in identifying and understanding regulations affecting the development and use of land.

The LUO additionally provides reasonable development and design standards that are applicable to the location, height and size of structures, yard areas, off-street parking facilities, as well as open spaces, and the use of structures and land for agricultural, industrial, residential, and other uses (ROH, Chapter 21).

Discussion:

According to the CCH Department of Planning and Permitting (DPP), the Project Area spans multiple zoning districts, reflecting the diverse mix of commercial, industrial, and residential uses within the Iwilei-Kapālama corridor. As mentioned in Section 1.2 of this EA, the Project Area is zoned under the Industrial Mixed-Use District (IMX-1), Medium Density Apartment District (A-2), and Community Business Mixed Use District (BMX-3) (see Figure 1-2 in Chapter 1). The Proposed Action is consistent with the LUO because it involves the installation of a new underground electrical infrastructure within the existing public roadways and utility corridors, which is a permitted public utility use across all zoning districts within the Project Area, including, A-2, BMX-3, and IMX-1.

4.3 Permits and Approvals

The following is a list of permits, approvals, and reviews that may be required prior to implementation of the Proposed Action.

State of Hawai'i

Department of Land and Natural Resources

- Chapter 6E, HRS, State Historic Preservation Law

Department of Health

- National Pollutant Discharge Elimination System
- Disability and Communication Access Board
- Pollution Control - Noise Permit
- Hazard Evaluation & Emergency Response (HEER) Office

City and County of Honolulu

Department of Planning and Permitting

- Grading/Trenching Permit

Department of Transportation Services

- Street Usage Permit

Honolulu Fire Department

- Plan Review

Federal

- Department of the Army (DA) Permit issued by the United States Army Corps of Engineers (USACE) pursuant to: Nationwide Permit (NWMP) 57
- National Historic Preservation Act (NHPA) Section 106 Consultation
- Endangered Species Act (ESA) Section 7 Consultation with USFWS, NOAA, and NMFS
- Coastal Zone Management (CZM) Act Consistency Review

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CHAPTER 5: ALTERNATIVES

5. ALTERNATIVES

Hawaii Administrative Rules, §11-200.1-18 requires an environmental assessment to identify and analyze any alternatives considered in satisfying the purpose and need of the Proposed Action. In this Assessment, the purpose of the Proposed Action is to undertake the design, alignment, and construction of the electrical infrastructure improvements for the Iwilei and Kapālama development project.

In observance of these goals, the Proposed Project has considered the following alternatives:

(1) No Action Alternative
(2) Proposed Action
(3) Alternative Alignments

5.1 No Action Alternative

Under the No Action alternative, no new 25kV underground distribution infrastructure would be installed to support planned development in the Iwilei-Kapālama area. Future projects within the area would continue to rely on the existing overhead 12kV and 25kV systems, which are aging and lack the capacity to meet the electrical demand of these major redevelopment efforts. Without the planned upgrades, future developments may be delayed or unable to proceed until separate electrical capacity solutions are identified.

Inclusion of a "No Action" alternative provides a baseline against which the impacts of the Proposed Action can be measured and assessed. Under the No Action alternative, improvements would not be made, and the Project site would remain in its current configuration. The No Action alternative would preclude permit approval, as well as costs for design and construction, which would otherwise be required for the Proposed Action. Additionally, it would avoid the minor environmental impacts that would occurs as a result of implementing the Proposed Action, along with appropriate mitigation measures, as discussed in Chapter 3 of this EA.

The No Action Alternative, however, does not align with the purpose and need of the Proposed Action, as outlined in Section 2.2 of this EA. The Proposed Action aims to upgrade the existing 12kV electrical distribution systems with the construction of a new 25kV underground infrastructure for future planned developments for the new housing projects at the Liliha Civic Center, Mayor Wright Homes, and Kamehameha Schools Bishop Estate – Kapālama Kai Phase I.

Under the No Action Alternative, existing site conditions would remain unchanged, leaving the Iwilei-Kapālama area without the necessary electrical systems to adequately support the future planned housing projects. This option would not only limit future housing opportunities but deprive the State, County, and community of the positive social, cultural, and economic impacts that this new electrical system could provide. Ultimately, the No Action Alternative does not meet the objectives of the Proposed Action and consequently, was rejected for further consideration as a feasible alternative.

5.2 Proposed Action

Under the Proposed Action, infrastructure developments would proceed as proposed. This EA would act as a guideline for the construction and implementation of best management practices designed to protect the environment near the Project Area while supporting the improved electrical infrastructure systems. Construction and implementation of the new underground conduit and manhole systems are outlined

below. More detailed descriptions of planned improvements can be found in Chapter 2, impacts, policies, and mitigation measures can be found in Chapters 3 and 4.

The Proposed Action aims to expand the electrical infrastructure necessary to support the development of new housing projects at the Liliha Civic Center, Mayor Wright Homes, and Kamehameha Schools Bishop Estate - Kapālama Kai, Phase 1. The project involves a series of electrical enhancements including upgrades to the existing 12kV and 25kV electrical distribution systems with the construction of a new underground infrastructure for future planned developments within the area. These upgrades are important to accommodate the additional demand for the new housing developments.

5.3 Alternative Alignments

During the Preliminary Design Coordination Phase, the Michels Team, in coordination with HCDA and third-party technical partners, evaluated twelve potential underground electrical duct bank alignments connecting the three project development sites to existing HECO substations. Each alternative incorporated different engineering, permitting, and construction strategies intended to optimize cost, schedule, and community impacts. The evaluation process relied on a structured, value-engineering scoring matrix that considered technical feasibility, constructability, environmental and social disturbance, and long-term system reliability.

Through iterative review and coordination with HECO, multiple alignments were screened out as additional information became available. Some alternatives were eliminated due to insufficient substation capacity, HECO requirements on manhole spacing, or right-of-way acquisition challenges associated with private parcels.

Following further investigation, the project team elected to advance Alignment 3 as the preferred alignment. As mentioned in Chapter 2, Section 2.4 – the proposed alignment (Iwilei Road and King Street) is approximately 1.12 miles (5,913.6 feet) and follows a route starting from south of the Liliha Civic Center (Liliha CC) via Iwilei Road, then continues east to the intersection of Iwilei Rd and North King St before heading northwest towards Mayor Wright Homes and Kamehameha Schools Bishop Estate along King Street (see Figure 2-1). It utilizes HDD while adhering to HECO's maximum manhole spacing of 800 feet. Additional utility connections will occur along portions of Pua Lane towards Kukui Street to support infrastructure needs in the surrounding area. Alignment 3 provides a technically feasible, cost-effective, and regulatory-compliant route that minimizes construction risk and community disruption.

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CHAPTER 6: ANTICIPATED FINDING OF NO SIGNIFICANT IMPACT

6. ANTICIPATED FINDING OF NO SIGNIFICANT IMPACTS (AFNSI)

Based on the analysis presented in this Draft EA, the Proposed Action is not anticipated to result in significant environmental impacts pursuant to the significance criteria of §11-200.1-13, HAR. Discussion of the Proposed Action's conformance to the criteria is presented below:

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

The Proposed Action occurs entirely within a previously disturbed urban roadway corridors and does not involve the use, removal, or alteration of any natural, cultural, or historic resources. HDD beneath Kapālama Canal avoids in-water work and prevents disturbance to streambed or aquatic habitat. Archaeological monitoring will be implemented where required to ensure that any inadvertent discoveries of subsurface cultural resources are identified, documented, and treated in accordance with SHPD guidance. Monitoring does not prevent discoveries but provides established procedures and professional oversight to avoid harm to cultural resources if encountered. Therefore, with SHPD consultation and implementation of any required measures, the project is not expected to result in the permanent loss of natural, cultural, or historic resources.

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

The Proposed Action will be constructed within the existing paved roadways and urbanized corridors and does not alter land use, restrict access, or reduce the availability of environmental resources for public or ecological benefit. Because the project installs underground conduit and manhole systems that do not change how the surrounding environment is used, the range of beneficial uses of the environment will not be curtailed.

3) *Conflicts with the State's environmental policies or long-term environmental goals established by law;*

The Proposed Action will not conflict with the long-term environmental policies, goals, and guidelines of the State of Hawai‘i as noted throughout Chapter 4 of the EA. The State's environmental policies enumerated by Chapter 344, HRS promote the conservation of natural resources, and an enhanced quality of life for all citizens. The Proposed Action does not conflict with the State's long-term environmental policies, goals, or guidelines as expressed in Chapter 344, HRS.

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

The Proposed Action is not anticipated to have a significant adverse effect on the economic welfare, social welfare, or cultural practices of the State as discussed in Chapter 3 and 4 of the EA.

The Proposed Action supports planned redevelopment by providing the underground electrical infrastructure needed for future electrical service, which in turn benefits housing, community facilities, and economic activity in the area. Construction activities are short-term and limited to the existing roadway corridors, with no anticipated disruption to cultural practices or community access. Because the project

does not displace users, restrict cultural activities, or negatively affect local economic conditions, no substantial adverse effect on economic welfare, social welfare, or cultural practices is expected.

The Proposed Action will not have an effect on cultural resources or practices at the Project Area as none exist as discussed in Section 3.7 and Appendix B of the EA.

5) Have a substantial adverse effect on public health;

No identified adverse short- or long-term impacts on public health are anticipated to result from the construction and operation of the Proposed Action. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated; however, they will be temporary in nature and will comply with Federal, State, and County regulations as discussed in Chapter 3 of the EA.

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

Substantial adverse impacts to public facilities are not anticipated to result from the construction and operation of the Proposed Action. The Proposed Action will serve the future housing developments planned for the Iwilei-Kapālama community and address anticipated power requirements in a comprehensive and coherent manner.

7) Involve a substantial degradation of environmental quality;

The Proposed Action is not anticipated to substantially degrade environmental quality. Long-term impacts on air and water quality, noise levels and natural resources will be minimal. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated, but will be temporary and will comply with State and County regulations as discussed in Chapter 3 of the EA. The implementation of various mitigation measures discussed in Chapter 3 will help ensure that the Proposed Action will not result in the degradation of 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 is not anticipated to have a considerable effect upon the environment as discussed in Chapter 3 of the EA.

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

No substantial adverse impacts on rare, threatened, or endangered species or their habitats are anticipated from the construction or operation of the Proposed Action. The existing site is located within an existing urbanized area. The construction of the Proposed Action will follow BMPs outlined in Sections 3.6.1 and 3.6.2.

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

No significant long-term impacts to air quality, water quality, or noise levels within the Project Area are anticipated as a result of the construction and operation of the Proposed Action. The Proposed Action will generate temporary construction-related emissions, noise, and potential stormwater runoff; however, these

impacts will be minimized through implementation of standard BMPs that are in compliance with State and City stormwater requirements, and adherence to allowable construction noise levels during work hours.

Construction of the Proposed Action will be performed in accordance with Federal, State and County regulations, thereby minimizing potential impacts on air and water quality. In the short term, noise from construction activities such as trenching, excavation, HDD operations, and equipment use will be unavoidable. The increase in noise level will vary according to the phase of construction. Noise may also increase because of operating power equipment during the construction period. Construction noise impacts will be mitigated by compliance with provisions of the State DOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" regulations. These rules require a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels stated in the DOH Administrative Rules. It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulatory limits.

Fugitive dust will be controlled, as required, by methods such as dust fences, water spraying and sprinkling of loose or exposed soil or ground surface areas. Landscaping and stabilization measures will be done as soon as possible on completed areas to help control erosion and runoff that could potentially enter the stream in the long term. Respective contractors will be responsible for minimizing air quality impacts during the various phases of construction. Exhaust emissions from construction vehicles are anticipated to have a negligible impact on air quality in the project vicinity as the emissions would be relatively small and readily dissipated.

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, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

No short- nor long-term significant adverse impacts are anticipated as the Project Area is not located within an environmentally sensitive area related to coastal or flood hazard as noted in Section 3.5.2 of the EA.

While earlier mapping identified portions of the area within regulatory flood hazard zones, the updated designation indicates reduced regulatory flood risk under current FEMA criteria. The Project Area is currently located within Zone X (see Figure 3-8). This area is determined to be outside of the 0.2 percent annual chance of flooding. In the short term, applicable BMPs would be implemented for construction.

The Proposed Action does not create short- or long-term risks related to the following environmentally sensitive areas, such as the tsunami zone, the beach, erosion-prone area, geologically hazardous land, estuary, fresh water and coastal waters. Because HDD will occur below the Kapālama Canal bed and avoids any in-water disturbance, the Proposed Action is not expected to impact these bodies of water.

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

The Proposed Action will not result in significant adverse impacts to view planes identified in County or State plans or studies. Moreover, the Proposed Action is not expected to adversely affect scenic and visual resources in the area as noted in Section 3.12 of the EA. The Proposed Action will not degrade lateral coastal views or mauka-makai views from the areas in the vicinity of the site.

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

The construction and operation of the Proposed Action will not require a significant level of energy consumption. Implementation of the Proposed Action will result in the short-term irrevocable release of GHGs from construction activities will be temporary and the quantities of GHGs released will be negligible. To reduce vehicle and equipment emissions, carpooling and ensuring that equipment is functioning properly will be included in regular construction work practices.

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CHAPTER 7: CONSULTATION

7. CONSULTATION

7.1 Early Consultation

The Early Consultation/Pre-Assessment process included efforts to inform the community and solicit input in scoping the EA for the Proposed Project. The Early Consultation/Pre-Assessment Package for the Proposed Project was mailed out on June 9, 2025, to the following agencies, organizations, and stakeholders listed below in preparation of the EA process. Consultation was conducted to solicit comments regarding potential concerns and requirements pursuant to refining the scope of EA documentation. Parties that formally replied during the Early Consultation/Pre-Assessment process are indicated by a "✓" below. All written comments are reproduced in Appendix E.

	Federal Agencies
✓	U.S. Army Corps of Engineers
	U.S. Environmental Protection Agency
✓	U.S. Department of the Interior, Fish and Wildlife Service
	U.S Department of Transportation, Federal Highway Administration
	Federal Representatives
	Senator Mazie Hirono
	Senator Brian Schatz
	Representative Jill Tokuda
	Representative Ed Case
	State Agencies
✓	Department of Accounting and General Services
	Department of Agriculture
	Department of Business, Economic Development and Tourism (DBEDT)
	DBEDT, Hawai'i State Energy Office
	DBEDT, Land Use Commission
✓	DBEDT, Office of Planning and Sustainable Development (OPSD)
	DBEDT, Business Development and Support Division
	Department of Defense (DOD)
	DOD, Hawaii Army National Guard
	Department of Education
	Department of Hawaiian Home Lands
✓	Department of Health (DOH)
	DOH, Clean Water Branch
	DOH, Environmental Management Division
✓	DOH, Hazard Evaluation and Emergency Response Office
	DOH, Wastewater Branch
	DOH, Safe Drinking Water Branch
	Department of Human Services — Hawaii Public Housing Authority
	Department of Land and Natural Resources (DLNR)
	DLNR, Commission on Water Resource Management
	DLNR, Division of Aquatic Resources
	DLNR, Division of Boating and Ocean Recreation
	DLNR, Engineering Division

	DLNR, Office of Coastal and Conservation Lands
✓	Department of Transportation (DOT)
	DOT, Highways Division
	DOT, Airports Division
	DOT, Highways Division
	Office of Hawaiian Affairs
	State Representatives
	Senator Karl Rhoads
	Representative Daniel Holt
	City and County of Honolulu Agencies
✓	Board of Water Supply
✓	Department of Community Services
✓	Department of Design and Construction
	Department of Environmental Services
	Department of Enterprise Services
✓	Department of Facility Maintenance
	Department of Land Management
	Department of Parks and Recreation
✓	Department of Planning and Permitting
	Department of Transportation Services
	Honolulu Authority for Rapid Transportation
✓	Honolulu Fire Department
✓	Honolulu Police Department
	Office of Climate Change, Sustainability, and Resiliency
	Office of the Mayor
	City Council
	Councilmember Tyler Dos Santos-Tam
	Utility Companies
	Hawai‘i Gas
✓	Spectrum Hawai‘i
	Hawaiian Telecom
	Hawaiian Electric Company
	Other Interested Parties and Individuals
	Hawai‘i State Library
	Liliha Public Library
	Neighborhood Board No. 13: Downtown — Chinatown
	Neighborhood Board No. 15: Kalihi — Palama
	Kamehameha Schools Bishop Estate

Comments received during the Early Consultation Process primarily focused on cultural and archaeological resources, hazardous materials, and transportation and access. Agencies emphasized the compliance with DOH HEER requirements within the Iwilei District and multimodal circulation during

construction. Additional comments requested clarification of construction methods, limits of disturbance, and potential environmental effects. These comments have been incorporated into the Draft Environmental Assessment through refinement of the project description and impact analysis.

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ATTACHMENT 1

Representative Photos of Horizontal Directional Drilling (HDD) Rigs

Iwilei and Kapālama

Electrical Infrastructure Project

Figure 2.2-2.4 (Figures provided by Michels)

Attachment 1
REPRESENTATIVE HDD EQUIPMENT SPECIFICATIONS

Representative HDD Equipment

The equipment identified below is representative of the range of HDD rigs and support equipment anticipated for use during construction. Actual equipment may vary depending on contractor means and methods.

FIGURE 2-2. MEDIUM-CLASS HDD RIG



Table 2-2. Vermeer 100x140 Specifications	
General Dimensions & Weight	**Parameters**
Length	36 ft 3 in
Width	8 ft 5 in
Height	9 ft 9 in
Unit Weight	52,500 lbs.

FIGURE 2-3. LARGE-CLASS HDD RIG



Table 2-3. Universal 250x400 Specifications	
General Dimensions & Weight	**Parameters**
Length	38 ft 0 in
Width	8 ft 2 in
Height	10 ft 5 in
Unit Weight	64,000 lbs.

FIGURE 2-4. LARGE-CLASS HDD RIG



Table 2-4. Kemtron HDD 600 Pro Specifications	
General Dimensions & Weight	**Parameters**
Length	33 ft 0 in
Width	8 ft 5 in
Height	13 ft 0 in
Unit Weight	32,673 lbs.

APPENDIX A

Natural Resources Assessment for Iwilei and

Kapālama Electrical Infrastructure Project

AECOS Inc.,

Honolulu, O'ahu

AECOS No. 1905

Natural resources assessment for Iwilei and Kapālama electrical infrastructure project in Honolulu, Oʻahu



AECOS Inc.
45-939 Kamehameha Highway
Suite 104
Kāneʻohe, Hawaiʻi 96744

October 31, 2025

Natural resources assessment for Iwilei and Kapālama electrical infrastructure project in Honolulu, Oʻahu

October 31, 2025 **DRAFT** *AECOS* No. 1905

Flor Mucino, Colleen Lawlor, Brian Deis, and Susan Burr
AECOS Inc.
45-939 Kamehameha Highway Suite 104
Kāneʻohe, Hawaiʻi 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: flor@aecos.com

Introduction

Wilson Okamoto Corporation is providing services for the planning, design, and construction of an electrical infrastructure project consisting primarily of horizontal directional drilling (HDD) and short sections of open trenching in Iwilei/Kapālama ("Project"), Honolulu, Oʻahu. The Project area extends approximately 1.9 km (1.2 mi) from Kohou Street to Iwilei Road, crossing under Kapālama Canal in Honolulu, Oʻahu (Figure 1). Wilson Okamoto Corporation contracted *AECOS*, Inc. to conduct biological surveys (terrestrial and aquatic) of the Project area. The terrestrial part included a botanical and avian survey and assessment, with particular attention paid to sensitive biological resources and environments. Sensitive biota includes species currently listed by the Endangered Species Act of 1973 as amended (ESA; see USFWS, 2021) or by state administrative rule (HDLNR, 1998, 2015), or a biological community that may or may not be under any specific threat of extirpation, but which would be regarded as special and worthy of preservation. The aquatic part included water quality testing, jurisdictional determination and delineation of a section of Kapālama Canal, and a biota survey and assessment. This report presents the results of these surveys.

Site Description

King Street

King Street stretches much of the length of Honolulu from Kapiolani Boulevard to Middle Street. The street is designated as South King Street from Kapiolani

Boulevard to Nuʻuanu Avenue and North King Street from Nuʻuanu Avenue to Middle Street. This stretch of North King Street is heavily trafficked and urbanized, hosting numerous businesses, residences, several churches, and an elementary school (Princess Victoria Kaʻiulani Elementary School).

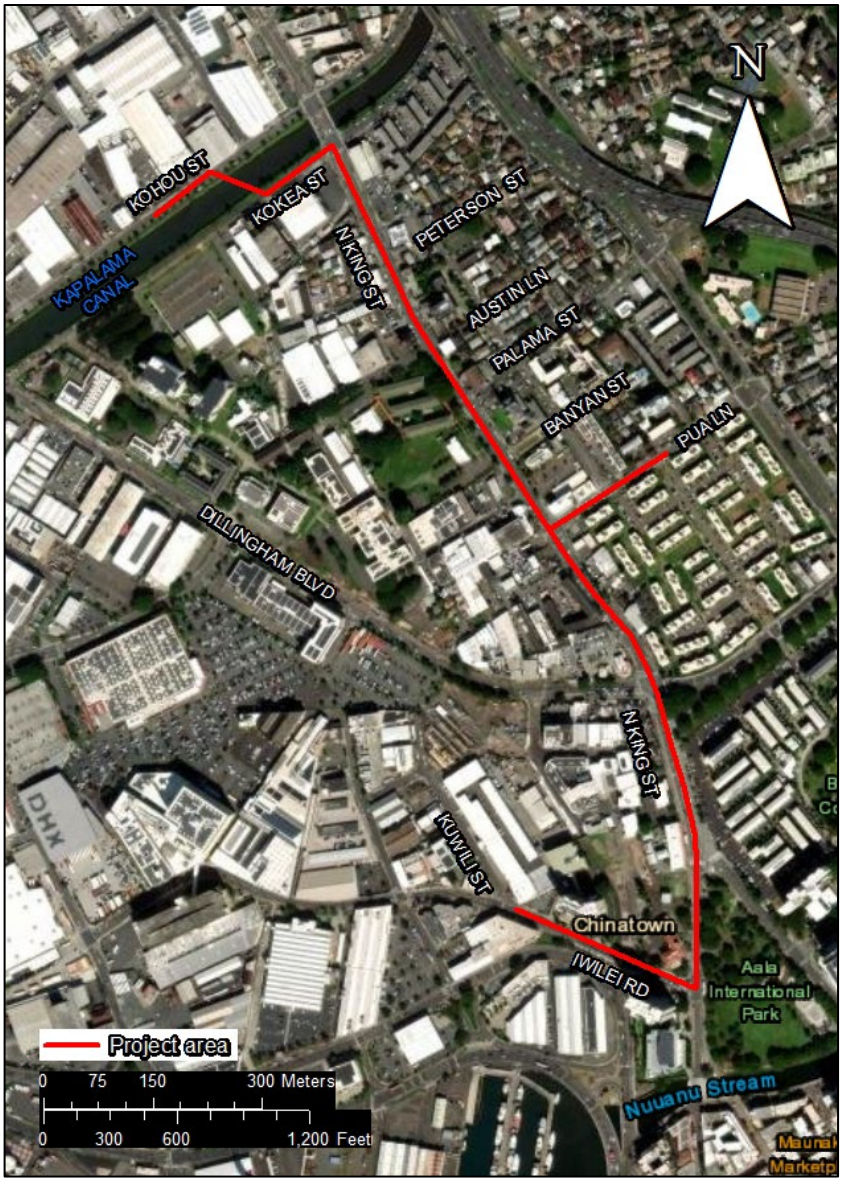

Figure 1. Project location in Honolulu, Oʻahu.

Kapālama Canal

Kapālama Canal is a man-made drainage canal constructed in the 1930s to prevent flooding of surrounding low-lying land (Ruzicka and Tice, 2015). Prior to the 1850s, most of Pālama consisted of *loko iʻa* (fishponds; WCIT, 2016), and

terraced *loʻi kalo* (taro pond fields) fed by two streams: Kapālama and Niuhelewai (Sterling and Summers, 1978). In the 1920s, the "worthless swamp lands" (as described by the Superintendent of Public Works for the Territory of Hawaiʻi) began to be filled with dredged spoils from Honolulu Harbor (Ruzicka and Tice, 2015). The wetlands of Pālama were converted to the commercial and industrial district it is today, and surface run-off from the watershed and coastal springs directed through underground culverts into Kapālama Canal.

Kapālama Watershed state code is No. 33010 in the Hawaiian Watershed Atlas (Parham et al., 2008). According to the watershed atlas, the longest continuous reach of Kapālama Stream is 9.0 km (5.6 mi); the stream drains an 8.5-km^2 (3.3-mi^2) watershed. Most of the watershed is privately owned land in the urban district; only 16% of the watershed is in state Conservation District, and that is in the uplands.

Kapālama Stream is classified in the Hawaiʻi water quality standards as a Class 2 inland waterbody. This classification means that uses of these waters are to be protected "for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation" (HDOH, 2021). The stream is confined to the Kapālama Canal in the Project area. The federal jurisdictional limit authorized by the Clean Water Act is the high tide line (HTL), located on the sides of the canal.

The Project includes, at the north end, a stretch of Kohou Street before crossing under the canal to Kokea Street. Crossing the canal will entail HDD where the electrical lines are placed inside a pipe that has been placed beneath the canal in a borehole created by drilling mostly horizontally between two points on the ground surface and well below the bottom of the canal.

Federal Jurisdictional Waters

Waters of the US (also called "jurisdictional waters" or "federal 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)] [1];
- 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)];

Because the Kapālama Canal is a tidal estuary within a confined channel, it is by definition a traditionally navigable water (TNW) [(a)(1)(i)]. Recent changes to the definitions of waters of the US (SCOTUS, 2023; USACE and USEPA, 2023b) have not altered the status of this primary category of jurisdictional waters.

Hawai‘i State Waters

Unlike many other states, Hawai‘i does not have an independent permitting program for state waters that are not regulated as waters of the US. Due to recent frequent changes in the definition of Waters of the US (e.g., the Clean Water Rule of 2015, the Navigable Waters Protection Rule of 2018, the Revised Definition of Waters of the US of March 2023, the US Supreme Court decision of May 2023, and the amendments to the Revised Definition of Waters of the US of September 2023), Hawai‘i State agencies have begun to evaluate whether certain waterbodies are state waters, independent of whether they are waters of the US.

State waters fall under jurisdiction authorized under Hawai‘i Revised Statutes (HRS), State Water Code (HRS § 174C-3, 2021) and Water Pollution Chapter (HRS § 342D-1, 2022). The State Water Code defines a “stream” as “…any river, creek, slough, or natural watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing [sic] be uniform or uninterrupted. The fact that some parts of the bed or channel have been dredged or improved does not prevent the watercourse from being a stream.” A “watercourse… means a stream or any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing [sic] be

[1] Numbers and letters given in brackets are from the final rule (USACE and USEPA, 2023a). Waterbody types are often referred to by these designations.

uniform or uninterrupted." State waters are defined in the Water Pollution Chapter (HRS § 342D-6, 2022) as "all waters, fresh, brackish, or salt, around and within the State, including, but not limited to, coastal waters, streams, rivers, drainage ditches, ponds, reservoirs, canals, ground waters, and lakes; provided that drainage ditches, ponds, and reservoirs required as part of a water pollution control system are excluded."

Methods

Jurisdictional Waters

AECOS scientists conducted a survey to identify and delineate aquatic features in the Project area on September 8, 2025. As applicable to the Project, jurisdictional waters include tidal waters, also known as traditionally navigable waters (TNWs). Because Kapālama Canal is tidally influenced, it fits the definition of a federally jurisdictional tidal waters (a)(1)(i). No other waters or wetlands exist in the Project area.

Tributary High Tide Line (HTL)

The extent of federal jurisdiction in tidal waters is at the high tide line (HTL), which is the maximum height reached by a rising tide (USACE and USEPA, 2023a). "The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm" (pg. 3145; USACE and USEPA, 2023a). In Kapālama Canal, the influence of tidal water is strong and HTL appears to be consistently co-located with the stream designation of ordinary high water mark (OHWM)[2]. We delineated HTL along both the left and right banks of Kapālama Canal[3]. We recorded the geospatial locations using a handheld

[2] OHWM is defined as "…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE and USEPA, 2023a).

[3] By convention, "left" and "right" are determined looking in the downstream direction.

global navigation satellite system (GNSS) instrument (Trimble 7x Series), providing sub-meter accuracy in position. The resulting shapefile was processed with GPS Pathfinder, including differential correction, and exported as an ArcMap shapefile projected as NAD 1983 UTM, Zone 4N.

Water Quality

On September 8, 2025, *AECOS* biologists F. Muciño, C. Lawlor, B. Deis, and S. Burr collected water samples from the Kapālama Canal in the Project area. Three stations were sampled: ("WQ1") upstream, beneath N. King Street bridge; ("WQ2") about halfway between the Dillingham Blvd and N. King Street bridge; and ("WQ3") downstream, near the intersection of Kokea Street and Kokea Place (see Fig. 2). To capture any tidal-driven changes in water quality, the stations were sampled twice—once in the morning close to low tide and once in the afternoon close to high tide. Physical measurements, including temperature, conductivity and salinity, pH, and dissolved oxygen (DO) were measured *in situ* at each sampling location. Collected samples were placed on ice and delivered to the *AECOS* Laboratory (*AECOS* Log No. 53758) in Kāneʻohe, Oʻahu, for analysis of turbidity and total suspended solids (TSS). Analyses for nutrients—ammonia (NH_4), nitrate + nitrite (NO_3NO_2), total nitrogen (TN), total phosphorus (TP), and orthophosphate (PO_4)—were done at the University of Hawaiʻi, Hilo Analytical Lab. The instruments and analytical methods used in the field and laboratory to analyze these samples are listed in Table 1.

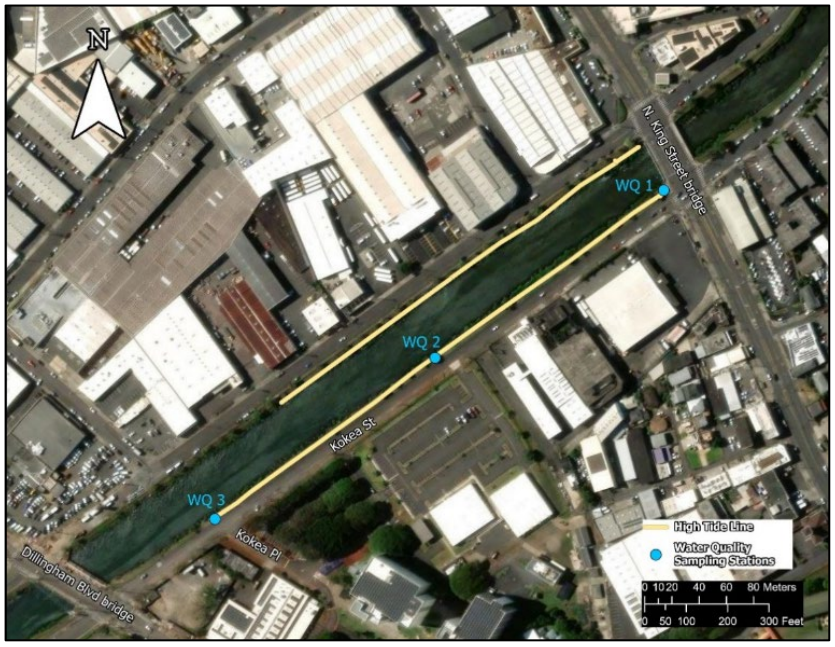

Figure 2. High tide line and water quality sample stations on the Kapālama Canal.

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
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
Dissolved Oxygen Saturation (DO%)	%	SM 4500 O-G	SM (2017)	YSI ProPlus
Turbidity	NTU	EPA 180.1 Rev. 2.0	USEPA (1993b)	HACH 2100Q Turbidimeter
Total Suspended Solids (TSS)	mg/L	SM 2540D(M)	SM (2017)	Mettler Balance
Ammonia	µg/L	G-327-05 Rev. 4	Kérouel & Aminot (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
Total Phosphorus	µg/L	SM 4500P	SM (2022)	Seal AA3 Auto Analyzer
Orthophosphate	µg/L	EPA 365.5	USEPA (1997)	Seal AA3 Auto Analyzer

Botanical Survey

AECOS biologists surveyed the Project area (Fig. 1) on September 8, 2025. Plant species were identified as they were encountered during wandering transects that covered the survey area. Species names follow *Manual of the Flowering plants of Hawai'i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants, *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, and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental and agricultural plants. More recent name changes for naturalized flowering plants mostly follow Imada (2019).

Terrestrial Vertebrates and Aquatic Biota Survey

Avian Survey

On September 8, 2025, *AECOS* biologists conducted an avian survey within the Project area. Birds were identified to species by visual observation, aided by Leica 8 X 42 binoculars, and by listening for vocalizations. Weather conditions were

ideal for avian detection during our survey, with unlimited visibility, no precipitation, and light winds (5 to 10 mph). The avian phylogenetic order and nomenclature used in this report follows the AOU *Checklist of North and Middle American Birds* 2024 (Chesser et al., 2024) and the 66th supplement to the checklist (Chesser et al., 2025).

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), except nomenclature for the Hawaiian hoary bat follows Pinzari et al. (2020) and Patou et al. (2009) for small Asian mongoose.

Aquatic Biota

AECOS biologists made visual observations of aquatic organisms residing in Kapālama Canal in the Project area on September 8, 2025. The potential for migration of native amphidromous species was assessed. Animal names follow *Hawai'i's Native & Exotic Freshwater Animals* (Yamamoto and Tagawa, 2000).

Results

Jurisdictional Waters

The extent of jurisdictional waters in the Project area is provided above in Fig. 2. Downstream of North King Street Bridge, jurisdictional waters are demarcated by HTL on the left and right banks. The delineation of HTL extended approximately 320 m (1,051 ft) on the left bank and 402 m (1320 ft) on the right bank. We used changes in bank slope, changes in the vegetation and presence of marine-deposited litter and debris as our primary indicators of HTL. Red mangrove (*Rhizophora mangle*) and pickleweed (*Batis maritima*), both wetland obligate species, line the banks of the canal below HTL.

Water Quality

NOAA tides for Honolulu (Station 1612340) reported a low of -0.16 ft at 10:24 and a high of 1.76 ft at 16:30 on September 8, 2025 (NOAA: CO-OPS, 2025). Considerable lag in the times of high and low tides will occur in the Project area, so for our sampling events, the morning event was during an ebbing (falling) tide near low and the afternoon event was during a flooding (rising) tide well before

high tide on September 8th. Water quality data for the Kapālama Canal sampling event are summarized in Table 2.

Table 2. Water quality for samples collected at Kapālama Canal on September 8, 2025.

Location	Tide	Time	Temp. (˚C)	Salinity (ppt)	Conductivity (µS/cm)	pH	DO (mg/L)	DO sat. (%)	Chll α
WQ1 Upstream	Ebbing	0940	28.0	20.83	34,500	7.65	1.37	20	-
	Flooding	1403	30.6	29.88	51,300	8.15	5.86	91	10.6
WQ2 Mid	Ebbing	0905	27.5	18.16	31,000	7.73	2.68	38	-
	Flooding	1338	30.7	27.82	47,700	8.03	5.46	85	40.4
WQ3 Downstream	Ebbing	0821	27.1	13.91	23,900	7.71	3.31	46	-
	Flooding	1323	30.4	25.70	44,300	8.01	5.54	73	7.40

Location	Tide	Turbidity (NTU)	TSS (mg/L)	Ammonia (µg/L)	Nitrate+ Nitrite (µg N/L)	Total Nitrogen (µg N/L)	Total Phosphorus (µg P/L)	Ortho-phosphate (µg/L)
WQ1 Upstream	Ebbing	8.82	11	155	300	629	73	70
	Flooding	15.2	25.8	23	10	171	22	10
WQ2 Mid	Ebbing	8.69	10	78	306	619	78	71
	Flooding	13.2	21.0	50	85	360	33	24
WQ3 Downstream	Ebbing	12.0	12	69	233	562	78	68
	Flooding	14.5	18	21	142	387	41	33

Vegetation

Vegetation is described based on two locations: along the banks of Kapālama Canal and the urban sidewalks on both sides of King St. and Pua Lane in the Project area. The vegetation found along the banks of the canal is dominated by mangrove (*Rhizophora mangle*). Along the water edge are grasses (Poaceae) and pickleweed (*Batis maritima*). The sidewalk margins along King Street include ornamental plants, weedy grasses, and lawns with no species standing out as

dominant. A‘ala Park, mostly a lawn, borders the east side of King Street near where the Project turns onto Iwilei Road.

Flora

Table 3 is a listing with relative abundances for all plant taxa recorded. 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 within the survey area. “Status” reflects the state-wide distribution of the species.

In all, 88 species of vascular plants were recorded. Among these, five species are indigenous plants (**Ind**; native, but also distributed elsewhere in the Pacific), representing 6% of the total number of species. One endemic species (**End**; native and unique to the Hawaiian Islands) was recorded. Two species (2%) are early Polynesian introductions (**Pol**; so-called “canoe plants”). The remaining 80 species (91%) are plants introduced to the Hawaiian Islands after 1778, comprising 70 naturalized species (Nat; i.e., grow naturally in the wild) and 10 ornamental species (Orn).

Table 3. Plant species recorded in the Project area during the September 8, 2025 survey.

FAMILY *Species*	Common name	STATUS	ABUNDANCE	NOTES
	FERNS & FERN ALLIES ***PTERIDOPHYTES***			
DAVALLIACEAE				
Davallia fejeensis Hook.	hare's-foot fern	Nat	R	
POLYPODIACEAE				
Phlebodium aureum (L.) J. Sm.	rabbit’s-foot fern	Nat	R	
Platycerium bifurcatum (Cav.) C.Chr.	staghorn fern	Nat	R	
PSILOTACEAE				
Psilotum nudum (L.) P. Beauv.	*moa*	**Ind**	R	
	FLOWERING PLANTS ***EUDICOTS***			
ACANTHACEAE				
Asystasia gangetica (L.) T. Anderson	Chinese violet	Nat	U	
AMARANTHACEAE				
Amaranthus spinosus L.	spiny amaranth	Nat	U	

Table 3 (continued).

FAMILY *Species*	Common name	STATUS	ABUNDANCE	NOTES
AMARANTHACEAE (cont.)				
Alternanthera pungens Kunth.	khaki weed	Nat	U	
Gomphrena celosioides Mart.	---	Nat	U	
APOCYNACEAE				
Carissa macrocarpa (Eckl.) A.DC.	natal plum	Orn	R	
Nerium oleander L.	oleander	Orn	U	
ARALIACEAE				
Heptapleurum actinophyllum (Endl.) Lowrey & G.M. Plunkett	octopus tree	Nat	U	
ASTERACEAE (COMPOSITAE)				
Bidens alba (L.) DC.	beggartick	Nat	U	
Calyptocarpus vialis Less.	---	Nat	U	
Conyza bonariensis (L.) Cronq.	hairy horseweed	Nat	U	
Pluchea carolinensis (Jacq.) G. Don	sourbush	Nat	U	
Pluchea indica (L.) Less.	Indian fleabane	Nat	O	
Pluchea x fosbergii Cooperr. & Galang	marsh fleabane	Nat	O	
Sphagneticola trilobata (L.) Pruski	wedelia	Nat	C	
Tridax procumbans L.	coat buttons	Nat	C	
BATACEAE				
Batis maritima L.	pickleweed	Nat	A	
BIGNONIACEAE				
Spathodea campanulata P. Beauv.	African tulip tree	Nat	R	
Tabebuia pallida (Lindly) Miers	pink tecoma	Orn	R	
BORAGINACEAE				
Heliotropium currasavicum L.	*kīpūkai*	**Ind**	R	
CASUARINACEAE				
Casuarina equisetifolia L.	common ironwood	Nat	R	
CONVOLVULACEAE				
Ipomoea obscura (L.) Ker-Gawl.	morning glory	Nat	U	
CRASSULACEAE				
Crassula cf. ovata (P. Mill.) Druce	jade plant	Orn	R	
Kalanchoë pinnata (Lam.) Pers.	air plant	Nat	R	
EUPHORBIACEAE				
Codiaeum variegatum (L.) Blume	croton	Orn	U	
Euphorbia hirta L.	garden spurge	Nat	R	
Euphorbia hypericifolia L.	graceful spurge	Nat	R	
Euphorbia maculata L.	spotted spurge	Nat	R	
Phylanthus debilis (Klein) ex Willd.	niruri	Nat	R	

Table 3 (continued).

FAMILY *Species*	Common name	STATUS	ABUNDANCE	NOTES
FABACEAE				
Desmanthus pernambucanus (L.) Thell.	slender mimosa	Nat	U	
Cassia x*nealiae* H.S. Irwin & Barneby	rainbow shower	Orn	O	
Leucaena leucocephala (Lam.) deWit	*koa haole*	Nat	R	
Indigofera hendecaphyla (Forssk.)	creeping indigo	Nat	U	
Indigofera suffruticosa Mill.	indigo	Nat	R	
Macroptilium atropurpureum (DC.) Urb.	---	Nat	U	
Mimosa pudica var. *unijuga (*Duchass. & Walp.) Griseb.	sensitive plant	Nat	R	
Pithecelobium dulce (Roxb.) Benth.	*ʻopiuma*	Nat	R	
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	*kiawe*	Nat	R	
GOODENIACEAE				
Scaevola sericea L.	*naupaka kahakai*	**Ind**	R	
MALVACEAE				
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	Nat	U	
Gossypium cf. *tomentosum* Nutt. ex Seem	*maʻo*	**End**	R	<1>
Malvastrum coromandelianum (L.) Garck	false mallow	Nat	O	
Sida ciliaris L.	---	Nat	C	
Sida rhombifolia L.	Cuba jute	Nat	U	
Thespesia populnea (L.) Sol ex Corrêa	*milo*	**Ind**	U	
Waltheria indica L.	*ʻuhaloa*	**Ind**	R	
MORACEAE				
Ficus macrophylla Desf. ex Pers.	Moreton Bay fig	Nat	R	
NICTAGINACEAE				
Boerhavia coccinea Mill.	false *alena*	Nat	R	
Bougainvillea spectabilis Wild.	bougainvillea	Orn	R	
PASSIFLORACEAE				
Passiflora foetida L	love-in-a-mist	Nat	R	
Passiflora suberosa L.	*huehue haole*	Nat	R	
PORTULACEAE				
Portulaca oleracea L.	pigweed	Nat	C	
PRIMULACEAE				
Lysimachia arvensis (L.) U. Manns & Anderb.	Poor man's weatherglass	Nat	U	

Table 3 (continued).

FAMILY *Species*	Common name	STATUS	ABUNDANCE	NOTES
RHIZOPHORACEAE				
Rhizophora mangle L.	red mangrove	Nat	AA	
RUBIACEAE				
Gardenia sp.	**---**	---	R	
Hedyotis corymbosa (L.) Lam.	**---**	Nat		
Paederia foetida L.	*maile pilau*	Nat	R	
RUTACEAE				
Murraya paniculata (L.) W. Jack	mock orange	Nat	R	<1>
SOLANACEAE				
Nicotiana glauca R.C. Graham	tree tobacco	Nat	R	
VERBENACEAE				
Citharexylum spinosum L.	fiddlewood	Nat	C	
Citharexylum caudatum L.	fiddlewood	Nat	C	
ZYGOPHYLLACEAE				
Tribulus terrestris L.	puncture vine	Nat	U	
	FLOWERING PLANTS			
	MONOCOTS			
ARECACEAE				
Dypsis lutescens (H. Wendl.) Beentje & J. Dransf.	golden-fruited palm	Orn	U	
Roystonia regia (Kunth) O. F. Cook	royal palm	Orn	O	
Veitchia merrilli (Beccari) H. E. Moore	Manila palm	Orn	U	
ASPARAGACEAE				
Cordyline fruticosa (L.) A.Chev.	*kī*	**Pol**	R	
CYPERACEAE				
Cyperus gracilis R. Br.	McCoy grass	Nat	U	
IRIDACEAE				
Trimezia martinicensis (Jacq.) Herb.	walking iris	Nat	R	<1>
MUSACEAE				
Musa hybrid L.	*mai'a*	**Pol**	O	
POACEAE				
Axonopus compressus (Sw.) P. Beauv.	brd-lf carpetgrass	Nat	C	
Bothriochloa pertusa (L.) A. Camus	pitted beardgrass	Nat	A	
Cenchrus ciliaris L.	buffel grass	Nat	C	
Cenchrus echinatus L.	common sandbur	Nat	U	
Chloris barbata (L.) Sw.	swollen fingergrass	Nat	O	
Cynodon dactylon (L.) Pers.	Bermuda grass	Nat	O	

Table 3 (continued).

FAMILY *Species*	Common name	STATUS	ABUNDANCE	NOTES
POACEAE (cont.)				
Dactyloctenium aegyptium (L.) Willd.	beach wiregrass	Nat	U	
Dichanthium annulatum (Forssk.) Stapf	Angleton grass	Nat	U	
Eleusine indica (L.) Gaertn.	wiregrass	Nat	O	
Eragrostis amabilis (Michx.) Nees	Japanese lovegrass	Nat	U	
Megathyrsus maximus (Jacq.) B. K. Simon & W. L. Jacobs	Guinea grass	Nat	U	
Paspalum dilatatum Poir.	Dallis grass	Nat	U	
Passiflora suberosa L.	*huehue haole*	Nat	U	
Sporobolus tenuissimus (Mart. ex Schrank) Kuntze	dropseed	Nat	R	
Urochloa mutica (Forssk.) T. Q. Nguyen	California grass	Nat	U	

Legend to Table 3

STATUS = distributional status for the Hawaiian Islands:
- **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 the arrival of Cook Expedition in 1778, and well-established outside of cultivation.
- Orn = A cultivated plant; a species not thought to be naturalized (spreading on its own) in Hawai'i.
- **Pol** = An early Polynesian introduction. Introduced before 1778.

ABUNDANCE = occurrence ratings for plant species:

R – Rare	seen in only one or perhaps 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.

NOTES: <1> = Planted as an ornamental.

Native plant species are rare in the Project area and include *moa* (*Psilotum nudum*), *'uhaloa* (*Waltheria indica*), *naupaka* (*Scaevola sericea*), and *milo* (*Thespesia populnea*). One endemic species, *ma'o* (*Gossypium tomentosum*), was located along King Street where it was planted. This species is not federally listed, and no federally listed species were observed during this survey.

Avian Fauna

Table 4 summarizes the avian species observed at the Project area during the survey on September 8, 2025. A total of ten different bird species from seven different families were recorded during the survey, all of which are alien introductions to the Island.

Table 4. Avian species identified within the Project area during the September 8, 2025 survey.

Common Name	ORDER FAMILY *Species*	Status
	GALLIFORMES	
	PHASIANIDAE - Pheasants & Partridges	
Red Junglefowl	*Gallus gallus*	A
	COLUMBIFORMES	
	COLUMBIDAE - Pigeons & Doves	
Zebra Dove	*Geopelia striata*	A
Mourning Dove	*Zenaida macroura*	A
Spotted Dove	*Streptopelia chinensis*	A
	PELECANIFORMES	
	ARDEIDAE - Herons, Bitterns & Allies	
Western Cattle-Egret	*Ardea ibis*	A
	PASSERIFORMES	
	PYCNONOTIDAE - Bulbuls	
Red-vented Bulbul	*Pycnonotus cafer*	A
	STURNIDAE - Starlings	
Common Myna	*Acridotheres tristis*	A
	ESTRILDIDAE - Estrildid Finches	
Chestnut Munia	*Lonchura atricapilla*	A
Common Waxbill	*Estrilda astrild*	A
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies	
House Finch	*Haemorhous mexicanus*	A

Table 4 (continued).

Legend to Table 4

STATUS = distributional status for the Hawaiian Islands:

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

Mammals

Domestic dog (*Canis lupus familiaris*) was the only mammal we observed in this urban environment during our survey.

Aquatic Species

The fauna of the Kapālama Canal includes fresh- and brackishwater fishes commonly found in estuarine systems of Hawai‘i (Table 5). Two native fishes, *‘ama‘ama* (*Mugil cephalus*) and *‘āholehole* (*Kuhlia xenura*), are commonly found in estuaries throughout Hawai‘i, even in waterbodies modified as heavily as Kapālama Canal. The aquatic community includes sponges and non-native fishes, including liberty/Mexican molly hybrid (*Poecilia* sp. hybrid complex [*salvatoris*/*mexicana*]) and black-chin tilapia (*Sarotherodon melanotheron*).

Table 5. List of aquatic species identified in Kapālama Canal during the September 8, 2025 survey.

PHYLUM, CLASS, ORDER FAMILY *Species*	Common name	Abundance	Status
	INVERTEBRATES		
PORIFERA, DEMOSPONGIAE, SUBERTIDIA HALICHONDRIIDAE *Halichondria* sp.	sponge	--	--
PORIFERA, DEMOSPONGIAE, HAPLOSCLERDIA CALLYSPONGIIDAE *Callyspongia sp.*	sponge	--	--

Table 5 (continued).

PHYLUM, CLASS, ORDER FAMILY *Species*	Common name	Abundance	Status
ARTHROPODA, MALACOSTRACA, DECOPODA PORTUNIDAE			
Scylla serrata Forsskal	Samoan crab	O	Nat
Metopograpsus thukuhar Owen	*ʻalamihi, kūkūau*	--	**Ind**
	FISHES		
CHORDATA, TELEOSTEI, CYPRINODONTIFORMES POECILIIDAE			
Poecilia sp.	indet. molly	C	Nat
Poecilia sp. hybrid complex (*salvatoris/mexicana*) group	liberty/Mexican molly	C	Nat
CHORDATA, TELEOSTEI, MUGILIFORMES MUGILIDAE			
Mugil cephalus Linnaeus, 1758	*ʻamaʻama*; striped mullet	U	**Ind**
CHORDATA, TELEOSTEI, PERCIFORMES CICHLIDAE			
Sarotherodon melanotheron Ruppell	blackchin tilapia	A	Nat
KUHLIIDAE			
Kuhlia xenura Jordan and Gilbert	*ʻāholehole*; Hawaiian flagtail	O	**End**

Legend to Table 5.

Abundance categories:

R – Rare – only one or two individuals observed.
U – Uncommon – several to a dozen individuals observed.
O – Occasional – seen irregularly in small numbers
C – Common -observed everywhere, although generally not in large numbers.
A – Abundant – observed in large numbers and widely distributed.

Status categories:

End – Endemic – species found only in Hawaii
Ind – Indigenous – species found in Hawaii and elsewhere
Nat – Naturalized – species were introduced to Hawaii intentionally, or accidentally.

Discussion and Recommendations

Recommendations 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) will minimize impacts to listed species to the maximum extent practicable.

Jurisdictional Waters

Kapālama Canal is a TNW, thereby qualifying it as federally jurisdictional waters under rule (a)(1)(i) and the high tide line (HTL) serves as the limit of federal jurisdiction. The delineation of federal jurisdictional waters is visually represented in Fig. 2. On both the left and right bank of Kapālama Canal, jurisdictional waters are demarcated by the HTL. No other tributaries or wetlands are present in the Project area.

Federal jurisdiction is solely determined by the USACE and is based upon the USACE accepting our findings. Acceptance may require a field visit by a USACE representative from the Regulatory Branch to confirm our delineation. Our delineation is not official until an acceptance letter from the USACE is received by the applicant.

State Waters

The entire length of Kapālama Canal qualifies as a "state water" and the jurisdictional extent in the Project vicinity is analogous to the delineated HTL. No additional tributaries or wetlands occur in the Project vicinity under state regulations.

Water Quality Assessment

State water quality criteria applicable to estuaries are shown in Table 6. 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 α are based on geometric means not to exceed specific criterion values. Since geometric means require a minimum of three separate samples per station, results of our two events cannot be compared with geometric mean criteria. However, the purpose of the water quality measurements presented in this report is to characterize existing conditions, not to establish compliance with state water quality standards. The water quality

sampling results presented in this report could be used as part of a larger data set to establish ambient conditions for various parameters in the future.

Table 6. 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_4-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.

At the time of sampling, temperature, salinity, conductivity, pH, and ammonia decreased from upstream to downstream, while DO, turbidity, nitrate+nitrite, total nitrogen, total phosphorus, and orthophosphate all increased from upstream to downstream. Temperature, salinity, conductivity, pH, DO, DO saturation, turbidity, and TSS were all lower in samples collected in the morning,

ebbing tide compared to those collected in the afternoon, flooding tide, while ammonia, nitrate+nitrite, total nitrogen, total phosphorus, and orthophosphate were all higher in morning samples compared to afternoon samples. In the morning samples, average DO saturation was low (34.67%) and all nutrient concentrations were elevated.

The tidal influence on the water quality in the Kapālama Canal is evident, as the results of the two events demonstrate. The difference in salinity of ~10 ppt between the morning and the afternoon indicates an influx of ocean water coming in on the rising tide.

Floral Resources

All of the survey area has been altered and developed and naturalized flora dominates. Although scattered and sparse occurrences of native flora occur in the area, these plants are all common species, and most members of their respective populations are numerous outside of the Project area. No plants proposed or listed as threatened or endangered species as set forth in the Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1543; USFWS, nd-a; HDLNR, 1998) were seen in the project area. For plants, state listing follows the federal listing.

Avian Resources

Seabirds

It is possible that Hawaiian Petrel (*Puffinus sandwichesis*), Band-rumped Storm-Petrel (*Hydrobates castro*), and Newell's Shearwater (*Puffinus newelli*) over-fly the Project area between April and the middle of December each year in small numbers. The primary cause of mortality in Hawaiian Petrel and Newell's Shearwater in Hawai'i is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality of these listed seabird species in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. Disoriented seabirds may collide with man-made structures and, if not killed outright, become easy targets of opportunity for feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003). No suitable nesting habitat exists within or close to the Project area for any of these three seabird species.

About the only impact that the Project poses to protected seabirds is an increased threat that birds will be downed after becoming disoriented by lights associated with construction lighting if undertaken during the nesting season and if it is deemed expedient or necessary to conduct night-time activities.

- If night-time construction activity or equipment maintenance is proposed during the construction phases of the Project, all such lighting must be shielded and, when large flood/work lights are used, these should be placed on poles high enough to allow the lights to be pointed directly downward (Reed et al., 1985; Telfer et al., 1987). All outdoor lighting installed must be fully "dark sky compliant" (HDLNR-DOFAW, 2016). DLNR recommends avoiding construction needing lighting between September 15 and December 15.

Waterbirds

On Oʻahu, endangered Hawaiian waterbirds include the Hawaiian Common Gallinule (*Gallinula galeata sandvicensis*) or *ʻalae ʻula*, Hawaiian Coot (*Fulica alai*) or *ʻalae keʻokeʻo*, and Hawaiian Stilt or *aeʻo* (*Himantopus mexicanus knudseni*). The banks of Kapālama Canal are dominated by red mangrove, which does not provide suitable nesting habitat for waterbirds; however, native waterbirds may visit the open waters.

The *ʻAukuʻu* or Black-crowned Night Heron (*Nycticorax nycticorax*), Mallard (*Anas platyrynchos*), and Hawaiian Duck-Mallard hybrid are waterbird species that might utilize Kapālama Canal and are common on Oʻahu. However, none of these birds is listed as endangered or threatened species under federal or state listings (USFWS, 2016).

Although it is unlikely that one or more of the endemic waterbird species described above may frequent the Project area, potential impacts to waterbird species during construction 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 in vicinity of the Kapālama Canal:

- No feeding of waterbirds, especially if they approach for handouts.
- Secure all food rubbish in closed trash receptacles.

Mammalian Resources

No mammalian species currently proposed for listing or listed under either federal or state endangered species statutes (HDLNR 1998, 2015; USFWS, nd-a)

were recorded in the Project area. All mammalian species observed during this survey are alien to the Hawaiian Islands. No rodents were recorded but one or more of the four alien Muridae found on Oʻahu—European house mouse (*Mus musculus*), roof rat (*Rattus* rattus), brown rat (*Rattus norvegicus*), and black rat (*Rattus exulans hawaiiensis*)—likely utilize various resources within the general area. These human commensal species are drawn to areas of human habitation and activity. All introduced mammalian species are deleterious to the native biota.

Hawaiian Hoary Bat

Although rare on Oʻahu, the endangered Hawaiian hoary bat (*Lasiurus semotus*) may use resources in the area. Deleterious impacts to this native bat can be minimized to the maximum extent practicable by following these guidelines:

- Cutting branches of trees can avoid adverse impact to Hawaiian hoary bat if done outside of the pupping season (June 1 to September 15 of each year).
- Potential adverse impacts to Hawaiian hoary bat can be avoided or minimized by avoiding the use of barbed wire for fencing (USFWS-PIFWO, 2023).

Aquatic Resources

No federal or state-listed threatened or endangered aquatic species (USFWS, nd-b; HDLNR, 2015) are known to be present in Kapālama Canal.

Though not observed during this survey, endemic aquatic *ʻoʻopu*, *ʻōpae*, and *hīhīwai* and *hapawai*, have been observed in Kapālama Canal during previous surveys (*AECOS*, 2017; Englund at al., 2000). These species are diadromous: eggs are laid in the stream and the larvae that hatch from these eggs move downstream and out into the ocean where they develop for a period of time before migrating back into fresh water to grow to maturity (Ford and Kinzie, 1982; Kinzie, 1988).

Though not an ideal environment, diadromous organisms inhabit and migrate through the Project area. There is no relationship between local population density and habitat quality (McRae, 2007); *ʻoʻopu* recruit to any freshwater source, regardless of habitat quality (Holmquist et al., 1998). Water quality is a priority, and good water quality should be maintained when work occurs in or near aquatic habitat. Apply appropriate construction BMPs for all in-water work.

- If in-water work is required, BMPs for work in aquatic environments should be incorporated into the Project plans to minimize the degradation of water quality and impacts to biological resources.
- Instream migration pathways for amphidromous species must be maintained at all times.

Other Resources of Potential Concern

Critical Habitat

Federally delineated Critical Habitat is not present in the Project area (USFWS, nd-c). No equivalent designation exists under state law.

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APPENDIX B

Archaeological Literature Review and Assessment

Iwilei and Kapālama Electrical Infrastructure Project

Kapālama and Nu‘uanu (Honolulu) Ahupua‘a,

Honolulu (Kona) District, O‘ahu Island, Hawai‘i

Archaeological Literature Review and Assessment
Iwilei-Kapālama Electrical Infrastructure Project
Kapālama and Nu‘uanu (Honolulu) Ahupua‘a, Honolulu (Kona) District, O‘ahu Island

N. King St., Pua Lane, Iwilei Rd. and Kohou St. rights-of-way (ROW) Adjacent to TMK (1) 1-5-004, 1-5-005, 1-5-006, 1-5-007, 1-5-008, 1-5-019, 1-6-001, 1-6-002, 1-7-026, 1-7-027, 1-7-029 & 1-7-031:various parcels

Prepared for
Michels Pacific Energy, Inc.
San Jose, California
Hawai‘i Community Development Authority (HCDA) (lead agency)
Honolulu, Hawai‘i

Prepared by
Christopher M. Monahan, Ph.D., and
Trisha K. Watson, Ph.D.
HONUA CONSULTING
Honolulu, Hawai‘i

November 2025

Management Summary

This archaeological literature review and assessment (ALRA) was completed for Michels Pacific Energy and the Hawai‘i Community Development Authority (lead agency) in support of the Iwilei-Kapālama Electrical Infrastructure project in Kapālama and Iwilei. The project area is a linear corridor along the N. King Street right-of-way (ROW), makai of the H-1 Interstate, between the Kapālama Drainage Canal (to the northwest) and Iwilei Road (to the southeast). The project area is 12.1 acres (4.9 hectares) in size. The landowner is the City & County of Honolulu. The project area environs are part of the Honolulu Rail transit-oriented development (TOD). The proposed project is envisioned as supporting three major proposed developments: redevelopment of Mayor Wright Homes by the Hawaii Public Housing Authority (HPHA), construction of the Liliha Civic Center by the Hawaii Housing Finance & Development Corporation (HHFDC) and development of Kapālama Kai Phase I residential project by Kamehameha Schools. The scope of work will include trenchless, directional drilling (i.e., horizontal drilling and installation of conduit) supported by several open trench excavations (“pilot holes”) at several locations. Subsurface excavation in excess of 10 feet (ft.) below grade is anticipated for the pilot holes.

The objectives of this ALRA were: (1) documentation and description of the parcel’s land-use history in the context of its traditional Hawaiian character as well as its historic-period changes; (2) identification of any archaeological historic properties or component features in the project area; and (3) providing information relevant to the likelihood of encountering historically significant cultural deposits in subsurface context during future construction. This ALRA is not an archaeological inventory survey (AIS), and it is not intended for formal review by the SHPD. It may be used, however, to support the project proponent’s consultation with the SHPD in compliance with Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and Hawai‘i Administrative Rules (HAR) Chapter 13-275 as well as other (e.g., environmental) regulations.

Results are as follows: (1) In general, due to the urbanization of the project area for a century or more, there are no above-ground (surface) archaeological remains of traditional Hawaiian sites; traditional Hawaiian sites that have been identified are exclusively located in subsurface context; (2) The main types of subsurface, traditional Hawaiian sites identified in the project-area environs include: (a) Human burials and isolated or fragmentary human skeletal remains; (b) Fishpond sediments from previously utilized ponds that were drained and filled many years ago for urbanization; and (c) Anthropogenic wetland sediments interpreted as traditional Hawaiian lo‘i kalo (wetland taro agriculture) areas; (3) Historic-period sites have been identified in both subsurface and above-ground contexts. Not including architectural resources, the main types of historic-period sites identified in the project-area environs include: (a) Human burials and isolated or fragmentary human skeletal remains and (b) Other, varied subsurface discoveries including fill layers.

Based on all available evidence, our recommendations are as follows: (1) The proposed project will have “no effect” on above-ground archaeological historic properties since none are present in or near the project area; and (2) The SHPD should be consulted to obtain its guidance on possible archaeological work needed to support ground disturbance associated with the proposed project.

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Section 1 Introduction

1.1 Project Background

This archaeological literature review and assessment (ALRA) was completed by Honua Consulting (Honua) for Michels Pacific Energy, Inc., on behalf of the Hawai‘i Community Development Authority (HCDA) (lead agency) in support of its Iwilei-Kapālama Electrical Infrastructure project in Kapālama and Nu‘uanu (Honolulu) Ahupua‘a, Honolulu (Kona) District, Island of O‘ahu, Hawai‘i (Figure 1 and Figure 2).

The project area is a linear corridor along the N. King Street right-of-way (ROW), makai of the H-1 Interstate, between the Kapālama Drainage Canal (to the northwest) and Iwilei Road (to the southeast). The northwest end of the project area crosses the canal to Kohou Street. The southeast end of the project area turns west up Iwilei Road for a short distance. A lateral extension along Pua Lane between N. King Street and Vineyard Boulevard. The overall size of the project area is 12.1 acres (4.9 hectares) or approximately 1,881.9 linear meters of roadway (6,174.3 linear feet). The project area is adjacent to numerous Tax Map Key (TMK) (Figure 3 to Figure 14 and listed on the title page). The landowner is the City & County of Honolulu.

The proposed project is in the downtown Honolulu residential and commercial neighborhoods of Kapālama and Iwilei. The neighborhoods of Kalihi and Chinatown, respectively, are northwest and southeast of the project area. The project area environs are part of the Honolulu Rail transit-oriented development (TOD). The closest rail stations are Niuhelewai (Kapālama-Honolulu Community College) and Kūwili (Iwilei). The proposed project is envisioned as supporting three major proposed developments in the area: the redevelopment of Mayor Wright Homes by HPHA, the construction of the Liliha Civic Center by HHFDC and the development of Kapālama Kai Phase I residential project by Kamehameha Schools.

The proposed project consists mostly of trenchless, directional drilling (i.e., horizontal drilling and installation of conduit) supported by several open trench excavations (“pilot holes”) at several locations. Subsurface excavation in excess of 10 feet (ft.) below grade is anticipated for the pilot holes.

Construction plans, which depict the locations of the pilot holes, are included as Figure 15.

1.2 Document Purpose and Regulatory Context

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

This ALRA is not an archaeological inventory survey (AIS), and it is not intended for formal review by the SHPD. It may be used, however, to support the project proponent’s consultation with the SHPD in compliance with Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and Hawai‘i Administrative Rules (HAR) Chapter 13-275 as well as other (e.g., environmental) regulations.

1.3 Environmental Setting

1.3.1 Natural Environment

This section describes the environmental and physiographic conditions in and adjacent to the project area. Some observations on historic patterns of change are described where applicable. The information in this subsection is derived from well-known sources including Foote et al. (1972), Macdonald et al. (1983) and Juvik and Juvik (1998); and from previous archaeological and cultural resource reports from the project area environs.

The project area is fully urbanized with little to no green space. Areas that are adjacent to the project area that are not completely developed and urbanized include ʻAʻala Park and two small community parks (e.g., Beretania and Kauluwela), all of which are in the eastern (Honolulu or Nuʻuanu) side of the project area. There are no naturally-occurring stream drainages in the project area; both the Kapālama and lower Nuʻuanu streams have been channelized. The project area lacks naturally-occurring vegetation.

There is minimal topographic variation in the project area other than a gentle slope down to the makai (seaward) direction. Elevation varies from approximately 20 ft. (6.1 m) above mean sea level (amsl) in the northwest to 10 ft. (3.0 m) amsl in the southeast. The entire project area is covered by asphalt and/or concrete and other hardscaping.

Mean annual rainfall in this part of Oʻahu is approximately 30 inches (762 mm) (Giambelluca et al. 2013), making it nearly semi-arid. The project area is subject to a leeward-type of climate with winter (so-called Kona) rains predominating, and very light trade-wind rains coming down from Nuʻuanu and Kapālama (ʻĀlewa Heights) valleys.

Naturally-occurring soils in the project area—when they have not been removed by previous construction disturbance—are dominated by alluvium from the two main stream systems (Kapālama and Nuʻuanu / Waolani / Pauoa). According to the U.S. Department of Agriculture's classification system, the natural alluvial soils in the project area consist predominantly of Ewa silty clay loam (EmA) with a small area of Hanalei silty clay (HnA) (Foote et al. 1972) (Figure 16). The soils classified as loam are also noted to be prime agricultural soils if irrigated. The far ends of the project area are in Fill land (FL), consisting of reclaimed areas just inland from the shoreline. Given the history of development in and around the project area for more than a century, most of it currently consists of previously disturbed soils from road building, infrastructure installation and repair and other urban development, maintenance and repair.

1.3.2 Built Environment

The project area is fully developed/urbanized and includes portions of the road rights-of-way (ROW) of N. King Street, Pua Lane, Iwilei Road and Kohou Street, after crossing (underneath) the Kapālama Drainage Canal. The adjacent areas contain single-family homes, larger apartment buildings and condominiums, public housing complexes (including Mayor Wright Homes and Kukui Gardens), public schools and grounds, as well as commercial (both light industrial and retail) buildings and facilities.



Figure 1. Portion of 2024 U.S. Geological Survey (USGS) topographic map showing project area (base map source: USGS online at http://ngmdb.usgs.gov/topoview)



Figure 2. Aerial photograph showing project-area location (base image source: ESRI's ArcMap 10.8.2)

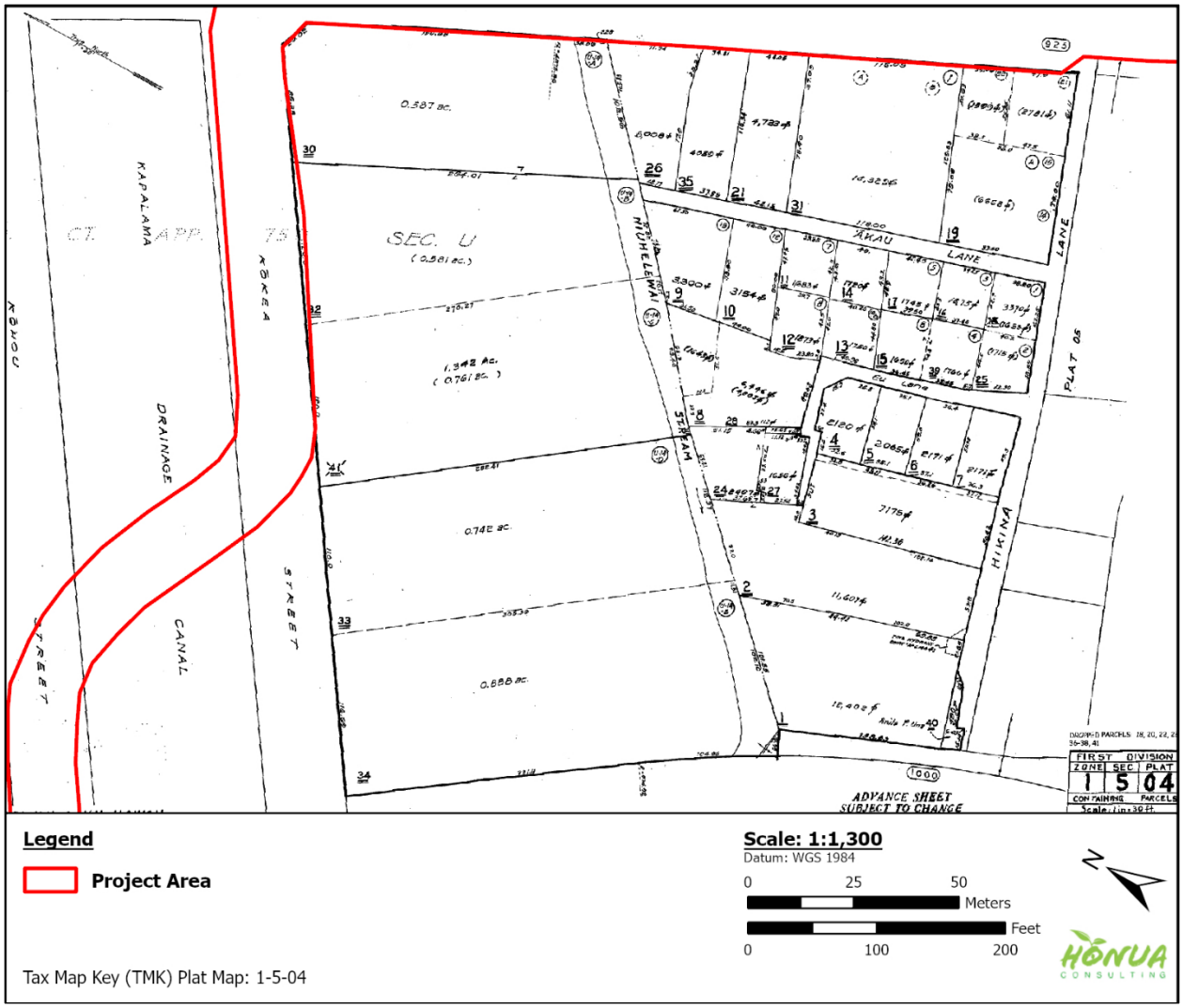

Figure 3. Tax Map Key (TMK) (1) 1-5-004 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

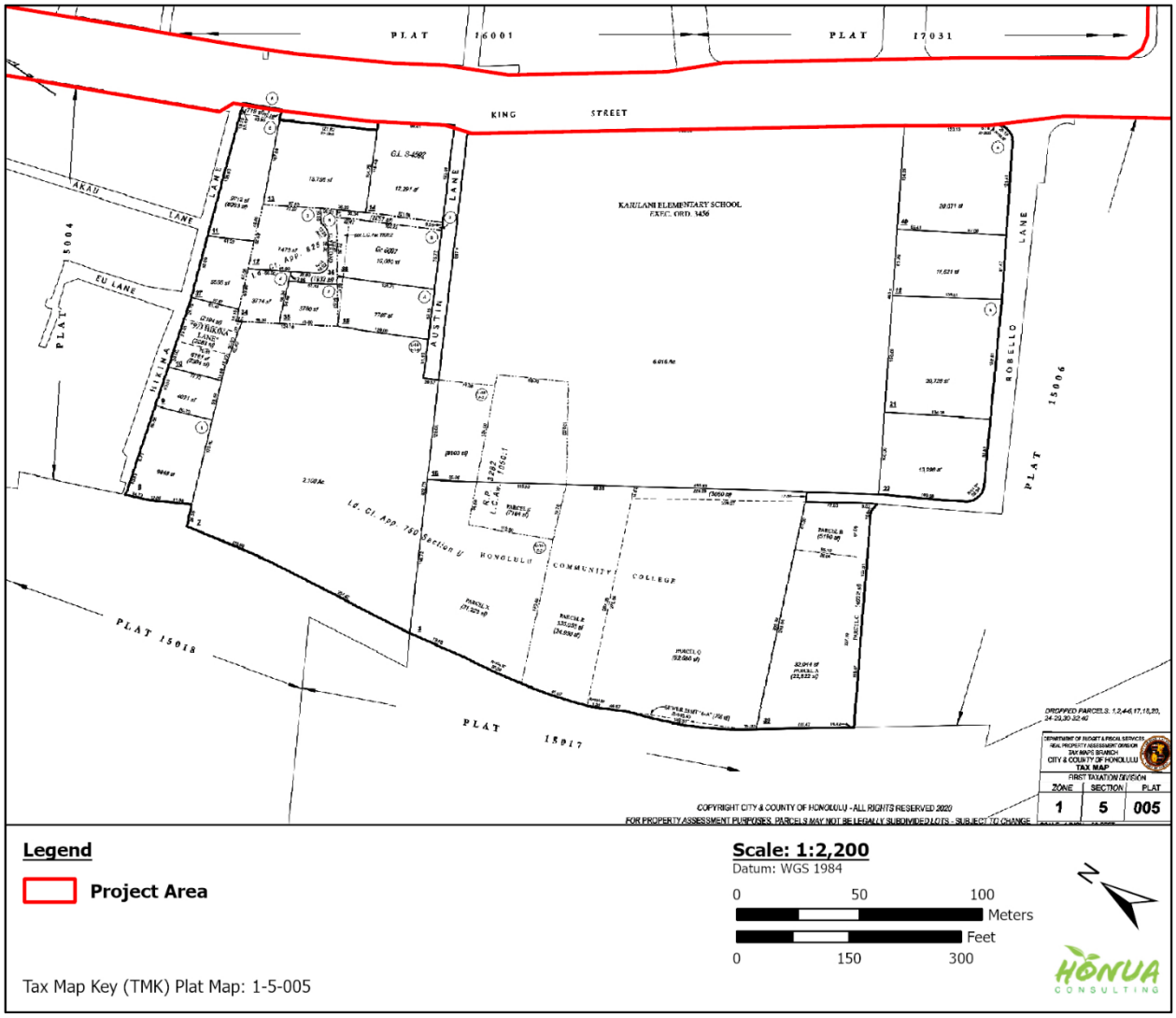

Figure 4. TMK (1) 1-5-005 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

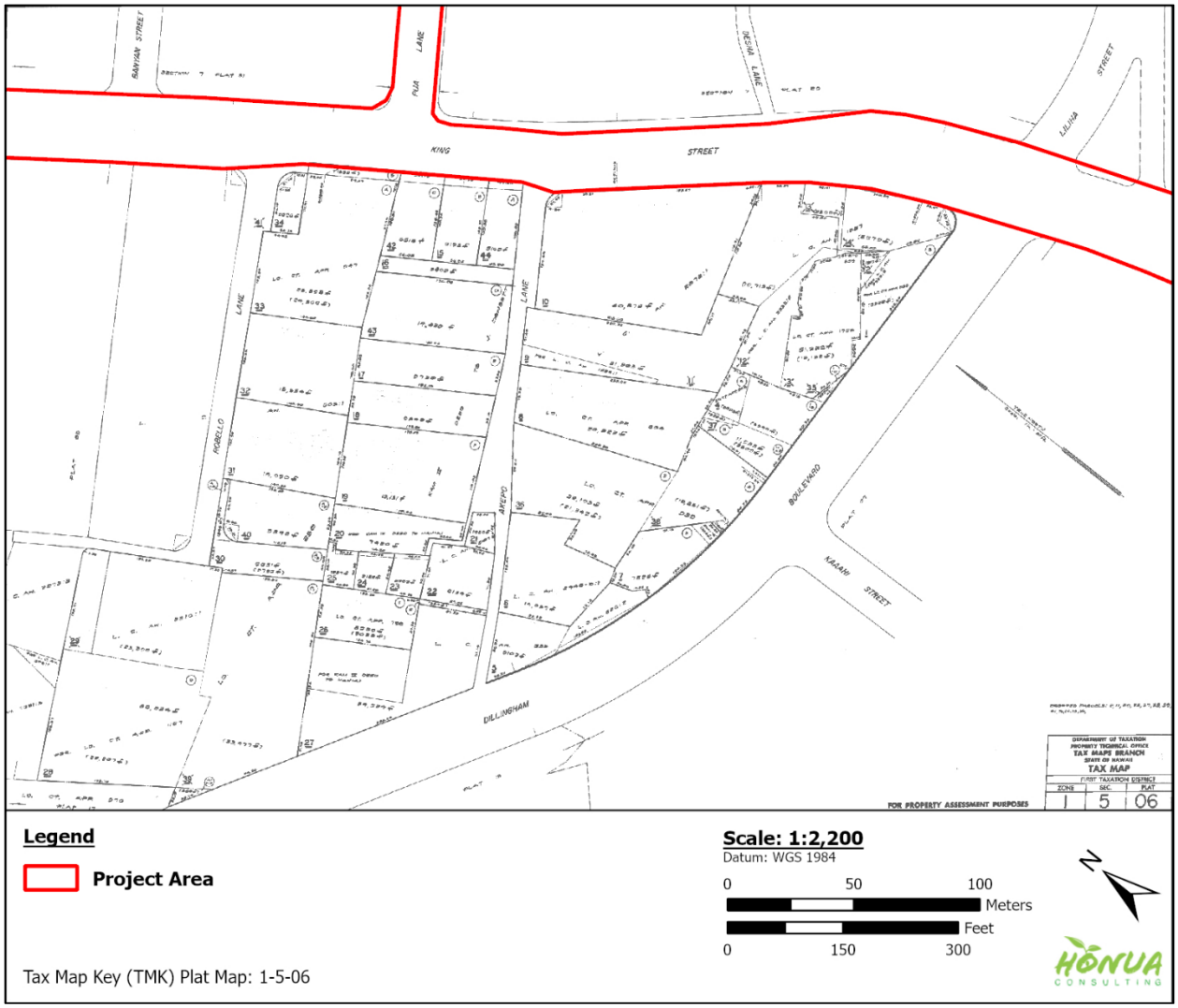

Figure 5. TMK (1) 1-5-006 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

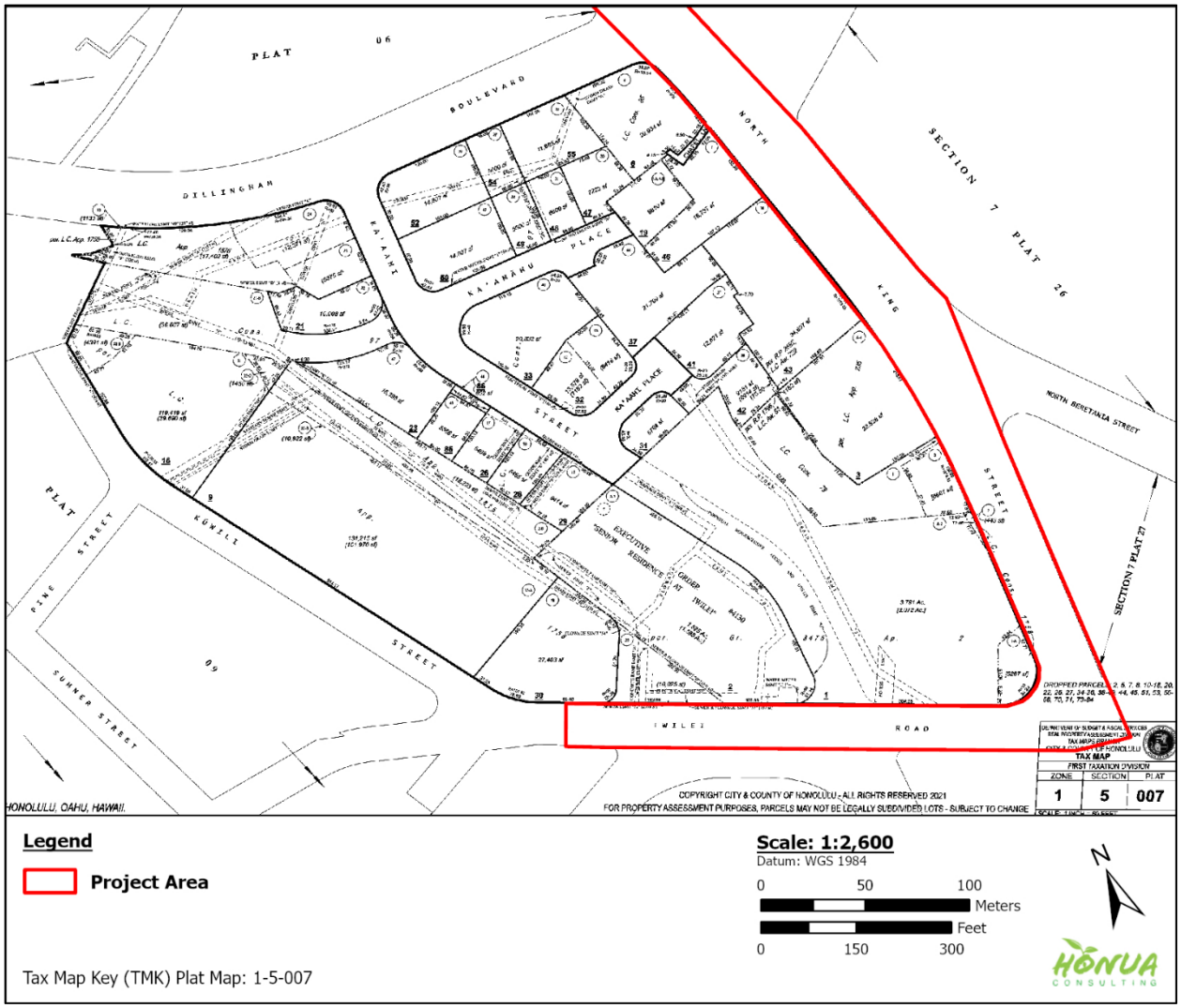

Figure 6. TMK (1) 1-5-007 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

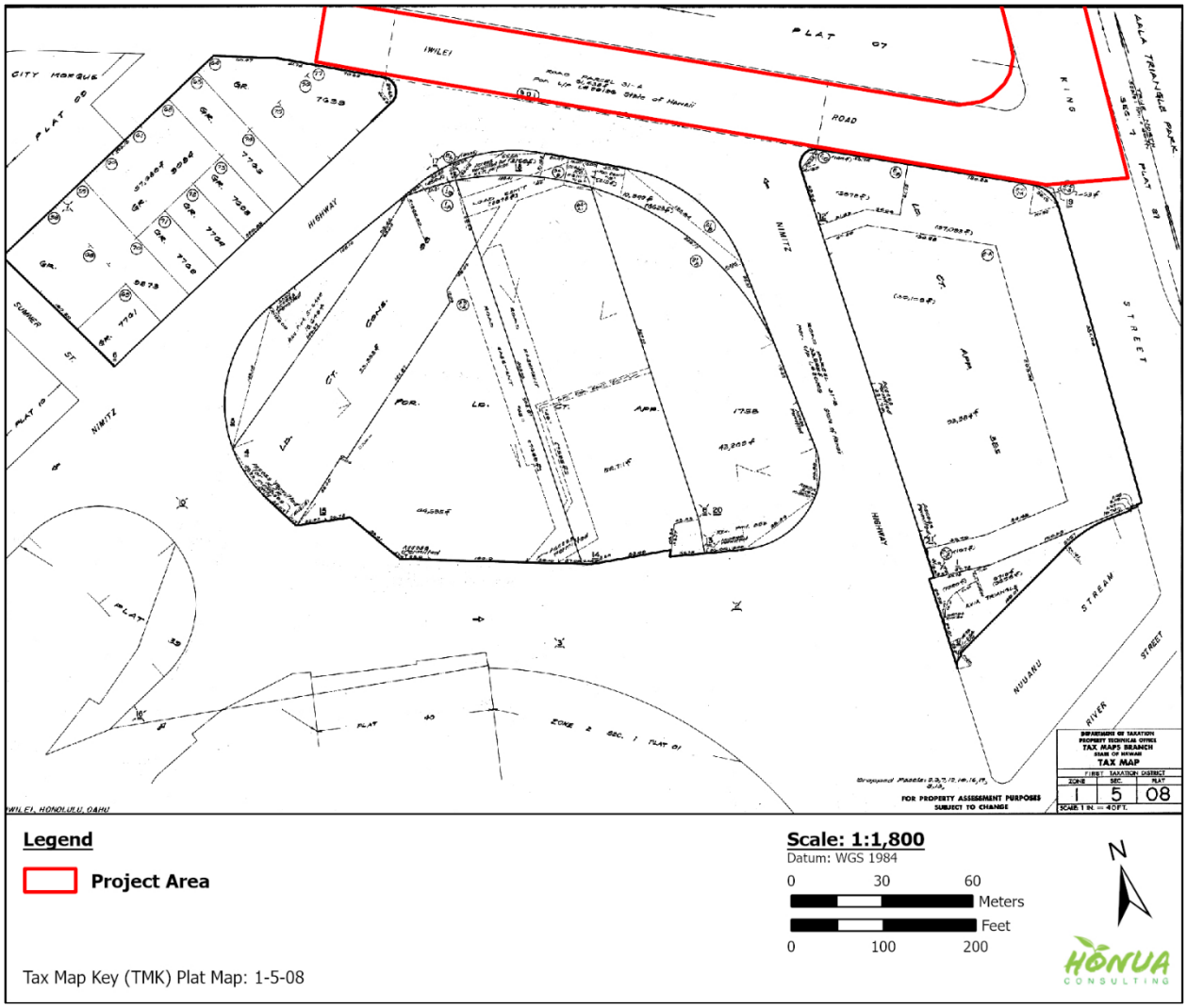

Figure 7. TMK (1) 1-5-008 showing a portion of the project area (base map source: City & County of Honolulu n.d.

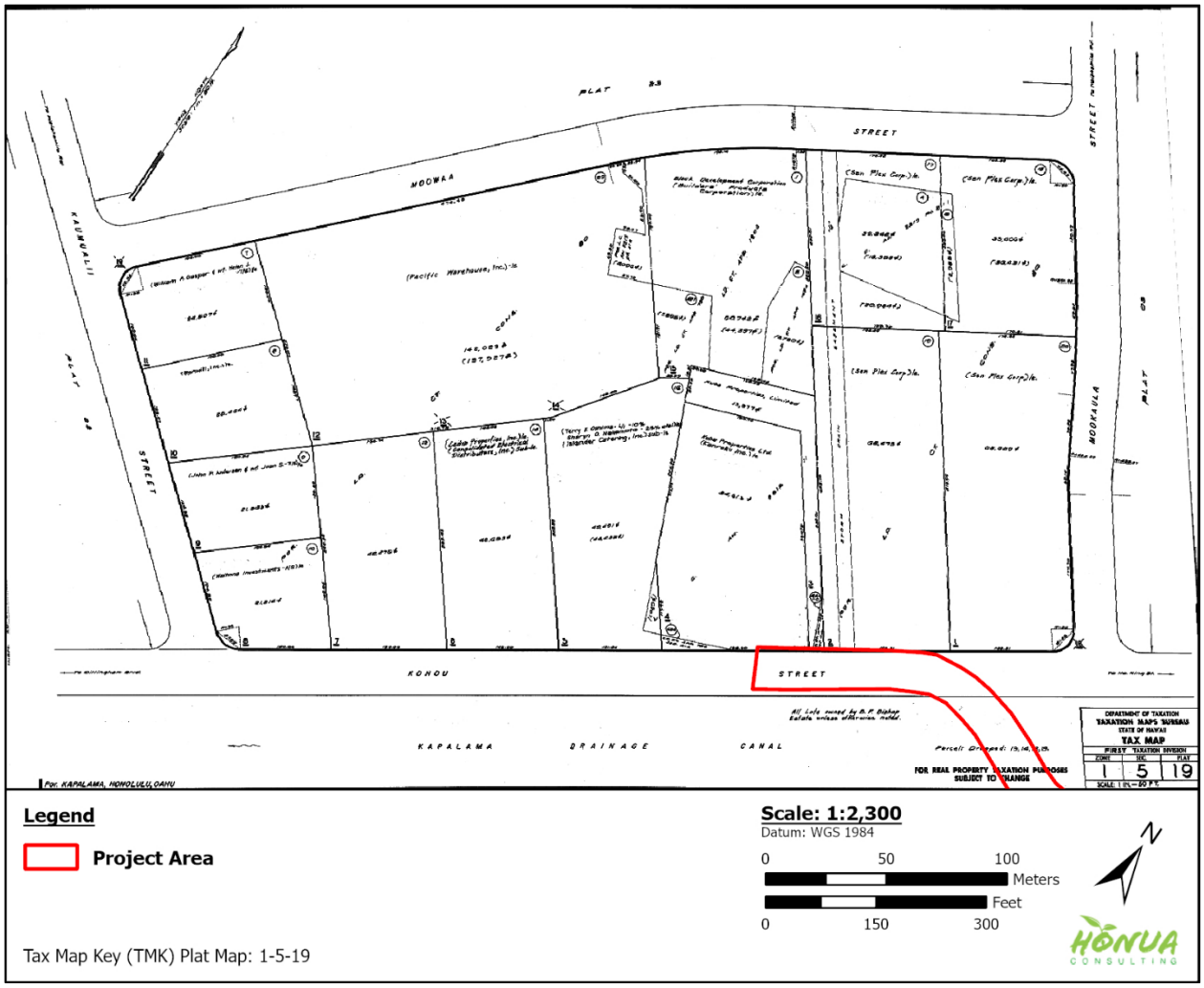

Figure 8. TMK (1) 1-5-019 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

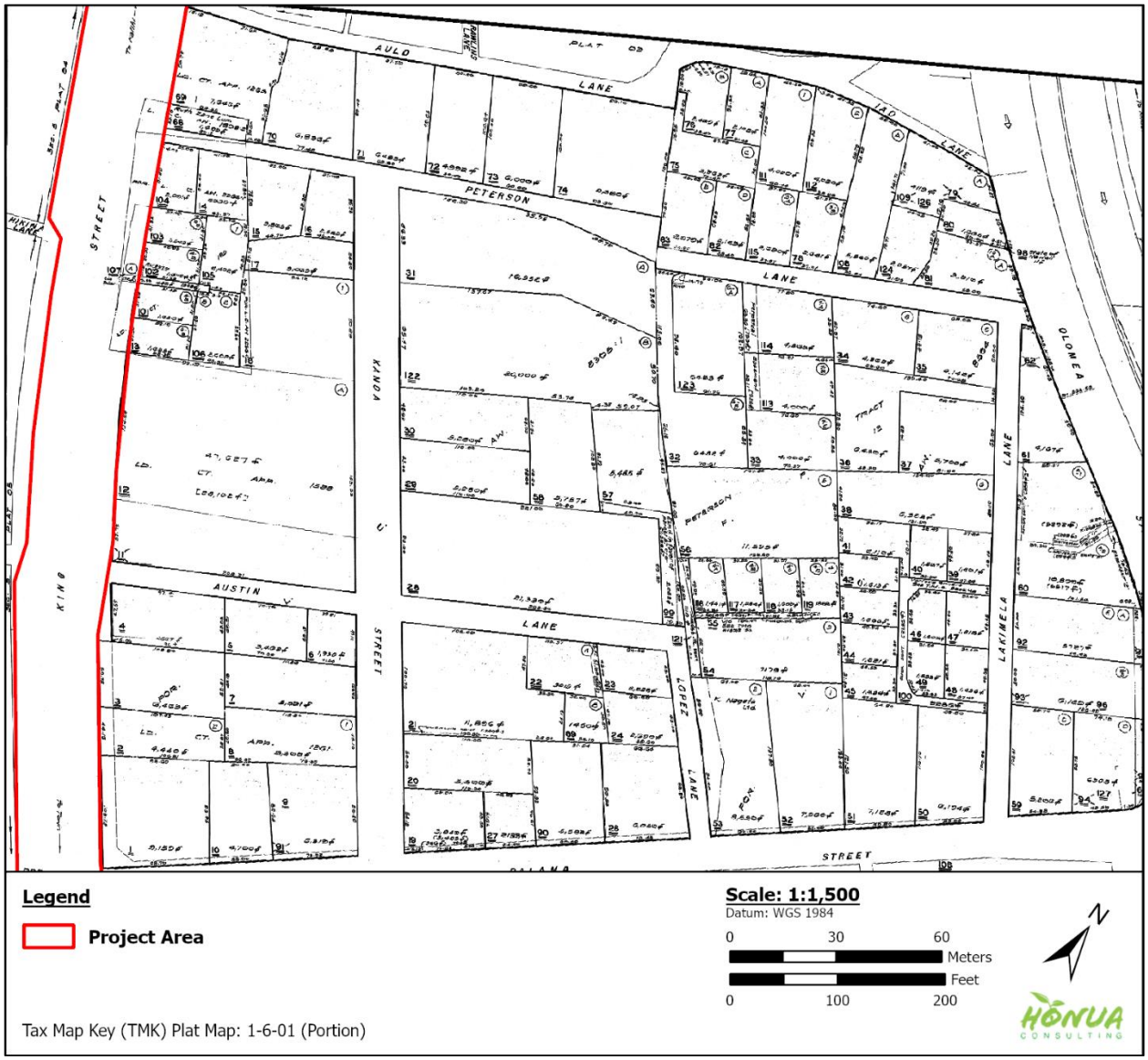

Figure 9. TMK (1) 1-6-001 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

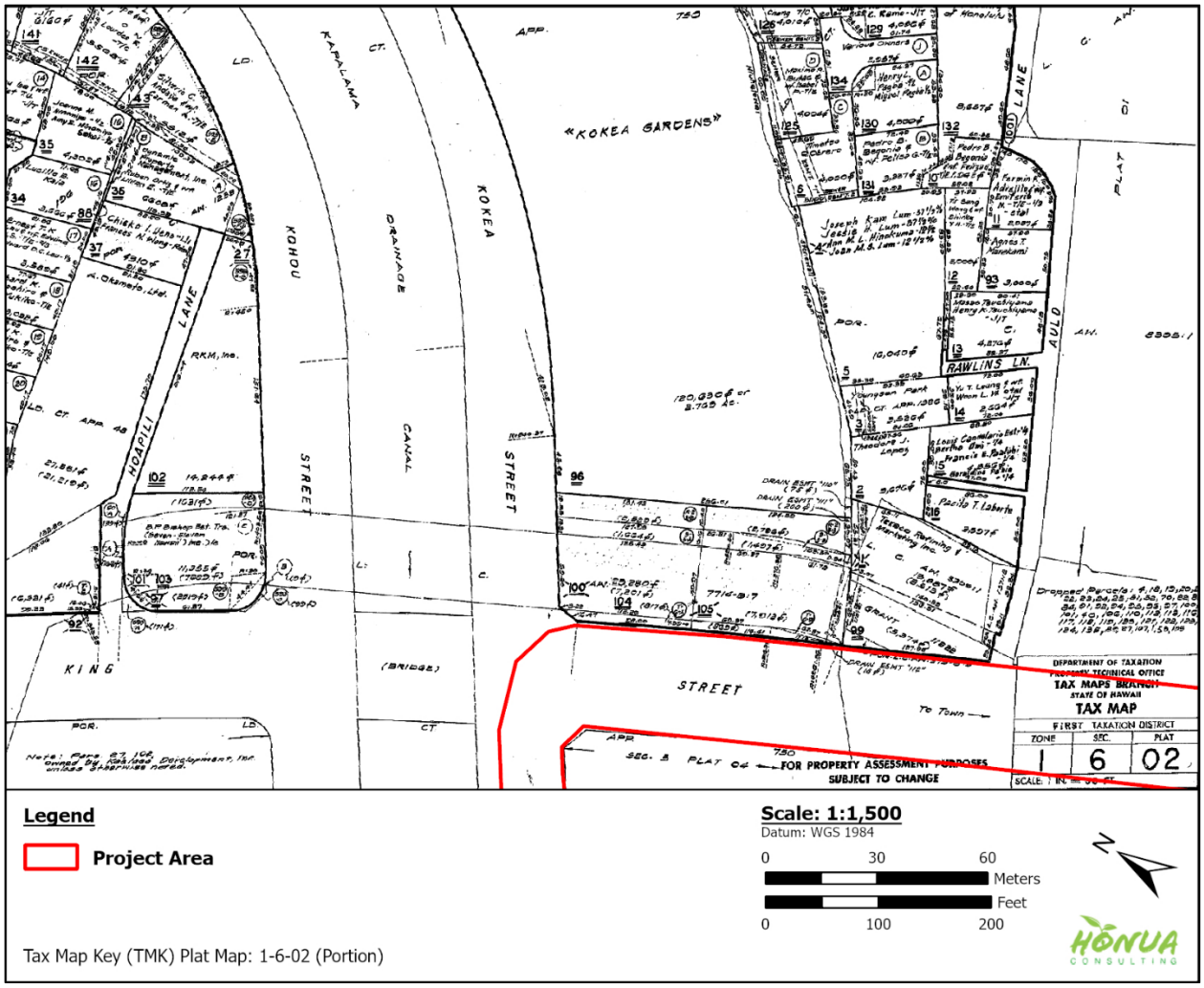

Figure 10. TMK (1) 1-6-002 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

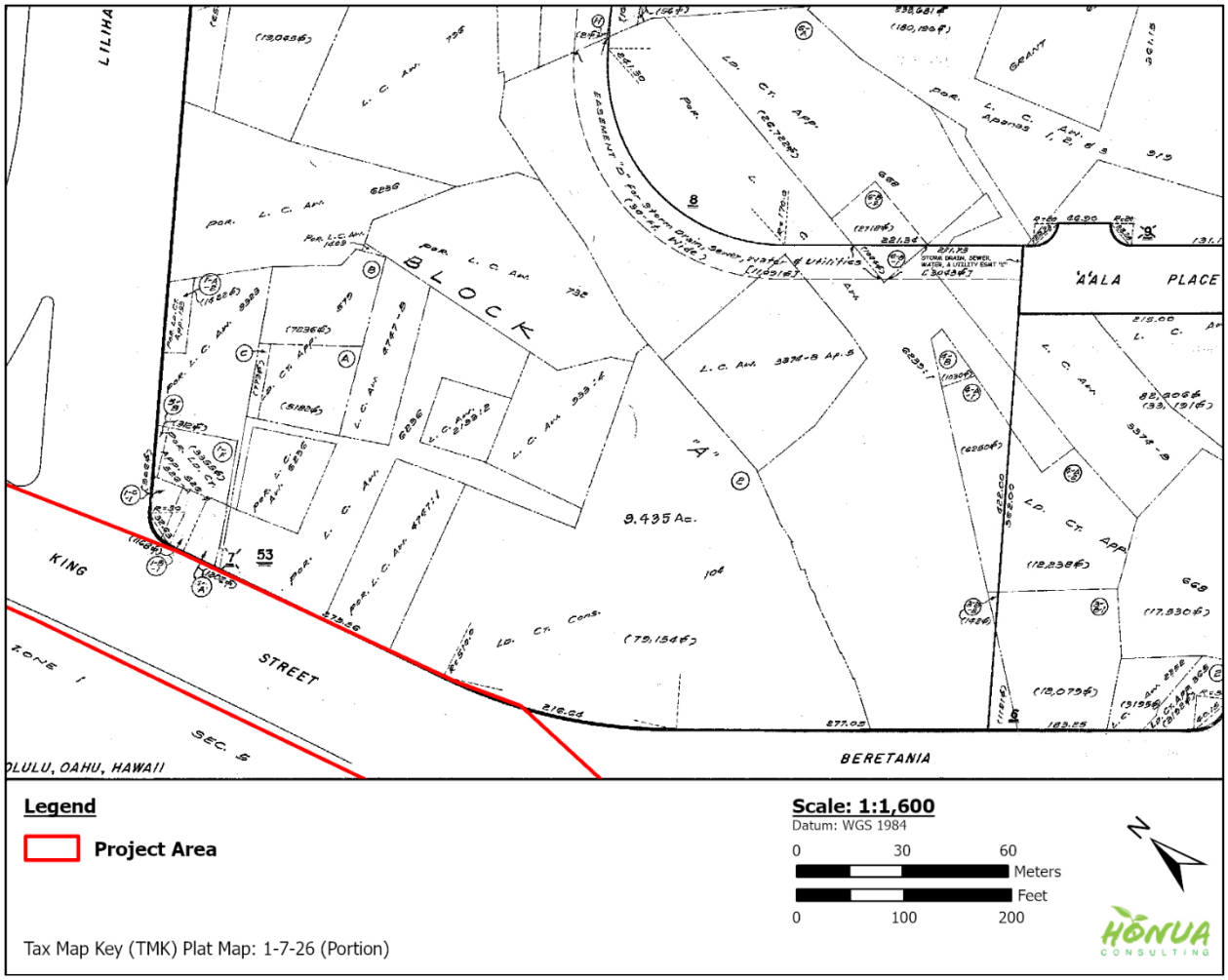

Figure 11. TMK (1) 1-7-026 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

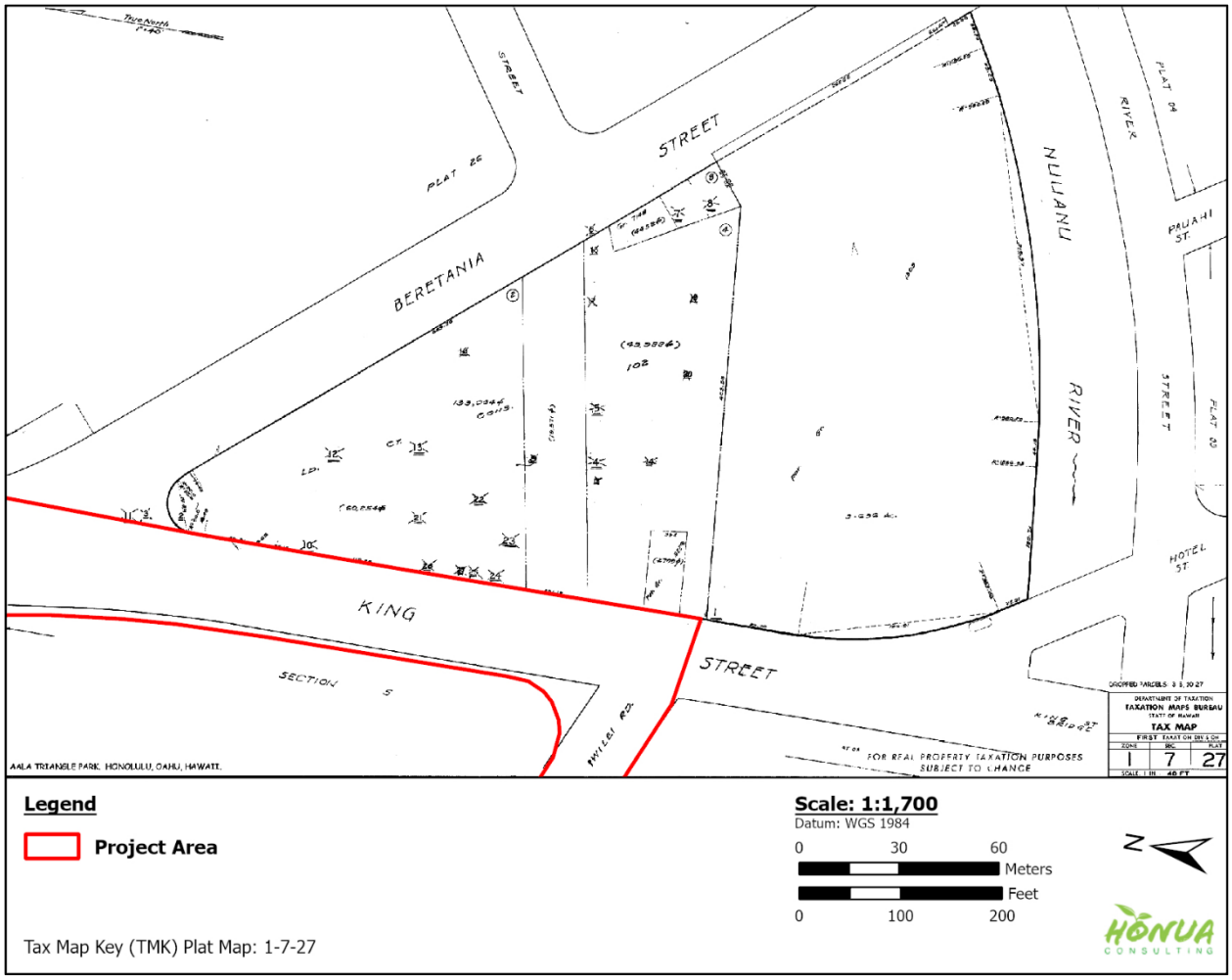

Figure 12. TMK (1) 1-7-027 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

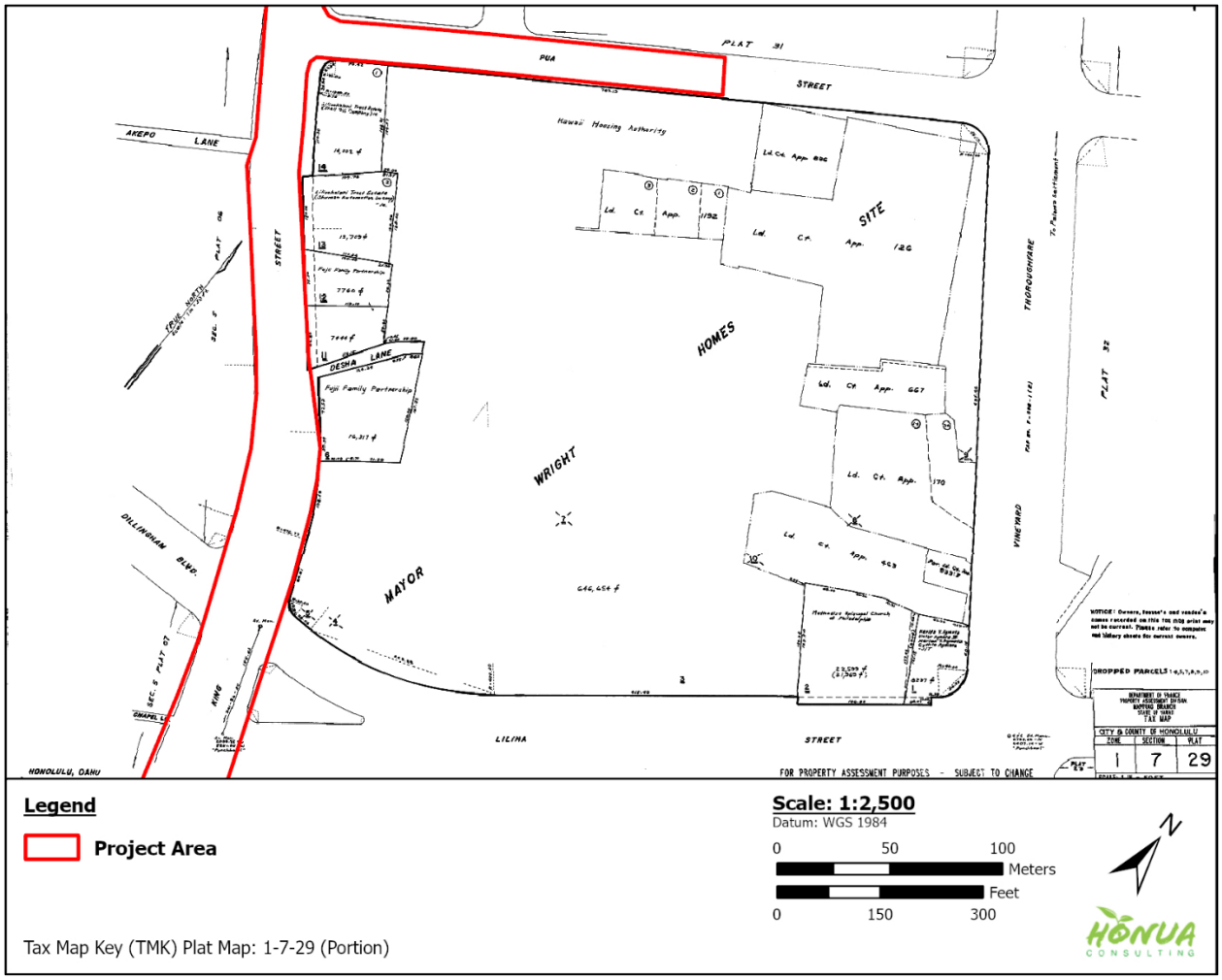

Figure 13. TMK (1) 1-7-029 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

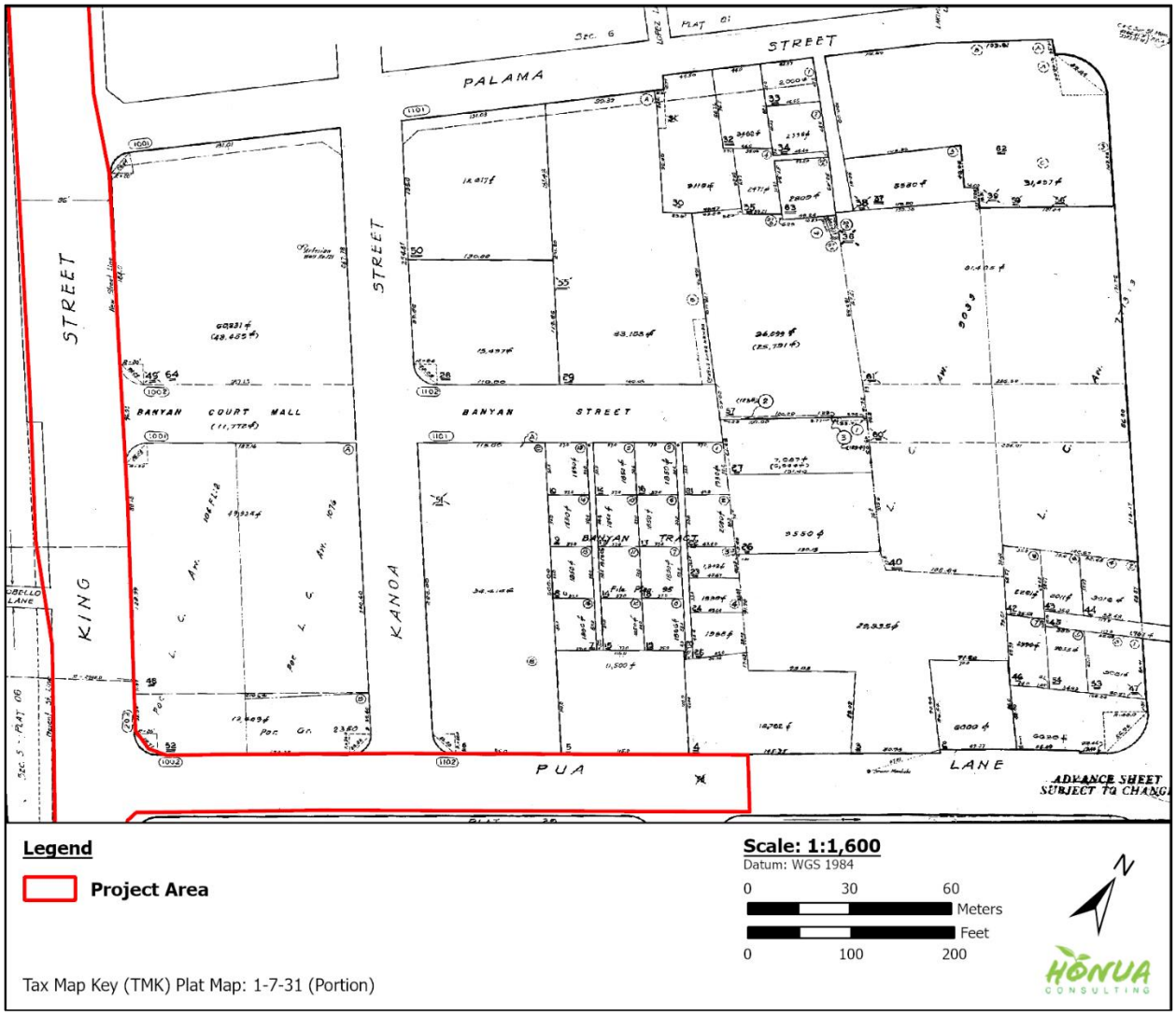

Figure 14. TMK (1) 1-7-031 showing a portion of the project area (base map source: City & County of Honolulu n.d.)

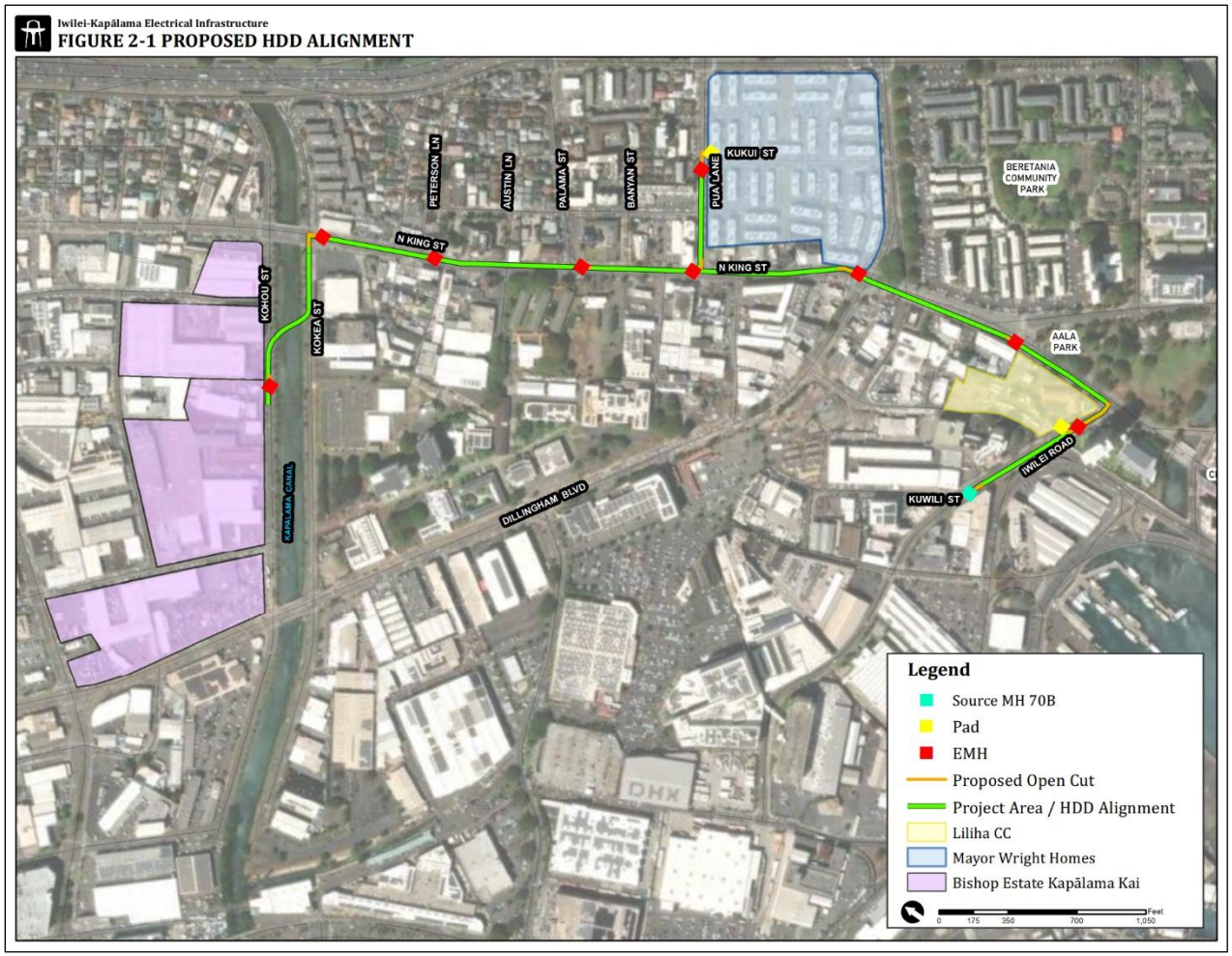

Figure 15. Construction overview provided by client; EMH symbols indicate locations of manholes; orange areas are location of open pit excavation; green lines denote locations of directional drilling

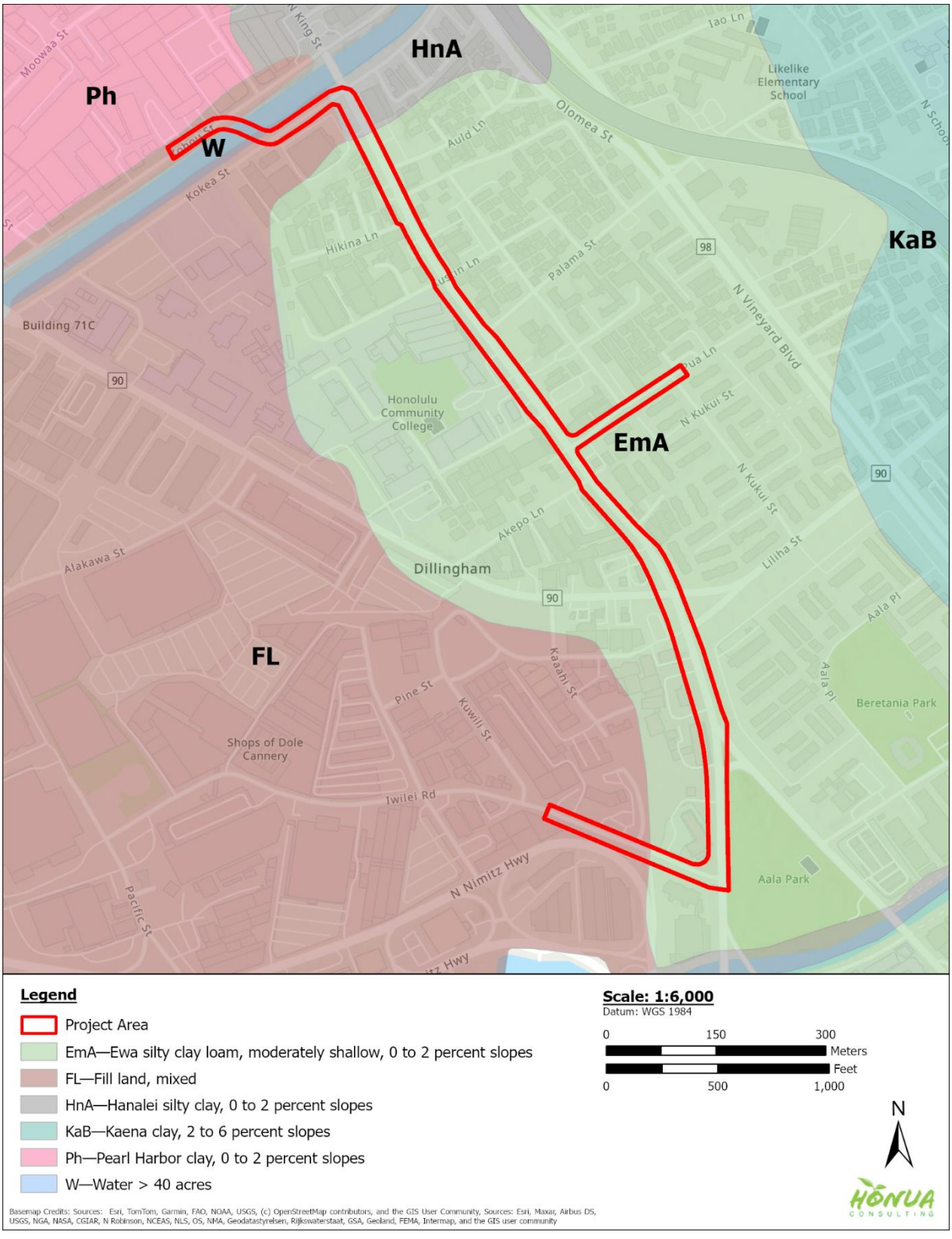

Figure 16. Soil survey data for project-area location and environs (soils data from Foote et al. 1972)

Section 2 Cultural and Historical Context

This section includes a brief synthesis of relevant cultural and historical information related to the types and character of land uses in and around the project area, as well as the lower reaches of Kapālama and Nu‘uanu (Honolulu) Ahupua‘a, more generally, from pre-Contact times into the historic period and modern times. The main objective, primarily through the analysis of historical documents, maps and aerial images, as well as secondary sources (i.e., other cultural resource management reports), is to provide a project area-specific picture of land use and modification over time.

If the proposed project requires additional archaeological work, such as an archaeological inventory survey (AIS) or archaeological monitoring, this section may be expanded.

In addition to referencing secondary sources (e.g., Monahan 2018a,b,c; Monahan 2019; Monahan 2024a,b), we also conducted a records search of the SHPD’s digital library, as well as the on-line database of the Environmental Review Program (ERP), within the Office of Planning and Sustainable Development, which publishes EIS and EA documents; we also reviewed Honua’s proprietary database of reports, and utilized the following on-line sources to obtain cultural, historical and archaeological data:

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

2.1 Hawaiian Cultural Landscape

The near-coastal area of lower Kapālama and Nu‘uanu streams was once one of the most densely populated and favored settlement and planting areas on O‘ahu for Hawaiians prior to the historic period. Although completely urbanized and transformed from its old Hawaiian character, the current project area can still be described in terms of its Hawaiian cultural landscape.

2.1.1 Nu‘uanu Ahupua‘a

Ahupua‘a boundaries can be extremely variable; and, depending on which source one cites, or what time period is referenced, the answer to which ahupua‘a the eastern half of the current project area is in varies. Honolulu Ahupua‘a is an atypical example that has more to do with the political history of the nineteenth century—starting with Kamehameha’s selection of Honolulu (or Kou, at that time) as a political center of the early Hawaiian Kingdom and the development

of Honolulu harbor as a shipping port for Euro-American merchants in the first few decades of the 1800s—than with traditional Hawaiian settlement or subsistence patterns (Beechert 1991; Daws 2006). For example, the Hawai'i State GIS layer considers Nu'uanu Valley and Stream (including the eastern half of the project area) as part of the large ahupua'a of Honolulu. Under this configuration, there is no Nu'uanu Ahupua'a, which almost certainly does not reflect how pre-Contact Hawaiians viewed this landscape. On the other hand, recent USGS topographic maps show Nu'uanu Ahupua'a coming down from the mountains but stopping at School Street. The well-known Bishop Museum compendium of archaeological sites and wahi pana (legendary places) Sites of Oahu (Sterling and Summers 1978) shows a similar configuration to the USGS version. Finally, Snakenberg's (1990) well-known "pre-Mahele" configuration of ahupua'a does not include Nu'uanu (which is subsumed under Honolulu). Hawaiians during the middle nineteenth century Mahele consistently referred to their lands in today's Nu'uanu as being in the 'āina of Honolulu (also known traditionally as Kou). It is likely that the original inhabitants of O'ahu—prior to the invasions by Kahekili (Maui) starting in the late eighteenth century, and later by Kamehameha (Hawai'i)—would have referred to the eastern half of the project area environs as the near-coastal portion of Nu'uanu Ahupua'a, given its location in the flood plain of this stream.

Regardless, compared with other land divisions and areas in and around Honolulu District (also known traditionally as Kona Moku), Nu'uanu ("cool height") is undoubtedly one the most storied and famous, possibly rivalled on O'ahu only by Honolulu proper, Waikīkī or Mānoa in terms of its cultural, historical and archaeological richness.[1] For example, one of the most significant and impactful events in the history of O'ahu and of all the Hawaiian Islands—the 1975 Battle of Nu'uanu, when Kamehameha I finally established his dominion over O'ahu—took place in the uplands of Nu'uanu; this event was once commonly known to Hawaiians as Kaleleake'anae, or "the leap of the mullet fish" (Sterling and Summers 1978:318, referencing W.D. Alexander), referring to the many O'ahu warriors who fell or jumped to their deaths over the pali (cliffs). Numerous Ali'i Nui (high chiefs) also established residences in the cool uplands of Nu'uanu.

Table 1 and Figure 17 summarize and depict the many traditional cultural and natural resources, including wahi pana (legendary places) of Nu'uanu.

The lowermost portion of Nu'uanu (literally, "cool height")—within which the eastern half of the project area is located, has been heavily modified by urbanization, and much of its middle section by residential development; undeveloped forest lands dominate the upper third or so of Nu'uanu, which is blessed with numerous streams, waterfalls and pūnāwai (fresh-water springs). Many of these, and other resource types, are associated with various mo'olelo (oral-historical accounts) (see table below for details).

There are two main stream systems in Nu'uanu: the primary (Nu'uanu Stream) system draining the central valley all the way up to the Ko'olau ridgeline; and a secondary (Waolani [literally, "heavenly mountain area"] Stream) system that drains much of the west side of the valley. Nu'uanu Stream, in turn, is fed by several named tributaries, including (from northwest to southeast): Moele Stream, draining Pu'u Lanihuli [literally, "turning royal chief"]; Mākūkū Stream, draining the center of the valley; and Lulumahu Stream, draining Kōnāhuanui [literally,

[1] Unless indicated otherwise, translations / interpretations of place names are from Pukui et al.'s (1974) *Place Names of Hawaii.*

Table 1. Traditional Cultural and Natural Resources, Place Names and Wahi Pana of Nu‘uanu from Makai to Mauka

Formal Type/Name*	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Koholāloa (or Kaholāloa) Reef*	Original reef in Honolulu Harbor	Near east end of Sand Island/Channel into Honolulu Harbor	Possibly part of LCA 153 to William Sumner, granted by Kamehameha III for his services to the king	Historically impacted by harbor dredging/ building of Sand Island	Literally “long reef”; after 1868-9, used to build up Quarantine Island (precursor to Sand Island)
Iwilei Fishery*	Nearshore fishery	General location of Sand Island	--	Mostly filled in/covered over by Sand Island	Area of Sand Island and Honolulu Harbor
Kūwili Fishery*	Nearshore fishery	Iwilei area	--	Filled in by urbanization of Iwilei and Honolulu Harbor	--
Loko Keālia	Fishpond (pu‘uone [inland] type)	Nu‘uanu kai Iwilei	--	Filled in by urbanization of Iwilei and Honolulu Harbor	Small fishpond; literally, “the salt encrustation”
Kamanuwai	Storied place; famous taro patch	Near intersection of Beretania St. & Nu‘uanu Ave.	Kāne & Kanaloa legend: a water bird, or duck, was used to transport their hānai (foster) child where he wanted to go (see Pukui et al. 1974:81 for more details)	Presumably filled in/destroyed by urban development	Liholiho (Kamehameha II) once lived here (Pukui et al. 1974:81); by 1884, this place was where some Chinese grew bananas; literally, “the water bird”
Nu‘uanu & Waolani Streams Lo‘i & Settlement Area	Lo‘i kalo (irrigated taro) & House sites	Lower & middle central Nu‘uanu valley	--	Once an extensive system; remnant elements still exist in modified form (e.g., channelized ditches)	Note, large portions of an extensive ‘auwai (traditional irrigation ditch system) have been mapped throughout main lo‘i and settlement area
Pūehuehu	Water pool	Area/section of Waolani Stream known as Pūehuehu	Pukui-translated story about Papahānaumoku (Papa) (original earth mother) and a man named Kali‘u, and how Papa created this water pool	Developed over by urbanization	Mo‘olelo about Papahānaumoku (Papa) translated by Pukui from 1906 Hawaiian newspaper account by J.M. Poepoe (see Sterling & Summers 1978:295–6)

Formal Type/Name*	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Kaheiki Heiau	Heiau,	Lower Nu‘uanu Stream, Pauoa side	Described by Kamakau as built by menehune (which suggests great antiquity); related to Kaupe, the supernatural man-killing dog of O‘ahu	Purportedly destroyed by early 1930s – current location is dense residential neighborhood	Original location of this heiau is a bit uncertain; there are different ideas about where it was
Kunawai	Pūnāwai (fresh-water spring) & water pool	Just ‘ewa of Liliha St. and just makai of Kunawai Ln.	According to 1884 Hawaiian language newspaper article by Moses Manu, this was a bathing pool for the “rainbow goddess,” and the “owner of this pool was a . . . mo‘o”	Presumably destroyed – current location is dense residential neighborhood	According to the mo‘olelo, the name of the resident mo‘o (supernatural water spirit) was Kunawai
Loko Alapena	Water pool in Nu‘uanu Stream associated w. 3 petroglyph areas	Current location of Nu‘uanu Memorial Park & Mortuary	--	Indeterminate	3 petroglyph areas described in *Sites of Oahu* (Sterling & Summers 1978:299-300) as Sites 67-69
Loko Kapena	Small water pool in Nu‘uanu Stream	Currently location along Nu‘uanu Stream behind Philippines Consulate	Supernatural dogs, including Poki, the most famous	Indeterminate	Also described as a waterfall
Unnamed Heiau (n=2)	Indeterminate	1 was at or near 2290 Liliha St., the other was at or near 2712 Nu‘uanu St.	Heiau at or near 2712 Nu‘uanu St. associated w. a mainlander who came to build a house right on top of it; he was warned not to, and later died because of his carelessness	Destroyed long ago by residential development	These heiau are described in *Sites of Oahu* (Sterling & Summers 1978:295)
Niolapa (or Niolopa)	Storied place/famous taro gardens	Near current Nu‘uanu Ave.	Supplied famous “Piialii” (red taro) to the Royal Palace; Niolopa once belonged to Haalelea who married Amoi	Presumably built over by residential development	--

Formal Type/Name*	Description	Location	Associated Moʻolelo	Current Disposition	Comments
Puʻu Kamanu	Natural feature/puʻu/ boundary marker	Ridgeline between Nuʻuanu & Pauoa	--	Presumably still exists, given its remote location on undeveloped land	Literally "water bird hill"; there is another Puʻu Kamanu in the district of Hanalei, Kauaʻi
Ahipuʻu (associated w. a similar feature known as Haʻipu)	Indeterminate - see Comments	Just south of Oʻahu Country Club	Assoc. w. legends describing place where Kona Moku chiefs & warriors could light signal fires to warn of invading warriors from windward side (see Burke et al. 2012)	Presumably long since developed over by residential neighborhood	Literally, "hill fire"; there is ambiguity as to whether this small hill, & another associated small hill known as Haʻipu, was once also a heiau
Hanaiakamalama (or Hānaiakamalama)	Storied place/Queen Emma's Summer Palace	2913 Pali Highway	Named for demi-goddess; main house known as Hale Aniani; associated w. Kamehameha lineage	Museum open to the public	Constructed in 1847 or 1848; literally, "the foster child of the light (*or* moon)"
Pūʻiwa	Storied place w. a water pool & cave	General location of Puiwa Rd. and Ln., and Nuʻuanu Elementary School	Kamehameha's cannon fired here at time of Battle of Nuʻuanu and blew up a rock wall the Oʻahu forces were sheltering behind; older moʻolelo about a "god of tapa makers, Maikohā, was buried here near the stream, and from his body grew the first *wauke* (paper mulberry) plants." (in Pukui et al. 1974:193)	Water pool and cave are likely intact	Specific location of pool and cave are not known; Pūʻiwa ʻIli is on wahi pana map below; literally "startled" or "startling"
Kahuoi	Natural feature/puʻu/ boundary marker	Ridgeline between Nuʻuanu & Pauoa	--	Presumably still exists, given its remote location on undeveloped land	Kahuoi is also the name of an old heiau whose exact location is indeterminate; Thrum reported it was destroyed around 1850

Formal Type/Name*	Description	Location	Associated Moʻolelo	Current Disposition	Comments
Pōhaku ʻUmeʻume	Storied stone	Along east side of Kekoalele, at Waolani; Oʻahu Country Club grounds	Struggle between Waolani (west side of valley) and Pūʻiwa (east side of valley) over this stone—eventually won by Waolani	Indeterminate	Also associated w. Menehune stories; literally, "pulling back and forth stone"; there are many story versions about this stone
Kanoniakapueo (or Kanoneakapueo)	Storied place/water pool	Near Pali Hwy, in Dowsett neighborhood	"Where the owls of Koolau and Kahikiku gathered" (Moses Manu 1884-5)	Indeterminate	According to Pukui, place name translates to "Owls dismal hoot"; another translation by Lahilahi Webb is "Cry of the owl"
Poʻonahoahoa (or Poʻonāhoahoa)	Natural feature/puʻu/ boundary marker	Ridgeline between Nuʻuanu & Pauoa	--	Presumably still exists, given its remote location on undeveloped land	--
Kapoholua	Natural feature/puʻu	Ridgeline between Kekoalele & Niniko streams	--	Presumably intact	--
Kahalepahu	Natural feature/puʻu	Ridgeline between Kekoalele & Niniko streams	--	Presumably intact	No translation found, but, possibly "the drum house" or "the house [of] drums"
Kahapaʻakai ʻIli	Land division (ʻili) and legendary area	Middle Nuʻuanu Valley	Place where Oʻahu warriors prepared for historic battles; associated w. Kākuhihewa, Oʻahu's last paramount (home-grown) warrior chief; also w. the famous Battle of Nuʻuana, and Kamehameha I's conquest of Oʻahu	Much of this ʻili has been developed as residential, but uplands above stream valley floor is undeveloped land	Some sources (e.g., Beckett and Singer 1999) describe Kahapaʻakai as a specific, discrete place w. a koʻa (small shrine), petroglyphs & nearby spring, but its specific location has not been shared
Waihaka	Water pool	Along Nuʻuanu Stream	--	Presumably intact	--

Formal Type/Name*	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Kaapaakai Spring	Pūnāwai (fresh-water spring)	Upper Nu‘uanu Stream near its confluence w. Moele Stream	J.S. Emerson in 1877 wrote “Delicious cool water . . . Formerly this spring was kapu to common people – chiefs only were allowed to drink from it.”	Most likely altered/modified a long time ago, and later by Board of Water Supply activities	Not to be confused with an area makai of this known as Kahapa‘akai (“salt place”), a stopping/resting place for cattle being driven to Honolulu from the Pali
Waihi (or Waihī)	Pool above a falls	Along Nu‘uanu Stream	--	Presumably intact	Pukui et al. (1974) discuss places with this name in upper Mānoa Valley but not Nu‘uanu; translated as “trickling water” (ibid.:222)
Lulumahu Falls	Waterfalls	Upper Nu‘uanu along Lulumahu Stream	--	Presumably intact	--
Kaumuhonu	Natural feature/pu‘u/ boundary marker	Intersection of Pauoa, Nu‘uanu & Mānoa	--	Presumably still exists, given its remote location on undeveloped land	Literally, “the turtle oven,” and described by Pukui et al. (1974:95) as a place in Ni‘ihau
Kaniakapūpū	House site of Kamehameha III (Kauikeaouli)	Upper Nu‘uanu	Lots of mid-19th century stories & social events	Ruins are supposedly in preservation status but under siege from vandals	Kamehameha III (Kauikeaouli) famously initiated the Māhele (introduction of western concepts of land ownership) in 1840s and 1850s
Keiliohia Spring	Pūnāwai (fresh-water spring) now within/under modern reservoir	Part of current Reservoir #4	--	Within/under modern reservoir	According to Burke et al. (2012:20), this spring was shown on original 1907 construction plans for Reservoir #4, before spring was submerged
Nāpu‘umaia (or Nāpu‘umai‘a) (peak, elevation 1,870 ft.)	Natural feature/pu‘u/ boundary marker	Ridgeline between Kapālama & Nu‘uanu	--	Presumably intact	Literally, “the banana hills”

Formal Type/Name*	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Holopoahina	Natural feature/pu‘u/ boundary marker	Marks very top of Kapālama Ahupua‘a, where it intersects with Kalihi and Nu‘uanu	--	Presumably intact	--
Mākūkū Heiau	Heiau, possibly of the rain-bringing variety	Upper Mākūkū Stream (west of current Pali Highway)	According to Kamakau, the purpose of this heiau was to send rain	Indeterminate	--
Pōhaku Manamana	Storied stone	Close to the Pali Highway on its east side	Story about Boki (brother of Kalaimoku) overseeing road construction in early 1800s; he was warned about removing a large stone by a “divining kahuna named Luau,” ignored the warning, but his men could not remove it	Indeterminate—likely removed/destroyed long ago	Mo‘olelo in this table recounted by Kamakau
Kaiholena	Natural feature/pu‘u	Upper Nu‘uanu, east side of Moele Stream	Pukui et al. (1974:68) recount a legend about a place of the same name in Ka‘ū, where the local rain god (Kūmauna) “had a field of *iholena* bananas there.”	Presumably intact	--
Kahaukomo	Legendary place	Upper Nu‘uana, north (mauka) of current project area; adjacent to Pali Highway	As recorded in the 1920s, purportedly a place famous for travelers being ambushed, and sometimes even killed	Indeterminate – likely altered by highway construction and maintenance over the years	Literally, “the hau trees begin”; 2 sacred guardian stones (Pōhaku Hāpu‘u and Pōhaku Kala‘iola)—see below in this table—were located here
Kahuailanawai	Water pool along uppermost Nu‘uanu Stream	At or near popular swimming hole known by locals as “Jackass Ginger” pond	Associated w. Kahaukomo, and its 2 guardian stones, Pōhaku Hāpu‘u and Pōhaku Kala‘iola	Undeveloped but heavily altered by modern use by tourists and locals	Literally, “site of tranquil water”; possibly the popular swimming hole known by locals as “Jackass Ginger” pond

Formal Type/Name*	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Pōhaku Hāpu‘u	Kia‘i (guardian) stones – paired with Pōhaku Kala‘iola	Originally right along the ‘ewa side of the old Pali trail	Numerous accounts in *Sites of Oahu* (Sterling and Summers 1978:312-14)	Probably destroyed long ago by road construction	Associated w. Kahaukomo (above); along w. Pōhaku Kala‘iola, guarded passage over the precipice of the nuku (“Pali gap”)
Pōhaku Kala‘iola	Kia‘i (guardian) stones – paired with Pōhaku Hāpu‘u	Originally right along the Diamond Head side of the old Pali trail	Numerous accounts in *Sites of Oahu* (Sterling and Summers 1978:312-14)	Probably destroyed long ago by road construction	Associated w. Kahaukomo (above); along w. Pōhaku Hāpu‘u, guarded passage over the precipice of the nuku (“Pali gap”)
Waipuhia Falls	Waterfalls	Below Pu‘u Lanihuli	Story about a boy and girl who lived in these hills, their friendship and loss of each other, and how the girl’s tears became the mist and rain that was carried down the valley	Presumably intact	Also known as “upside down falls”; in addition to the mo‘olelo in this table, there is other oral-historical information about this place dealing with Kāne and some fair maidens who lived in the mountains
Pu‘u Lanihuli	Natural feature/pu‘u/ boundary marker	Upper, northwest corner of Nu‘uanu Palena – along Ko‘olau ridgeline	“Name of an ancient *mo‘o* god of Lā‘ie” (Pukui et al. 1974:128-9)	Presumably intact	Literally, “turning royal chief”
Ho‘okio Ridge	Natural feature/pu‘u/ boundary marker	Boundary between nā moku (the districts) of Kona & Ko‘olau Poko	--	--	--
Nu‘uanu Pali	Pass through Ko‘olau ridgeline to windward side	Above the Pali tunnels	Battle of Nu‘uanu; the great notches of the Pali	--	--

Formal Type/Name*	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Waipuilani (or Waipu‘ilani) Falls	Waterfall	Upper Nu‘uanu	According to a traveler from a whaling vessel (F.O. Bennett) in 1834-5, a mo‘o lived here	Possibly altered by historic/modern activities	Pukui et al. (1974:227) do not mention this specific location, but do note a place in Maui called Waipu‘ilani (literally, “waterspout”)
Kōnāhuanui	Natural feature/pu‘u/ boundary marker	Uppermost Nu‘uanu along Ko‘olau ridgeline	--	--	Highest point on the Ko‘olau Mountain range at 3,150 ft. elevation

Notes:

- Table adapted from Uyeoka et al. (2020). The original table was conceived of, researched, and completed by Monahan. General references used in compiling information for this table include commonly-available sources such as McAllister (1933), Pukui et al. (1974) and Sterling and Summers (1978). All Hawaiian translations, including place names, are from Pukui et al. (1974), unless stated otherwise.
- * These entries are not depicted on the map figure below.
- LCA = Land Commission Award, dating from the Māhele (starting in 1840s to 1850s, introduction of western concepts of land ownership in the islands)

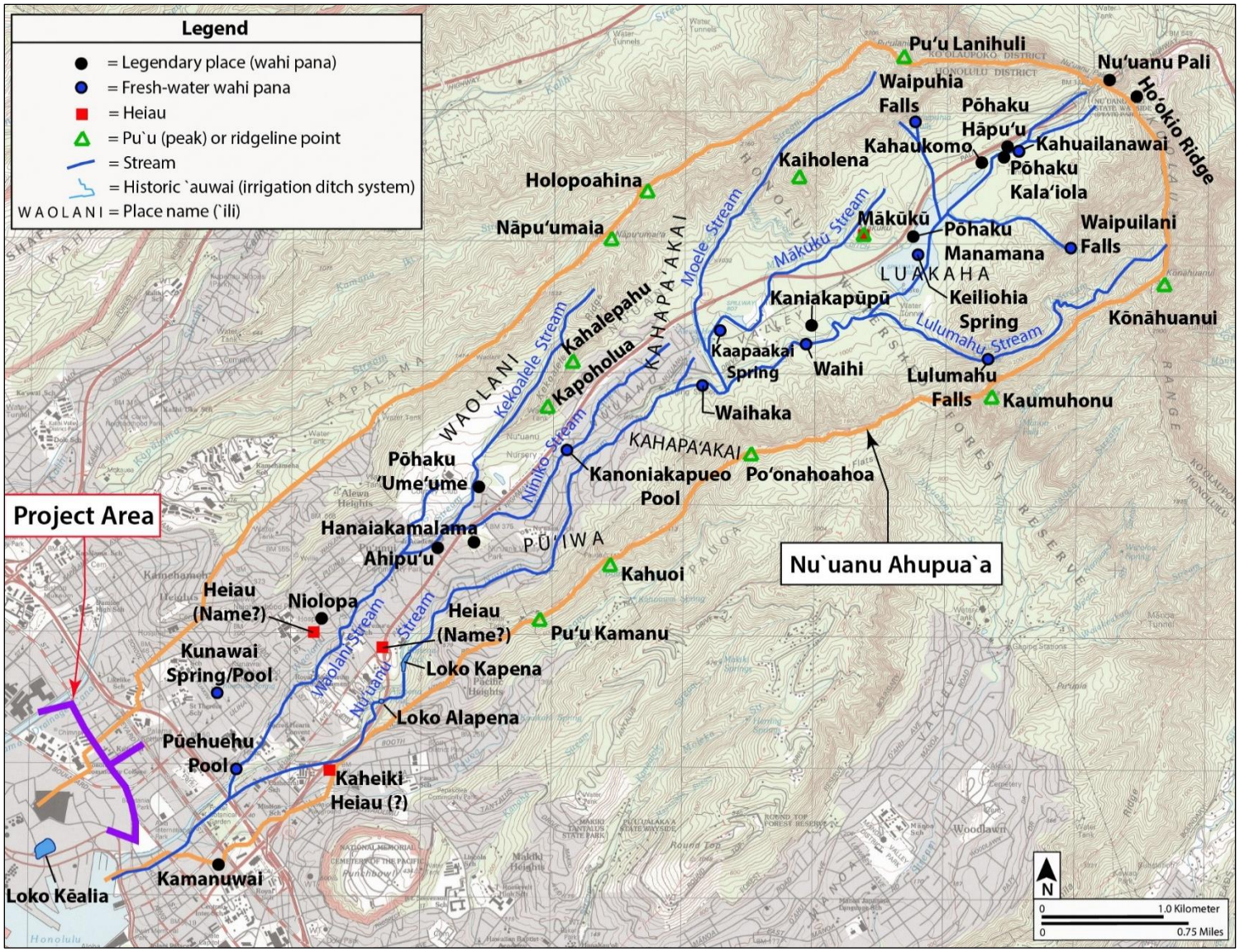

Figure 17. Wahi pana (legendary places) and other significant cultural and natural resources of Nu'uanu (orange outline); current project area (partially depicted in lower left) in purple (graphic created by Honua)

"large fat innards"]. The secondary stream system of Waolani is fed by two main tributaries: Kekoalele [literally, "the leaping warrior"] Stream (to the northwest), and Niniko Stream (towards the center of the valley).

The uppermost (mauka) portions of Nu'uanu is home to at least four named waterfalls (Waipuhia [literally, "blown water"], Waipulani, Lulumahu, and Waipuilani [or Waipu'ilani, which literally translates to "waterspout") and one named spring (Kaapaakai). Two named spring/pools (Kunawai and Pūehuehu [literally, "spray scattered") are in the lower valley (Liliha area).

Several heiau have been recorded in Nu'uanu, including Mākūkū in the upper reaches of the valley near the stream of the same name, two unnamed heiau in the lower central valley, and Kaheiki along the lower Nu'uanu.

Like other ahupua'a in Kona Moku, the upland forest in Nu'uanu was a valued source of various native, endemic, and Polynesian-introduced plants. These upland resources provided not only food products—especially when famine struck—but also medicinal plants, wa'a (canoe) trees, and other needed items (e.g., for religious practices, hula, and so on). High-quality basalt for making tools such as ko'i (adzes) could also be obtained in the upper forest region.

In his ground-breaking study of native planters in Hawai'i, Handy (1940; Handy and Handy 1972) talked about traditional cultivation, settlement and land use in Nu'uanu:

> Nu'uanu was a bountiful valley of ever-flowing streams, with taro lands extending from seaward back into extensive terraced areas at least half-way to the upper end of the valley. Its hinterland was rich in resources. It was unique in that the low pass in the Ko'olau range known as the Nu'uanu pali (cliff) gave easy access to the windward coast. At its seaward end lies Honolulu Harbor . . . (Handy and Handy 1972:475-6)

Handy's descriptions, and other evidence such as an extensive network of 'auwai (traditional irrigation ditches), suggest the main settlement area extended from near the shoreline—within the eastern half of the project area—far up into the valley.

Near the original seashore, in today's Iwilei, a pu'uone (inland-style) fishpond, Loko Keālia, was once located near Honolulu Harbor, just inland of several near-shore fisheries.

Early historical maps from 1817 to 1855 are reproduced below for their value in depicting the traditional appearance of the landscape in and around the project area before major urbanization and development began. These maps are not intended to be interpreted literally (e.g., the absence of evidence of land use in certain areas is not necessarily evidence of absence); rather, these early depictions—which also do not always precisely agree with each other—provide thumbnail sketches or snap shots as to what early observers deemed worthy of describing and highlighting, undoubtedly aided by locals who explained at least some of what was being mapped and depicted.

Figure 18 is a portion of 1817 map by the Russian naval officer Otto von Kotzebue with the georeferenced project area. Beyond its general depiction of the early historic-period cultural landscape of Honolulu (e.g., showing a shoreline fishpond near the mouth of the Nu'uanu Stream), this map is directly relevant for several reasons. First, it shows that portions of the project area—particularly the Nu'uanu (eastern) half, were dotted with lo'i kalo (irrigated taro) as well as pu'uone (inland fishponds). Second, it shows several areas with house sites (smaller,

triangular symbols) around both of the project area's main streams. Finally, near the central portion of the current project area, several house sites are depicted on top of what appears to be an elevated pu‘u of some kind. This location, which is in the Mayor Wright Homes block, was excavated during an archaeological inventory survey (AIS) by Monahan (2018a); results demonstrated the presence of shallow lithified coral-reef bedrock. Thus, the elevated pu‘u landform with houses sites in Kotzebue's map appears to have once been a section of raised coral shelf that was eventually leveled or graded down. It is likely this landscape feature is a late Pleistocene formation representing the well-documented Waimānalo Sea Stand dating to approximately 120,000 years before present, an interglacial period when sea levels in Hawai‘i were some 7.5 m (24.8 ft.) above current levels (Macdonald et al. 1983; Ziegler 2002).

Figure 19, a small portion of an 1825 map of Oahu‘s south shore by British Lieutenant Charles Malden. This map does not include any details of the landscape in the project area; however, it does show the addition of a wall—presumably a seawall—just makai of the Kapālama portion of the project area, indicating perhaps the earliest map evidence of the start of landfilling activities along the harbor front. Discussions by Daws (2006) and Fitzpatrick (1986) suggest this structural feature may have been part of an early effort to prevent the Honolulu harbor from silting up and becoming too shallow for shipping due to the muddy delta at the stream mouths. This map also depicts what appears to be a kuapā (walled shoreline) fishpond west of the mouth of Nu‘uanu Stream fronting Iwilei.

Figure 20, a portion of 1847 map by Metcalf, shows places name, probably mostly ‘ili, in the eastern (Nu‘uanu) half of the project area, near the mouth of the stream. The area near the stream mouth, on its west side, is depicted as marshy. Several cart paths are depicted in the project area.

Figure 21, a portion of 1855 map by French Lieutenant J.M.H. de La Passe, shows the project area within an extremely dense cluster of lo‘i kalo (irrigated taro) with numerous house sites scattered around the lo‘i kalo ("Champs de Taro," or taro fields). Thus, the current dense urban area of lower Nu‘uanu and Kapālama was once home to an extensive Hawaiian community. Fishponds are also depicted in the project area and along the coastline in both (east and west) directions.

As illustrated below, Māhele documents from the middle nineteenth century are consistent with La Passe's 1855 map showing that the project area was home to dozens of densely packed Land Commission Awards reflecting the area's productivity and attractiveness to Hawaiians living a traditional subsistence lifestyle.

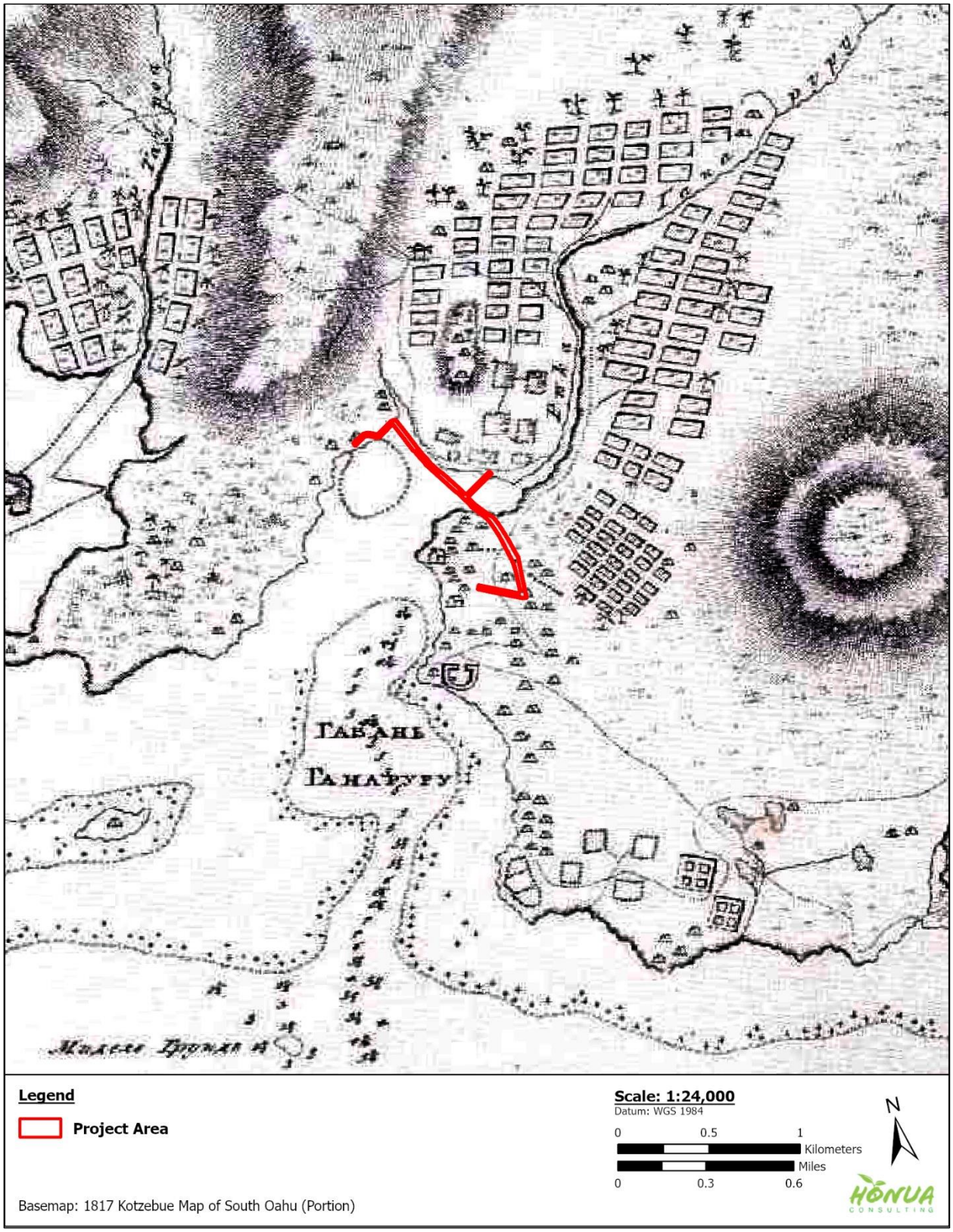

Figure 18. Portion of 1817 Kotzebue map (base map source: Fitzpatrick 1986:49) showing project-area location

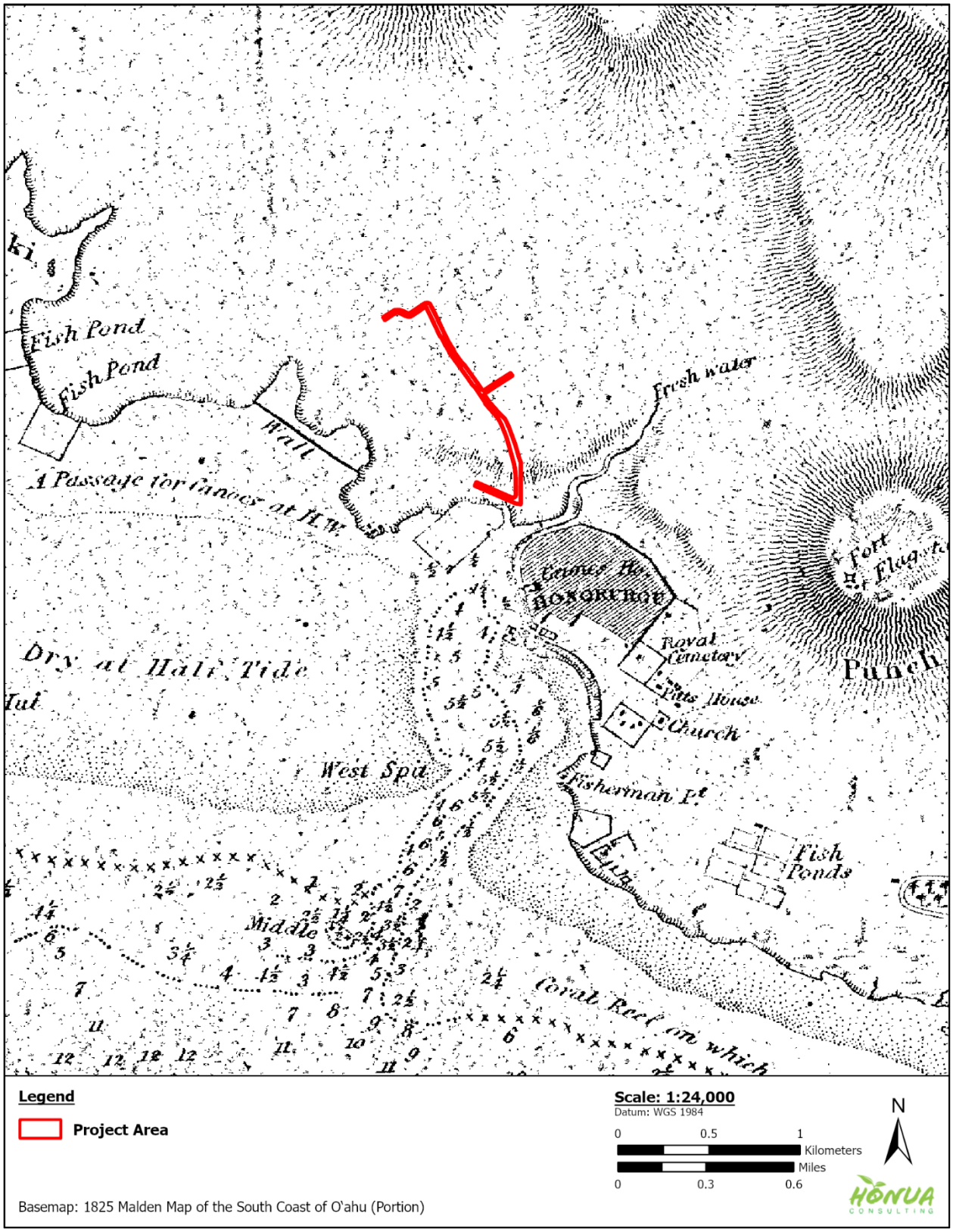

Figure 19. Portion of 1825 Malden map (Registered Map 640) showing project area

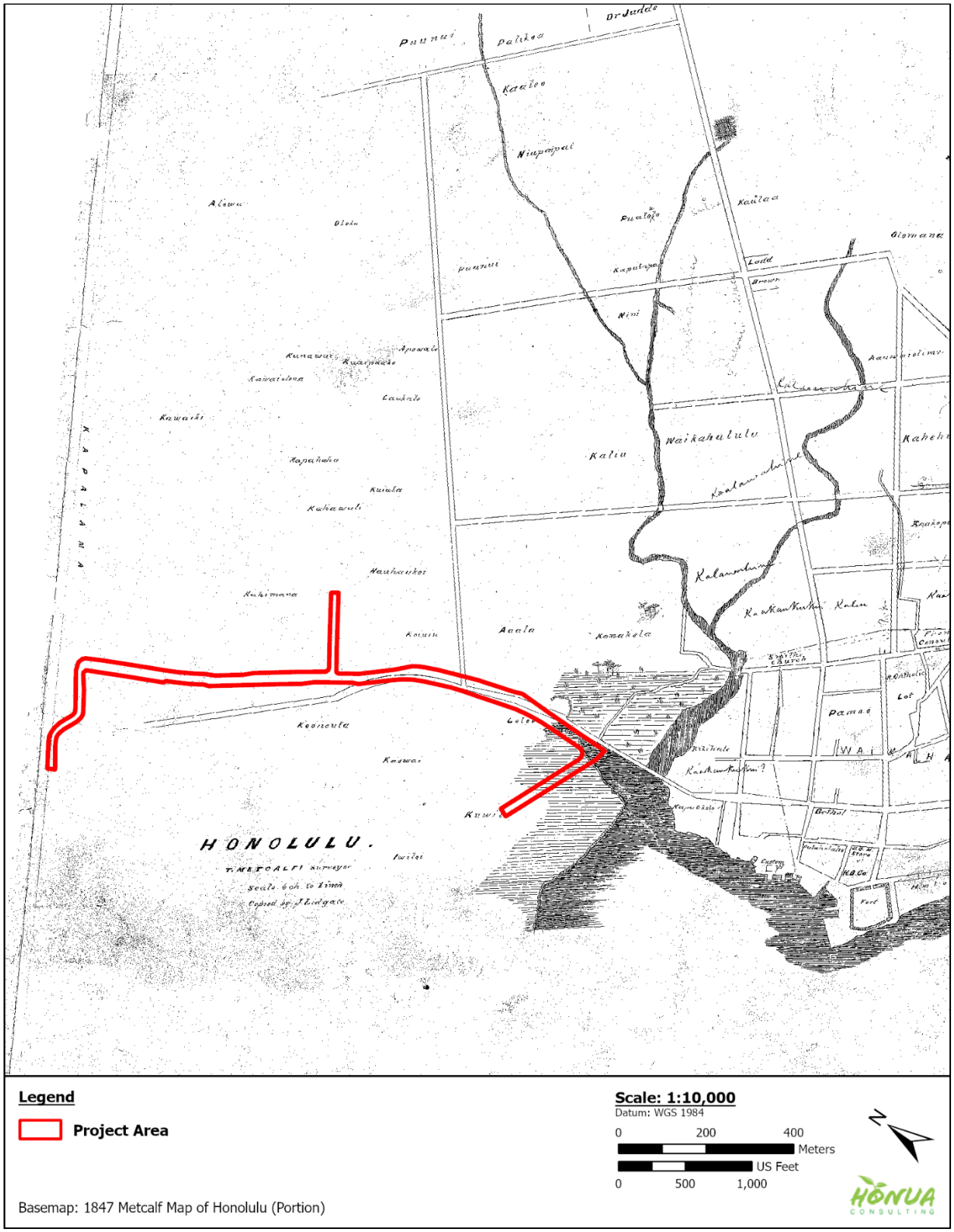

Figure 20. Portion of 1847 Metcalf map (Registered Map 242) showing project area and various ʻili names



Figure 21. Portion of 1855 map of Honolulu Harbor and environs by J.M.H. de La Passe (base map source: Fitzpatrick 1986:82-3) with approximate location of project area within a dense cluster of loʻi kalo (taro ponds)

2.1.2 Kapālama Ahupuaʻa

The western half of the project area is in lower Kapālama Ahupuaʻa. Prior to its urbanization starting in historic times, the shoreline makai of the project area would have been under water and/or right at the shoreline of the western side of Honolulu Harbor (today known as Kapālama Basin).

Table 2 and Figure 22 summarize and depict the many traditional cultural and natural resources, including wahi pana (legendary places) of Kapālama (and see Figure 18 to Figure 21, above, for historic maps dating from 1817 to 1855 that illustrate aspects of this discussion).

The place name Kapālama, literally "the lama wood enclosure" (Pukui et al. 1974:87), is associated with moʻolelo about "high chiefs [who] were protected here" (ibid.), referring to the maintenance of the purity of young aliʻi prior to marriage. According to Thrum, Kapālama was also the name of the grandmother of Lepe-a-Moa.

While much of the lower portion of Kapālama Ahupuaʻa has been heavily modified by the urbanization of Honolulu, including the commercial areas of Iwilei, Dillingham Boulevard, the H-1 highway and the channelized Kapālama Drainage Canal, much of the upper half of this ahupuaʻa—starting around the Kamehameha Schools campus—is largely undeveloped.

Two main streams, Kapālama (called Keanakamanō in its upper reaches) and Niuhelewai wrap around a major ridgeline known as Kalaepōhaku. These streams do not converge in their makai portions, but they once watered an extensive loʻi kalo and settlement area stretching from School Street to the shoreline. The western portion of the project area was once part of this extensive floodplain/agricultural area. Here, the loʻi kalo would have fed back into and through two or three loko iʻa (fishponds) located along the shoreline.

Several named, near-shore fisheries were once located below the fishponds, near the current piers of Honolulu Harbor and Sand Island.

The upper reaches of the ahupuaʻa do not end along the ridgeline of the Koʻolau—like many other lands in Kona Moku, but rather are overtaken by neighboring Kalihi and Nuʻuanu.

In his study of native planters in Hawaiʻi, Handy (1940; Handy and Handy 1972) described Kapālama as follows:

> . . . [similar to Kalihi, Kapālama] had extensive loʻi, from Iwilei at the shore up to the foothills. There were two streams that irrigated these loʻi, evidently originating in springs, since there is no valley mountainward but only a broad hillside on which are now The Kamehameha Schools and the residential section called Alewa Heights. In prediscovery days there was somewhere in the area a stockade and house in which young aliʻi were sequestered before marriage. (Handy and Handy 1972:474) (brackets added)

According to research by Uyeoka et al. (2009:25), the uplands of Kapālama once included valuable resources including sandalwood trees. More generally, like other ahupuaʻa in Kona Moku, the upland forest was a reliable source of various native, endemic, and Polynesian-introduced plants, which is reflected in place names; for example, there is a place in the mauka portions of Kapālama (along the boundary with Nuʻuanu) known as Nāpuʻumaia (or Nāpuʻumaiʻa), or "the banana hills." These upland resources provided not only food products—

especially when famine struck—but also medicinal plants, wa‘a (canoe) trees, and other needed items (e.g., for religious practices, hula, and so on).

Writing in the middle nineteenth century, both Samuel Kamakau—the prolific Hawaiian historian and chronicler of traditional Hawai‘i, and John Papa ‘Ī‘ī—one of the most prominent nineteenth-century Hawaiians, noted Kapālama’s direct association with Kamehameha I, who famously worked his farm lands here and in other places around Honolulu to help Hawaiians recover from years of warfare and pestilence (Kamakau 1992:190; ‘Ī‘ī 1959:69).

As with lower Nu‘uanu, early historical maps (including the well-known 1817 map by Otto von Kotzebue, the 1855 map by La Passe and the 1825 map by Malden) show the western portion of the project area characterized by lo‘i kalo (irrigated taro pond-fields); cross-slope trails are depicted as around or just makai (seaward) of the H-1 Interstate Highway. ‘Ī‘ī (1959:95), writing in the middle 1800s and recalling traditional trails from around 1800, described a main trail connecting Nu‘uanu with Moanalua, passing through Kapālama:

> When the trail reached a certain bridge, it began going along the banks of taro patches, up to the other side of Kapalama, to the plain of Kaiwiula; on to the taro patches of Kalihi; down to the other stream and up the other side; turned right to the houses of the Portuguese people . . .

Otto von Kotzebue’s journal provides one of the earliest accounts of the area. Kotzebue described a trip from the mouth of Nu‘uanu Stream to Pearl Harbor, again crossing through Kapālama:

> The way now lies to the west, through a beautifully cultivated valley, which is bounded towards the north by romantic scenery of woody mountains, and on the south by the sea. The artificial taro fields, which may justly be called taro lakes, excited my attention. Each of them forms a regular square of 160 feet, and is enclosed with stone all round like our basins. This field, or rather this pond ... contains two feet of water. In the spaces between the fields, which are from three to six feet broad, there are very pleasant shady avenues, and on both sides bananas and sugar cane are planted . . . [T]he fish which are caught in distant streams thrive . . . when put into them. In the same manner as they here keep river-fish, they manage in the sea with sea-fish, where they sometimes take advantage of the outward coral reefs, and draw from them to the shore a wall of coral stone. Such a reservoir costs much labor, but not so much skill as the taro fields, where both are united. I have seen whole mountains covered with such fields, through which the water gradually flowed; each sluice formed a small cascade, which ran through avenues of sugarcane, or banana into the next pond, and afforded an extremely picturesque prospect. Sugar plantations and taro fields alternately varied our way, with scattered habitations, and we had gone unawares five miles to the large village of Mouna Roa [Moanalua] (Kotzebue 1967:339–341) (brackets added)

Table 2. Traditional Cultural and Natural Resources, Place Names and Wahi Pana of Kapālama from Makai to Mauka

Formal Type/Name	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Koholāloa (sometimes Kaholāloa) Reef	Reef- natural resource	Near current east end of Sand Island/Channel into Honolulu Harbor	Possibly part of LCA 153 to one William Sumner, granted by Kamehameha III for his services to the king	Historically impacted by harbor dredging/ building of Sand Island	Literally “long reef”; after 1868-9, used to build up Quarantine Island (precursor to Sand Island)
Mokauea Fishery	Nearshore fishery	Mokauea Fishery	--	Mostly filled in/covered over by Sand Island	Channel between Sand Island and piers of Honolulu Harbor
Iwilei Fishery	Nearshore fishery	Iwilei Fishery	--	Mostly filled in/covered over by Sand Island	Channel between Sand Island and piers of Honolulu Harbor
Kūwili Fishery	Nearshore fishery	Kūwili Fishery	--	Filled in by piers and docks of Honolulu Harbor	Originally, this fishery fronted Loko Kūwili & Loko Kapukui
Kapālama Fishery	Nearshore fishery	Kapālama Fishery	--	Filled in by piers and docks of the harbor	Originally, this fishery fronted Loko Kūwili
Loko Kūwili (possibly also named Kanāueue)	Fishpond (pu‘uone type), was connected to Loko Kapukui	Iwilei kai; once located at site of historic O‘ahu Railway station; Kalawahine ‘Ili	Possible, alternative name, Kanāueue (literally, “the rotating”), was an old land section named for a Kailua-Kona chief	Filled in – part of Iwilei commercial district	Kūwili (literally, “stand swirling”); filled in late 1880s to develop and expand harbor; radiocarbon dates from as early as 1,100 A.D.
Loko Kapūku‘i	Fishpond (kuapā type); was connected to Loko Kūwili	Iwilei kai; Kalawahine ‘Ili	A hau tree once grew at the mākāhā between Kūwili & Kapukui	Filled in – part of Iwilei commercial district	Filled in as early as late 1880s to development and expand the harbor
Lower Kapālama & Niuhelewai Stream Lo‘i & Settlement Area	Lo‘i kalo (irrigated taro) & House sites	Niuhelewai (literally, “coconut going [in] water”)	Niuhelewai was “site of a battle on which Kahekili of Maui defeated Ka-hahana of O‘ahu; stream was choked with corpses” (Pukui et al. 1974:166)	Filled in by urban development	H-1 Freeway cuts right through the original lo‘i/ settlement area; lower (makai) part bounded roughly by the Nimitz Highway
Kalaepōhaku	Famous place/Ali‘i house site location	Area once known also as Wailuakio	Once house site of an old O‘ahu “king,” known as Ahuapau	Developed over by urbanization	Literally, “the stone promontory”; near current location of Lanakila Health Center

Formal Type/Name	Description	Location	Associated Mo‘olelo	Current Disposition	Comments
Mokauea	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kapālama & Kalihi	Natural feature has same name as a near-shore fishery at current Sand Island	Indeterminate	--
Heiau (name uncertain)	Possibly an agricultural (not sacrificial) heiau	Current Kamehameha School campus	--	Partially rebuilt about 10 years ago	--
Phallic rock	West side of Kapālama Valley	In upper valley, which is also known as Kalaepōhaku	Used as a shrine, or place of worship, by Hawaiians as late as later historic times; associated w. mist from a “bell stone” in Kalihi	Indeterminate – probably intact, given its remote location	Designated Site 411 in *Sites of Oahu* (Sterling and Summers 1978)
Waolani	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kapālama & Nu‘uanu	Heiau said to have been built by Kāne & Kanaloa, and where Wākea (the first man) was born; also associated w. military battles of Kuali‘i	Indeterminate – probably intact, given its remote location	Literally, “heavenly mountain area”
Pu‘u Keanakamanō	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kapālama & Kalihi	--	Presumably intact	--
Nāpu‘umaia (or Nāpu‘umai‘a) (peak, elev. 1,870 ft.)	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kapālama & Nu‘uanu	--	Presumably intact	Literally, “the banana hills”
Holopoahina	Natural rock (outcrop) feature – ahupua‘a boundary point	Marks very top of Kapālama Ahupua‘a, where it intersects with Kalihi and Nu‘uanu	--	Presumably intact	--

Notes:

- Table adapted from Uyeoka et al. (2020). The original table was conceived of, researched, and completed by Monahan. General references used in compiling information for this table include commonly-available sources such as McAllister (1933), Pukui et al. (1974) and Sterling and Summers (1978). All Hawaiian translations, including place names, are from Pukui et al. (1974), unless stated otherwise.
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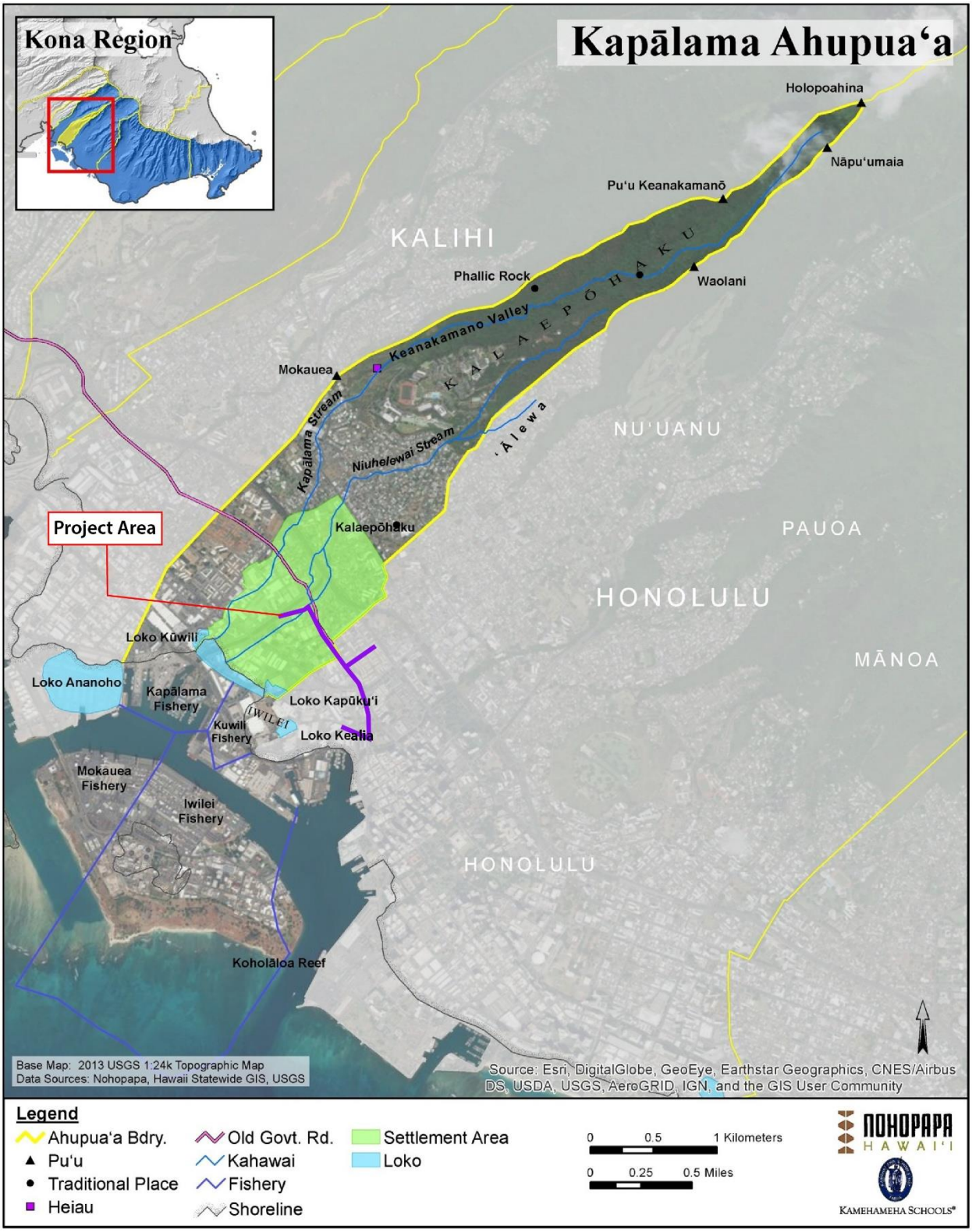

Figure 22. Annotated map (original from Uyeoka et al. 2020, available at http://www.nohopapa.com/kai) showing wahi pana and other significant cultural and natural resources of Kapālama (yellow outline); current project area in purple

2.1.3 Selected Moʻolelo (Oral-historical Accounts) of Nuʻuanu

Most of the moʻolelo (oral-historical accounts) associated with Nuʻuanu are associated with places in the uplands, well mauka of the current project area. Additional moʻolelo not included in this section are listed in Table 1 (above).

Kanoniakapueo (or Kanoneakapueo), translated as "owls dismal hoot" or "cry of the owl," is a storied place/water pool in Niniko Stream (a tributary of Waolani Stream). Some accounts (e.g., Moses Manu 1884–5) describe this is "where the owls of Koolau and Kahikiku gathered." Kawarahada (1996), citing Thrum and Kamakau, relate this place's part in the moʻolelo of Kapoʻi, a legendary figure, and the many supernatural owls (pueo) of Oʻahu. Kawarahada (ibid.) provides a literal translation of this place name: Ka-noni-a-ka-pueo, or the noni tree of the owl."

Kaapaakai Spring in the upper valley is a famous pūnāwai near the confluence of Moele and Mākūkū streams. J.S. Emerson in 1877 wrote "Delicious cool water . . . Formerly this spring was kapu to common people – chiefs only were allowed to drink from it." This pūnāwai, which is just below what is now known as Reservoir #3 (also known as Spillway 807), has most likely been altered/modified a long time ago by development activities in the valley.[2]

Two upcountry ʻili, Kahapaʻakai (literally "salt place") and Luakaha ("place for relaxation")[3], are associated with important early historical events. Kahapaʻakai is a legendary place where Oʻahu warriors prepared for battle; as such, it is associated with Kākuhihewa, Oʻahu's last paramount (home-grown) warrior-chief, the Battle of Nuʻuana resulting in Kamehameha I's conquest of Oʻahu, and others. Some sources (e.g., Beckett and Singer 1999) describe Kahapaʻakai as a specific, discrete place with a koʻa (small shrine), petroglyphs and a nearby spring, but its specific location has not been shared. Luakaha is most famous for being the location of Kaniakapūpū (see below).

Kaniakapūpū was a summer palace of Kamehameha III (Kauikeaouli). There are many middle nineteenth century stories related to social events involving aliʻi (chiefs) and their associates. The ruins are supposed to be in preservation but have been under siege from vandals for some time.

Waipuilani (or Waipuʻilani) is a waterfall in uppermost Nuʻuanu below Kōnāhuanui (high peak of the Koʻolaus). According to a traveler from a whaling vessel (F.O. Bennett) in 1834-5, a moʻo (supernatural water spirit) lived here. Pukui et al. (1974:227) do not mention this as a Nuʻuanu location but do note a place in Maui called Waipuʻilani, which they translate literally as "waterspout."

Keiliohia Spring was the name of the original pūnāwai around/over which Reservoir #4 was constructed. According to Burke et al. (2012:20), this spring was shown on the original construction plans for Reservoir #4 dated 1907, before the spring was submerged.

Pōhaku Manamana, between the current Reservoir #4 and the Pali Highway, was a famous stone associated with a legend about Boki (brother of Kalaimoku) overseeing road construction

[2] This spring (Kaapaakai) is not to be confused with an area makai of this known as Kahapaʻakai ("salt place"), a stopping/resting place for cattle being driven to Honolulu from the Pali, and also the name of an upcountry ʻili.
[3] Other interpretations for Luakaha are also possible based on one meaning of the word lua (i.e., the hand-to-hand combat or Hawaiian martial art) and kaha (location or place).

in early 1800s. Boki was warned about removing a large stone by a "divining kahuna named Luau," ignored the warning, but his men could not remove it (see Kamakau 1992:292).

Mākūkū Heiau, located west of the Pali Highway, has been described by some (e.g., Kamakau, cited in Sterling and Summers 1978:309) as dedicated to bringing rain.

Kamakau (1991:19–21) relates a legend of Kapuni about two heiau named Pāka'alana, one in Waipi'o Valley on Hawai'i Island, and one near Waolani Valley in Nu'uanu on O'ahu.

> Kapuni was the son of Kauhola. It is said that he was a chief born, walked, grew, became a mature man and an elderly man all in one day. He was born at Waipi'o, Hawai'i, was laid away at Paka'alana heiau, and became a god. (ibid.:19)

One day two gods passed Kapuni's home in Waipi'o and saw him leaping far into the air, only to fall back to the ground. One god caught him in one of his leaps, and cut off his testicles so that he would be light enough to leap high and to fly. The boy traveled with the gods to Kahiki (the ancestral Hawaiian homeland) and then to Kaua'i, where they heard the sound of a conch shell (pū) blown by the 'e'epa (legendary gnomes) at the Waolani temple in Nu'uanu Valley. Kapuni wanted that shell, even though the gods warned him that it was well-guarded by the 'e'epa. Nevertheless, the three traveled to O'ahu, landing at Pāka'aluna Heiau, above where the shell was kept. Kapuni rested on a stone there in the land called Niolapa (an 'ili of Nu'uanu). Kamakau provides some information on this location:

> They came from Kaua'i and stayed for a night above Kahakea, then leaped over to that rock (the one associated with Kapuni) there by the heiau where the pahu drums were sounded, above Waolani. Pāka'a-luna [Pāka'a-lana-luna] was its name. (ibid.:20) (brackets added)

Kapuni stole the shell from the enclosure outside of the heiau, and the three leapt into the air, and flew over the ocean to Moloka'i. During this leap, the shell touched the ocean water and sent out a clear blast. The god of the temple heard the sound, and chased the thieves, but Kapuni and his friends hid in the waves and the god could not find them. They took the shell to a heiau in Hainoa, in the North Kona District of Hawai'i island. The heiau became a gathering place for the gods, who often blew on the trumpet shell (Fornander 1917:558–560; Kamakau 1991:21–2).

As recounted in many previous reports (see, e.g., Genz and Hammatt 2011; Burke et al. 2012; Belluomini et al. 2015; Shideler et al. 2017; Uyeoka et al. 2020) and well-known compilation volumes (e.g., Sterling and Summers 1978; Pukui 1983; Kawarahada 1996), there are numerous other oral-historical associations with Nu'uanu, including the names of its winds and rain, details about the famous Nu'uanu Pali and the ancient trail system that led up to it from Honolulu, several additional heiau once located throughout the valley, many battles that took place (particularly those related to Kamehameha I but also Kalani'ōpu'u [an uncle to Kamehameha I] in early historic times, Kākuhihewa and Kū'ali'i in the late pre-Contact times, etc.), various mo'o (supernatural water spirits) including Hauola and Hapu'u who guarded the Pali, and various other legends and sagas (e.g., Keaomelemele, the goddess Haumea and her retainer Kali'u and Kaupē the cannibal chief, etc.).

2.1.4 Selected Mo'olelo of Kapālama

This subsection of mo'olelo associated with Kapālama is partially adapted from a compilation of cultural, historical and archaeological resources of Kona Moku (Uyeoka et al. 2020:56–61).

Excerpts from the legends of Lepeamoa, Palilia and Kaulu are presented below. Additional moʻolele not included in this section are listed in Table 2 (above).

Story of Lepeamoa

As stated above, Kapālama is commonly understood to refer to an enclosure (pā) of lama wood that surrounded the place of residence of high ranking aliʻi. Westervelt's (1923) original telling of the story behind this name involves a chiefess named Kapālama, who was the grandmother of Lepeamoa (Hawaiian for "cockscomb"). A chief of Kauaʻi named Keāhua traveled to Oʻahu to take Kauhao, the daughter of Kapālama, as his wife. He angered a kupua (supernatural being that can change form) called Akuapehuale (god of swollen billows [surges or waves]), who forced the couple to hide in the uplands of the Wailua River valley of Kauaʻi.

Keāhua's daughter was born as an egg and was adopted by the chiefess Kapālama to raise on Oʻahu at her home, also named Kapālama. When the egg hatched, Lepeamoa was a bird with feathers all the colors of the rainbow. She became able to turn herself into a beautiful young woman wearing a feather lei. The girl was so beautiful that a rainbow was always present above her. The girl was guarded by her ancestress, Keaolewa ("the moving cloud"), who could also change forms between human and bird. The lower ridge separating Kapālama and Nuʻuanu (ʻĀlewa Heights) may have been named for this ancestress. The parents of Lepeamoa also had a son called Kauʻilani, who was so strong that he was able to defeat the kupua who had threatened his parents. After Kauʻilani's victory over the kupua, he went to find his sister, searching for the rainbow that would signify her presence. In her compound, he found Kapālama, who advised him to hide in Lepeamoa's house, wait until she was asleep in her bird form, and catch and hold her until she acknowledged him as her brother. Her advice worked, and Lepeamoa lived with her brother thereafter (ibid.).

Additional stories are told of Kauʻilani and his magical sister Lepeamoa. In one story, the Maui chief, Mauinui, had a fighting rooster. This rooster was also a kupua that could change forms; by the use of its magic it always defeated any challenger. The Oʻahu chief Kakuhihewa was hosting the Maui chief at his residence in Waikīkī and was losing many goods while betting on the cockfighting, which the Maui chief's rooster always won. Kakuhihewa had heard about the hero Kauʻilani and asked him if he could find some way to defeat the Maui rooster. When Kauʻilani agreed, Kakuhihewa gave him his daughter in marriage. Kauʻilani asked for the help of his sister, who turned into a beautiful hen to fight the rooster. The two combatants both changed forms several times during the battle, but eventually Lepeamoa won. The daughter of the king had a child, called Kamano, who Lepeamoa took back to Kapālama to care for (ibid.).

Legend of Palila

In the Legend of Palila, a hero had a war club that could magically carry him far distances in a single flight. Palila came to the plain of Keahumoa in ʻEwa to participate in the athletic games given by the Oʻahu king, Ahuapau. The residence of this chief was said to be at Kalaepōhaku, near Wailuakio in Kapālama (Fornander 1918:142). Kalaepōhaku Peak (meaning "the stone promontory") said to be a higher, rocky area in southeast Kapālama is near the intersection of School and Alaneo streets.

Legend of Kaulu

Niuhelewai (literally "coconut going [in] water"), makai of King Street in lower Kapālama, was associated with the goddess Haumea and the legendary hero, Kaulu, who was known for his great strength (Fornander 1917:530; Fornander 1919:368). Kaulu was born in Kailua, Oʻahu. His older brother, Kaeha, was taken by the spirits to a realm of the gods in the sky. For love of his brother, Kaulu followed him to this realm, playing a number of tricks on the gods, including Makaliʻi, the god of plenty, who had a magic fish net that would fill with fish whenever used. After playing the tricks, Kaulu then had to rescue his brother from the wrath of the various spirits. The brothers finally returned to the land of men on Oʻahu, setting down at Moanalua (ahupuaʻa west of Kapālama).

> When they arrived at Papakolea, Moanalua, Kaulu left Kaeha at this place while he continued on his way to Kapalama in search of Haumea. Haumea was a spirit that lived at Niuhelewai, Oahu. It was a female spirit. (Fornander 1917:530–531)

Haumea had a home at Niuhelewai in Kapālama; she challenged anyone who passed by, often killing them. Kaulu was passing through Niuhelewai; when he came to the home of Haumea, he found her asleep and woke her up.

> Haumea then asked Kaulu: "Where are you going?" Kaulu replied: "Sightseeing." "You cannot go any further; this place is sacred to me and death shall meet those who disobey." Kaulu then asked the ghost: "Are you strong"" Haumea replied: "Yes." Kaulu again said: "Yes, I will return and tomorrow I will come again, when we will fight." Haumea assented to this. (Fornander 1919: 368)

Kaulu challenged Haumea to a fight on the following day. The reason why Kaulu delayed the fight with Haumea is because he wished to get some nets (koko) from Makaliʻi to catch her with.

> Kaulu then flew up to Makaliʻi and asked for the nets. Makaliʻi allowed him to take them, and Kaulu returned with the nets and he again found Haumea asleep. Kaulu then surrounded the house with four thickness of real fishnets and two thickness of the fishnets of Makaliʻi [. . .] When Kaulu saw the house of Haumea was completely encompassed with nets he called out in a loud voice . . . (Fornander 1919: 368)

When Haumea heard the call she woke up and saw that she was entirely surrounded by nets. Haumea was unable to cut the nets and became so entangled and exhausted that she went to sleep. While asleep, Kaulu burned down her house, killing her (Fornander 1919: 368).

In other traditional accounts, Niuhelewai Stream in Kapālama is also the place where famous battles took place. Two accounts of traditional Hawaiian warfare suggest mass killings in the vicinity of Niuhelewai, which is the stream generally now known as Kapālama Canal. The first traditional account is Kahahawai's defeat of Kahāhana (Oʻahu's mōʻī, or king, at this time). Kahahawai was Kahekili's (the mōʻī of Maui) chief of war. Fornander (1919:498) states that Niuhelewai was the place name of the Pālama cane field between the fire and pumping stations. Cordy (2002:19) places Kahāhana's reign of Oʻahu around the year 1780 to his death in 1783 after this battle.

The second account of a massacre at Niuhelewai occurred in the rebellion of the ʻEwa and Kona Chiefs. After Kahāhana's death, the chiefs of Maui took over Oʻahu. Some of the chiefs

from ʻEwa and Kona districts conceived a plot to murder their new overlords, but the Maui chiefs were warned. The main plotters were temporarily able to convince Kahekili that the conspiracy originated on Kauaʻi. Eventually, however, the truth was revealed:

> . . . the districts of Kona and ʻEwa were attacked, and men, women, and children were massacred, until the streams of Makaho and Niuhelewai in Kona [in Kapālama] and of Kahoaʻaiʻai in ʻEwa were choked with the bodies of the dead, and their waters became bitter to the taste, as eyewitnesses say, from the brains that turned the water bitter. All the Oahu chiefs were killed and the chiefesses tortured. (Kamakau 1992:138) (brackets added)

A brief mention is made of Kapālama in the Legend of the Tapa Board, which has several different versions (see Sterling and Summers 1978:25–26). The production of traditional kapa, or tapa (a kind of textile), which was made by beating bark from wauke or māmaki to soften and smooth out the fibers, made a resonant sound, and women could often identify the owner of the board by the sound that was made. One day a woman in Kahuku on Oʻahu took her favorite tapa board to a pool to clean it and left it at the side of the pool. The next day the board was missing. The woman first searched the windward districts of the island, but never heard the distinctive sound of her own favorite board. After several months without finding her board, she traveled to the leeward side of Oʻahu.

> She went from Kahuku on the Koolau side to Kaneohe where she spent the night. There was no sign of the anvil in Koolau, because the sign she sought was the sound it made . . . She went on and spent the night at Wailupe but did not find hers. She heard other anvils but they were not hers. The night turned into day and she went on to Kapalama where she slept but did not hear what she sought till she came to Waipahu. (Ka Loea Kalaiaina, June 10, 1899; English translation in Sterling and Summers 1978:25)

At Waipahu Spring in the ʻEwa District, she finally heard the sound of her own board. She followed the sound to the uplands of Waikele and found a woman beating tapa on her board. The woman claimed that she had found the board one day floating on the water at a spring near her house. This legend illustrates the belief that there were underground streams and passages that led from one side of the island to the other. In one version of this story, the people of ʻEwa followed the woman back to Kahuku so that she could prove that the board was the same one she had lost. They wrapped a bundle of ti leaves and cast them into the pool near the house of the Kahuku woman. Then returning to ʻEwa, they saw the same bundle of ti leaves a few days later in Waipahu at the spring. Because of this, the Waipahu spring was called Ka-puka-na-wai-o-Kahuku, which means “Outlet of water from Kahuku.”

2.2 Historic Period

This section describes some developments in and near the project area during the Historic Period. As above, we broadly divide the discussion into Nu‘uanu first followed by Kapālama, although, in many ways, events and developments in these two are intertwined.

2.2.1 Māhele ‘Āina in Lower Nu‘uanu Ahupua‘a

Beginning in the 1840s, the concept of private property was introduced to Hawai‘i through formation of the Board of Commissioners to Quiet Land Titles, and the adoption of the Māhele (the division of Hawaiian lands). In 1845, King Kamehameha III waived his right to full authority over the land, portioning out land for his personal use (crown lands) and then dividing the rest into government land, land for the ali‘i (chiefs) and konohiki (land overseers), and land for commoners (kuleana land) (Alexander 1891; Board of Commissioners 1929; Moffat and Fitzpatrick 1995). Following thereafter, Land Commission Awards (LCAs) were awarded to maka‘āinana (commoners) as kuleana parcels for fee ownership. LCAs therefore record who resided on the land and (most of the time) how the land was used. Chiefs, konohiki and other high-ranking individuals were generally not required to describe land use in detail; hence, land use details are generally packing from high-ranking awards.

Multiple historical maps from the middle to later 1800s show the eastern portion of the project area as densely packed with LCAs, as well as ‘auwai (traditional irrigation ditches). This density of small parcels, which contained a high number of house lots and “taro patches,” is a testament to the area’s traditional value as a coveted settlement and cultivation place.

Historical maps showing the entire project area (both Nu‘uanu and Kapālama) are included in another section below (see Section 2.3 – Other Historical Maps and Aerial Images). Here, we present a detailed analysis of LCA data from one large block in lower Nu‘uanu from a previous study by Monahan (2018a) of the Mayor Wright Homes property bounded by N. King Street, Liliha Street, Vineyard Boulevard and Pau Lane. An analysis of traditional land use in this approximately 15.3-acre block is representative of much of the current project area in traditional and early historic times. As well, it illustrates the complexity of historical information available from just one 15.3-acre block.

Table 3 and Figure 23 summarize and depict the LCA and other historical land ownership data from the Mayor Wright Homes property. These data reveal many relevant observations:

- In such a relatively small area—a modern city block—there are at least five named ‘ili: Kapahaha, Kahawali (or Kahawale), Koiuiu (also “Koiuiu, Leleo”), Hauhaukoi and Keoneula. Immediately adjacent ‘ili include Aala, Kapalama and Kaoaowai;
- Among the names of Hawaiians who were awarded parcels in the project area, there is one Julia (or Juliana) Alapa‘i Kauwa (or Kauwa‘a), an Ali‘i Nui (high chiefess), sometimes referred to as Princess, who was married to the famous John Young. She died in 1849, and was awarded many other lands, including others on O‘ahu (including ‘Ewa) as well as Maui and Moloka‘i. She is described as the konohiki by some claimants;
- The table also shows that, when available, land use always includes lo‘i kalo, with several house sites, and occasional mentions of ‘auwai; and

- One person (Kahina) claims a "lo'i iloko," which is a term for a pond-field kalo patch also used as a small fishpond.

Figure 23 is a graphic depiction of LCAs, Land Grants—where people purchased land from the government (and for which there is generally less publicly available information on land use), and Land Court Applications, which represent some kind of quiet title actions taken after the Māhele to obtain kuleana (LCA) parcels. The three Land Grants, 2063, 2065 and 2346, to Panio, Napehe and Kaona, respectively, were purchased in 1856–7.

Bushnell and McAllaster's (2017) historical documentation of the OR&L Co.'s terminal and freight yard block effectively describes the middle nineteenth century Land Commission data in and around the Liliha Civic Center parcel. It is important to state that these data are complex and their accuracy and value for understanding mid-nineteenth land use patterns in this part of Honolulu should be considered a general picture rather than a definitive set of conclusions. They also provide other important historical information about the area in and around the Liliha Civic Center parcel.

The authors provide the following relevant information:

> At Kuwili, seven individuals claimed land within the block. The Land Commission Awards closest to Kuwili fishpond were designated as FL to signify "Fort Lands." According to the law, all of these lands [were]
>
> > …set apart for the use of the Fort in Honolulu to be cultivated by soldiers and other tenants under the direction of the Governor of Oahu, and his successors in office, native born Chiefs of the Hawaiian Islands, according to the instructions of the Minister of the Interior and his successors in office, approved by the King in Privy Council.
>
> In July 1851, only three years after the creation of the Fort Lands reserve, the law was repealed because "the Reserve of Lands…[had] not been productive, and consist[ed] of waste and scattered pieces, interspersed with the Lands of Private Individuals." The Fort Lands were then surveyed and awarded to *kuleana* owners who already had Land Commission Awards within designated Fort Lands. The government sold remaining Fort Lands at public auction, or set them aside for a nursery.
>
> The area known as Kuwili comprised the lands closest to the Kuwili Fishpond. The Land Commission Awards referred to King Street as Alanui Alii (King Street) and Alanui Halepule (Church Street or Chapel Street). The lands adjacent to King Street and within the OR&L Block were part of the land division of Leleo. Records imply this land was used almost exclusively for houselots, with the exception of LCA 61FL that claims one taro field. The 1885 Brown map depicted twenty-six structures, most probably houses, within the [. . .] area. One individual, Keonekapu (LCA 722), stated that his 1.4-acre houselot was fenced and contained five houses in which his family lived. In addition to houses, the following features were listed within the LCAs: pastureland, Koiuiu irrigation ditch, Kuili (sic. Kuwili) stream, fenced schoolhouse lot, a lane (*ala aloli*), and a freshwater spring (*waipuna*).

Native testimony recorded during the land claim process attested to some of the issues that the native land tenants were dealing with at the time. The transition from revocable land tenure to fee simple ownership was a radical departure from old ways and led to many disputes. One of these disputes revolved around the land managers (*konohiki*) and lesser chiefs of the time. The new land system was perceived as offering little to this rung of the hierarchy for these chiefs not only depended on the tenants for food and supplies (as taxes), but also exerted control over their labor. The reluctance of the *konohiki* to relinquish their control over the tenants is made clear in more than one claim at Kuwili and Leleo.

The *konohiki* were not the only obstacle for the tenants attempting to claim their land. The tenants themselves vied for control over property, creating alliances with neighbors to help them in the effort. Aholo (LCA 722) testified for Kapulani (LCA 64FL) that the neighbor Hooliliamanu (LCA 927) and his family left Kapulani without house and home. Before he died in 1848, Hooliliamanu was a tax collector and probably well aware of the process involved in making a land claim. His relationship with Kapulani and her husband, Nawailua, is not known, however it is clear that the land in question was registered under his name, not Kapulani's.

Another interesting note gleaned from this testimony is that work on King Street (now North King Street) impacted Kapulani's property as early as the 1840s. This was the main route from points north and west to Honolulu and the bustling harbor. As foot traffic gave way to horse traffic and carts and carriages, the need to widen King Street would have been more acute. D. Lima, acting Road Supervisor in the 1850s, put out a notice in October of 1856 calling all foreigners who had been in the kingdom for over one year to report for road repair work on the stretch of road from the slaughter houses at Leleo to Nuuanu Street.

The marshlands across King Street (or east) of the OR&L Block extended from Nuuanu Stream, behind the Chinese laundry and the Chinese theater, to the north. Low-lying lands, including the area encompassing the Chinese laundry and theater, Prison Road, and King Street, were very susceptible to flooding and were inundated on a regular basis. One flood that occurred in 1884 was particularly severe for the area:

> The very heavy rain that commenced shortly before midnight, and has fallen almost continuously since, has done considerable damage around Honolulu. All the streams were turned into rushing torrents and had reached their greatest height between four and five o'clock. The road at the Chinese Theater was covered to a depth of four feet and all the recent repairs have been entirely destroyed. Horses, fowls, trees and portions of buildings were washed down and several Chinese stores were completely inundated, portion of the goods floating into the harbor. The water covered the floor of the Chinese laundry…

The *kuleana* property in the OR&L Block was probably not spared the flooding, although it was most likely located on higher ground. The 1883 Brown map showed the land area directly across the street from the *kuleana* as having a higher

> elevation. In 1888, the Minister of Interior announced the sale of the lease of Kuwili Fishpond and the adjoining taro lands. The upset price was $250 per year with a term of ten years. Chin Wo & Co. leased the fishpond and surroundings. By this time, the rice industry in Hawaii was at its peak. Chinese immigrant laborers who came to Hawaii to work in the burgeoning sugar industry were later employed to grow rice. Rice was well suited for the extensive wetlands that were used for taro. In Palama, an entrepreneur named Young Ah In (Y. Ahin) began leasing a few taro fields for rice growing and eventually opened Chin Wo Company, a very successful distributer and exporter of rice and importer of Chinese merchandise. With a ready market in nearby Honolulu and Chinatown, Kuwili Fishpond provided multiple possibilities for food production. The edges of the fishpond were established taro ponds that could be converted to rice paddies. The pond itself produced fish and the Chinese were adept at raising waterfowl, as they did in nearby Palama and in the marshlands east of Kuwili Fishpond. (brackets added)

In the 1870s, newspaper accounts in Honolulu indicate a lot of interest in buying and selling these LCA parcels in and near the Mayor Wright Homes property. For example, in an 1873 edition of The Pacific Commercial Advertiser, there is an advertisement to sell "4 Kalo Patches" at "Kapahaha, Liliha St." From the same newspaper, in 1881, one Mrs. Kaaea Akepo wishes to sell "…that valuable piece of land, with buildings thereon, situated at Kapahaha, Kapalama-Kai, known as 'THE OLD KING STREET LAUNDRY HOUSE.'"

As stated above, the boundary between lower Nu'uanu and Kapālama can be indeterminate and difficult to pin down makai (seaward) of School Street. Right along this boundary was once the home of royal residences (see Section 2.2.3 - Royal Residences in Lower Nu'uanu and Kapālama, below). As documented by the local historian, Ralph Thomas Kam, there were once large residential complexes belonging to Queen Lili'uokalani—in the southwestern part of the Mayor Wright Homes property—and Princess Ruth Ke'elikōlani—just west of Pua Lane, as late as the end of the nineteenth century (Kam 2013). Several well-known historic maps show the location of the Queen's place. Princess Ruth's was just west of this.

2.2.2 Kaumakapili Church

Pammer and McDermott (2014:32) summarize the origins and development of this historic Hawaiian-Christian church that was originally located on Punchbowl Street east of the Nu'uanu Stream and the current project area:

> Kawaiaha'o Church, on the corner of King and Punchbowl Streets, was the first church built by the American missionaries who arrived in 1820. By 1838, Hiram Bingham, head of the mission, realized a second church would be necessary to provide service to their burgeoning congregation. Governor Kekūanaoa decided the church would be in the village of Honolulu in the *'ili* of Kaumakapili where some 13,000 people already lived. An adobe building with a grass-thatched roof was built on the corner of Smith and Beretania Streets, *mauka* of the Chinatown District. In 1881, the adobe structure was replaced by a brick building with two soaring spires. The church burned down in the Chinatown fire of 1900, leaving only the shell of the brick base of the building. Instead of rebuilding at the same location, in 1903 the church committee purchased a new lot at the corner of

Simerson (now Pālama) and King Streets on the eastern boundary of Kapālama. They built a small wooden chapel on a lot at King Street and Austin Lane, which served as a church for the next seven years. A cemetery was also established in this lot as early as 1902. In 1911, the present stone structure was completed and dedicated . . .

Table 3. Summary of Land Commission Awards and Other Historic Land Ownership in and near Mayor Wright Homes

LCA (ʻāpana)[1]	Acres	Land Use	RP	Name	ʻIli	Location Relative to MWH PA	Comments
2072:2	0.30 ac.	2 loʻi kalo & 1 garden house	5572	Kapaalua	Kapahaha	Adjacent to PA (outside PA) between it & King St.	RP 5572 dates to 1864 and includes 3 ʻāpana in all under LCA 2072 (2.15 acres in total)
2072:3	0.25 ac.	1 loʻi				*Partially in PA along King St. side (mostly out of PA to King St. side)*	
8525-B:1	1.74 ac.	?	8185	J.A. (Julia Alapaʻi) Kauwa (w)	Kapahaha	*Partially in PA at W corner (partially out of PA)*	This appears to be Aliʻi (High Chiefess) Julia (or Juliana) Alapaʻi Kauwa, or Kauwaʻa (born c. 1814, died 1849), described as the Konohiki by some; RP 8185 dates to 1906, and instead of using the term ʻāpana, says "part"; she received (and relinquished) many land awards; she received awards in Kona (Oʻahu) and ʻEwa, as well as Maui and Molokaʻi.
1285:4	1.24 ac.	2 loʻi	1982	Kaluau or Kaluau , W. (w)	Kahawali	*Partially in PA at W corner (partially out of PA)*	Indices of Awards (1929) indicate she received 4 ʻāpana under LCA 1285 w. ʻili listed as Kaoawai (Kaoaowai), Kapahaha & Kahawali (Kahawali o Kaeo); Waihona ʻAina listed the ʻili as "Kapahaha & Kahawali"; claims (NR) she received a house lot from Kapaalua at the time of Kinau; calls J.P. Alapaʻi the Konohiki
1405:1 (por.)	1.90 ac. (total)	8 loʻi & 1 house site (total)	5553 (por.)	Pihiliilii	Kahawali	Completely in PA	This LCA also associated with RP 2397 (ʻili also spelled Kahawale in some documents); ʻāpana 1 taken (or sold?) during LCAp 1192
1405:1 (por.)						Completely in PA	
1405:4						Completely in PA	
933:1	1.05 ac. (total)	3 loʻi & 1 house site	1226	Kamae	Koiuiu	Adjacent to PA (out of PA) S of Desha Lane	Incorrectly spelled Kiouiu in Indices of Awards (1929); he was awarded 4 ʻāpana in all under this LCA
933:2						Completely in PA	
933:3						*Partially in PA at NE corner (partially out of PA)*	

LCA (‘āpana)[1]	Acres	Land Use	RP	Name	‘Ili	Location Relative to MWH PA	Comments
1078*	0.62 ac.	3 lo‘i kalo & 1 “small hut”	4393	Naili or Naihe*	Kahawali	Completely in PA	* Naili (or Naihe) for Kanui (cf. Indices of Awards 1929); this ‘āpana identified as “loi” on Pihiliilii’s survey map; Indices of Awards (1929) state: “Awarded by Privy Council by Resolution dated June 23, 1856”; received in Boki’s time (i.e., probably 1820s); referred to as an ‘ili ‘āina
605:2	1.29	3 lo‘i	4423	Kalunaaina for Lupe	Keoneula	Completely in PA (along Pua Lane side)	Kalunaaina received these lands from Kamehameha III in the time of Ka‘ahumanu; he died in 1846 and gave lands to his only child (daughter named Lupe); this award had 6 ‘āpana; description of ‘āpana 2 includes ‘auwai
605:3	0.66	2 lo‘i				Completely in PA (along Pua Lane side)	
6236	6 contiguous ‘āpana; total 3.56 ac.	Multiple lo‘i	See Comments	Kaaiawaawa	Koiuiu	Completely in PA (in S corner)	Unclear if all ‘āpana are in PA; there are 6 different Royal Patents: 7339, 8160, 8296, 8338, 8339 & 8342
36 F.L.	0.85 ac.	Lo‘i	2248	Nakilaku (or Nakileku)	Aala	Adjacent to PA (outside of PA) near corner of Liliha & Vineyard	--
3 F.L.	0.57 ac.	4 lo‘i	2684	Kapo	Hauhaukoi	Adjacent to PA (outside of PA) along Vineyard	In addition to 4 lo‘i, “loi maloo” (dried up or not-in-use) lo‘i are also mentioned in NT; received in 1839 from (or at the time of) Kinau
2 F.L.	0.67 ac.	5 lo‘i & 1 house site	2102	Kamoku	Hauhaukoi	*Partially in PA along Vineyard (partially out of PA)*	Received land from (or at time of) Kinau circa 1839; house site called a “kahuhale”
8520:1	?	?	8197 (por.)	Kaeo, Iosua	Kahawali, Kapalama	Completely in PA	Claimant received several ‘āpana in different places—even different islands—under same LCA 8520; e.g., ‘āpana 4 is on Lāna‘i; ‘āpana 2 & 3 are on Maui; ‘āpana 5 is Hilo, and so on
8520:1	?	?	8197 (por.)			*Partially in PA along Vineyard (partially out of PA)*	
8520:1	?	?	8293			Adjacent to PA (outside of PA) at N corner	
2107:1	0.37 ac.	2 lo‘i iloko (taro/fishpond)	4528	Kahina	Kahawali	Completely in PA	Claimant received 3 other, nearby ‘āpana under a different Royal Patent (7254)
2107:2	0.42 ac.	Lo‘i				*Partially in PA along Vineyard (partially out of PA)*	

LCA (‘āpana)[1]	Acres	Land Use	RP	Name	‘Ili	Location Relative to MWH PA	Comments
640	0.63 ac.	4 lo‘i & 1 house	8239	Kamahalo	Hauhaukoi	Adjacent to PA (outside of PA) along Pua Lane	Called “Land Patent” rather than Royal Patent; received in time of Kinau
8613:2	1.40 ac.	6 lo‘i	7446	Keonekapu, J.	Hauhaukoi	Completely in PA	‘Auwai entering from mauka land
25 F.L.	0.37 ac.	3 lo‘i	4518	Kukui (w)	Hauhaukoi	Completely in PA	Just NE of Kukui St. extension; Kukui was a woman (wahine); received in 1843
4747:2	0.98 ac.	7 lo‘i	5610	Kama (w)	Leleo, Koiuiu	Completely in PA	‘Āpana 1 located in Kapalama; Kama was a woman (wahine); received land from (or at time of) Kinau circa 1839
1362	0.46 ac.	2 lo‘i	2681 (por.)	Naholowaa**	Keoneula	Completely in PA	** Naholowaa for Hoa (wahine), according to Indices of Awards 1929); FT says this Naholowaa had no claim to the land, he was only a “working man” under Hoa. “She told me to send in a claim for it as she was afraid she should not get her claim in before the Commission.”

Abbreviations: LCA = Land Commission Award; LCAp = Land Court Application; MWH = Mayor Wright Homes, por. = portion; PA = MWH Project area; RP = Royal Patent; NR = Native Register; NT = Native Testimony; FT = Foreign Testimony; w = wahine (woman).

[1] Bold text = LCA entirely within Mayor Wright Homes property; ***italics*** = LCA partially in/partially out of Mayor Wright Homes property; plain text = LCAs immediately adjacent/abutting Mayor Wright Homes property.


PUA
LANE
KING
STREET
DESHA
LANE
KALAIWAAHA
CONCRETE DRAINAGE DITCH
LAND COURT APPLICATION 1182
LAND COURT APPLICATION 1320
LAND COURT APPLICATION 1378
LAND COURT APPLICATION 1379
LAND COURT APPLICATION 1380
LAND COURT APPLICATION 1381
LAND COURT APPLICATION 1382
LAND COURT APPLICATION 1383
LAND COURT APPLICATION 1384
LAND COURT APPLICATION 1385
LAND COURT APPLICATION 1386
LAND COURT APPLICATION 1387
LAND COURT APPLICATION 1388
LAND COURT APPLICATION 1389
LAND COURT APPLICATION 1390
LAND COURT APPLICATION 1391
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2.2.3 Royal Residences in Lower Nu‘uanu and Kapālama

As Kam (2013:147) points out, this area was once a kind of “suburb for the elite of Honolulu.” His *Remembering the Royal Residences of Kapālama: The Homes of Princess Ruth Ke‘elikōlani and Queen Lili‘uokalani*, points out several salient observations:

1. It is remarkable that there are no historical markers or signs whatsoever at the locations of these places, which belonged to two of the most powerful Hawaiian Ali‘i Nui in the late period of the Hawaiian Kingdom. Likewise, there is no systematic photographic record of these places, whose characteristics Kam had to reconstruct using mostly contemporary newspaper and magazine accounts.
2. Princess Ruth’s place was called Mauna Kalama, and it was bounded by Asylum Road (now called Pālama Street) on the northwest, King Street to the southwest and what is now Pua Lane. The current Kanoa Lane bisects the Mauna Kalama site. Princess Ruth only lived at this house for less than five years, as she passed away in 1883. By 1884, with the death of Bernice Pauahi Bishop, the property became part of the Bishop Estate-Kamehameha Schools holdings and was put up for rent or lease. Kam relates interesting details of a prominent Hawaiian who rented this house, Joseph Kaho‘oluhi Nāwahī, an attorney who opposed annexation by the United States. For example, “[a]s a key leader of the opposition, his Kapālama home was searched for weapons on the evening of Saturday, December 8, 1894” (ibid.:150)
3. After Nāwahī’s death in 1896, the mansion was transformed into the Pālama Chinese School, a missionary boarding school (Seventh Day Adventist). After the school moved to another location by 1900, the Bishop Estate commenced subdividing the property in order to lease it out in portions. A major undertaking needed to accomplish this was the filling of agricultural wetlands that surrounded the residence; historical records described by Kam indicate it took more than 24,000 wheelbarrow loads of fill to complete this project (ibid.:153).
4. In 1885, the Queen (then still Princess) Lili‘uokalani had a residential estate built within the boundaries of the Mayor Wright Homes called Mu‘olaulani (Pukui et al. [1974] translate this as “innumerable royal buds”), which Kam believes may have been named after Princess Ruth. She purchased the land “for $8,000 from a couple who had bought the property from the widow of Simon K. Ka‘ai” (ibid.:158).
5. In addition to serving as a residence for Lili‘uokalani and a place to entertain guests, Mu‘olaulani was also used for meetings of the Liliuokalani Educational Society, “whose aim was ‘the care and education of needy orphan children’” (ibid.:161). King David Kalākaua made a special presentation at Mu‘olaulani in honor of his sister’s 48th birthday. Other famous people (e.g., Robert Wilcox) and occasions were also marked at this residence.
6. In 1889, Lili‘uokalani returned to live with her husband, John Owen Dominis, at Washington Place. At the time of the ill-fated rebellion led by Wilcox, in 1889, he was staying at Mu‘olaulani, and Lili‘uokalani was guilty by association. Her house was used over the years by those resisting the U.S. take over. After she was

jailed in January 1895, the house was leased out to British Commissioner and Consul-General, Albert George Sidney Hawes.

7. By 1901, Muʻolaulani was leased out and being used as a Japanese hotel. By 1906, Muʻolaulani was "divided into fourteen separate residences and labeled as a tenement" (ibid.:169). As Kam points out, this term (tenement) does not imply it was a slum, rather, it was used to refer to properties rented out to multiple families. Numerous lessees rented the property over the next several years. After Liliʻuokalani's death in 1917, the original structures at Muʻolaulani continued to be altered and partially razed. Even the remnant portion of surviving Muʻolaulani that can be seen as late as the early 1950s (on a Sanborn map) was gone by the time Mayor Wright Homes was complete in 1953.

2.2.4 St. Louis College

According to research by Cultural Surveys Hawaiʻi,

> St. Louis College was established in 1883 by Right Reverend Hermann, D.D. (Doctor Divinitatis), Bishop of Olba. He erected a two-story brick building, and recruited teachers from the States. It aimed to be a first-class prepatory, classical, and commercial school. Due to the influx of students, they constructed additional accommodations on campus . . . (Belluomini et al. 2016:17)

> According to Ruby et al. (2012), growing enrollment and the death of a student at the (first and original) Beretania Street location of the College of Saint Louis (precursor to today's Saint Louis School) resulted in the campus moving to Kamakela [in the northeastern portion of the current project area] in the late 1880s. However, the proximity of the Catholic all-boys campus to the red light district of Iwilei [eventually] led to another move. (Coleman 2012) (brackets added)

2.2.5 Palama Settlement

Pammer and McDermott (2014:32) provide a concise summary of some aspects of the origins of Pālama Settlement:

> In 1896, P.C. Jones, a philanthropic businessman and president of C. Brewer and Company, built a small chapel at the corner of King and Liliha Streets. He later turned over the land and chapel to the Central Union Church of Honolulu, which operated it as an outreach branch. Immediately after the 1900 burning of Chinatown, many of the refugees settled in temporary housing around the chapel; some decided to permanently settle there. In 1905, the chapel was transferred to the Hawaii Evangelical Association, which founded the Pālama Settlement and contracted James Rath as the superintendent. The philosophy of the Settlement Movement was that social workers could do better work if they lived among the people they were trying to help. The Rath family first set up facilities to take care of wayward children. The settlement quickly grew, and additional facilities were constructed, including low-rent cottages, a nursing station, a swimming pool and tennis courts. The Pālama Settlement moved to a new site at the corner of Vineyard Street and Palama Street in 1925 . . .

2.2.6 ʻAʻala Park

According to Belluomini et al.'s research, the name ʻAʻala is not a traditional Hawaiian place name (2016:17, 24). Citing contemporary newspaper accounts and the work of the famous chronicler of Hawaiiana, Thomas Thrum (1896), they describe its early twentieth century origins, uses and development as follows (Figure 24 and Figure 25):

> [ʻAʻala] . . . is not a traditional name, but was introduced in the post-Contact period. In the early nineteenth century, ʻAʻala was sparsely inhabited and was known mainly for the many wash houses (laundries) operating adjacent and within Nuʻuanu Stream . . . This explains the name *ʻaʻala*, which means "fragrant," a sarcastic reference to the smell of the wash houses, and probably the river itself . . . Many Japanese moved into the neighborhood on the west side of Nuʻuanu Stream after the burning of Chinatown in 1900 destroyed their homes and businesses on the east side of the stream. Besides rooming houses and single-family homes, shops, theaters, pool halls, and restaurants were also built in the area to service the Japanese population. (ibid.)
>
> The center of the neighborhood was ʻAʻala Park, which was used for athletic games, picnics, and fairs. The idea for a park in an open area close to downtown was first raised by the Hawaiian Government in 1871, and land was set aside for that purpose . . . Development was slow, however, as the area was a low, swampy area that became inundated whenever the adjacent Nuʻuanu Stream overflowed its banks. It was not until 1898 that a bill was passed in the new Territorial Legislature to preserve the land for a park . . .
>
> The park could not be built until a retaining wall was completed around Nuʻuanu Stream . . . While roads were built around the park, the soil from the park was "looted" and used to supply road material to bring adjacent streets to the proper grade.
>
> > Trenches wide and deep had been dug all over it and the surface earth had been completely stripped away…. Then it was promised that the dredger should fill up the various "graves" [trenches]. It set to work on this. Then the river wall had to be completed. Then the stuff pumped up was good road material and the land was stripped again, then it was pumped full again, and again stripped, and exactly at what stage it is now, deponent [sic] cannot say. . . (*Hawaiian Star* 1900)
>
> The park land became a handy storage spot for sewer pipes and as a dumping ground for "old tin cans and broken gin bottles" . . . The park also suffered from a recurring problem for the government, its use by the homeless. Chinese "squatters" built low wooden hovels with corrugated iron roofs in the park . . . Finally, money came through for the park and the "trenches" left from the roadwork looting and other lowlying areas of the park were filled with saline mud

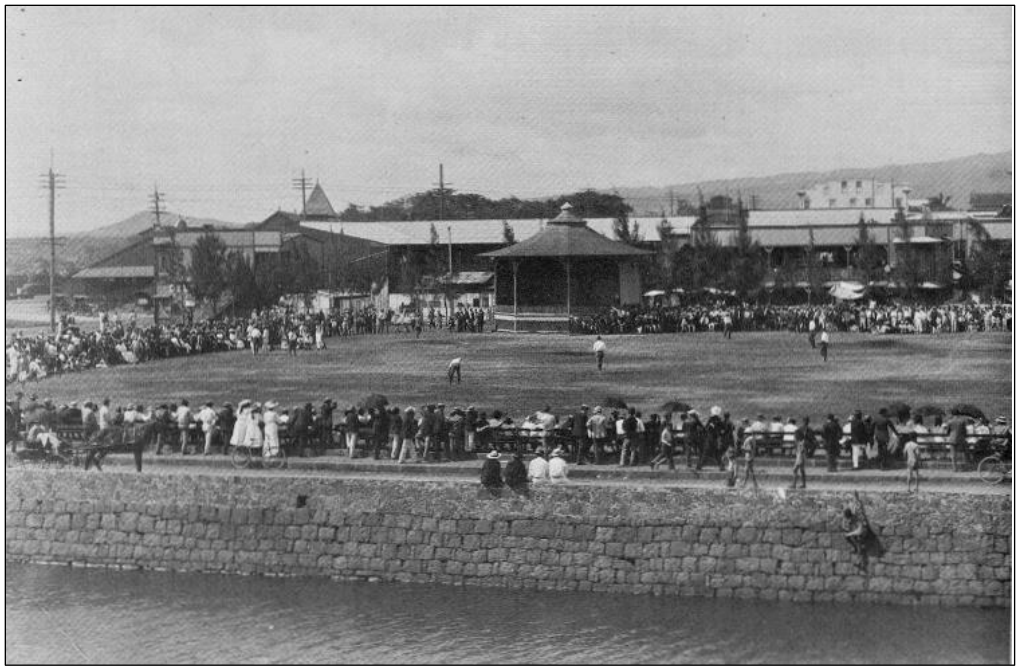


Figure 24. ʻAʻala Park in 1903, during a baseball game, view from Chinatown side of Nuʻuanu Stream facing west; OR&L train depot can be seen in left background (Baker 1903)



Figure 25. ʻAʻala Park in the 1940 to 1950s, showing the parade start, facing northeast with the Nuʻuanu Stream to the right (Hawaiʻi State Archives Digital Collections)

> dredged from the harbor, loaded on to railway cars, and then pumped onto the park land . . .
>
> The main attraction of the park in the early 1900s was its use for baseball games, which took place at the park from its dedication in 1902 to the end of World War II. With the backing of Henry Berger, the bandmaster of the Royal Hawaiian Band, a bandstand for musical concerts was built in the park in 1905 (Pacific Commercial Advertiser 1905, 1906). ʻAʻala Park was also the site for several large workers' strikes in the early twentieth century, when plantation and dock workers demanded better wages and working conditions . . .
>
> The park was neglected after World War II, but in the 1960s, all of the structures in the park were razed, and it was landscaped anew. The next rejuvenation was in 2002, when the park was officially reopened after extensive work including the building of basketball courts, ball courts, a skateboard rink, and playground equipment . . .
>
> One of the attractions of the ʻAʻala area were the theaters . . . The first theater in ʻAʻala, called the "Chinese Theater" was built in 1879 on the "Esplanade," the area at the harbor filled to create new land adjacent to the docks . . . The Pacific Commercial Advertiser (in 1894), noted that the government ordered the structure to be moved and would provide new land for the theater, on condition that it would revert to the government in 10 years, a day that had come due in 1894, suggesting the move took place around 1884. The new land was in the ʻAʻala area, on the west side of Nuʻuanu Stream. In late nineteenth century Honolulu directories . . . the location is usually listed as on "King Street near the bridge" (i.e., the King Street bridge from Chinatown to ʻAʻala).

2.2.7 Māhele ʻĀina in Lower Kapālama Ahupuaʻa

Regarding the middle-nineteenth century Mahele, Uyeoka et al. (2009:31) state,

> At the mid-nineteenth century Māhele, the ahupuaʻa of Kapālama, along with many other lands in the islands, was awarded as part of Land Commission Award (LCA) 7714-B to Moses Kekūāiwa, son of Kekūanaoʻa and Kīnaʻu, who had earlier been married to Kamehameha I. The land passed down in turn to his sister Victoria Kamāmalu, to her brother Lot Kamehameha, to his half-sister Ruth Keʻelikōlani, and then to her first cousin, Bernice Pauahi Bishop. The will of Mrs. Bishop set many of her lands aside as a trust to provide financial aid to educational and charitable institutions, including the founding of Kamehameha Schools to educate Hawaiian youth.

An 1885 map by J.F. Brown dated 1885 (Registered Map 1039) shows lower Kapālama and Iwilei, on both sides of Kapālama Stream, as densely packed with LCAs, as well as extensive ʻauwai (traditional irrigation ditches).[4] This density of small parcels, which contained a high number of "taro patches" in the Kapālama portion, is a testament to the area's attractiveness for settlement and cultivation. Reflecting this elevated status, LCAs shown in this historical map

[4] See also Section 2.3 – Other Historical Maps and Aerial Images, below

were awarded not only to makaʻāinana but also to Aliʻi Nui (highest ranking chiefs) and their konohiki. For example, some LCA on the west of Kapālama Stream were awarded to Hawaiʻi's last monarch, Queen Liliʻuokalani, Victoria Kamāmalu (a granddaughter of Kamehameha I) and Kekūanāoʻa (father of Victoria Kamāmalu and Governor of Oʻahu).

Farley and Shideler (2018:17–20) provide a full listing of LCAs in Kapālama (minus some Iwilei awards) in addition to an annotated figure showing specific LCA numbers in this area. According to these authors, a large portion of the land in the floodplain of Kapālama Stream was also used for rice cultivation in the late 1800s to early twentieth century (ibid.:15), a land use that was common on Oʻahu at this time (i.e., repurposing old loʻi kalo into commercial rice operations).

A well-known 1881 map by Covington (Registered Map 1381) shows the main trail or carriage road connecting Honolulu to Moanalua and the east side of Puʻuloa (Pearl Harbor)—an early version of King Street—as crossing through the current project area just makai and below the current location of the H-1 Highway. Maps from this time also show Kuwili Fishpond in Iwilei, the old Prison and Insane Asylum to the east. An 1887 map by Wall shows the original location of Kamehameha School, in lower Kapālama just west of the current project area. The main carriage road of King Street is labeled crossing through the project area. The fishponds of Kūwili are depicted just to the southeast.

2.2.8 Iwilei

The Office of Hawaiian Affairs (OHA) produced an Information Sheet (Coleman 2012), excerpts of which are included below (Figure 26):

> Iwilei is described as both an *ʻāpana* and an *ʻili* (small land divisions) and is commonly thought to belong to the *makai* (seaward, coastal) areas of the *ahupuaʻa* (large land division) of Kapālama. More contemporary accounts include Iwilei in the *ahupuaʻa* of Honolulu. However, as a coastal area, Iwilei also shares its history with the surrounding *ahupuaʻa* of Kalihi, Nuʻuanu, and Kewalo.
>
> The history of Iwilei is also very closely tied to the harbor area; although it is now known as Honolulu Harbor, it was once known as Māmala. Nuʻuanu Stream flowed into the bay, creating rich marine environments and diverse flora and fauna. The village of Kou also stood on the Kewalo banks of the harbor.
>
> The lands of Iwilei are bordered and watered by two streams, Nuʻuanu and Kapālama: these streams, in addition to extensive *ʻauwai* (irrigation ditches), fed vast stretches [of] *loʻi kalo* (taro patches) throughout the inland areas of Kapālama and Kalihi (Handy et al. 1972). (brackets added)
>
> The coastal area of Iwilei was part of a large complex of fishponds, reefs, and extremely productive fishing grounds that once ran from ʻEwa to Maunalua. For example, Māmala [Honolulu Harbor] was well noted for its *aku* (bonito) fishing. The reef Kaholaloa was known for lobsters, crabs, and *limu* (seaweed), particularly the seaweed known as *manauea* (*Gracilaria coronopifolia*). (brackets added)
>
> During the late 1800s and 1900s, Hawaiʻi began rapidly urbanizing. While Honolulu became known as a business and banking center, Iwilei would become known as an industrial center. The harbor became an increasingly busy port. The

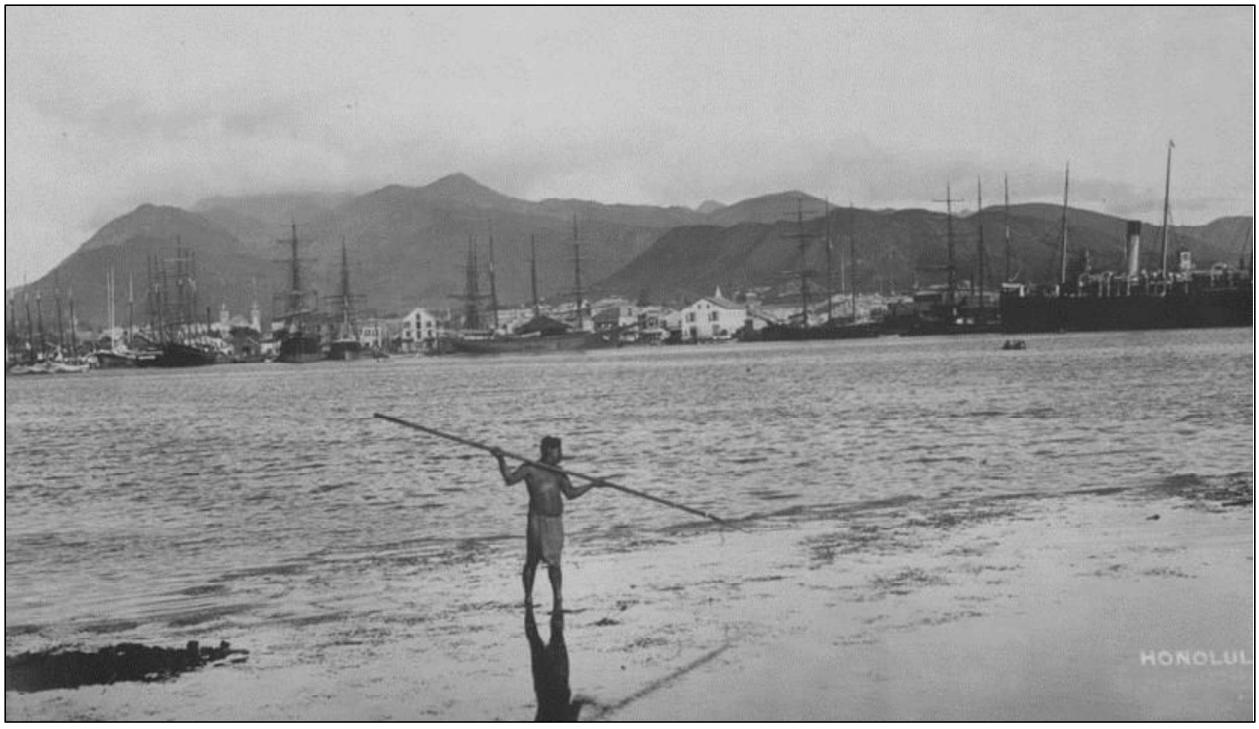


Figure 26. Spear fisherman standing on the reef at the entrance to Honolulu Harbor in Iwilei in the 1890s (image source: Hawai‘i State Archives Digital Collections)

completion of various types of infrastructure, including buildings, storefronts, and transportation stations, would for-ever change the nature of Iwilei and surrounding areas.

One of the biggest influences of change was the construction of a rail line in Iwilei. In 1889, Benjamin Dillingham of O‘ahu Rail and Land opened a rail line connecting sugar plantations in ‘Ewa to Honolulu. The rail terminus and depot was built in Iwilei [at the site of the current Liliha Civic Center parcel], and a rail track was built across Kūwili fishpond. It was said to have only been 2 feet above the water mark at high tide . . . The rail’s roundhouse was built on the Kanāueue Fishpond; it was here that the train was rotated on a turntable so that it could travel between the Iwilei and ‘Aiea stations of the rail. The roundhouse and surrounding areas were called by Hawaiian place names that referred to swirling and rotating (i.e. Kūwili and Kanāueue) and the area’s notoriously seedy reputation may have been inspiration for the extremely *kolohe* (mischievous) song “Kūwili.” (brackets added)

The Hawaiian Fertilizer Works was also established in Iwilei in 1898 by Amos F. Cooke, the son of the missionary Amos S. Cooke. The company primarily serviced the sugar and pineapple plantations in the ‘Ewa plains . . .

Among the many effects of the rapid industrialization of Honolulu and Iwilei was the loss of traditional Native Hawaiian place names. For example, the influx of non-Hawaiian immigrants to the area led to the mixing of cultures, languages, and the overlaying of histories. Names like “Hell’s Half Acre,” “Tin Can Alley,”

"Cunha Lane," "Mosquito Flats," and "Blood Alley" replaced Hawaiian names . . . It is also difficult to date and provide context for some Hawaiian names; for example, ʻAʻala was said to have been named for the fragrance of soap from the Government Laundry in the area . . .

The dredging and infilling of the harbor and reefs forever altered the geography and ecology of Iwilei. These activities occurred for various reasons. Marshy areas such as Iwilei were believed to cause the outbreak of disease. The silting of Honolulu Harbor from Nuʻuanu Stream was another reason for dredging. Real dredging efforts began in the 1850s, when a dredging machine (named Kaulu), pile driver, and steam tug (named Pele) were purchased by Chief Justice William Little Lee for the Kingdom.

From there, dredging and infilling activities in Iwilei increased over the years but accelerated after the overthrow of the Hawaiian monarchy during the late 1800s and into the 1900s. A number of fishponds in Iwilei, including Kawa and Kūwili, were infilled. At one point, Kaholaloa Reef was used as a dumping ground; it was eventually infilled with materials obtained through the dredging of the harbor. The mouth of Nuʻuanu Stream was narrowed by dumping and infilling. A channel (Kalihi Channel) was cut into the reefs that spanned the harbor. Further dredging activities occurred during the world wars and subsequent militarization and urbanization of Honolulu; for example, Sand Island was enlarged by dredging in the 1940s.

The growing importance of Honolulu Harbor greatly increased the presence of whalers, sailors, American soldiers, immigrants, and plantation workers in the Honolulu area. Over time, locales within Honolulu like Iwilei and Chinatown became known for high rates of crime, poverty, gambling saloons, disease, and prostitution . . .

Much of Iwilei's history is marred by the proliferation of disease. As a hub of industrialization and a commercial port, the influx and rapid spread of disease was common. In fact, efforts to control disease shaped much of the geography of Iwilei.

An outbreak of Asiatic cholera in 1895 and 1896 was concentrated in Iwilei; most of the deaths occurred among Native Hawaiians . . . The causes for the outbreak were uncertain, and medical science and public health practices were not as advanced as they are today; part of the discourse surrounding the outbreaks of disease was economically, politically, and socially (especially racially) charged. At the time, it was rumored that the deaths could be attributed to the cultural practices of *kahuna anaana* (experts in sorcery) and specifically the events surrounding a stolen horse. One theory put forth by Territorial Government officials and the general public for the outbreak attributed the disease to the Native Hawaiian practice of eating shellfish, fish, and *limu* (seaweed), particularly if it was consumed raw: it was thought that crabs and fish were feeding on the bodies of cholera victims. As a result, a complete ban on all forms of fishing (including the gathering of *limu*) was enforced for all of Honolulu (from Mānana in what is today

> Pearl City to Maunalua in what is today Hawai‘i Kai). The outbreak also led to the infilling of Kawa Pond in Iwilei between 1895 and 1901.
>
> Bubonic Plague broke out in Chinatown in 1899; victims were burned in a furnace at Honolulu Iron Works on the Kewalo side of Honolulu Harbor until a crematorium was built on Quarantine Island. Chinatown was placed under a strict quarantine and “sanitary fires” were set . . . When one fire got out of control and destroyed much of Chinatown, many of its residents moved to Iwilei, both of their own will and through detention camps . . .

2.2.9 Sand Island or Mauliola (Hawaiian Place Name)

The so-called “reef islands” fronting the project area have been important cultural and natural resources to Hawaiians practicing a traditional subsistence lifestyle for centuries. This general area is still important, and relevant, to some contemporary Hawaiians as a place to gather limu and other marine resources. A full treatment of the origins and development of these natural resources into what is today known as Sand Island is beyond the scope of this report, but has been summarized by Monahan (2018c), from which the following excerpts are taken:

- The findings of our research indicate that, in general, Sand Island was created by “. . . the filling of the reef flats during incremental dredging of Honolulu Harbor and Ke‘ehi lagoon”;
- Most of the major filling activities took place in the early twentieth century, but the island has a complex history of change extending back into the middle-late nineteenth century;
- In the early historic period, a portion of what we currently refer to as Sand Island was simply a natural, elevated section of reef. Starting in 1868, this sandy island began to be used as a place to temporarily quarantine newly-arrived visitors and immigrants until they passed health examinations;
- Shortly after the turn of the twentieth century, in 1906, Quarantine Island was more formally shaped and constructed using retaining walls into an elongated oval, portions of which can still be observed on recent aerial imagery and topographic maps. Prior to this formalization of the early twentieth century Quarantine Island, earlier depictions (from the later nineteenth century) show a dynamic, changing size and shape due most likely to tidal variation in sand deposition and accretion;
- Many episodes of infilling and land reclamation from dredging of the harbor and channels around Sand Island, all the way up to the 1940s, eventually created the approximately 520-acre island of today (Figure 27);
- The 1920s saw the end of the use of Sand Island as a place of quarantine, and the beginning of the military’s use of the island;
- The island became an integral part of the Coast Defense system starting in the 1930s, and was used as an internment camp for several hundred residents of Hawai‘i (mostly Japanese, but including others) in 1941–3;
- At the very end of World War II, Sand Island was used as a prisoner-of-war (POW) camp for Italian and Korean military personnel;

- By the 1960s, the federal government had transferred control of the entire island to the state, except for the U.S. Coast Guard installation (which is still located there);
- In the 1970s, the state created a recreational area on the south and southeast shoreline of Sand Island, where military (Coast Defense) structures and infrastructures had once operated;
- Numerous military sites (historic properties) are still extant in this area, which was also the location of a controversial eviction of mostly Hawaiian fishing families in 1980.

2.2.10 Old Oahu Prison & Prostitution in Iwilei

According to Coleman (2012),

> [A]ppropriations for a prison began in . . . 1855. By 1857, O‘ahu Prison was completed for $27,000. Built from coral blocks on a part of Kawa Fishpond in Iwilei, the prison was sometimes referred to as the “Reef” . . . Bonfires were said to have been lit by prisoners as a tribute to Kalākaua in the late 1800s, and were immortalized by an ‘ōlelo no‘eau (poetical saying) “A ma‘amau pinepine ke ahi o Kawa (Fire of consistency is the fire of Kawa; un-wavering fire)” . . .
>
> In 1869, a lighthouse was completed on Kaholaloa Reef at the entrance to Honolulu Harbor; it remained there for many years.

Peter Young’s on-line compendium of Hawaiian history, *Images of Old Hawai‘i,*[5] talks about the “old Oahu prison” and other less savory aspects of Iwilei (i.e., prostitution) in the late nineteenth to early twentieth centuries. The following are excerpts:

> [When it was finished in 1855] . . . The Prison was on a marshy no-man’s land almost completely cut off from the main island by two immense fishponds. The causeway road (initially called “Prison Road,” later “Iwilei Street”) split Kawa Pond into Kawa and Kūwili fishponds.
>
> Sometimes called the “O‘ahu Prison,” “King’s Prison,” “Kawa Prison” or, simply, “The Reef,” it was a coral block fortress built upon coral fill at the end of a coral built road over the coral reefs and mudflats of Iwilei.
>
> In 1886, Mark Twain visited the prison and wrote: “… we presently arrived at a massive coral edifice which I took for a fortress at first, but found out directly that it was the government prison. A soldier at the great gate admitted us without further authority than my countenance, and I supposed he thought he was paying me a handsome compliment when he did so; and so did I until I reflected that the place was a penitentiary.”
>
> The Prison was later relocated to Kalihi (1916) and renamed O‘ahu Jail; this is now known as O‘ahu Community Correctional Facility. (brackets added)

[5] Source: http://imagesofoldhawaii.com/prisoners-pullmans-and-prostitutes/; accessed November, 2023.

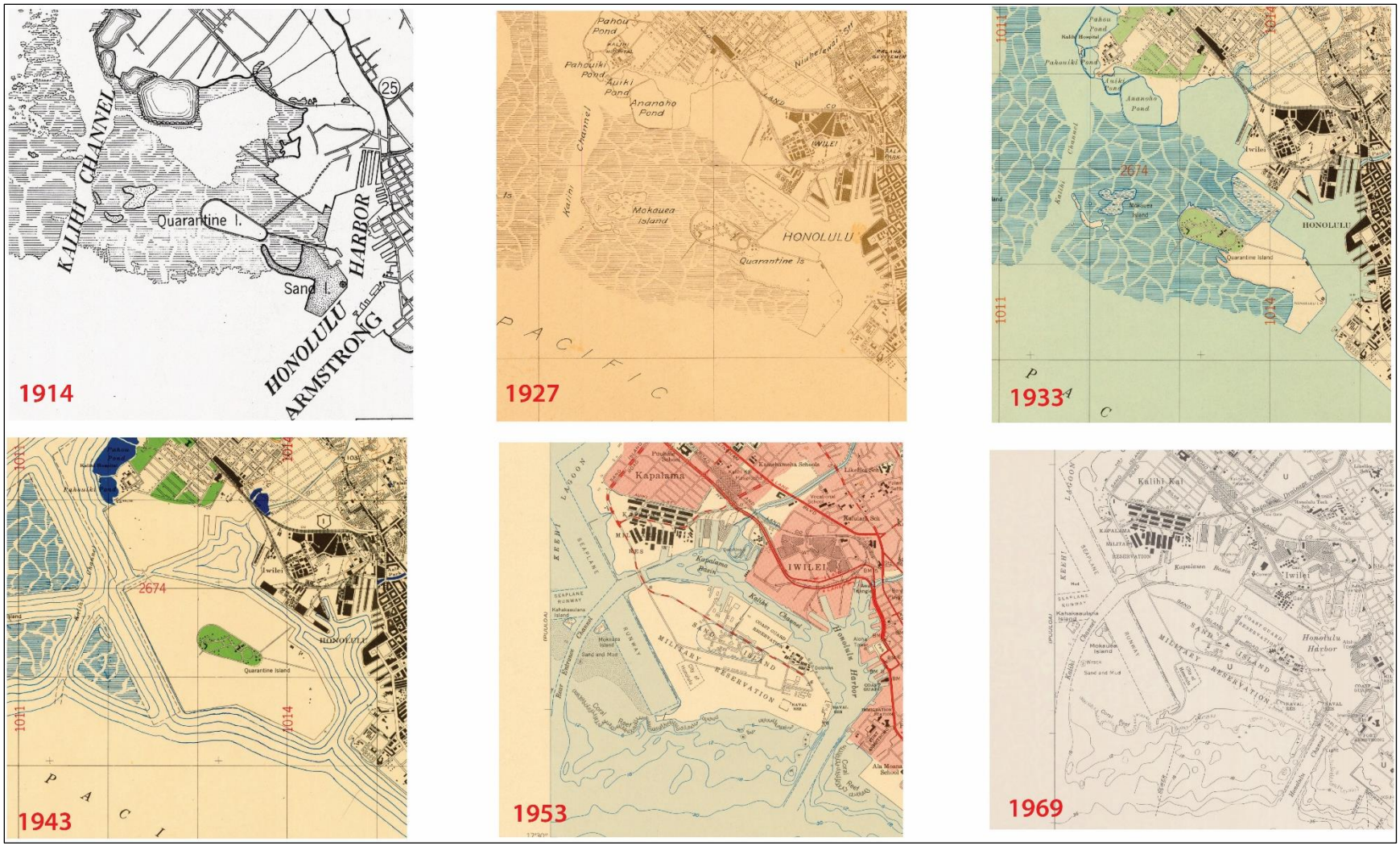


Figure 27. USGS topographic map depictions (1914 to 1969) of Quarantine Island and its development into Sand Island; graphic created by TCP Hawai'i (Monahan 2018c) (base map sources: UH-Mānoa digital map collection; https://evols.library.manoa.hawaii.edu/handle/10524/49265)

Commenting on Iwilei's role in the sex trade, Young (ibid.) writes,

> The . . . business of sex . . . in Iwilei . . . [was] called . . . the 'Iwilei Stockade.'
>
> Inside a high stockade wall were long rows of rooms, each 8×10; there were 225 of them . . . From 4 pm to 2 am, the stockade gates were open . . .
>
> These women did not live at Iwilei; they only went there in the evenings, and then returned to their uptown homes at night. Some had homes of their own, others were servants of families; but all went back to town . . .
>
> Local law enforcement condoned and controlled the activities, under the guise that it was "a public necessity." "The whole of Iwilei makai of the O'ahu Prison has been used for the purpose of prostitution for some time past" [wrote a Special Legislative Committee Report in 1905]
>
> "The High Sheriff of the Territory, through his agents, has ordered all of such women (prostitutes) that are found in different parts of the City, and also in some portions of Iwilei, to move to one particular part as follows: on the makai side of Iwilei rice mill, and on the Ewa side of the Iwilei road" . . .
>
> The Iwilei brothels (or "boogie houses," as they were also called back then) were later forced to relocate to Hotel Street and a few adjoining parts of Chinatown. By 1916, the Iwilei Stockade was shut down. [brackets added]

2.2.11 Oahu Railway and Land Company (OR&L)

Monsarrat's 1897 map (Registered Map 1910) shows several new developments in the western portion of the project area, including the "Oahu Railway" crossing the current project area south of King Street and stables for the Tramway Company at the intersection of Waiakamilo and King streets (Figure 28). The old Houghtailing Street alignment is still extant at this time. Much of lower Kapālama is shown to be in rice and pineapple cultivation. According to Farley and Shideler (2018:29):

> . . . Kalihi-Palama area was considered the western edge of the greater Honolulu urban area. There were still large tracts of agricultural land including rice plantations just east and west of the project area [here they are referring to Waiakamilo Road] and a pineapple plantation just to the west. Pineapples were grown as early as 1892 in Kalihi. A man named Antone Rose imported 1,000 plants to grow on his land, and expressed a desire for a cannery nearby to process his plants . . . The Houghtailing compound is prominent adjacent to the east side of Houghtailing Street.
>
> In 1890, 6 acres of Kuwili I Pond were filled in to build the railway terminal of the OR&L new depot [this is within the Liliha Community Center parcel] . . . just above Kawa Pond. At the intersection of the roads that would become Houghtailing and King streets is a box labeled "Tramway Co. stables," indicating there were other forms of transportation. The houses of two prominent families are labeled, the Houghtailing farmstead at the junction of Houghtailing and School streets and the Dowsett home . . . around Alaneo Street. Kamehameha Boys School campus had expanded with several outbuildings, and the Kamehameha Girls School south of King Street had been completed. Two other

> labeled structures are the "Chinese Hospital" and the "Reform School," both located just southwest of the project area. [brackets added]

Farley and Shideler (2018:29, 35) describe the historical context and significance of the OR&L Railroad Co.:

> By the 1890s, the area was being drastically altered by industrialization. A consortium of businessmen, led by Benjamin Dillingham, created the Oahu Railway and Land Company (OR&L) in February 1889, and constructed the company's Honolulu depot on land between Kuwili I Fishpond and North King Street, just 'Ewa (west) of the intersection of North King Street and Iwilei Road. An 1890 photograph . . . shows the new depot, built on pilings on top of a portion of the newly filled pond. Rocks from ship ballast are piled at the site for additional filling . . . The railroad officially opened on 16 November 1889; at that time, the line extended only between 'Aiea and Honolulu. [brackets added]
>
> In 1899, through an agreement with the Hawaiian Government, the OR&L exchanged land elsewhere in the vicinity of Honolulu Harbor for Kawa Pond, which had recently been filled, and a large portion of the adjacent Kuwili I Pond. Between 1899 and 1901, ongoing Honolulu Harbor improvements created 6,000,000 cubic yards of mud, sand, and loose coral through dredging. Additionally, several thousand cubic yards of hard coral were blasted. This material was used to fill the low areas of the former Kawa and Kuwili I fishponds that were adjacent to the OR&L harbor facilities and terminal. In 1903, subsequent to the reclamation of Kawa Pond (1895-1897) and Kuwili I Pond (1895-1901), the OR&L announced that it had moved and greatly expanded its terminal . . . The new passenger and cargo station was on the former Kuwili I Fishpond, immediately north of lwilei Road. The expansion of the OR&L transportation and cargo routes, with the associated harbor traffic, was one of the primary factors behind the industrial development of the Iwilei area of Honolulu.

Describing early twentieth century changes in the lower Kapālama area, Farley and Shideler (2018:36) state the following:

> In the twentieth century, the coastal and central sections of Kalihi and Kapalama became a suburb of Honolulu. The lower areas of these two ahupua'a were often grouped together as Kalihi-Kapalama or Kalihi-Palama . . .
>
> Between 1897 and 1919 . . . great changes were taking place in Kapalama. The main King Street thoroughfare is crossed by the mauka-makai graded Waiakamilo Street, with housing subdivisions branching from both streets. The ancient 'auwai is not shown on this [1919] map, and it appears Niuhelewai Stream has been straightened and now empties near a pond.

By the 1920s, railroad lines crossed the western portion of the project area south of King Street and linked up in Iwilei with the main lines of the OR&L railroad switching yard. Many of the streets in the area, planned but not yet built (see dashed lines), were still the location of commercial agricultural fields (primarily rice) in the process of being replaced by urbanization. The southern end of the current project area shows it was crossed at this time by a network of tracks from the OR&L.

2.2.12 The Hawaiian Pineapple (Dole Food) Company and Cannery in Iwilei

Coleman (2012) presents a concise summary of the locally famous Dole cannery in Iwilei:

> Between the 1920s and early 1990s, Iwilei was particularly known for its canning industry.
>
> The Hawaiian Pineapple Company was one of the businesses that transported pineapples from its farms in Wahiawā to Iwilei using the railway. It was founded in 1901 by James Dole, a cousin of the president of the Territory of Hawai'i, Sanford B. Dole. [who was a leading member of the U.S. businessmen-led coup d'etat that resulted in the overthrown of the Hawaiian Kingdom government and monarchy]
>
> The company was acquired by Castle & Cook in 1932. They consolidated the Hawaiian Pineapple Company and the Standard Fruit Company and renamed the business the Dole Food Company. The Dole Cannery was located in Iwilei and operated until 1992. In addition to providing substantial jobs for the laboring class, working in the cannery was a common summer occupation for young men and women of Hawai'i for decades. [brackets added]

2.2.13 Kapālama Drainage Canal and Halona Street Bridge

Construction of the drainage canal and Halona Street Bridge that spans it was completed between 1938 and 1939 (Figure 29 to Figure 31). This major infrastructure development changed the lower Kapālama landscape by draining the previously-active floodplain and preparing the western half of the current project area for urban development. Ruzicka (2016:6, 10) explains:

> The Halona Street Bridge, in its present five-span form, was built in 1938 by the City and County of Honolulu under Job No. 44-37. This 1938 construction added two, approximate[ly] 25' spans on each side of the existing center three spans (approximately 16' spans). At the time of this 1938 construction, it carried Vineyard Street across the canal and was called the Vineyard Street Bridge. The original construction date for the older, three span bridge is not known, but it is likely to be ca. 1930, which is the date of construction for the Dillingham Boulevard bridge, about one mile downstream from the Halona Street Bridge. The Dillingham Boulevard Bridge was built about eight years before the Kapalama Drainage Canal was built (1938). The canal banks at Dillingham are earth and not stabilized with retaining walls, as are the banks at Halona Street. It appears that the 1938 canal was built under the Dillingham Bridge without disturbing it. At Halona Street (Vineyard) in 1938 when the canal was built, the existing 3 span bridge was lengthened with two additional spans to cross the canal between its newly built lava rock retaining walls. The stabilization of the banks of the canal using the lava rock retaining walls was extended downstream to the King Street Bridge (1938).
>
> The Kapalama Drainage Canal was completed in February 1939 after about a year of construction by the Hawaiian Contracting Company. Planning for the canal dates to the early 1920s when the potential commercial value of the low-lying land of the Kapalama area was recognized. Beginning in 1924, dredging spoils

from Honolulu Harbor were used to fill about 11 acres of a 58-acre section makai of Vineyard Street that had been condemned by the [Territorial] Board of Health as unsanitary. Spoils from the 1925-26 dredging of the Kapalama Basin were used to bring the remaining acreage up to grade level. Along with this filling project, the City and County of Honolulu formed a drainage plan to prevent heavy rains from inundating the new land. This design combined the two streams of the area, Niuhelewai and Kapalama in to the Kapalama Drainage Canal, that was ultimately routed along the approximate contour of Niuhelewai Stream.

The plans for the canal languished until late 1937 or early 1938, when construction got underway. The canal and stonework was accomplished under a Works Progress Administration (WPA) project that built the Kapalama Drainage Canal. A WPA grant of $310,000 partially funded the overall $670,000 cost of the canal. Most of the balance was funded by bond sales by the City and County of Honolulu and from the flood control fund of the city and county. [brackets added]



Figure 28. 1890 photograph of the OR&L Depot built on the filled-in Kūwili Fishpond (image source: Scott 1968:858)



Figure 29. Kapālama Drainage Canal from N. King Street facing makai in 1938 (source: Bishop Museum Archives SP20711,1)



Figure 30. Kapālama Drainage Canal from Dillingham Boulevard facing mauka in 1938 (source: Bishop Museum Archives SP20711,2)

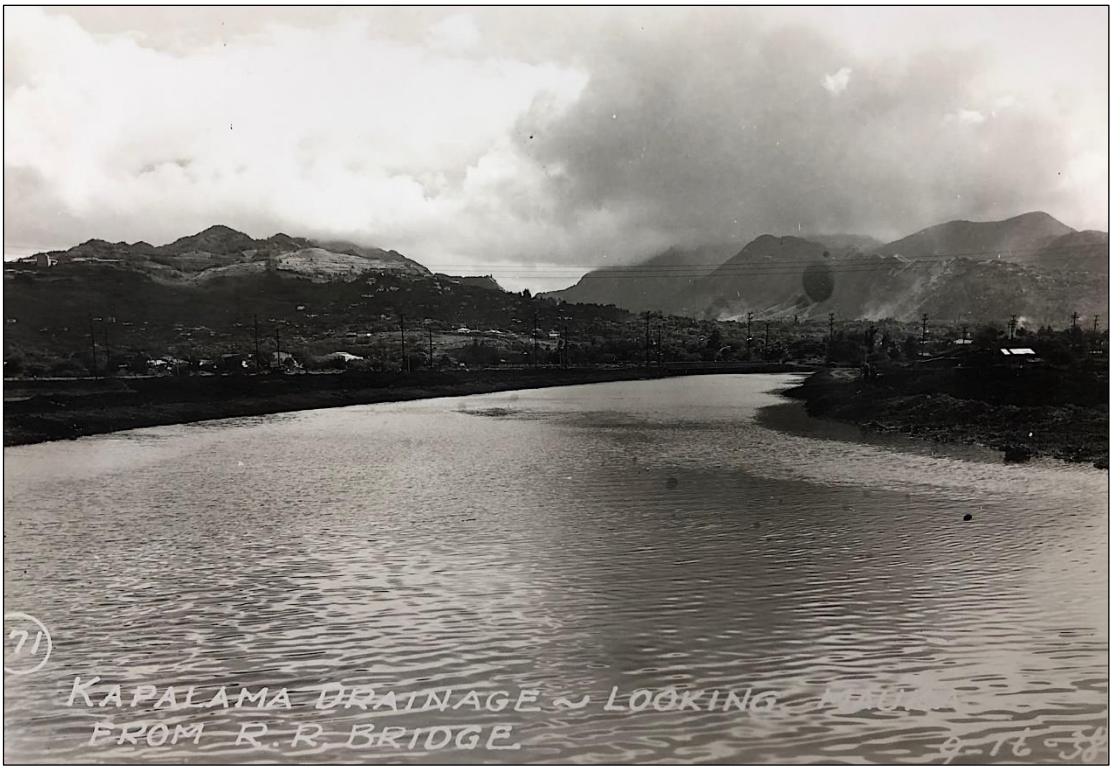


Figure 31. Kapālama Drainage Canal from current Nimitz Highway (but then OR&L bridge) facing mauka in 1938 (source: Bishop Museum Archives SP20711, 3)

2.3 Other Historical Maps and Aerial Images

This section includes a selection of historical maps including the current study area. These maps generally illustrate aspects of the nineteenth and twentieth century cultural landscape in and around the project area. Wherever relevant, features on these maps are cross-referenced to topics discussed in the previous section (see Section 2.1 – Hawaiian Cultural Landscape, and Section 2.2 – Historic Period).

Figure 32, a portion of 1881 Covington map, shows early versions of N. King Street in the project area area as well as Liliha Street, which connected N. King and Judd streets at this time. The old Prison is depicted in Iwilei at the intersection of today's Kuwili St. and Iwilei Rd. The area around the mouth of Kapālama Stream is (incorrectly) labeled Kuwili, which is at odds with other historical maps and references that place Kuwili and its fishpond further to the east in Iwilei.

Figure 33, a portion of 1885 map by Brown, illustrates what was once a network of ʻauwai (irrigation ditch) and rock walls in and near the project area; two large fishponds (Kūwili and Kawa) are shown in the Nuʻuanu end of the project-area environs; collectively, these features—along with a seawall fronting the Kapālama shoreline—represent a highly productive agricultural system that was likely, at this time, still supplying Honolulu town with food staples. These maps also show the old Prison located between the two main fishponds. Several walled features labeled Kiʻo Pua are depicted around the top of Kūwili Fishpond. The Hawaiian translation for these features suggests they were spawning ponds for hatchlings (baby fish or pua). Dozens of LCAs in the Kapālama floodplain, and relatively few houses in that area, attest to its agricultural productivity. The eastern side of this image, heading towards Nuʻuanu Stream and Honolulu, depicts still more agricultural plots and ʻauwai feeding down into the fishponds, but also numerous houses, particularly along the old N. King Street alignment, before it was straightened into its current orientation.

Figure 34, a portion of 1886 map by Brown, is a detailed depiction of the area east of Liliha Street and north of N. King Street. This map depicts dozens of LCA parcels, many with houses sites, and part of the small inland pond (on the north side of N. King Street). Some commercial buildings are labeled along the eastern half of N. King Street in this depiction. This map also includes the names and locations of several ʻili, including (using the spellings provided on the map) Aala, Koiuiu (depicted as two, discontinuous ["lele"] areas), Kaliu, Nini (in the area of the small inland pond), Kamakela and Kauluwela.

Figure 35 is a portion of 1887 map by Wall showing Liliha and King streets. *Note, the labeling of the large structure near just north of King Street ("R. Keliikolani")—which is in the southwest corner of the current Mayor Wright Homes property—is incorrect and should read Queen Liliʻuokalani*. Historical information about the residence of the last ruling monarch of the Kingdom of Hawaiʻi has been provided in a previous section (see Section 2.2.3 - Royal Residences of Lower Nuʻuanu and Kapālama, above). An important wahi pana, Kunawai Spring, is depicted mauka of the project area, just west of Liliha Street. The old Prison is shown just south of Kūwili Fishpond. Kawa Fishpond appears to have been possibly filled in and disused as a fishpond by this time. Other notable historic structures, including the Reform School and St. Louis college are also shown.

Figure 36, a portion of 1889 map, shows the first evidence of the OR&L railway line through the south of the project area.

Figure 37, a portion of 1893 Wall map, shows the Queen's residential compound (in the southwest corner of the current Mayor Wright Homes property) correctly labeled "Lili'uokalani." Note, also, an unnamed spring mauka of the project area and the extensive cross-hatching in Kapālama at and below Kunawai Spring (below Judd Street) extending into the current project area; and, around Nu'uanu Stream to the east that appears to depict lo'i kalo and/or other type/s of cultivated fields. The OR&L Depot building is also depicted in the filled in area of the previous Kūwili Fishpond. A Chinese Theater is depicted near the southeast portion of the current project area, just west of Nu'uanu Stream.

Figure 38, an 1897 map by Monsarrat, shows many Hawaiian place names (presumably 'ili) in the project-area environs, including (using the spellings provided on the map) Iwilei, Hauhaukoi, Kauluwela, Kamakela, Aala, Koiuiu and Kuwili. A new (not seen on other historic maps) pond mauka of School Street ("Waikahalulu"), northeast of the project area, is also depicted. The extensive advent of rice cultivation throughout lower Kapālama is also depicted.

Figure 39, a portion of 1901 map by Monsarrat, shows early neighborhoods and blocks with Hawaiian place names and formalization of many streets. Note that Queen Lili'uokalani's place is no longer depicted on this map. Newspaper articles in The Pacific Commercial Advertiser from 1902 list many building permits for 1- and 2-story wooden structures. In 1900, the Evening Bulletin listed many building permits for wooden structures for Chinese names near Pua Lane and King Street.

Figure 40, a portion of 1906 Donn map depicting major land uses on O'ahu, shows the wetlands of Kapālama in the western portion of the project-area environs.

Figure 41, a portion of 1920 map by Monsarrat, shows an early (perhaps the first) depiction of the location of "Palama Settlement" south of King Street, before it eventually moved to its current location between the H-1 highway and Vineyard Street. By this time, the western half of the project-area environs and makai of this was still almost entirely dedicated to commercial agricultural pursuits, including rice cultivation. The eastern project-area environs is heavily developed with many historic buildings and facilities depicted (e.g., the OR&L Depot and railways, Kaumakapili Church, the Palama Fire Station, multiple schools including St. Louis College and an early version of 'A'ala Park). Buildings and facilities in and adjacent to Iwilei include the "Canneries," referring to Dole's pineapple-processing facilities, the Gas Works and other industrial operations (e.g., "Fertilizer Works"). The Niuhelewai Stream (another name for the lower reaches of Kapālama Stream) is shown on this map spelled (incorrectly) Nuhelewai. This drainage would eventually be transformed (in somewhat different orientation) into the Kapālama Drainage Canal by circa 1940. Plans for Dillingham Boulevard (denoted as a dashed line makai of N. King Street) are evident on this map.

Figure 42, a portion of 1933 topographic map, shows changes to the drainage southwest of the project area, where multiple ponds are depicted. By the late 1930s, these had been drained and filled as part of the Kapālama Drainage Canal project. The agricultural lands of lower Kapālama, by this time, have been laid out with a proposed street grid, anticipating the eventual demise of urban agriculture in the project area. It appears that this actual, widespread disappearance of agriculture in this area was not complete, however, until the 1960s. By circa 1933, Iwilei has also

become a center of industrial activities and facilities. Major changes to what would become the modern waterfront, including Sand Island, are in evidence by this time.

Figure 43, a portion of 1943 topographic map, shows the completed Kapālama Drainage Canal. Stream drainage changes upstream and mauka of the project area were made by this time to divert water into the Niuhelewai Stream. The current perimeter shape of the largely artificially-created Sand Island is apparent by this time. An early version of Nimitz Highway, soiuth of the project area, was completed in the 1940s.

Figure 44, a portion of 1953 topographic map, shows the completed Kapālama Drainage Canal, and a precursor facility (labeled Vocational school, known formally as the Honolulu Technical School) to the current Honolulu Community College, which was established circa 1964. Both the Nimitz Highway and Dillingham Boulevard are depicted as completed roadways by this time.

Figure 45, a portion of 1969 topographic map, shows the completion of the H-1 highway and the removal of much of the OR&L railway tracks, including the looped element that served as a turn-around down and through Iwilei before it headed back west. By this time, as well, the current (triangle-shaped) ʻAʻala Park is depicted (i.e., expanded from its original smaller footprint).

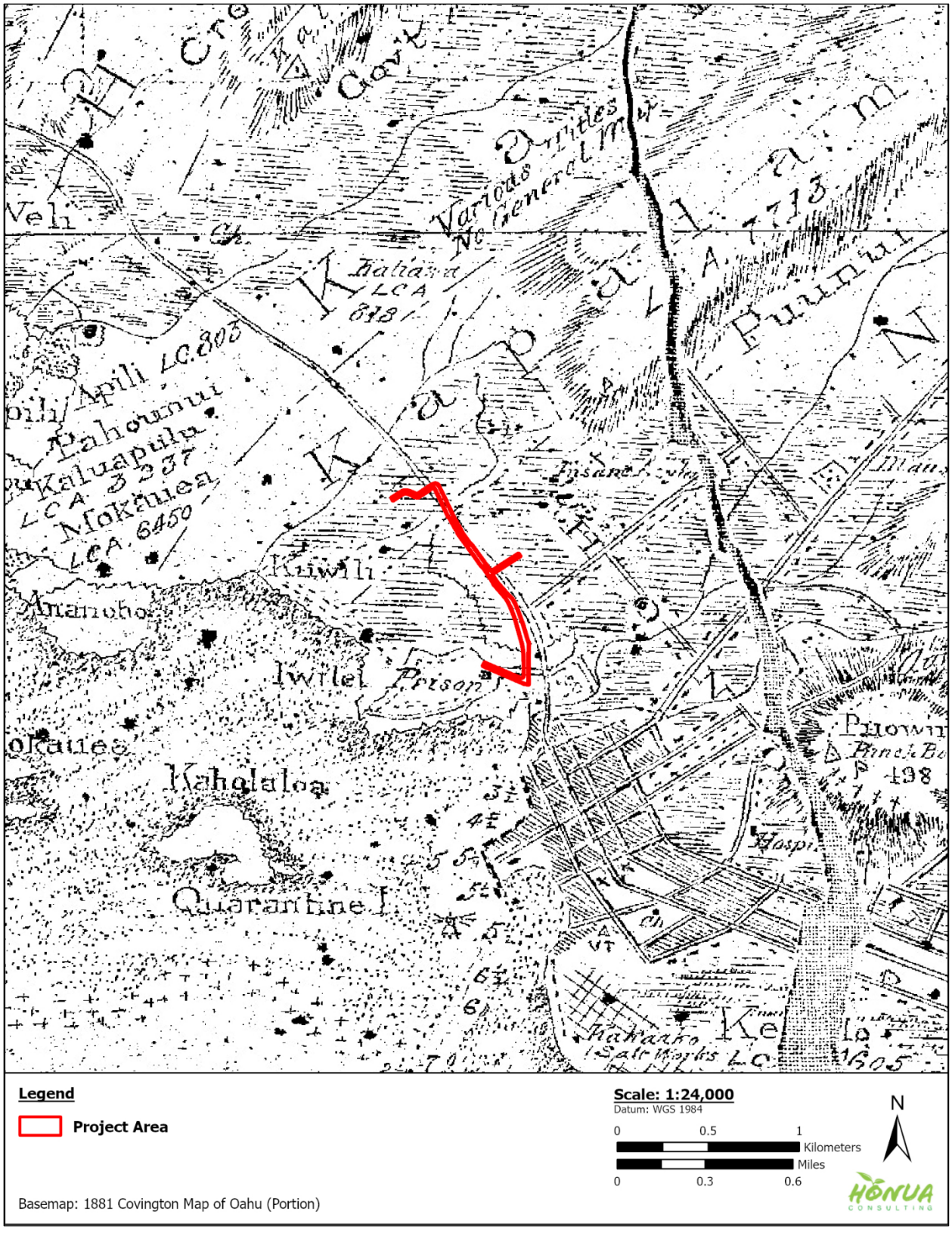
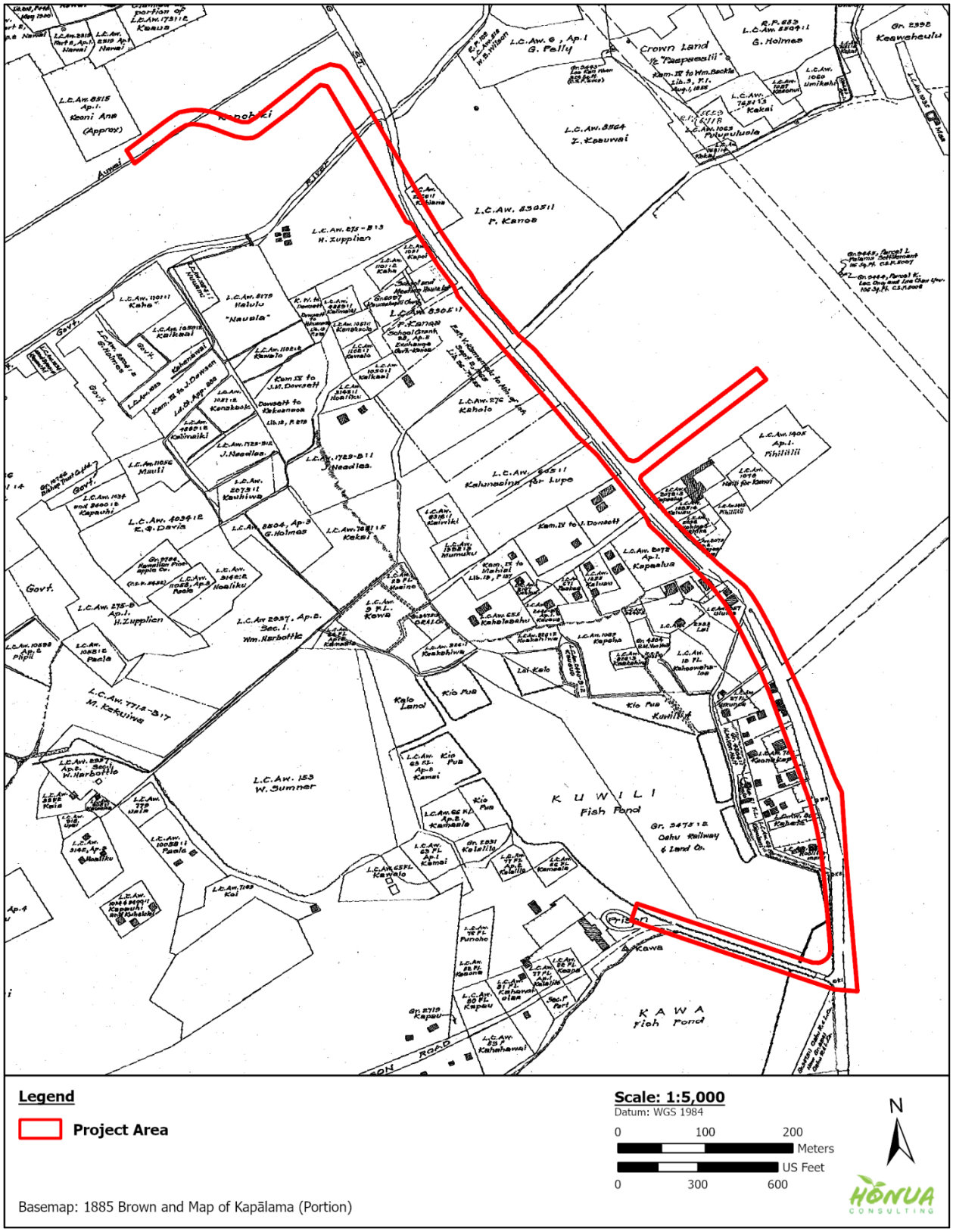


Figure 32. Portion of 1881 Covington map showing project-area location


Legend
Project Area
Scale: 1:5,000
Datum: WGS 1984
0 100 200
Meters
US Feet
0 300 600
N
Basemap: 1885 Brown and Map of Kapālama (Portion)
K U W I L I
Fish Pond
K A W A
Fish Pond
L.C.Aw. 153
W. Sumner
L.C.Aw. 8390:11
P. Kanoa
L.C.Aw. 8564
I. Kauwai
Crown Land
"Paapeeailii"
G. Holmes
Govt.
Govt.
Govt.

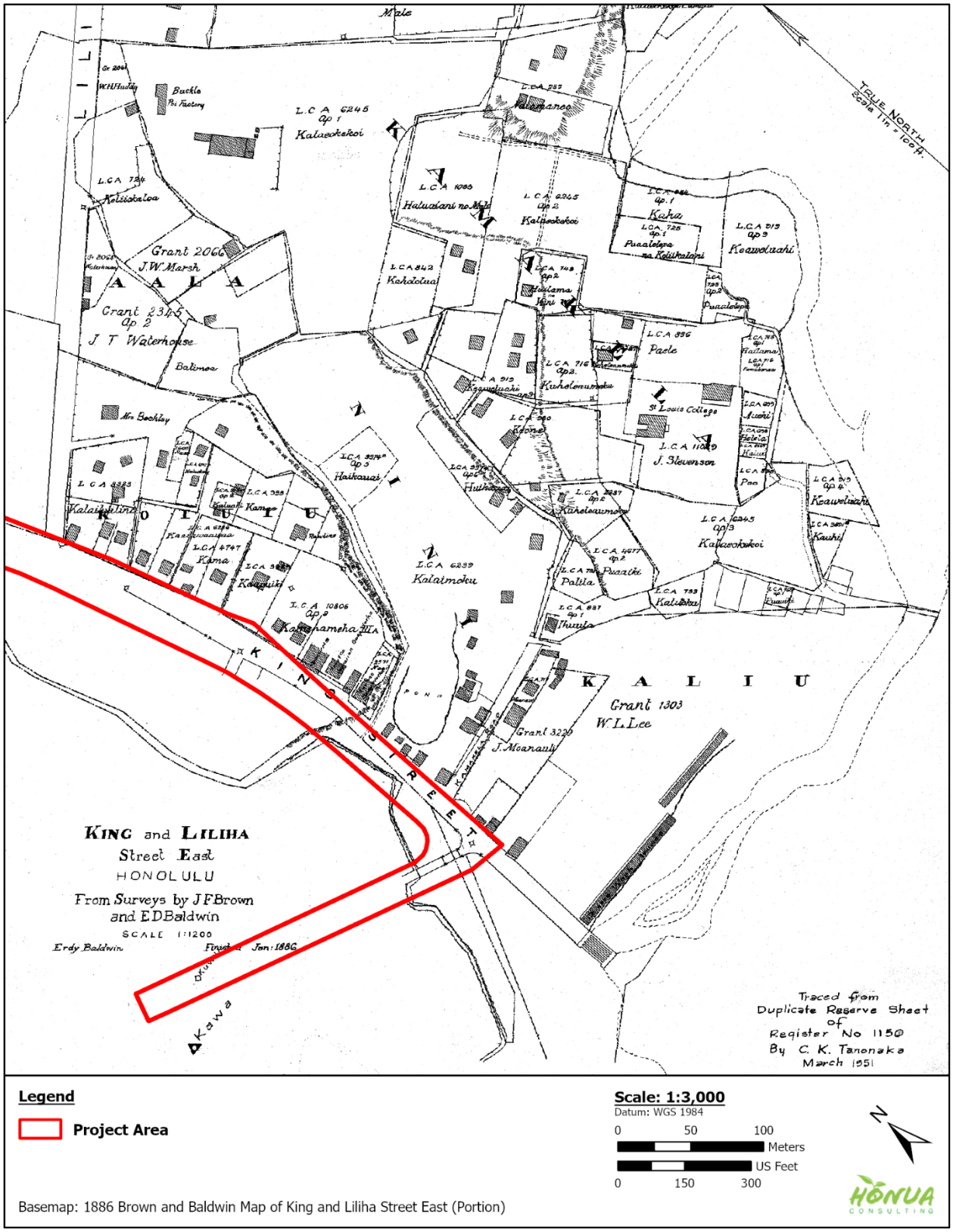


Figure 34. Portion of 1886 Brown and Baldwin map of Lower Nu‘uanu (Registered Map 1150) showing project-area location

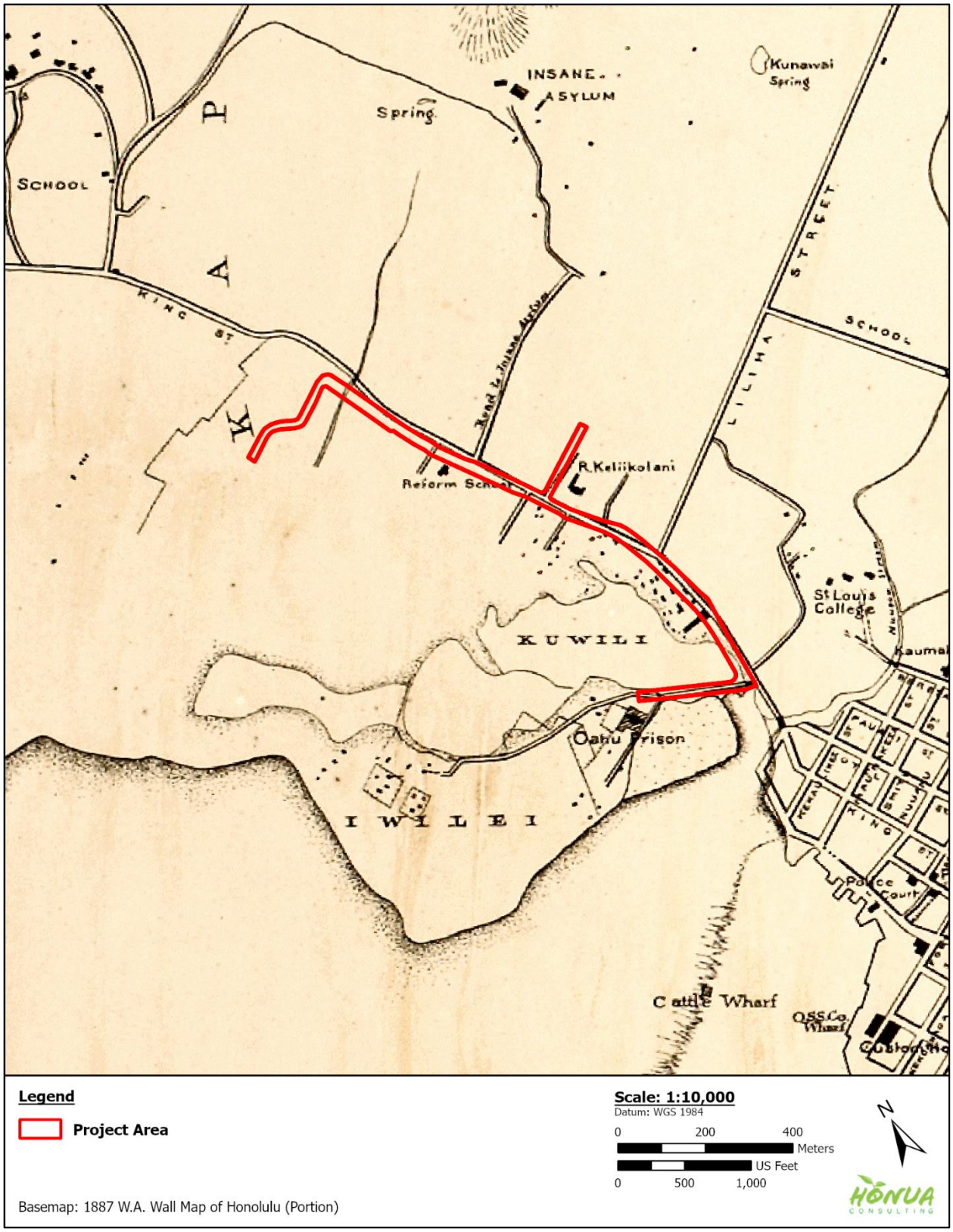


Figure 35. Portion of 1887 Wall map showing project-area location

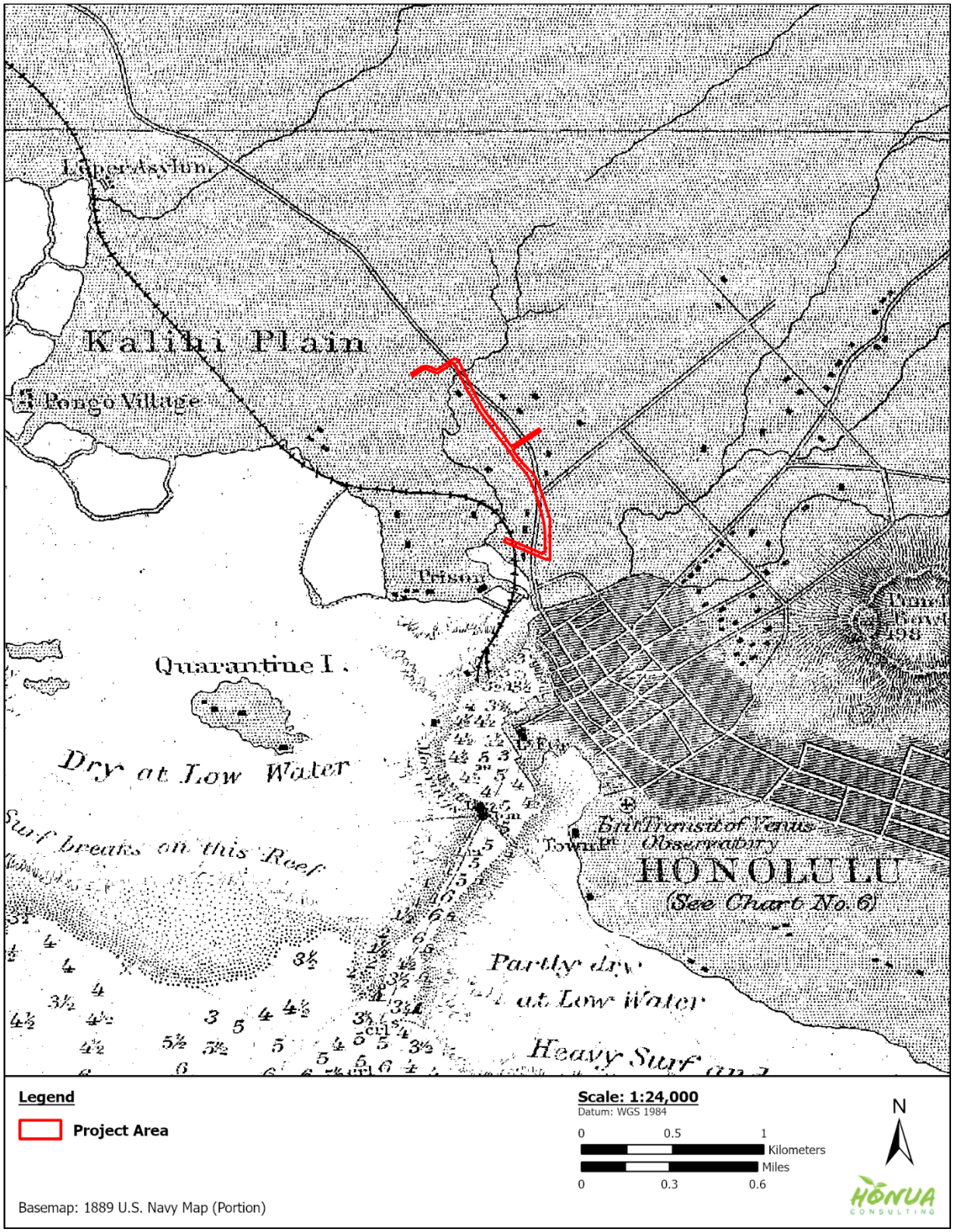


Figure 36. Portion of 1889 U.S. Navy map (Registered Map 1505) showing project-area location

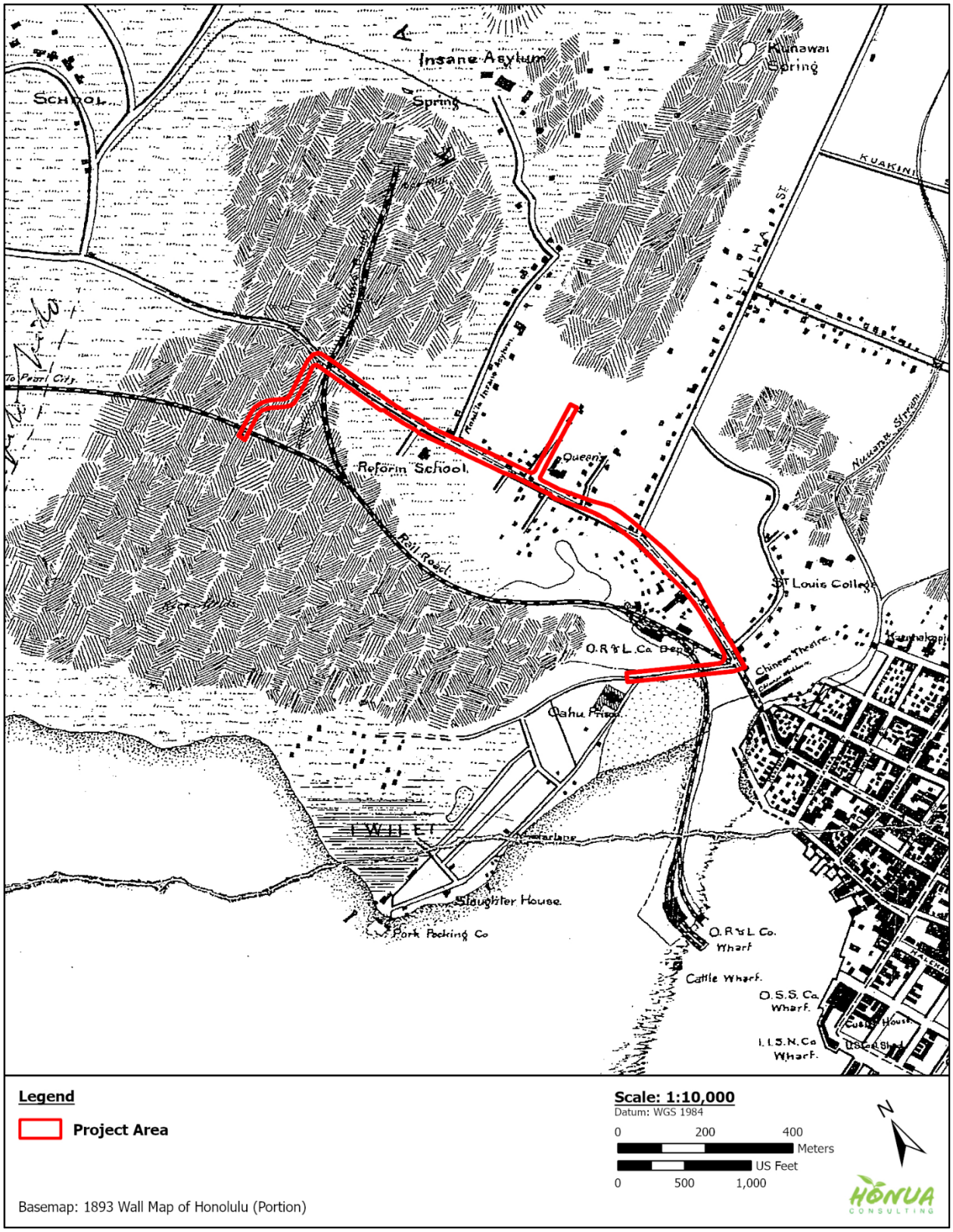


Figure 37. Portion of 1893 Wall map (Registered Map 1690) showing project-area location

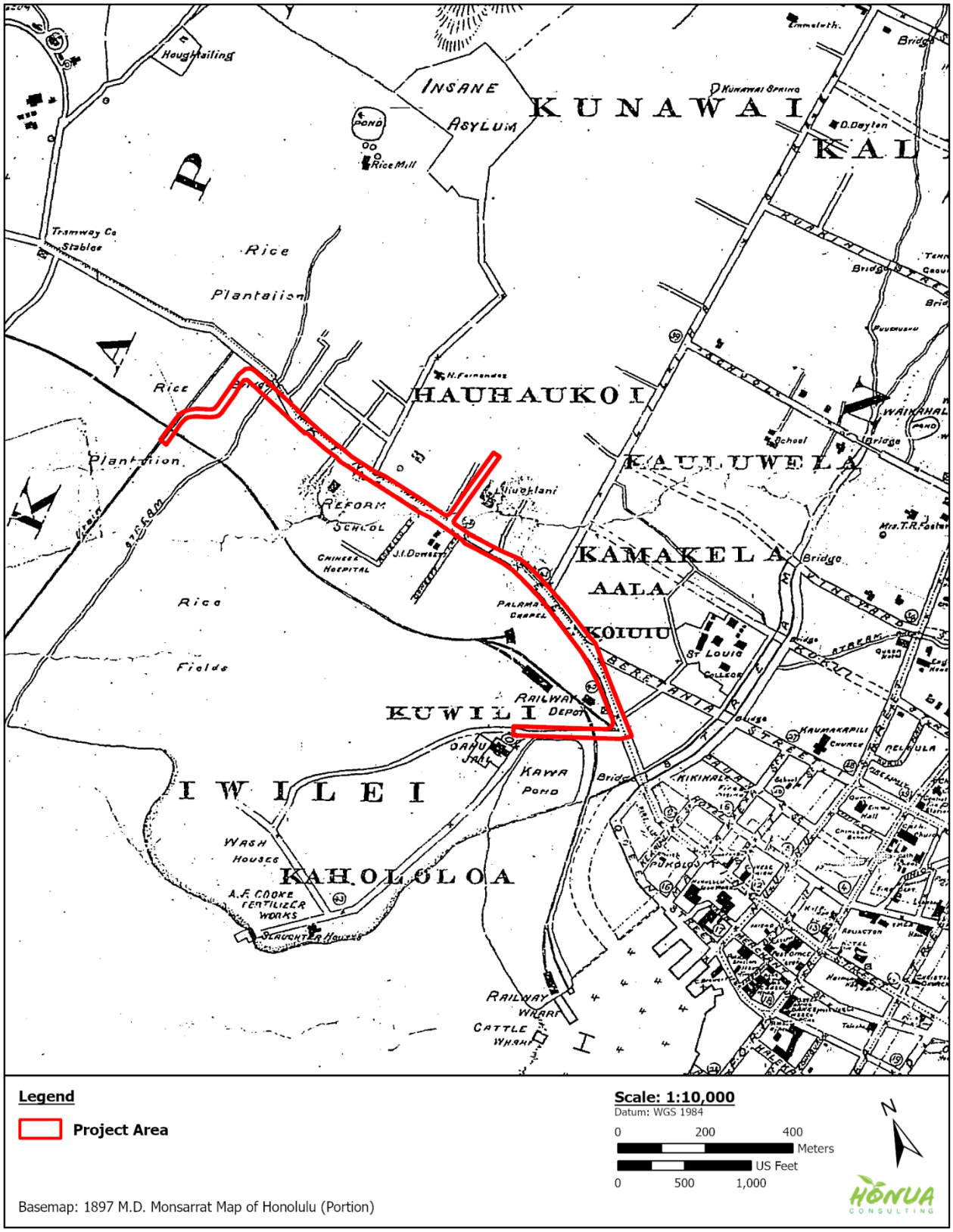


Figure 38. Portion of 1897 Monsarrat map (Registered Map 1910) showing project-area location

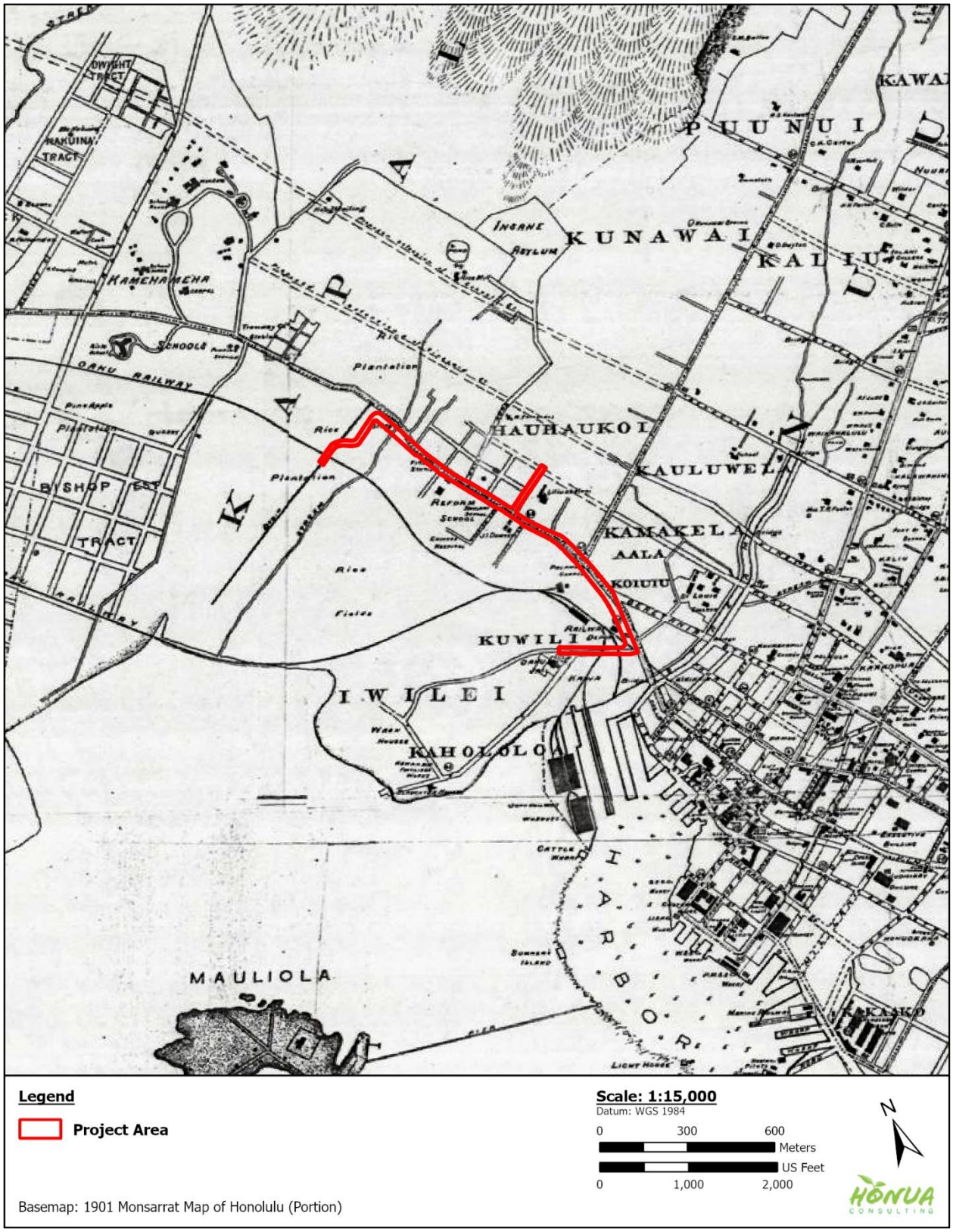


Figure 39. Portion of 1901 Monsarrat map (Registered Map 1901) showing project-area location

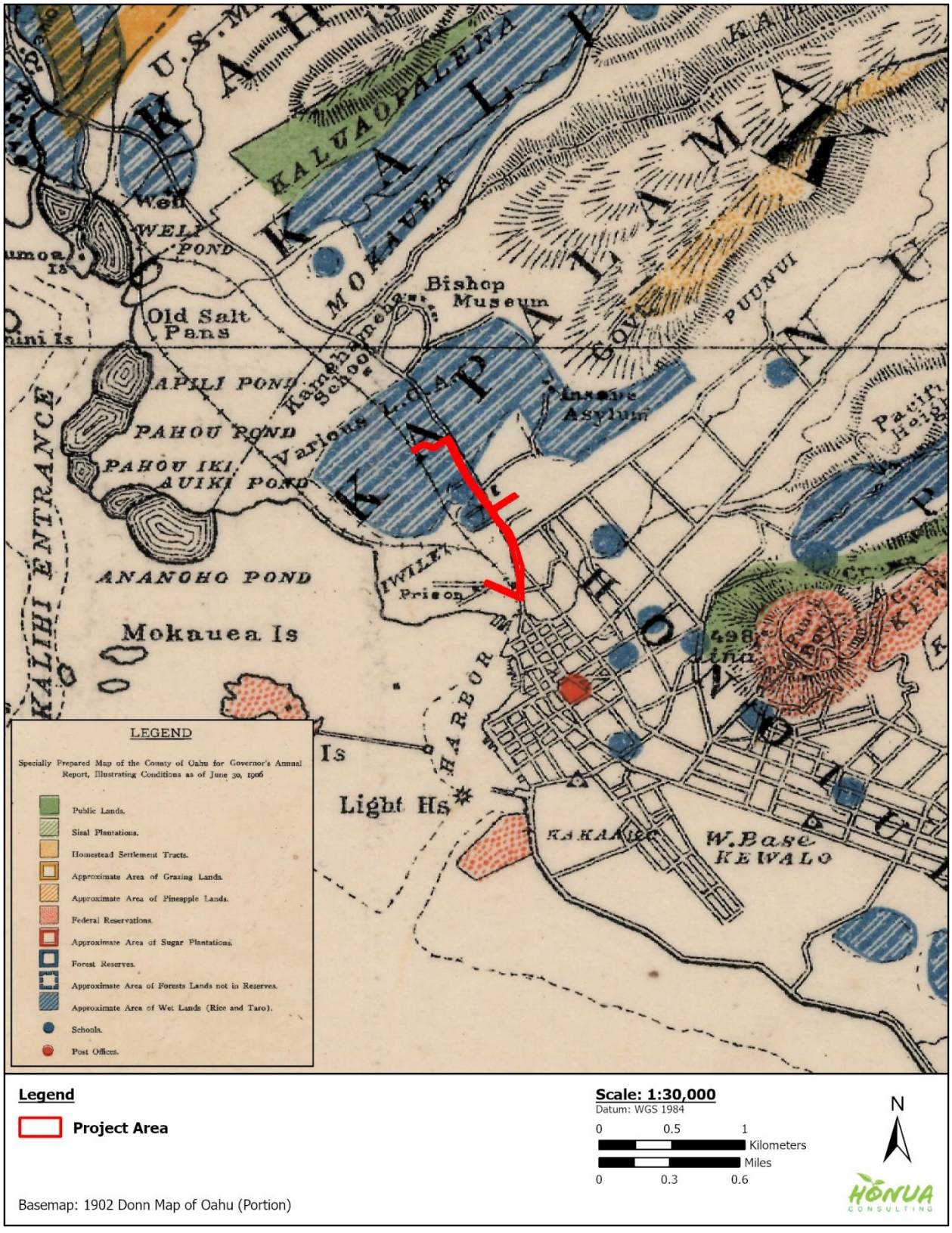


Figure 40. Portion of 1906 Donn map with historic land use showing project-area location

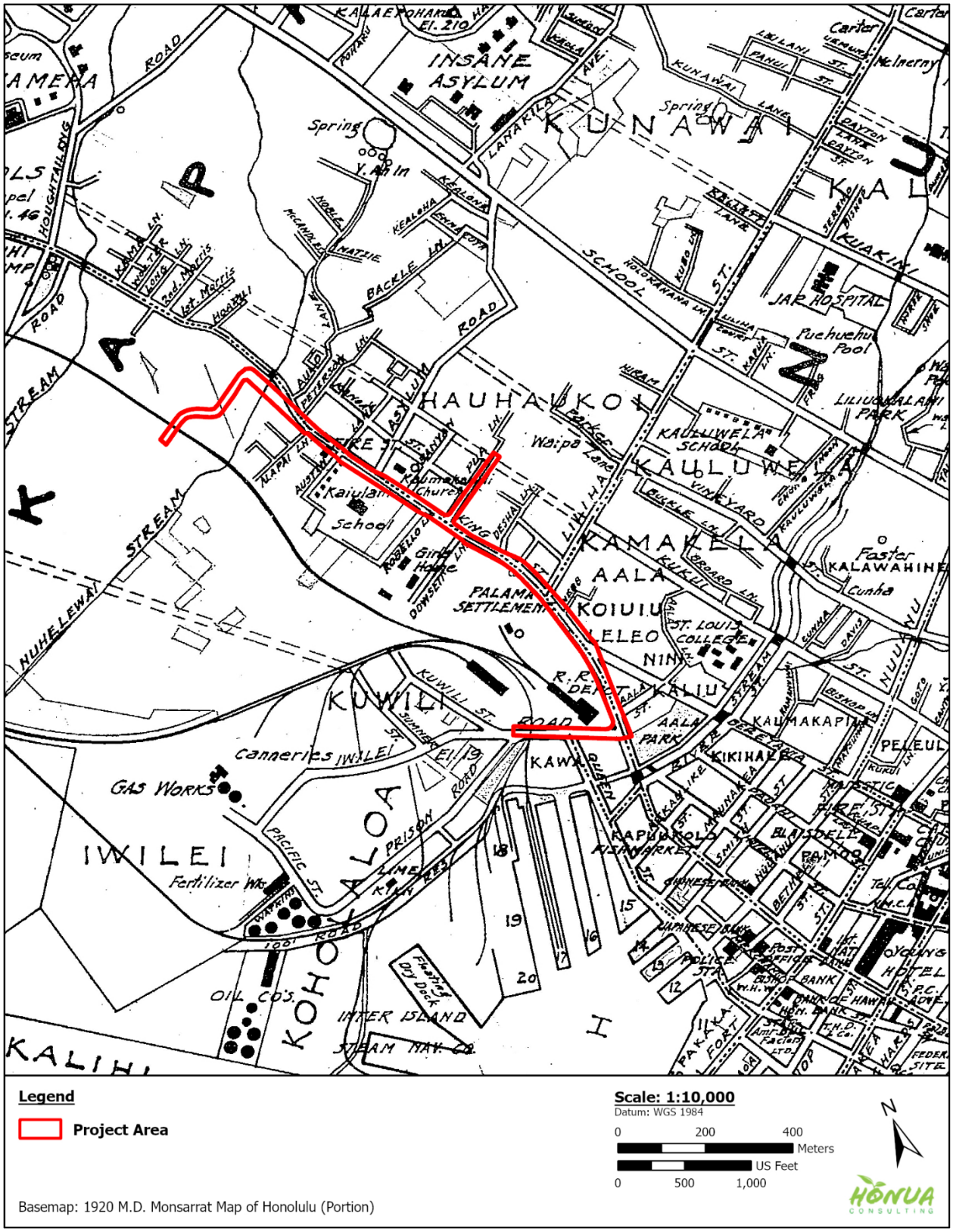


Figure 41. Portion of 1920 Monsarrat map showing project-area location

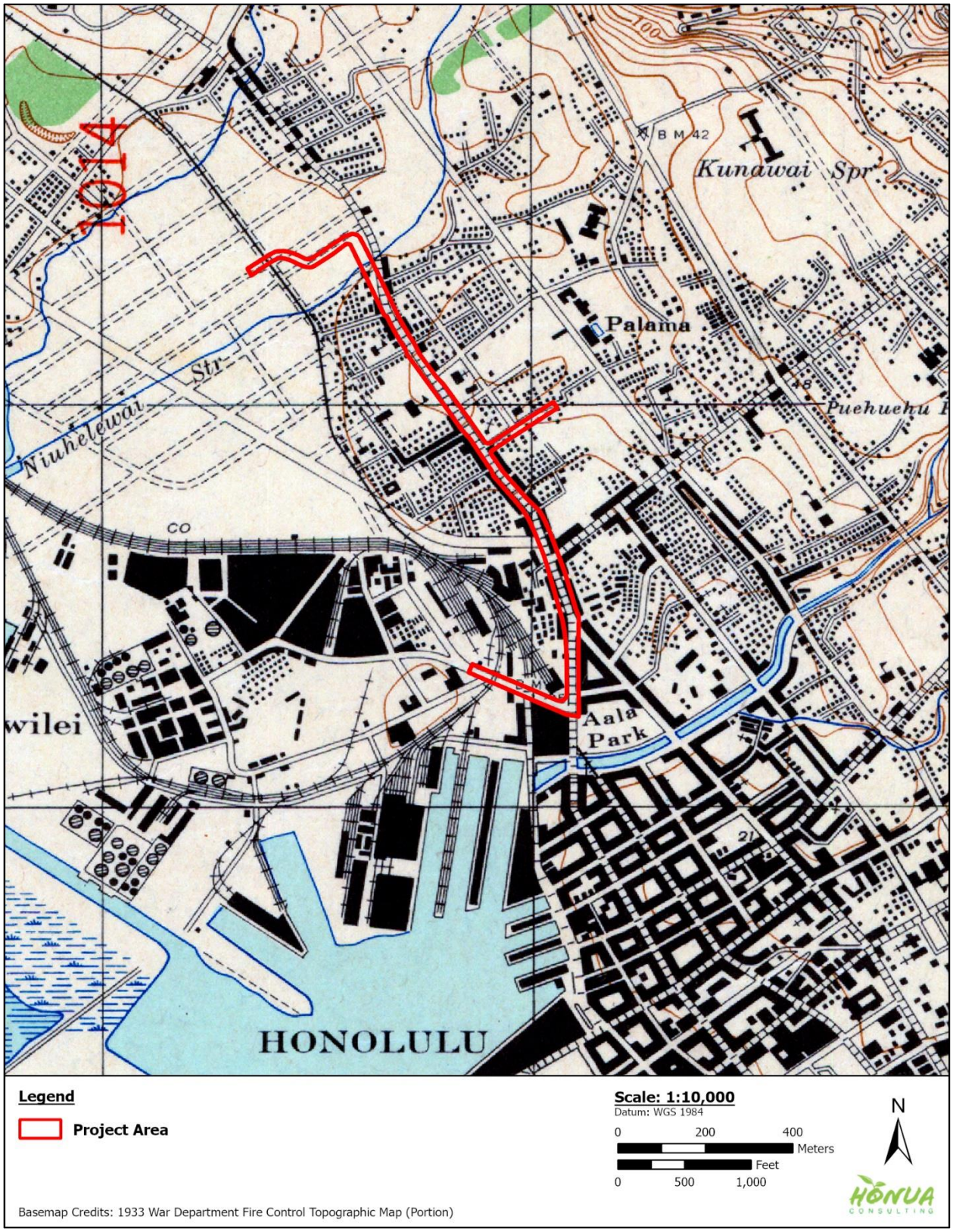


Figure 42. Portion of 1933 War Department Fire Control topographic map showing project-area location

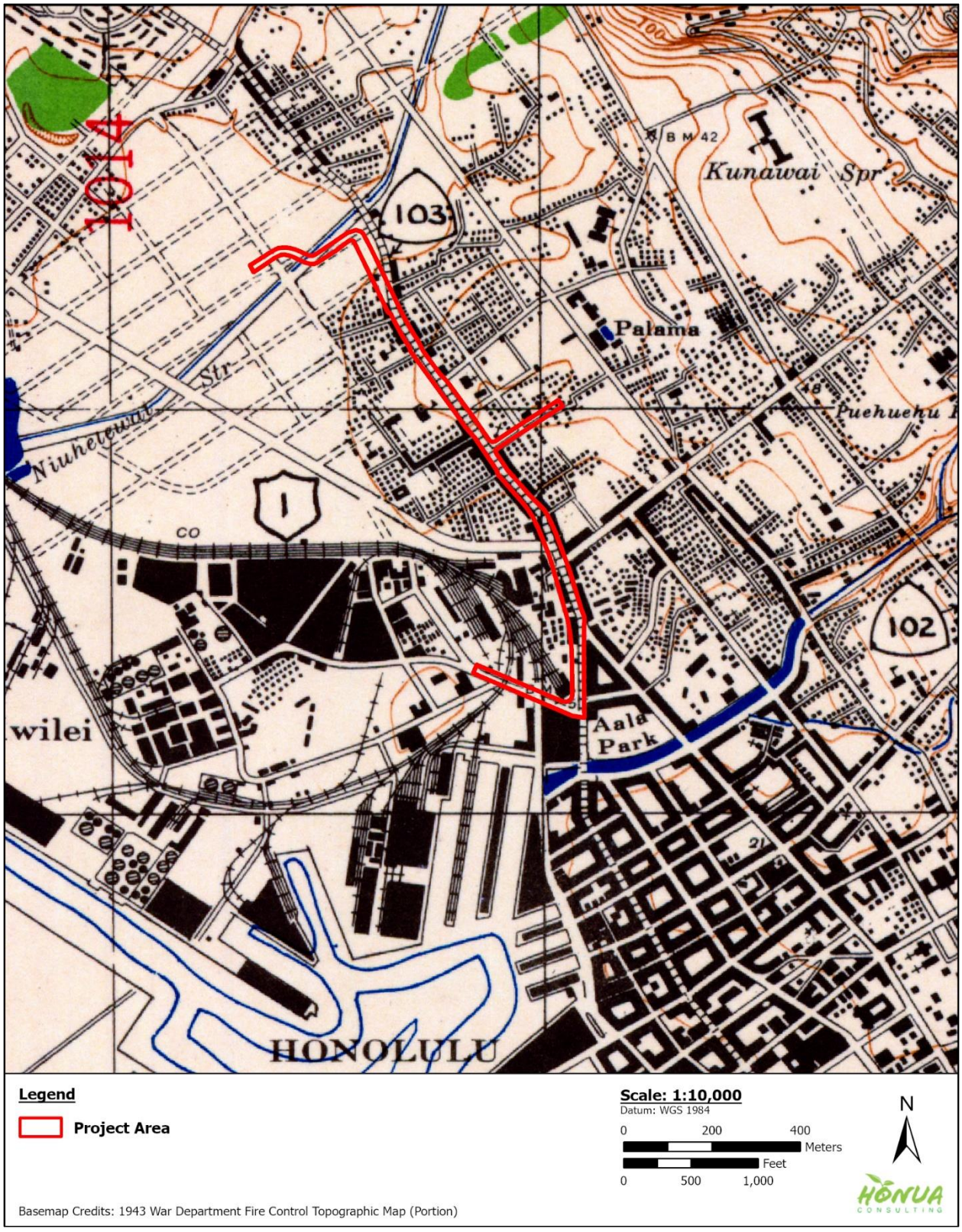


Figure 43. Portion of 1943 War Department Fire Control topographic map showing project-area location

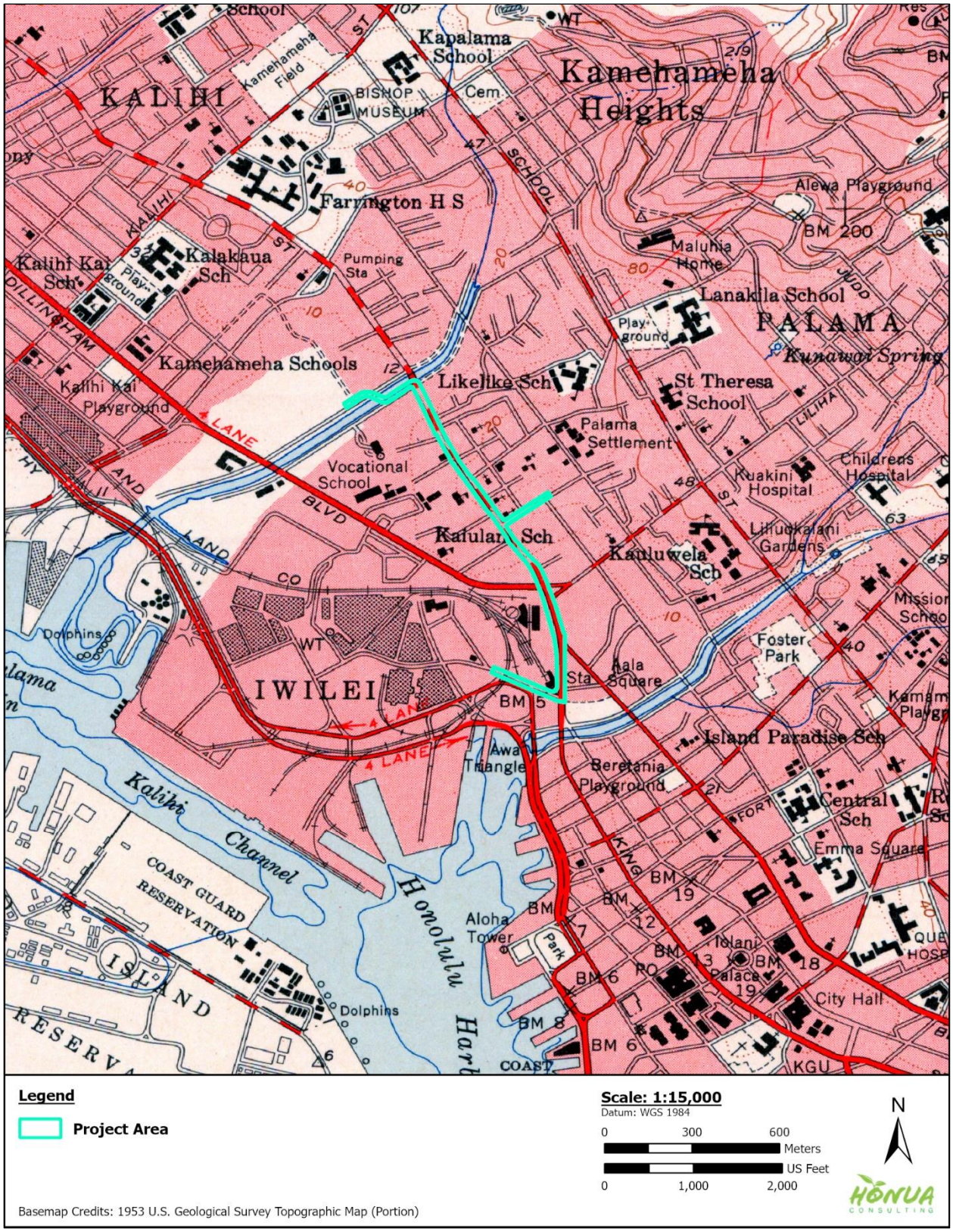


Figure 44. Portion of 1953 USGS topographic map (Honolulu quadrangle) showing project-area location

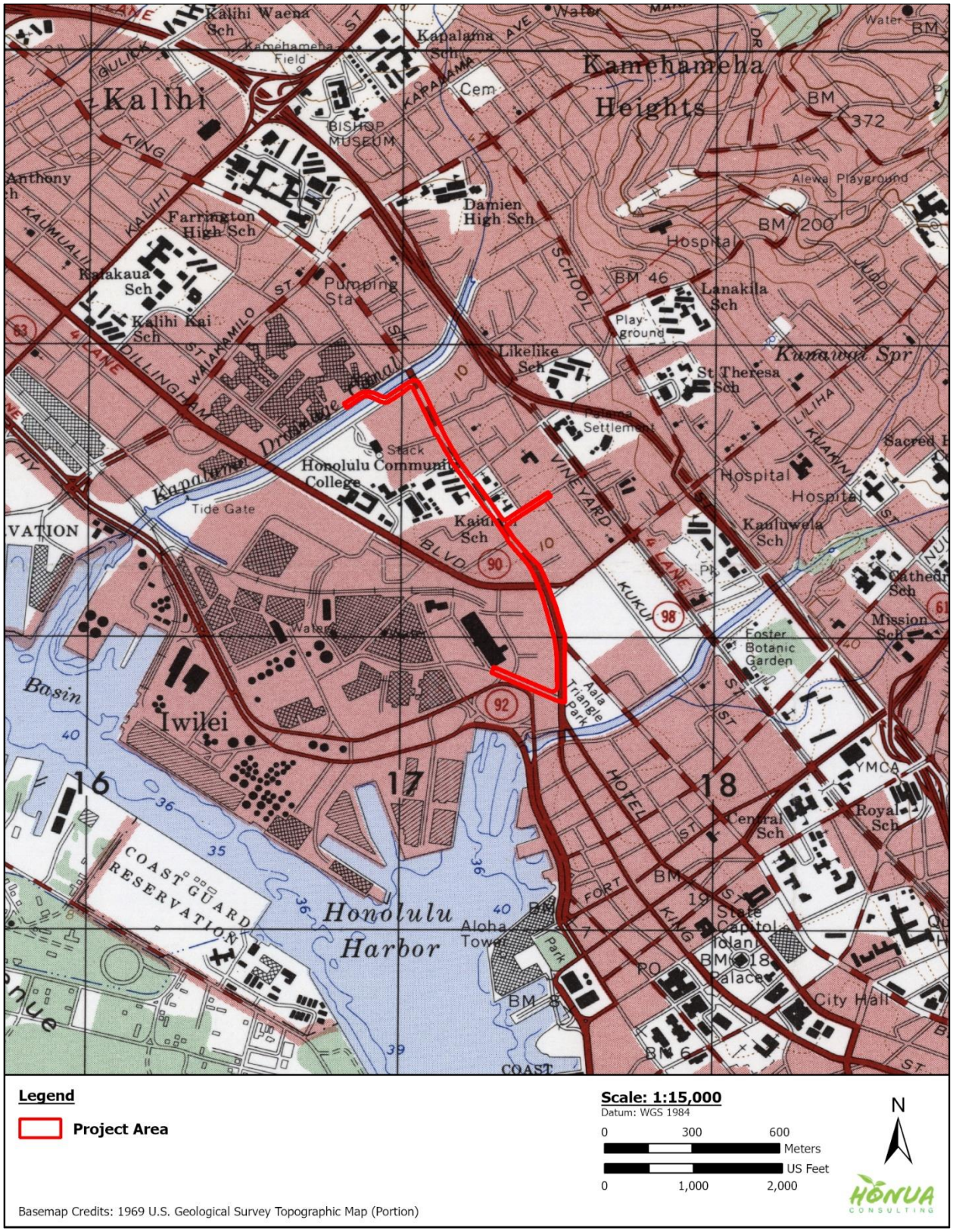


Figure 45. Portion of 1969 USGS topographic map (Honolulu quadrangle) showing project-area location

Section 3 Archaeological Context

This section summarizes relevant previous archaeological and other cultural-resource studies to reconstruct human use and modification of the land in and near the project area from pre-Contact times to the historic period. The main purpose is to develop predictive data about the types and distribution of historic properties we expected to encounter during the field inspection; and to assist interpretation of any new findings. This section may be expanded if a formal archaeological inventory survey (AIS) or archaeological monitoring is required.

Table 4 and Figure 46 and Figure 47 summarize and depict the location and results of previous archaeological studies in and near the project area. For the purposes of this study, this discussion of previous work and results is limited to a radius of approximately 0.5 miles around the project area.

3.1 Overview

This section is subdivided into three parts:

1. General observations and results related to the discovery of traditional Hawaiian sites (Section 3.2);
2. General observations and results related to the discovery of historic-period sites (Section 3.3); and,
3. Results of previous archaeological studies that have included portions of the current project area (Section 3.4).

3.2 Traditional Hawaiian Sites

In general, due to the urbanization of the project area for a century (or more in the eastern part), there are no above-ground (surface) archaeological remains of traditional Hawaiian sites. Traditional Hawaiian sites that have been identified are exclusively located in subsurface context and have mostly been discovered during archaeological monitoring of construction work and also proactively during archaeological inventory surveys in advance of proposed ground disturbance projects.

The main types of subsurface, traditional Hawaiian sites identified in the project-area environs include:

1. Human burials and isolated or fragmentary human skeletal remains: in 2016, at the American Savings Bank property, a cluster of at least seven individuals, along with some pig and dog bones possibly representing buried animals associated with the human burials, was identified by Belluomini et al. (2016) within an LCA (731 to Palile); the age of this site (State Inventory of Historic Places [SIHP] # 50-80-14-07933) was interpreted as pre-Contact to post-Contact (Historic Period);
2. Fishpond sediments from previously utilized ponds that were drained and filled many years ago for urbanization; two such sites, Kuwili Fishpond (SIHP # 50-80-14-05368) and Kawa Fishpond (SIHP # 50-80-14-05966), are located in Iwilei (Athens and Ward 1997; McGerty et al. 1997; Hammatt et al. 2008; Monahan 2019);

3. Anthropogenic wetland sediments interpreted as traditional Hawaiian lo‘i kalo (wetland taro agriculture) areas: (a) several studies (Hammatt 2013; Medina et al. 2013; Pammer and McDermott 2015) have documented the presence of a laterally-extensive, subsurface soil deposit interpreted as representing former wetlands on either side of Kapālama Stream that may have been used for traditional Hawaiian agriculture during late pre-Contact to early historic-period times (SIHP # 50-80-14-07426); Monahan (2018a) identified a similar subsurface site (SIHP # 50-80-14-08034) on the grounds of Mayor Wright Homes, interpreted as probable remnants of traditional Hawaiian lo‘i kalo.

The conspicuous absence of sites consisting of subsurface layers containing traditional Hawaiian artifacts and features likely reflects two main factors: (1) the area was extensively built up and urbanized long before historic-preservation laws and rules were enacted, and (2) much of the project-area environs does seem to have been dominated by lo‘i kalo—i.e., irrigated pond-field agriculture.

3.3 Historic Period Sites

Historic-period sites have been identified in both subsurface and above-ground contexts. The main types of historic-period sites identified in the project-area environs include:

1. Human burials and isolated or fragmentary human skeletal remains: at least two such sites have been identified in the project area: SIHP # 50-80-14-03373 (multiple human burials and additional isolated and fragmentary human skeletal remains in association with historic artifacts interpreted as victims of nineteenth-century epidemics) (Dunn et al. 1991); and SIHP # 50-80-14-04929 (historic-period burial in a coffin found during excavation on Austin Lane interpreted as probably associated with Kaumakapili Church cemetery, which was used from the 1870s to at least 1921) (Jourdane 1994; Hammatt 1995);
2. Other, varied subsurface discoveries including fill layers (e.g., SIHP # 50-80-14-07515 [Medina et al. 2013]), foundation structures, rock walls, burn pits and trash deposits (e.g., SIHP # 50-80-14-07506 [Hammatt 2013]), old infrastructure, and remnants of a historic-period trolley attributed to the Honolulu Rapid Transit & Land Company (HRT&L) (SIHP # 50-80-14-05942) (West et al. 2002);
3. Architectural resources such as buildings (the OR&L Office Building in Iwilei [SIHP # 50-80-14-01380], Pālama Fire Station [SIHP # 50-80-14-01302] and Kaumakapili Church and grounds [SIHP # 50-80-14-09851]), Kapālama Drainage Canal (SIHP # 50-80-14-07808) and bridges spanning it (SIHP # 50-80-14-07807).

In general, historic-period sites and features are more likely to be documented in subsurface contexts in the project-area environs, compared with traditional Hawaiian materials. Thus, this general category of finds (i.e., subsurface sites and features from historic-period times)—characterized by item #2 in the list above, has the highest potential for discovery in the project area.

Table 4. Previous Archaeological and Other Historic-Preservation Studies and Results in and near the Project Area

Author(s)[1]	Type of Study	Location & Notes	Results & Comments[2]
McAllister 1933 Thrum 1938 Sterling & Summers 1978	Island-wide survey	O‘ahu – Island-wide	Two fishponds identified along the shoreline: Site 73, Ananoho, and Site 74, Pahouiki, Pahounui, and Apili (3 adjoining ponds) (see text above)
Neller 1980	ARS	Palama Fire Station	Massive charcoal deposit observed in trench, but significance not determined
Dunn et al. 1991	AM	Palama Chevron Station, Kapālama	Nine test trenches for pipelines excavated; burials, human skeletal remains, and historic artifacts (SIHP # 03373) recorded; burials were victims of nineteenth-century epidemics
Hurst & Pantaleo 1992	ALR	Proposed Liliha Civic Center / Iwilei Senior Housing	Historic literature review for proposed Liliha Civic Center
Jourdane 1994	BT	Austin Lane, Kapālama	Historic human coffin burial (SIHP # 04929) found during excavation on Austin Lane
Hammatt 1995	BT	Austin Lane, Kapālama	Historic coffin burial at Austin Lane (SIHP # 04929) disinterred; burial probably associated w. Kaumakapili Church cemetery, used from 1870s to at least 1921
Athens & Ward 1997	Paleoenvironmental study	Proposed Liliha Civic Center / Iwilei Senior Housing	Indicated Kūwili Fishpond (SIHP # 05368) constructed between AD 1400–1650
McGerty et al. 1997	AIS	Proposed Liliha Civic Center / Iwilei Senior Housing	Identified soil layers interpreted as remains of Kūwili Fishpond (SIHP # 05368) and suggested the pond may have been constructed as early as AD 1100
McDermott & Mann 2001	AIS	Nimitz Hwy. water system improvements	Focused on investigations of Kawa Fishpond (SIHP # 05966)
Davis & McGerty 2002	ALR	Proposed Honolulu Bus Rapid Transit Primary Corridor	Background report – no fieldwork or excavation conducted; noted documented presence of Kūwili Fishpond in subsurface context
Mann & Hammatt 2002	AM	King St. rehabilitation	No significant sites were identified in current study area, although finds were made elsewhere: one incomplete, previously disturbed, human burial, SIHP # 06317, near intersection of S. King and Punchbowl, and a pit feature containing non-human skeletal remains at corner of S. King and Richards streets

Author(s)[1]	Type of Study	Location & Notes	Results & Comments[2]
West et al. 2002	AM	Installation of water mains along King St, between Liliha and River streets	Identified previously recorded Honolulu Rapid Transit & Land Company (HRT&L) trolley (SIHP # 05942) along with numerous artifacts in association
Groza & Hammatt 2008	AM	Rehabilitation of Beretania St.	No undisturbed cultural deposits found
Hammatt et al. 2008	DR	Proposed Liliha Civic Center / Iwilei Senior Housing	Collected/analyzed sediment samples in Kūwili Fishpond (SIHP #05368); suggested earliest pond sediments deposited circa AD 1020–1120, (most consistent with the estimate of AD 1100 by McGerty et al. [1997], and inconsistent with Athens and Ward's [1997] estimate of the AD 1400s)
O'Hare et al. 2010	ALRFI	Honolulu Community College	Noted exposures of potential midden and features in banks of Kapālama Canal; included archival information on rich cultural landscape of the area
Pammer & Monahan 2011	ALRFI	Kapālama Shopping Center	Included 5 test trenches and documented a subsurface loʻi kalo (irrigated taro) deposit designated SIHP # 07426 in all trenches
Hunkin et al. 2012	AM	Kalihi-Nuʻuanu Sewer Rehabilitation project	No cultural deposits identified; isolated human femur fragment found in fill material in one of western Punchbowl slope areas; no site number assigned to this fragment, which was handed over to SHPD for reburial
Hammatt 2013	AIS	City Center portion of Honolulu High- Capacity Transit Corridor project	Two historic properties identified near the current study area: SIHP #s 07426 (subsurface wetland deposit) and 07506 (subsurface incinerated trash deposit); wetland sediments identified along Dillingham Blvd; incinerated trash deposits encountered within HCC campus at corner of Dillingham Blvd and Kokea St.
Medina et al. 2013	AM	Traffic control signal along Dillingham Blvd	Two historic properties reported, SIHP #s 07426 (previously identified historic property consists of former wetland/ agricultural sediments that may have been utilized during late pre-to early post- Contact period) and 07515 (newly identified historic property related to creation of Kapālama Drainage Canal during 1920s and in-filling of surrounding area for purposes of urban development)
Tulchin & Hammatt 2013	AISP	Kamehameha Schools parcels	Included 13 test trenches and documented a subsurface loʻi kalo (irrigated taro) deposit designated SIHP # 07426 in 11 of 13 trenches

Author(s)[1]	Type of Study	Location & Notes	Results & Comments[2]
Hazlett & Spear 2014	AIS*	710 N. King St (TMK [1] 1-7-031:052)	No historic properties identified; included excavation of 4 backhoe-assisted trenches
Pammer & McDermott 2014	AIS	Honolulu Community College	Two previously recorded historic properties identified within survey area: SIHP #s 07426 (wetland sediments) and 07506 (incinerated trash layer)
Belluomini et al. 2016	AIS	American Savings Bank	Three sites identified: SIHP # 07933 (human burials), 07934 (rock wall remnant), and 07935 (building foundation)
Monahan 2018a	AIS	Mayor Wright Homes (MWH) block	4 historic properties identified: SIHP #s 08033 (middle 20th century bulldozing associated w. original construction of MWH), 08034 (subsurface layer / gray clay interpreted as pond sediments, most likely remnants of traditional Hawaiian taro cultivation), 08035 (subsurface remnants of degraded asphalt/concrete surfaces) & 08036 (middle 20th century buried infrastructure)
Turran et al. 2018	AM	Honolulu Community College, Chilled Water Loop Extension project	Identified 1 new site, SIHP # 08766 (subsurface asphalt layer); and exposures of previously-identified SIHP # 07426 (see above)
Monahan 2019	AM	Soil borings in portion of Liliha Civic Center parcel	No historic properties identified but fishpond sediments from Kūwili Fishpond (SIHP #05368) were observed in some cores

[1] Arranged chronologically but also grouped together by project area when applicable.
[2] SIHP = State Inventory of Historic Places; complete (formal) SIHP #s in this table are preceded by "50-80-14-".
Abbreviations: AIS = archaeological inventory survey, AIS* = archaeological inventory survey with no findings, written up as an archaeological assessment, AISP = archaeological inventory survey plan, ALR = archaeological literature review, ALRFI = archaeological literature review and field inspection, AM = archaeological monitoring, ARS = archaeological reconnaissance survey, BT = burial treatment, DR = archaeological data recovery

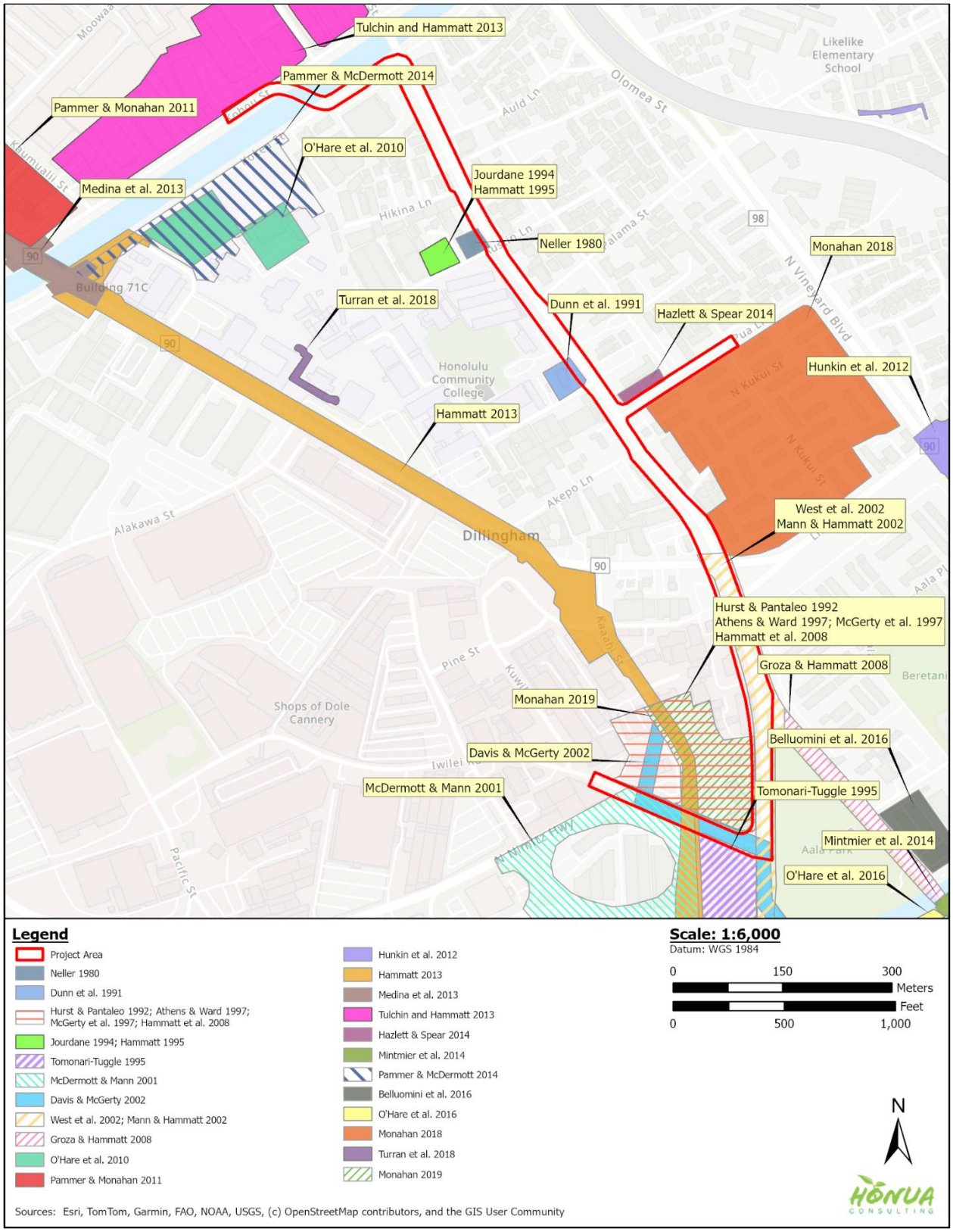


Figure 46. Previous archaeological studies near the project area (see table and text above for details)

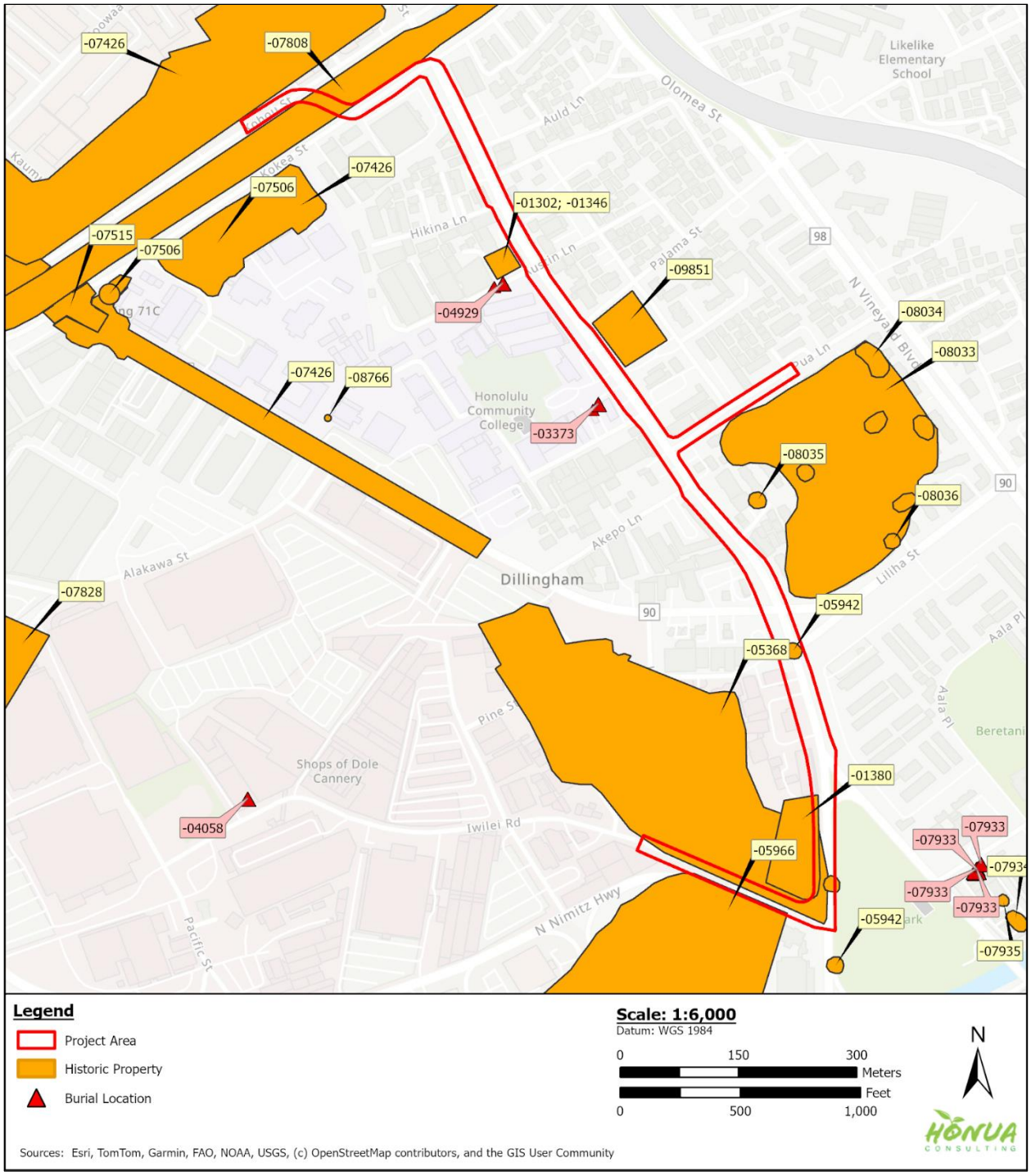


Figure 47. Previously identified archaeological historic properties near the project area (see table and text above for details)

3.4 Previous Studies in or Immediately Adjacent to the Project Area

The first set of studies consist of island-wide compilations and general surveys of O‘ahu; these are not depicted on Figure 46 since they cover the whole island. Following this (after Section 3.4.1), relevant studies are discussed from northwest to southeast (refer to Figure 46 for their locations).

3.4.1 McAllister 1933; Thrum 1938; Sterling and Summers 1978

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

There are no “McAllister sites” within 500 ft. of the current project area. Two fishponds in Kalihi Kai, southwest of the project area, were noted along the shoreline (see below). As is common along O‘ahu’s south shore, including Pu‘uloa (Pearl Harbor) west of the project area, different archival sources demonstrate a significant amount of variation in terms of how many loko i‘a (fishponds) were once present at a given time, how large each was, what their names were, and so on.

By the time of McAllister’s (circa 1930) survey work, the two nearby fishponds of Kūwili (SIHP # 50-80-14-05368) and Kawa (SIHP # 50-80-14-05966) in Iwilei were apparently not only drained and filled in but also forgotten. The two fishponds of Kalihi Kai mentioned by McAllister (1933) were the following:

> Site 73. Ananoho Fishpond (Des.[troyed]). An oval-shaped pond 52 acres in area. The walls approximate 4700 feet in length, and average 6 feet in width. They are primarily of coral and average 3 feet in height. There are now [i.e., circa 1930] two houses on the wall, but houses and makaha [sluice gates] are modern . . . Auiki is a small adjoining pond partly filled. It is 12 acres in area with a 900-foot wall. (Des.[troyed])[7] (brackets added)
>
> Site 74. Pahouiki, Pahounui, and Apili Fishpond (Des.[troyed]). Three adjoining fishponds off Kalihi. Pahouiki is the smallest, being 14 acres in area with a wall 1050 feet in length. The wall is coral, with one house and two makaha now. It is open to Pahounui, a pond of 26 acres with a wall 2600 feet long. The walls are also of coral with one house and two makaha. It adjoins but does not open to Apili pond, which is 28 acres in extent, with a wall 1500 feet long. (brackets added)

[6] It is important to note that, given the enormity of McAllister’s task of identifying the “archaeological sites of O‘ahu,” he naturally focused on the most prominent and formal such as heiau, fishponds, large archaeological complexes, and so on. Thus, the absence of “McAllister sites” does not correlate with a lack of Hawaiian occupation or use of that place.

[7] McAllister site 73 can also be designated SIHP # 50-80-14-00073; likewise for Site 74 (i.e., SIHP # 50-80-14-00074).

As explained above (see Section 2.1 Hawaiian Cultural Landscape), the most important "take away" message from the variety of different fishpond names, locations and configurations in and adjacent to the shoreline west of Honolulu is this coastal location was a highly coveted place for traditional Hawaiian aquaculture; and, that pond sizes and configurations changed through time for various reasons.

3.4.2 Tulchin and Hammatt 2013

Cultural Surveys Hawai'i (CSH) conducted an archaeological inventory survey (AIS) plan for Kamehameha Schools Commercial Lands in the makai portion of Kapālama. The work included the excavation of 13 trenches, 11 of which exposed subsurface wetland deposits interpreted as lo'i kalo (irrigated taro) designated SIHP # 50-80-14-07426. Other studies further makai—not adjacent to the current project area (Pammer and Monahan 2011; Medina et al. 2013)—also identified this laterally extensive archaeological historic property.

3.4.3 Neller 1980

During excavations at the Palama Fire Station in September 1980, the SHPD made a site visit to the project. A large charcoal deposit was observed in an excavation sidewall which contained several basalt cobbles. No further information was obtained due to the backfilling of the excavation prior to the SHPD's return to document the feature. It could not be determined whether the deposit represented a historic feature or a traditional imu (earth oven) pit; however, no historic artifacts were observed in association with the feature.

3.4.4 Jourdane 1994; Hammatt 1995

A coffin burial was found during construction of a water line on Austin Lane and reported to the SHPD (Jourdane 1994). CSH (Hammatt 1995) conducted background on the property and disinterred the burial. The human remains, designated SIHP # 50-80-14-04929, were turned over to the SHPD for reburial.

3.4.5 Dunn et al. 1991

During archaeological monitoring conducted by Paul H. Rosendahl, Inc. (PHRI) at the Palama Chevron Station, highly fragmented human skeletal remains were observed at 80 cm below surface (cmbs), 105 cmbs and 120 cmbs (Dunn et al. 1991:1, 4). The minimum number of individuals (MNI) was reported as five. The authors noted:

> A parishioner of Kaumakapili Church mentioned to PHRI field personnel that the survey area was once a cemetery. Mr. Tom Dye of the DLNR [Department of Land and Natural Resources] said that older residents of the area had once mentioned that when they were younger they regarded the area as 'spooky,' and that this may be attributable to the fact that they had heard there were burials in the area. (ibid.:10)

3.4.6 Hazlett and Spear 2014

Scientific Consultant Services (SCS) (Hazlett and Spear 2014) conducted an AIS at 710 N. King Street (TMK [1] 1-7-031:052), extending north along Pua Lane adjacent to Mayor Wright Homes, which included four backhoe trenches. No historic properties were identified.

3.4.7 Monahan 2018a

TCP Hawai‘i (Monahan 2018) completed an AIS of the Mayor Wright Homes property including a 100% pedestrian survey of the exterior portions of the parcel; and subsurface testing of 24 backhoe-assisted trenches. Four historic properties in subsurface context were identified: (1) SIHP # 50-80-14-08033 (exposed in 21 of 24 trenches), a subsurface layer representing a project-area wide grading/bulldozing and pit-filling (dumping) event just prior to, and in preparation for, the construction of the Mayor Wright Homes residential complex (middle 1940s to early 1950s); (2) SIHP # 50-80-14-08034, exposed in several trenches in the mauka (inland) portion of the project area (Trench #s 6, 7, 10, 15 & 17), a subsurface layer of gray clay interpreted as pond sediments, most likely the remnants of traditional Hawaiian lo‘i kalo (irrigated taro cultivation); there is abundant historical evidence that, in pre-Contact times, the project area was a prime location for traditional Hawaiian subsistence cultivation of taro; and such activities continued in some portions into the early twentieth century; (3) SIHP # 50-80-14-08035, asphalt and/or concrete surfaces (exposed in Trench #11 [Feature 1] and Trench #12 [Feature 2], respectively) dating from the late historic/early modern period; and (4) SIHP # 50-80-14-08036, a set of very large drainage pipes (exposed in Trench #21) also dating from the late historic/early modern period.

3.4.8 Mann and Hammatt 2002; West et al. 2002

CSH conducted archaeological monitoring for the King Street Rehabilitation project on King Street between Dillingham Boulevard and South Street (Mann and Hammatt 2002). One human burial (SIHP # 50-80-14-06371) was recovered near the intersection of S. King Street and Punchbowl Street, makai of Honolulu Hale, well east of the current project area. The human skeletal remains were incomplete and poorly preserved due to previous disturbance by construction activities. The SHPD took custody of the remains. In addition to the human burial, a pit feature containing a substantial quantity of non-human skeletal remains was documented at the corner of S. King Street and Richards Street; however, no SIHP # was assigned to the pit feature (Mann and Hammatt 2002).

Garcia and Associates completed archaeological monitoring for the installation of water mains along King Street between Liliha Street and River Street (West et al. 2002). One previously recorded archaeological site, structural remnants of the Honolulu Rapid Transit & Land Company Trolley (SIHP # 50-80-14-05942), was identified in subsurface context at multiple locations within the project area. Documented remnants consisted of railroad ties, metal hardware and bricks. Small sections of the trolley track (not *in situ*) were exposed on top of fill material, which contained concentrations of historic artifacts. The historic artifacts found within the fill layers that overlay a coral bedrock included glass bottles and jars, handmade leather shoes, ceramics, non-human bone (pig, cow and chicken), shell, wood, charcoal, Belgian Block cobblestones and metal hardware (West et al. 2002).

3.4.9 Hurst and Pantaleo 1992; Athens and Ward 1997; McGerty et al. 1997; Hammatt et al. 2008

Following up on Hurst and Pantaleo’s (1992) archival review of the (then) proposed Liliha Civic Center/Iwilei Senior Housing project, SCS (McGerty et al. 1997) conducted an AIS. SCS identified sediments representing the filled-in Kūwili Fishpond that were designated SIHP # 50-

80-14-05368. The Kūwili Fishpond layer consisted of a uniform gleyed clay lacking clastics (ibid.). International Archaeological Research Institute, Inc. (IARII) (Athens and Ward 1997) also conducted a paleoenvironmental coring study of SIHP # 05368. Hammatt et al. (2008) subsequently investigated Kūwili Fishpond during archaeological data recovery; they defined a stratigraphic sequence at Kūwili Fishpond characterized by multiple fill layers overlying sediments associated with pond use, and earlier underlying natural estuary sediments. Typically, the uppermost fill layers represent modern events while deeper fill layers are associated with historic events dating to reclamation infilling of the fishpond (Hammatt et al. 2008). Remnants of the OR&L railroad (including rail spikes, wooden ties, and rails) were observed in some recent fills post-dating dismantling of the railroad system between 1948 and 1951 (McGerty et al. 1997). Beneath the historic fills and underlying Kūwili Fishpond sediments, the lowermost layers consist of natural sediments predating construction of the fishpond.

3.4.10 Groza and Hammatt 2008

CSH conducted archaeological monitoring for the Rehabilitation of Streets project in downtown Honolulu on an approximately 1,800 m (5,900 ft.) linear corridor along Beretania Street between North King Street and Alapa‘i Street (Groza and Hammatt 2008). No archaeological historic properties or component features were identified; most of the observed soils consisted of fill. Those areas excavated beneath the fill sediments were consistent with volcanic cinder from the Sugar Loaf/Tantalus series. The western portion of the project area contained alluvium associated with Nu‘uanu Stream.

3.4.11 Monahan 2019

TCP Hawai‘i (Monahan 2019) conducted archaeological monitoring in support of soil testing (environmental assessment) at a 2.39-acre parcel at 333 and 351 N. King Street in Iwilei. The subject parcel at TMK (1) 1-5-007:001 is bounded by N. King Street (east), Iwilei Street (south), and residential/commercial buildings to the west, north and northeast. The parcel was partially vacant, but also included the historic OR&L (Oahu Rail and Land Company) building (SIHP # 50-80-14-01308, listed on the Hawai‘i Register of Historic Places on 6/17/1987), part of the former OR&L railway right-of-way (SIHP # 50-80-12-9714, listed on both the National and Historic Register of Historic Places on 12/1/1975) and subsurface deposits of the former Kūwili Fishpond (SIHP # 05368). Other than finding sediments in the lower portion of the soil cores throughout the project area consistent with representing fishpond sediments from Kūwili Fishpond, no historic properties were identified.

3.4.12 Hammatt 2013

CSH conducted an AIS in support of the Honolulu High-Capacity Transit Corridor project (City Center) between Middle Street and Ala Moana Center. Testing identified multiple sites, two of which were identified near the current project area: SIHP #s 50-80-14-07426 (subsurface wetland deposit) and 50-80-14-07506 (subsurface incinerated trash deposit). The wetland sediments were identified in 28 test excavations (designated T-054 through T-082 by CSH). along Dillingham Boulevard, makai of the current project area. The incinerated trash deposits were encountered in three test excavations (T-064, T-066 and T-067) in the Honolulu Community College campus at the corner of Dillingham Boulevard and Kokea Street.

3.4.13 Davis and McGerty 2002

SCS (Davis and McGerty 2002) conducted an archaeological literature review of the (then) proposed Honolulu Bus Rapid Transit Primary Corridor in Iwilei. The archival report noted the presence of previously identified deposits of Kūwili Fishpond in subsurface context (SIHP # 05368).

3.4.14 McDermott and Mann 2001

In 2001, CSH conducted an AIS for the proposed Nimitz Highway water system improvements in downtown Honolulu (McDermott and Mann 2001). The project area was located between Iwilei Road, North King Street, River Street and Kūkahi Street. The archaeological fieldwork focused primarily on the investigation of Kawa Fishpond, SIHP # 50-80-14-05966. Five boring cores were extracted to determine the boundaries of the pond, and three backhoe trenches were excavated near cores with positive results for fishpond sediments. Radiocarbon dating results of fishpond samples did not provide a clear date of construction for Kawa Fishpond; however, based on the samples, it appears that fishpond sediments were accumulating since at least AD 1150–1350 (McDermott and Mann 2001).

Section 4 Conclusion

This archaeological literature review and assessment (ALRA) was completed by Honua Consulting for Michels Pacific Energy, Inc., on behalf of the Hawai‘i Community Development Authority (lead agency) in support of its Iwilei-Kapālama Electrical Infrastructure project in Kapālama and Iwilei. The project area is a linear corridor along the N. King Street right-of-way (ROW), makai of the H-1 Interstate, between the Kapālama Drainage Canal (to the northwest) and Iwilei Road (to the southeast). The northwest end of the project area crosses the canal to Kohou Street. The southeast end of the project area turns west up Iwilei Road for a short distance. A lateral extension along Pua Lane between N. King Street and Vineyard Boulevard. The overall size of the project area is 12.1 acres (4.9 hectares) or approximately 1,881.9 linear meters of roadway (6,174.3 linear feet). The project area is adjacent to numerous Tax Map Key (TMK) (listed on the title page). The landowner is the City & County of Honolulu.

The project area environs are part of the Honolulu Rail transit-oriented development (TOD). The closest rail stations are Niuhelewai (Kapālama-Honolulu Community College) and Kūwili (Iwilei). The proposed project is envisioned as supporting three major proposed developments in the area: the redevelopment of Mayor Wright Homes by HPHA, the construction of the Liliha Civic Center by HHFDC and the development of Kapālama Kai Phase I residential project by Kamehameha Schools.

The proposed project consists mostly of trenchless, directional drilling (i.e., horizontal drilling and installation of conduit) supported by several open trench excavations (“pilot holes”) at several locations. Subsurface excavation in excess of 10 feet (ft.) below grade is anticipated for the pilot holes.

The objectives of this ALRA were: (1) documentation and description of the parcel’s land-use history in the context of its traditional Hawaiian character as well as its historic-period changes; (2) identification of any archaeological historic properties or component features in the project area; and (3) providing information relevant to the likelihood of encountering historically significant cultural deposits in subsurface context during future construction.

This ALRA is not an archaeological inventory survey (AIS), and it is not intended for formal review by the SHPD. It may be used, however, to support the project proponent’s consultation with the SHPD in compliance with Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and Hawai‘i Administrative Rules (HAR) Chapter 13-275 as well as other (e.g., environmental) regulations.

Results of this archival study are as follows:

1. In general, due to the urbanization of the project area for a century (or more in the eastern part), there are no above-ground (surface) archaeological remains of traditional Hawaiian sites. The traditional Hawaiian sites that have been identified are exclusively located in subsurface context and have mostly been discovered during archaeological monitoring of construction work and also during archaeological inventory surveys in advance of construction-related ground disturbance.
2. The main types of subsurface, traditional Hawaiian sites identified in the project-area environs include:
    a. Human burials and isolated or fragmentary human skeletal remains; in 2016, at the American Savings Bank property, a cluster of at least seven individuals,

along with some pig and dog bones possibly representing buried animals associated with the human burials, was identified by Belluomini et al. (2016) within an LCA (731 to Palile); the age of this site (SIHP # 07933) was interpreted as pre-Contact to post-Contact (Historic Period);

b. Fishpond sediments from previously utilized ponds that were drained and filled many years ago for urbanization; two such sites, Kuwili Fishpond (SIHP # 05368) and Kawa Fishpond (SIHP # 05966), are in Iwilei (Athens and Ward 1997; McGerty et al. 1997; Hammatt et al. 2008; Monahan 2019); and,

c. Anthropogenic wetland sediments interpreted as traditional Hawaiian lo‘i kalo (wetland taro agriculture) areas; several studies (Hammatt 2013; Medina et al. 2013; Pammer and McDermott 2015) have documented the presence of a laterally-extensive, subsurface soil deposit interpreted as representing former wetlands on either side of Kapālama Stream that may have been used for traditional Hawaiian agriculture during late pre-Contact to early historic-period times (SIHP # 07426); Monahan (2018a) identified a similar subsurface site (SIHP # 08034) on the grounds of Mayor Wright Homes, interpreted as probable remnants of traditional Hawaiian lo‘i kalo.

3. Historic-period sites have been identified in both subsurface and above-ground contexts. Not including architectural resources, the main types of historic-period sites identified in the project-area environs include:

   a. Human burials and isolated or fragmentary human skeletal remains: at least two such sites have been identified near the project area: SIHP # 03373 (multiple human burials and additional isolated and fragmentary human skeletal remains in association with historic artifacts interpreted as victims of nineteenth-century epidemics) (Dunn et al. 1991); and SIHP # 04929 (historic-period burial in a coffin found during excavation on Austin Lane interpreted as probably associated with Kaumakapili Church cemetery, which was used from the 1870s to at least 1921) (Jourdane 1994; Hammatt 1995);

   b. Other, varied subsurface discoveries including fill layers (e.g., SIHP # 07515 [Medina et al. 2013]), foundation structures, rock walls, burn pits and trash deposits (e.g., SIHP # 07506 [Hammatt 2013]), old infrastructure, and remnants of a historic-period trolley attributed to the Honolulu Rapid Transit & Land Company (HRT&L) (SIHP # 05942) (West et al. 2002).

4.1 Recommendations

Based on all available evidence, our recommendations are as follows:

1. The proposed project will have “no effect” on above-ground archaeological historic properties since none are present in or near the project area.
2. The SHPD should be consulted to obtain its guidance on possible archaeological work needed to support ground disturbance associated with the proposed project.

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APPENDIX C

State Historic Preservation Division (SHPD) Review Consultation

Hawaii Revised Statutes, HRS §6E-8

HAWAII COMMUNITY DEVELOPMENT AUTHORITY

547 Queen Street, Honolulu, Hawaii 96813
Telephone: (808) 594-0300 Fax: (808) 587-0299
Web site: http://dbedt.hawaii.gov/hcda/

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

STERLING HIGA
CHAIRPERSON

CRAIG K. NAKAMOTO
EXECUTIVE DIRECTOR

April 15, 2026

Jessica Puff, PhD, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
601 Kamokila Boulevard, Suite 555
Kapolei, Hawai‘i 96707

RE: State Historic Preservation Review – HRS §6E-8
Iwilei–Kapālama Electrical Infrastructure Project
Kapālama and Nu‘uanu (Honolulu) Ahupua‘a,
Honolulu (Kona) District, Island of O‘ahu

Project Area: Portions of North King Street, Iwilei Road, Kuwili Street, Pua Lane, and Kohou Street rights-of-way and TMKs: (1) 1-5-004, 1-5-005, 1-5-006, 1-5-007, 1-5-008, 1-5-019; (1) 1-6-001, 1-6-002; (1) 1-7-026, 1-7-027, 1-7-029, and 1-7-031 (adjacent parcels)

Dear Dr. Puff:

The Hawai‘i Community Development Authority (“HCDA”), as lead agency, submits this HRS §6E-8 determination letter for review by the State Historic Preservation Division (“SHPD”) pursuant to Hawai‘i Revised Statutes (“HRS”) §6E-8 for the proposed Iwilei-Kapālama Electrical Infrastructure Project (“Project”).

Project Purpose and Transit-Oriented Development Context

The Project is a State-initiated capital improvement project to plan, design, permit, and construct electrical infrastructure improvements necessary to support the development of new affordable and mixed-income housing within the Iwilei–Kapālama area of urban Honolulu.

The Project is located within a highly urbanized transit-oriented development (“TOD”) area, within one-half mile of the planned Kūwili (Iwilei) and Niuhelewai (Kapālama) rail transit stations. The Project directly supports State housing initiatives, including the Mayor Wright Homes Redevelopment and the Liliha Civic Center Project, and will also serve the Kamehameha Schools Kapālama Kai (Phase I). The Project’s purpose is to remove electrical infrastructure constraints that currently limit housing delivery in this district.

Project Scope and Avoidance Measures

The Project will involve the installation and upgrading of underground electrical infrastructure within existing public rights-of-way, including duct lines and facilities necessary to support 12kV and 25kV electrical circuits.

To avoid and minimize impacts to archaeological and cultural resources, construction will primarily utilize horizontal directional drilling ("HDD"). Any open-cut trenching will be limited, localized, and minimized and will occur within previously disturbed roadway and utility corridors. These measures are specifically intended to avoid disturbance of intact subsurface deposits, if any remain.

Identification and Inventory of Historic Properties

An Archaeological Literature Review and Assessment ("ALRA") was prepared for the project area to document the land-use history, summarize prior archaeological investigations, and assess the potential presence of historic properties. The ALRA determined that:

- The project area has been extensively disturbed for more than a century by harbor development, industrial activity, roadway construction, utility installation, dredging, grading, and infilling;
- Former wetlands, loʻi kalo systems, and nearshore environments were substantially altered or buried during nineteenth- and twentieth-century urban development;
- No above-ground archaeological historic properties are present within or immediately adjacent to the project area; and
- Any archaeological materials potentially associated with traditional Hawaiian or historic-period land use are expected, if present, to occur only in deeply buried and previously disturbed subsurface contexts.

Evaluation of Significance

Although the broader Iwilei–Kapālama area is historically and culturally significant, the project area itself has been substantially altered and no longer retains archaeological integrity at or near the surface. The ALRA concludes that intact archaeological deposits, if present, are unlikely to be affected by the proposed construction methods.

Effect Determination

Based on the findings of the ALRA, the heavily disturbed condition of the project area, and the proposed avoidance-oriented construction methods, HCDA has determined that the Iwilei–Kapālama Electrical Infrastructure Project will result in **no historic properties affected**.

This determination is made pursuant to HRS §6E-8, as amended by Act 160 (2025), which affirms the authority of the lead agency to render effect determinations and establishes an expedited review timeline for projects that do not affect historic properties.

Recommendation for Archaeological Monitoring

While the project is anticipated to result in no effects to historic properties, HCDA recognizes that limited ground disturbance will occur in an area with a long and complex land-use history. Accordingly, HCDA recommends archaeological monitoring for identification purposes only, focused on pilot hole locations or other limited open-cut excavations, should such work proceed.

The purpose of monitoring would be to provide additional assurance that any previously unidentified subsurface cultural materials are appropriately identified and documented, if encountered, consistent with HRS Chapter 6E.

Procedural Notice Under Act 160 (2025)

Pursuant to Act 160 (2025), SHPD is afforded thirty (30) calendar days from receipt of a submittal to provide written concurrence or non-concurrence with this effect determination. If no response is received within the thirty-day statutory review period, HCDA will proceed to the next step in the compliance process, which will include the preparation of an Archaeological Monitoring Plan (AMP) for identification purposes, consistent with the recommendations outlined above and the sequencing contemplated by Act 160.

HCDA remains committed to full compliance with HRS Chapter 6E and will immediately notify SHPD should any previously unidentified historic properties or burial sites be encountered during construction, in accordance with HRS §§6E-43 and 6E-43.6.

The ALR project drawings, maps, and other materials have been uploaded to HICRIS. A draft environmental assessment is also being prepared for the Project. This environmental assessment will supplement the Iwilei Infrastructure Improvement Master Plan and Liliha Civic Center Master Plan Final Environmental Impact Statement that was completed in March 2025.

If you have any questions regarding the ALRA or preparation of the proposed AMP, please feel free to contact Mr. Dodge Watson of Honua Consulting at dodge@honuaconsulting.com or 808-741-7441. You may also contact the HCDA project manager, Ms. Michelle Kaneko at michelle.a.kaneko@hawaii.gov or 808-594-0352 and Ryan Tam, HCDA Director of Planning and Development, at ryan.am.tam@hawaii.gov or 808-594-0338 for additional information about this project and HCDA's determination. Thank you very much for your assistance.

Sincerely,

Craig K. Nakamoto

Craig K. Nakamoto
Executive Director

APPENDIX D

Phase I Environmental Site Assessment

HCDA Iwilei and Kapālama DB Electrical Infrastructure

Improvements Alignment Evaluation

ENPRO Environmental

(Appendices available upon request)

Prepared for:

Michels Pacific Energy, Inc
817 Main Street, P.O. Box 128
Brownsville, WI 53006

Phase I Environmental Site Assessment



Iwilei-Kapalama DB Electrical Infrastructure Improvements Alignments

Honolulu, Hawaii

Prepared by:

ENPRO Environmental
151 Hekili Street, Suite 210
Kailua, Hawaii 96734

808.262.0909
808.262.4449 (fax)
www.enproenvironmental.com

ENPRO Environmental Contact:

Kenton Beal
Environmental Professional
808.262.0909
info@enproenvironmental.com

ENPRO Project Number:	2508-195PH1-O
Date of Report:	November 21, 2025
On-Site Investigation:	September 2, 5, and 8, 2025

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1.0 EXECUTIVE SUMMARY

Michels Pacific Energy, Inc. (the Client) retained ENPRO Environmental (ENPRO) to conduct a Phase I Environmental Site Assessment (ESA) in conformance with ASTM International (ASTM) Practice E1527-21 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (the Practice), for the public thoroughfare encompassing the Iwilei-Kapalama DB Electrical Infrastructure Improvements Alignments, in Honolulu, Hawaii (the subject property). The subject property includes:

- North King Street, from Iwilei Road to Kohou Street
- Pua Lane, from North King Street to North Kukui Street
- Iwilei Road, from North King Street to Kuwili Street

The purpose of the Phase I ESA was to identify recognized environmental conditions (if any) as part of due diligence prior to electric utility work at the subject property.

The subject property is owned by the State of Hawaii and has been used as a traffic thoroughfare since its first developed use.

We have performed a Phase I ESA of the subject property in conformance with the scope and limitations of the Practice.

This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the subject property, except for those listed in **Tables 1-1** below. Recommendations for additional actions are listed in Section 9.1.

Potential business environmental risks (BERs) which fall outside the scope of a Phase I ESA but may warrant investigation were identified as listed in **Table 1-1**.

Table 1-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Recognized Environmental Conditions (REC)			
Historic Use:			
Historic roadway and fill material: Urban generated fill material is suspect in soil underlying the roadway and project alignment. Urban generated fill is associated with potential debris from the historic Chinatown fire, roadway use and industrial activities and may contain contaminants such as heavy metals, PAHs and PCBs.	**REC**: Condition indicative of a release		✓

Table 1-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Adjoining and/or Nearby Site Contamination Likely to Impact the Subject Property:			
Potential dry cleaner: Drycleaners are environmentally significant because they commonly use chlorinated solvents such as perchloroethylene, which are toxic, persistent, and can readily contaminate soil and groundwater through spills, leaks, or improper waste disposal.	**REC**: Condition indicative of a release	✓	
Junk Yard: Junkyards are often considered environmentally significant due to the potential for releases of petroleum products, heavy metals, and other hazardous substances from vehicle fluids, batteries, and scrap materials. Spills, leaks, or improper storage of these materials can result in contamination of soil and groundwater over time.	**REC**: Condition indicative of a release		✓
Lumber Yard: Lumber yards may involve the storage or treatment of wood with chemical preservatives such as creosote, pentachlorophenol, or chromated copper arsenate. These substances can leach into soil or groundwater through spills, runoff, or improper handling of treated materials.	**REC**: Condition indicative of a release		✓
Railroad: Railroad roundhouses and associated facilities such as car shops, boiler shops, paint shops, machine shops, and foundries are considered environmentally significant due to their historical use of petroleum products, solvents, paints, and heavy metals. Activities such as equipment maintenance, metalworking, and fuel or lubricant storage commonly resulted in spills, leaks, and disposal of hazardous materials that may have impacted soil or groundwater quality. Releases are known to have occurred at the site.	**REC:** Release		✓
Current and former gas stations at: • Tom's Chevron, 743 North King Street • Kokea Service Station, 1065 North King Street • Shell Service Station, 1101 North King Street Regulatory records were not readily accessible for these sites. Gas stations, particularly those constructed with single-wall steel underground storage tanks common in the 1970s and 1980s, are considered environmentally significant due to the high risk of fuel leaks and releases from corroded or failing tanks and piping.	**REC**: Condition indicative of a release		✓
Former auto/motorcycle repair at: • Sub's Auto Repair, 587B North King Street • Palama Auto Company, 1138 North King Street • Motor Service Company, 1138A North King Street • Wholesale Auto Repair, 1138B North King Street Auto and motorcycle repair facilities are considered environmentally significant because they commonly store and use petroleum products, solvents, degreasers, and other hazardous materials during maintenance operations. Spills, leaks, or improper disposal of these substances can result in contamination of soil or groundwater over time.	**REC**: Condition indicative of a release		✓
Leaded gasoline release from a storage tank at 373 North Nimitz Highway.	**REC:** Release		✓
Gasoline and related constituents were detected along 938 Kohou Street's eastern boundary from a former gas station release.	**REC:** Release		✓

Table 1-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Previous investigations at 1020 Liliha Street indicate the presence of petroleum, solvent, pesticide, and metals at the site.	**REC:** Release		✓
Historical Recognized Environmental Condition (HREC)			
A former 2,000-gallon LUST at 888 Iwilei Road was removed and remediated under HDOH oversight in 2002.	HREC	✓	
The former gasoline UST release at 1036 North King Street was fully investigated and closed by DOH in 1995 with confirmation sampling showing no remaining petroleum impacts.	HREC	✓	
A documented 1987 gasoline release was fully remediated, and post-remediation confirmation sampling demonstrated that soil and groundwater contaminant concentrations met applicable DOH cleanup criteria, and DOH issued a formal NFA determination in 1994, providing regulatory closure.	HREC	✓	
All documented petroleum releases from 666 North King Street were fully investigated and closed by the Hawai'i DOH with No Further Action determinations, and no contaminants remained above applicable environmental action levels.	HREC	✓	
DOH issued an NFA determination for Pier 42 in July 2003 as all constituents from the petroleum release decreased and remained below DOH Tier 1 EALs.	HREC	✓	
Controlled Recognized Environmental Condition (CREC)			
Shallow soils at 710 North King Street previously contained elevated lead and barium, but all affected soil was removed and replaced with clean fill during redevelopment; remaining low-level contamination is confined beneath the new building and pavement and managed under a long-term Environmental Hazard Management Plan (EHMP).	CREC	✓	
The Iwilei Center property (866 & 850 Iwilei Rd, 505 Kaaahi St) was historically impacted by petroleum hydrocarbons, metals, and pesticides from former industrial uses; it was investigated and remediated under the Hawaii DOH Voluntary Response Program, received a 2024 Letter of Completion, and is now managed under an EHMP and 2025 Environmental Covenant that maintain engineering and institutional controls.	CREC	✓	
The 2014 HART Programmatic EHMP identifies residual pesticide, solvent, and petroleum contamination along the rail alignment from historical agricultural, industrial, and military uses requiring soil and groundwater management to prevent exposure and migration during construction.	CREC	✓	
HDOH identified widespread petroleum and metal contamination in the Iwilei District from historical fuel storage and industrial activities; residual impacts remain in soil, groundwater, and vapor but are managed under state oversight through engineered and administrative controls to prevent exposure during future subsurface work as described in the Iwilei District Programmatic EHMP.	CREC	✓	

Table 1-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Two petroleum releases were confirmed at 1010 North King Street in 1998 and 2007, both investigated and closed with DOH NFA determinations, with only a small volume of residual petroleum-impacted soil remaining in place beneath asphalt at depths greater than three meters and assessed as posing no significant risk under current commercial/industrial use.	CREC	✓	
***De minimis* Conditions**			
Surface Staining			
Minor oil staining was observed throughout the subject property.	*De minimis*	✓	
Roadway			
Roadways are considered environmentally significant due to historical maintenance activities and vehicle emissions that can result in the accumulation of lead and other heavy metals in adjacent soils. Leaded gasoline use prior to its phase-out, along with surface sealing, striping, and equipment maintenance operations, often contributed to residual contamination along road corridors and right-of-way areas.	*De minimis*	✓	
Business Environmental Risk (BER)			
Contaminants of emerging concern (CECs):			
CECs may be present on the subject property, but are not covered under the scope of the Practice until they are defined as hazardous substances under federal regulation.	BER	✓	
Sensitive Ecological Areas:			
According to the ERIS Database Report, the Kapalama Canal was depicted as a sensitive ecological area.	BER	✓	
Suspect asbestos-containing material (ACM):			
ACM may be present on the subject property.	BER	✓	
Suspect lead-containing paint (LCP):			
LCP may be present in paint used for roadway markings.	BER	✓	

ENPRO recommends conducting a Phase II investigation as further detailed in **Section 9.1**.

2.0 INTRODUCTION

The Client retained ENPRO to conduct a Phase I ESA of the public thoroughfare described in **Table 2-1** in accordance with ENPRO's Proposal Number 24I-0315-HNL Revision 2 dated March 21, 2025.

Table 2-1
Location and Legal Description

Address	Iwilei-Kapalama DB Electrical Infrastructure Improvements Alignments, Honolulu, Hawaii
TMK	Public thoroughfare
Location	North King Street from Iwilei Road to Kohou Street, Pua Lane from North King Street to North Kukui Street, and Iwilei Road from North King Street to Kuwili Street Latitude: 21.31940333 Longitude: -157.86601208 Elevation: Less than 10 feet above sea level
Land Area	Approximately 400,000 square feet (9.2 acres)
Zoning	BMX-3: Community Business Mixed Use
Owner/Operator	State of Hawaii

This Phase I ESA conforms to standards for all appropriate inquiries[1] (AAI) into the previous ownership and uses of the subject property consistent with good commercial and customary practice as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC §9601).

2.1 PURPOSE

The goal of this Phase I ESA was to identify, to the extent reasonably feasible, RECs, controlled RECs (CRECs), historical RECs (HRECs), and BERs associated with the subject property in accordance with the Practice and the Code of Federal Regulations (CFR) (40 CFR Part 312).

This Phase I ESA also includes a limited vapor encroachment screen with respect to chemicals of potential concern (COPCs) that may migrate as vapors into the vadose zone of a property. The goal of this process is to identify a vapor encroachment condition (VEC), should one exist, as per ASTM E2600-22 "Standard Guide for Vapor Encroachment Screening on a Property Involved in Real Estate Transactions."

[1] As defined at 42 USC §96S01(35)(B) and 40 CFR Part 312

In addition, this Phase I ESA was conducted to support the Bona Fide Prospective Purchaser defense with respect to petroleum products and the range of contaminants within the CERCLA scope. As such, this report is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability[2] (hereinafter, the "landowner liability protections," or "LLPs").

2.2 DEFINITIONS

The Practice defines a recognized environmental condition (REC) as:

> (1) The presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.

The definition of a REC may be contrasted with the definition of a *de minimis* condition. *De minimis* conditions are not RECs. The Practice defines a *de minimis* condition as:

> A condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

In addition to the generalized REC, the Practice defines two specific types of RECs that may be present on a property.

A controlled recognized environmental condition (C-REC) is:

> A condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, activity and use limitation or other property use limitations) (ASTM E1527-21).

A C-REC designation does not imply that the Environmental Professional has evaluated or confirmed the adequacy, implementation, or continued effectiveness of the required control that has been, or is intended to be, implemented. Additionally, a past release that previously qualified as a C-REC may no longer constitute a C-REC at the time of this Phase I ESA if new conditions or information is identified (e.g., a change in regulatory criteria or a newly identified migration pathway).

[2] 42 USC §9601(35)(A)&(B), §9607(b)93), §9607(q), and §9607(r)

A historical recognized environmental condition (H-REC) is defined as:

> A previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations) (ASTM E1527-21).

A past release that previously qualified as an H-REC may no longer constitute an H-REC at the time of this Phase I ESA if new conditions or information is identified (e.g., a change in regulatory criteria or a newly identified migration pathway).

A vapor encroachment condition (VEC) is:

> The presence or likely presence of [contaminant of concern] vapors in the vadose zone of the [subject] property caused by the release of vapors from contaminated soil and/or groundwater either on or near the [subject property] as defined by Tier 1 or Tier 2 procedures (ASTM E2600-15).

The first tier is defined by adjusting the area of concern (AOC) to determine whether there are releases on or proximal to the property that result in a VEC. The second tier includes a detailed literature search or possible sampling to obtain greater certainty. It should be noted that a VEC is not necessarily a REC, and RECs may not result in a VEC. The evaluation of RECs is a separate process from that of evaluation VECs.

A business environmental risk (BER) is:

> A risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of commercial real estate not necessarily related to those environmental issues required to be investigated in a Phase I ESA.

BERs may warrant consideration by parties to a commercial real estate transaction. Consideration may involve additional investigation beyond this ESA, such as soil sampling, groundwater sampling, asbestos surveying, or other considerations listed in **Section 7.0**.

2.3 SCOPE OF WORK

ENPRO's scope of services for this Phase I ESA included the following:

- Identify the source(s) of potable water for the subject property and current heating and sewage disposal system(s) used at the subject property, if any, and their age if readily ascertainable (**Section 4.2**).
- Conduct a visual reconnaissance of the subject property and cursory reconnaissance of adjacent properties to identify visible evidence of RECs (**Sections 4.3 and 4.4**).

- Review current United States Geological Survey (USGS) topographic maps to identify the physiographic setting of the subject property and provide a statement on the local geologic, soil, and groundwater conditions based on ENPRO's general experience and sources such as geologic maps and soil surveys (**Section 5.1.1**).
- Review historical aerial photographs, fire insurance maps, building department records, city directories, and land use and tax assessor records, as available and appropriate, to identify past development history on and adjacent to the subject property relative to the possible use, generation, storage, release, or disposal of hazardous substances (**Section 5.2**). ENPRO attempted to identify uses of the subject property from the present back to the time that records show no apparent structures on the subject property, back to the time that the property was first used for residential, agricultural, commercial, industrial, or governmental purposes, or back to 1940, whichever is earliest.
- Review readily available geotechnical reports, environmental reports and/or other relevant documents pertaining to environmental conditions at the subject property (**Section 5.2.3**).
- Review the results of a federal, state, local and tribal environmental database search provided by an outside environmental data service for listings of properties with known or suspected environmental concerns on or near the subject property within the search distances specified by the Practice. Our database and file review search also included a review of United States Environmental Protection Agency (EPA) and State of Hawaii Department of Health (HDOH) websites for readily available information (publications and reports) concerning area-wide soil and groundwater contamination on or adjacent to the subject property (**Section 5.3**).
- Review regulatory agency files regarding listed properties of potential environmental concern relative to the subject property (**Section 5.3**).
- Interview representatives of the local fire department and HDOH to gather information or fill data gaps regarding the history of the subject property and surrounding properties relative to the likely presence of hazardous substances (**Section 5.3**).
- Identify a key site manager with specific knowledge of past and present property use and request that the key site manager meet an ENPRO representative on-site for an interview during the visual reconnaissance and/or an interview by telephone if they are not available during the reconnaissance (**Section 6.0**). ENPRO also identified and interviewed others familiar with the use and history of the subject property, as available and appropriate, including representatives of current occupants that likely use, store, treat, handle, or dispose of hazardous substances now or in the past (**Section 6.0**).
- Interview past owners and occupants of the subject property as necessary to gather information or fill property use data gaps regarding property use history (**Section 6.4**).
- Interview current owners or occupants of neighboring properties as necessary to gather information or fill property use data gaps regarding the subject property (**Section 6.5**).
- Identify data gaps relative to the Phase I ESA study findings (**Section 8.1**).

- Provide a written summary of the Phase I ESA results and identified RECs, if present, along with ENPRO's opinion and recommendations regarding the potential for contamination by hazardous substances at the subject property and any significant data gaps identified (**Section 9.0**).

This ESA did not address whether requirements in addition to AAI have been met to qualify for the LLPs, nor does it address requirements of any federal, state, or local laws other than AAI. Federal, state, and local laws may impose environmental assessment obligations that are beyond the scope of this report.

This Phase I ESA did not assess BERs as defined in Section 13 of the Practice, which are beyond the scope of ASTM Practice E1527-21. Potential BERs include, but are not limited to:

- Asbestos-containing material (ACM)
- Biological agents
- Climate change
- Controlled substances
- Contaminants of emerging concern (CECs) and substances not defined as hazardous substances under CERCLA
- Cultural and historical resources
- Ecological resources
- Endangered species
- Geotechnical concerns
- Health and safety
- Indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment
- Industrial hygiene
- Land use changes
- Lead-containing paint (LCP) unrelated to releases to the environment
- Lead in drinking water
- Mold
- Polychlorinated biphenyl (PCB)-containing building materials
- Regulatory compliance
- Suspect termiticide application
- Wetlands

This Phase I ESA did not include any sampling or testing.

2.4 SIGNIFICANT ASSUMPTIONS

In preparing this report, ENPRO assumes the following:

- Certain verbal information and representations provided by Phase I ESA owner/users; landowners, tenants, occupants, and/or their representatives; government employees; and others, are complete and accurate to the best of their knowledge.
- Government agency responses to public requests for information are complete and accurate.
- Reports provided by the private database search company (detailing a computer search of government databases) are complete and accurate.
- Written information and documents provided by the Phase I ESA owners/users, tenants, occupants and/or their representatives are complete and accurate to the best of their knowledge.

Except as discussed, ENPRO has relied on that information and did not attempt to verify its accuracy or completeness independently but did not detect any inconsistency or omission of a nature that might call into question the validity of the data. To the extent that the conclusions in this report are based in whole or in part on such information, they are contingent on its validity. ENPRO assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to ENPRO.

2.5 LIMITATIONS, EXCEPTIONS, SPECIAL TERMS, AND CONDITIONS

This investigation focused on potential sources of hazardous substances and petroleum products that may be considered to represent a REC and a potential liability concern due to the presence of such materials in significant concentrations (i.e., above acceptable limits set by the federal, state, or local government) or due to the potential for contaminant migration through exposure pathways (e.g., contact with groundwater). Materials that contain substances that are not currently deemed hazardous by the EPA, or the prevailing state environmental regulatory agency were not considered as part of this study.

Unless specifically included in our scope of services, consideration of building materials (asbestos, PCBs, and lead-containing paint), Clean Water Act concerns, Clean Air Act concerns, shorelines concerns, and Endangered Species Act concerns are not considered in this report, nor are building issues such as fire safety, indoor air quality, mold, or similar matters. ENPRO did not evaluate the subject property for compliance with land use, zoning, wetlands, or similar laws. This report is not intended to be relied upon as a full environmental compliance audit.

Hazardous substances occurring naturally in plants, soils, and rocks (e.g., heavy metals, naturally occurring asbestos, or radon gas) are not typically considered during these investigations. Similarly, construction debris (e.g., discarded concrete, asphalt) is not considered unless the

observation suggests that hazardous substances have been disposed on the subject property, and/or have substances likely to be present in significant concentrations, and/or likely to migrate to the subject property. Further, ENPRO may not identify materials that are concealed behind walls, floors, buried in the ground, located below heavy brush, or are otherwise undetectable using prevailing assessment practices.

Certain other limitations could affect the accuracy and completeness of this report, as follows, and as described in detail in **Section 8.1:**

- Subject property access limitations
- Physical obstructions to observations
- Outstanding information requests
- Historical data sources failure
- Other limitations

The conclusions presented in this report are professional opinions based solely upon visual observations of the subject property and surrounding areas and ENPRO's interpretation of the available historical and regulatory information and documents reviewed. They are intended exclusively for the purpose outlined herein and apply only to the subject property indicated. Findings and opinions presented herein apply to subject property conditions existing at the time of ENPRO's investigation and those reasonably foreseeable; they cannot necessarily apply to site changes of which ENPRO is not aware and has not had the opportunity to evaluate.

It is possible that other information exists or subsequently has become known, just as it is possible for conditions ENPRO observed to have changed after the initial observations. For these and associated reasons, ENPRO cannot under any circumstances warrant or guarantee that not finding indicators of hazardous substances or petroleum products means that hazardous substances or petroleum products and/or associated contamination do not exist on the subject property.

ENPRO's services are performed, within limits prescribed by the Client, with the usual thoroughness and competence of the consulting profession in accordance with the standard for professional services at the time those services are rendered. No warranty or representation, either expressed or implied, is included or intended in the proposals, contracts, or reports.

ENPRO makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

2.6 USER RELIANCE

For the purposes of the contractual relationship, the term "Client" refers to Michels Pacific Energy, Inc., and its affiliates, which have sole permission to rely on this report. The Practice

defines the "User" as the party seeking to use the standard to complete an ESA. The Client is the User of this Phase I ESA.

This Phase I ESA may not be relied upon by other parties without the express written consent of ENPRO and acceptance of our Terms and Conditions through ENPRO's Third-Party Reliance Agreement. ENPRO will not distribute nor publish this report without the consent of the Client except as required by law or court order.

Provided that this report is still valid and reliable, within the intended use of this report relevant to the electric utility project referenced above, ENPRO will issue a third-party reliance letter to parties that the Client identifies in writing, upon payment of the then-current fee for such letters. All third parties relying on ENPRO's report, by such reliance, agree to be bound by ENPRO's proposal and reliance agreement.

This report does not correspond to a planned transaction; therefore all transaction-related language has been removed. See Deletions, Section 8.2, for additional explanation.

3.0 USER PROVIDED INFORMATION

In accordance with the Practice, the User (the Client) of this Phase I ESA was informed of their responsibility to provide the following information for consideration during the assessment:

- Environmental liens and AULs for the subject property resulting from the user's review of land title and judicial records
- Actual knowledge of the user regarding any environmental liens or AULs
- Specialized knowledge or experience which may be indicative of a REC
- Commonly known (within the local community) or reasonably ascertainable information regarding past releases, conditions indicative of releases, or threatened releases of hazardous substances or petroleum products
- Information as to whether the purchase price of the subject property is lower than the fair market value due to contamination
- The reason why the User wants to have the Phase I ESA performed

Mr. Ryan Morrissey, Senior Alternative Delivery Manager for Michels Electric and Project Manager for the subject property, provided responses regarding the above information through completion of the User questionnaire provided in **Appendix C**. Mr. Morrissey has been familiar with the subject property for three years.

3.1 TITLE RECORDS

The User did not provide ENPRO with any information regarding their review of land title and judicial records.

3.2 ENVIRONMENTAL LIENS AND AULS

Mr. Morrissey reported no knowledge of environmental liens or AULs for the subject property.

3.3 SPECIALIZED KNOWLEDGE AND EXPERIENCE

Mr. Morrissey reported no specialized knowledge or experience which may be indicative of a REC for the subject property.

3.4 COMMONLY KNOWN INFORMATION

Mr. Morrissey did not report any commonly known or reasonably ascertainable information that may indicate contamination at the subject property or any past events that could have resulted in environmental impacts for the subject property or adjoining properties, except for common knowledge that contaminants are in the vicinity of the subject property.

3.5 VALUATION REDUCTION

Mr. Morrissey indicated the purchase price for the subject property was not applicable to this ESA.

3.6 REASONS FOR PERFORMING THE PHASE I ESA

The purpose of this Phase I ESA was to identify environmental issues as part of due diligence during design, permitting, and construction of electrical duct banks at the subject property.

4.0 SITE RECONNAISSANCE

Site reconnaissance was performed by Ms. Kimberly Kim on September 2, 5, and 8, 2025 to observe general conditions and operations at the subject property. The reconnaissance included a visual survey of the subject property, and a brief survey of the visible portions of the adjacent parcels, and interviews with operators of adjacent properties as described in **Section 6.0**.

Weather conditions at the time of the reconnaissance were mid-80s and sunny.

4.1 METHODOLOGY AND LIMITING CONDITIONS

The subject property was observed from the periphery and systematically traversed to view features and existing structures. It was possible to walk adjacent to the entire subject property. All accessible areas were observed for evidence of storage, activities, or features that could represent RECs. Due to the presence of vehicle traffic, visibility of some street features was restricted. The entirety of the subject property was covered in asphalt or concrete pavement; therefore, direct observation of soil conditions was not possible.

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

4.2 SUBJECT PROPERTY IMPROVEMENTS AND USAGE

No buildings, structures, or other improvements were observed at the subject property during ENPRO's site reconnaissance, except for the roadway and utility infrastructure.

The entirety of the subject property was paved with asphalt and concrete for motor vehicle and pedestrian traffic.

The subject property comprises portions of North King Street from Iwilei Road to Kohou Street, Pua Lane from North King Street to North Kukui Street, and Iwilei Road from North King Street to Kuwili Street.

The subject property doubles as a utility corridor.

4.3 SUBJECT PROPERTY OBSERVATIONS

Table 4-1 summarizes the site inspection and findings of environmental conditions at the subject property.

Table 4-1
Site Observations

Item	Observation	Finding
Roads	Roads or paths with no apparent outlet, which are considered to have potentially been used as an avenue for releases or the disposal of hazardous substances or petroleum products, were not observed on the subject property.	Not a REC
Storage Tanks	Above-ground storage tanks (ASTs), underground storage tanks (USTs), associated dispensers, and/or piping used to contain hazardous substances or petroleum products were not observed on the interior or exterior portions of the subject property. Evidence of USTs was observed at three gas stations adjacent to the project site. No visible evidence of contamination, such as odors or staining, was observed.	REC
Odors	Strong, pungent, or noxious odors were not noted on the interior or exterior portions of the subject property during the site reconnaissance.	Not a REC
Standing Surface Water or Pools of Liquid	Standing surface water, pools, catchment structures, and/or sumps containing liquids likely to be hazardous substances or petroleum products were not observed on the interior or exterior portions of the subject property during the site reconnaissance.	Not a REC
Drums, Totes, and Bulk Containers	Drums, totes, and/or bulk containers were not observed on the interior or exterior portions of the subject property.	Not a REC
Hazardous Substances or Petroleum Products Not Connected to Identified Uses	Hazardous substances or petroleum product containers unrelated to identified site uses were not observed on the interior or exterior portions of the subject property.	Not a REC
Unidentified Substance Containers	Containers of unidentified substances suspected of being hazardous substances or petroleum products were not observed on the interior or exterior portions of the subject property.	Not a REC
Polychlorinated Biphenyls (PCBs)	Numerous pole-mounted transformers, owned by HECO, were observed along the length of the subject property. According to HECO's response to ENPRO's inquiry, these transformers are PCB-free, except for vaulted transformers 30959, 30960, and 30978 at 333 North King Street that did not have test data.	Not a REC
Heating/Cooling	Heating and cooling systems including elements such as natural gas furnaces, heating oil fueled boilers, electric baseboards, and/or municipally supplied steam were not observed on the subject property.	Not a REC
Stains or Corrosion	Stains or corrosion indicative of hazardous substances or petroleum products were not observed on floors, walls, or ceilings.	Not a REC

Table 4-1
Site Observations

Item	Observation	Finding
Drains and Discharge Features	Drains and other discharge features were not observed on the interior or exterior portions of the subject property, except for storm drains discharging to the Pacific Ocean along the entire subject property.	Not a REC
Pits, Ponds, or Lagoons	Pits, ponds, and lagoons were not observed on the subject property.	Not a REC
Stained Concrete or Pavement	Minor staining of pavement was observed throughout the subject property (see Photo 32). Staining was more concentrated in portions of the right hand lanes that were periodically used for parking.	*De minimis* condition
Stained Soil or Stressed Vegetation	Stained soil and stressed vegetation were not observed on the exterior portion of the subject property.	Not a REC
Solid Waste or Fill Dirt	Areas that appeared to be graded by non-natural causes, filled with fill of unknown origin, mounds, depressions, or other features suggesting trash, construction debris, demolition debris, or other solid waste disposal were not observed on the subject property.	Not a REC
Wastewater	Wastewater or other liquids, including stormwater, that discharges into a drain, ditch, underground injection system, or stream on or near the subject property were not observed during the site reconnaissance. The storm drain inlets along the length of the subject property direct stormwater to the municipal drainage system and eventually discharges to the Pacific Ocean.	Not a REC
Wells	Dry wells, irrigation wells, injection wells, abandoned wells, or monitoring wells were not observed on the interior or exterior portions of the subject property. A total of four monitoring wells were observed at the three gas stations adjacent to the subject property. An additional three monitoring wells were observed on an Iwilei Road adjacent property.	REC
Septic Systems or Cesspools	Septic systems, cesspools, and/or leach fields were not observed on the subject property.	Not a REC
Wetland Areas or Surface Waters	A detailed wetland evaluation was beyond the scope of this investigation. Areas that may be wetlands or nearby surface water bodies were not observed on or near the subject property, except for the Kapalama Canal. There were no obvious signs of filling of wetlands or discharges (e.g., oily sheen) to the canal.	Not a REC

4.4 ADJACENT PROPERTY AND SURROUNDING AREA OBSERVATIONS

The area surrounding the subject property consisted mostly of commercial properties. Adjoining and surrounding properties were observed from the subject property to identify features, activities, uses, and conditions that may indicate RECs at the subject property. Adjoining property uses are listed in **Table 4-2**.

Table 4-2

Adjoining Property Use

Direction	Property	Use
North	7/11	Gas Station
	Kalihi-Palama Health Center	Medical
	Banyan Gardens	Residential
	Unnamed Apartment Complex	Residential
	Iwilei Senior Residence	Residential
	Hawaiian Discovery Furniture	Commercial
South	Mayor Wright Apartment Complex	Residential
	Aala Park	Community
	215 North King Street	Residential
East	Palama Supermarket	Commercial
	Parking Lot	Commercial
	Kalihi-Palama Health Center	Medical
	M&N Filipino Restaurant	Commercial
	Tamashiro Market	Commercial
	Church	Community
	Church	Community
	Shell	Gas Station
	Mayor Wright Apartment Complex	Residential
	Kukui Gardens	Residential
West	King's Market	Commercial
	Ferguson Bath, Kitchen, and Lighting Store	Commercial
	Chrysty Second Hand Shop	Commercial
	Oahu Home Construction	Commercial
	Jesus Faith Deliverance Church	Community
	Kaiulani Elementary School	Education
	Texaco	Gas Station
	Talofa Polynesian Market	Commercial
	RRR Recycling Services	Commercial
	MANA Global Retail Outlet	Commercial
	Jollibee Chicken	Restaurant
	Used Car Sales	Commercial
	Hawaii Chinese Baptist Church	Community
	Mark Kitchen and Catering	Commercial
	Hawaii Department of Human Services	Government
	Institute for Human Services	Government
	Salvation Army Thrift Store	Commercial
	Sunspear Energy	Commercial
	Veterinary Hospital	Medical

ENPRO made the following observations on the adjoining properties:

- Three active gas stations with USTs
  - Two monitoring wells at one gas station
  - One monitoring well at each of the other two gas stations
- Three monitoring wells on an adjoining property to the south
- Multiple houseless encampments, especially in the vicinity of Iwilei Road and Aala Park

4.5 SITE RECONNAISSANCE FINDINGS

ENPRO identified the following findings during the site reconnaissance:

- 7/11 at 1136 North King Street with associated USTs, dispensers, and one monitoring well
- Texaco at 743 North King Street with associated USTs, dispensers, and two monitoring wells
- Shell at 666 North King with associated USTs, dispensers, and one monitoring well
- Three monitoring wells at 375 North Nimitz Highway
- Minor oil staining was observed throughout the subject property.
- Houseless encampments were plentiful in the southwest portions of the subject property.

Photographic documentation of ENPRO's site reconnaissance is included in **Appendix B**.

5.0 RECORDS REVIEW

This section presents the results of ENPRO's environmental records review. These records were reviewed to assess potential environmental concerns for the subject property and, when applicable, surrounding properties.

5.1 PHYSICAL SETTING SOURCES

ENPRO reviewed reasonably ascertainable sources to assess the physical setting of the subject property, including topographic, geologic, hydrogeologic, and hydrologic characteristics. The results of ENPRO's review are presented below.

5.1.1 TOPOGRAPHY AND DRAINAGE

The general location of the subject property was shown on the 2013 USGS Honolulu Quadrangle at an elevation of less than ten feet above mean sea level (**Figure 1**).

Based on ENPRO's on-site observations and topographic maps reviewed, the topographic gradient and presumed hydraulic gradient was to the southwest, towards the Pacific Ocean.

Stormwater runoff from the subject property was generally presumed to follow engineered gutters to storm drains along King Street prior to eventual discharge to the Pacific Ocean.

5.1.2 SURFACE WATERS

There were no surface water features on the subject property, other than Kapalama Canal which transects the subject property near its northern terminus.

Table 5-1 lists the surface water bodies nearest to the subject property.

Table 5-1

Nearby Surface Water Bodies Within a Half-Mile Radius[3]

Direction	Name	Approximate Distance (feet)
North	Kapalama Drainage Canal	Transects subject property
South	Unnamed Drainage Canal Honolulu Harbor	335 520
East	Kunawai Spring Waolani Stream Nuuanu Stream Pauoa Stream	3,400 2,300 2,400 3,450

[3] Source: National Wetlands Inventory, 2025

Table 5-1

Nearby Surface Water Bodies Within a Half-Mile Radius[3]

Direction	Name	Approximate Distance (feet)
West	Kapalama Drainage Canal	Transects subject property

The subject property was within 150 meters (approximately 500 feet) of a surface body of water.

5.1.3 GROUNDWATER

Groundwater beneath the subject property occurs in two distinct aquifers within the Kalihi Aquifer System of the Honolulu Aquifer Sector. The shallow aquifer is classified as a basal, unconfined, sedimentary aquifer, occurring in non-volcanic lithology. The groundwater status is reported as currently used, but not for drinking water, nor was it considered to be ecologically important. This aquifer is described as having a moderate salinity (1000-5000 milligrams per liter [mg/L] chloride). Groundwater within the aquifer is further described as replaceable, with a high vulnerability to contamination (Mink & Lau, 1990).

The deeper aquifer is classified as a basal, confined, flank aquifer, occurring in horizontally extensive lavas. This aquifer is classified as currently used as a drinking water source, and as having a fresh salinity (<250 mg/L chloride). The groundwater is further described as irreplaceable, with a low vulnerability to contamination (Mink & Lau, 1990).

HDOH has established the underground injection control (UIC) line to determine the level of protectiveness afforded an aquifer as reflected by water quality standard criteria. Generally, groundwater mauka (inland) of the UIC line is considered a potential source of drinking water and groundwater makai (seaward) of the UIC line is not a potential drinking water source. The subject property lies mauka of the UIC line. Therefore, groundwater beneath the subject property is considered a potential source of drinking water. However, for the purposes of DOH Environmental Hazard Evaluations, the site is not considered a drinking water source, as the shallower aquifer is not a drinking water source.

The HDOH Safe Drinking Water Branch (SDWB) maintains an online database of contaminated wells throughout Hawaii (HDOH SDWB). ENPRO's September 30, 2025 review of SDWB's database did not identify any contaminated wells within approximately one mile of the subject property.

The Commission on Water Resource Management (CWRM) within the Department of Land and Natural Resources (DLNR) is responsible for managing groundwater resources in Hawaii. Individual files on all permanent wells drilled in the state are maintained by the CWRM and indexed in a searchable database (DLNR CWRM). The ERIS Physical Settings Report (PSR) reports all of the State's wells indexed in the CWRM database located within a mile of the subject property. ENPRO's review of the ERIS PSR and September 30, 2025 review of the CWRM database identified 150 wells within one mile of the subject property.

The hydrogeologic gradient in the vicinity of the subject property was anticipated to be slight, with a general trend to the south. Groundwater levels may be influenced by leaking infrastructure, tidal fluctuations, and human activity.

Subsurface conditions at the subject property were interpreted from available data and may vary. Groundwater was assumed to flow south based on topography and nearby water features, toward Honolulu Harbor. Actual groundwater hydraulic gradient and flow direction(s) do not always follow topography, especially in areas influenced by heavy pumping from municipal or agricultural wells, irrigation, and/or recharge projects. Additional regional research and/or site-specific groundwater studies may be required to reliably establish groundwater flow direction in the vicinity of the subject property.

Depth to groundwater is estimated based on groundwater levels measured from nearby wells by the United States Geological Survey database. Groundwater is expected to be encountered at approximately 5 to 10 feet below ground surface.

5.1.4 SOILS

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey accessed on September 30, 2025, the predominant soil type found throughout the subject property is Ewa silty clay loam (USDA NRCS). This well-drained soil is found in basins and on alluvial fans on the islands of Maui and Oahu. These soils developed in alluvium derived from basic igneous rock.

Other soil types found on the subject property include: fill land and Hanalei silty clay. These soil types are described in the following paragraphs:

Hanalei silty clay is a poorly drained soil located on bottom lands on the islands of Kauai and Oahu. These soils developed in alluvium derived from basic igneous rock.

Fill Land consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage and general material from other sources.

5.2 HISTORICAL RECORDS REVIEW

ENPRO consulted historical record sources to develop a history of the subject property's previous uses. The sources reviewed for this Phase I ESA included:

- Topographic maps
- Aerial photographs
- Sanborn fire insurance maps
- City directories
- Historic maps of Oahu

- Internet search query

A summary of ENPRO's significant findings is provided in **Table 5-2** for the subject property and **Table 5-3** for adjacent and nearby properties. Copies of source documents are included in **Appendix D**.

Table 5-2
Historical Subject Property Use

Year	Source[1]	Observation
1914	Sanborn map	The subject property was depicted as a road.
1953	Topographic map	The northern portion of the subject property was depicted as a secondary highway, with the southern portion as a primary highway. Railroad tracts transected the southern, Iwilei Road portion of the subject property.
1969	Topographic map	The railroad tracks were no longer depicted along the southern portion of the subject property.
1983	Topographic map	The entire King Street portion of the subject property was depicted as a secondary highway, with Iwilei depicted as a road.

1 = ERIS, 2025

Table 5-3
Historical Adjoining and Nearby Property Use

Year	Source[1]	Observation
1914	Sanborn map	The region to the north of Kapalama Canal was noted as sugar cane fields. Areas adjacent to the subject property were primarily developed as a housing tract. The Palama Fire Station and Kaiulani Public School were depicted to the west of the subject property. Kaumakapili Church and St. Elizabeth Church were depicted to the east. Adjacent areas to the south were developed with small shops along King Street, and multiple tenement buildings. The southwest region was depicted as the Oahu Railway and Land Company's Round House and Car Shop, including turn table, boiler shop, paint shop, machine shop, car shop, and foundry. A junk yard was depicted to the southeast of the subject property. The City Mill Company Lumber Yard and Aala Park were depicted on the adjacent properties to the south.
1927	Sanborn map	Several dwellings to the north had been replaced with small shops, particularly along King Street. Portions of the lumber mill to the south had been redeveloped as the Aala Market.
1950	Sanborn map	Two gas stations were depicted on northeast adjacent properties. An additional two gas stations and auto repair shop were depicted on southwestern adjacent properties. The lumber yard was replaced with an expansion of the railway depot and auto parking. The Honolulu Fire Department Station 8 was depicted on a southwestern adjacent property.
1955	Sanborn map	A gas station was depicted on a northwestern adjacent property.

Table 5-3

Historical Adjoining and Nearby Property Use

Year	Source[1]	Observation
1952	Aerial Photograph	The areas adjacent to the subject property appeared to be developed primarily for residential use, with commercial/industrial areas primarily to the southwest.
1953	Topographic map	A railway depot with turnstile was depicted adjacent to the southern portion of the subject property. Two churches and two schools were depicted adjacent to the central portion of the subject property.
1959	Aerial Photograph	The northern region had undergone significant redevelopment and appeared to be used for commercial purposes.
1968	Aerial Photograph	The region to the west of the subject property had undergone a significant shift from residential to commercial/industrial use. Residential structures to the southeast had been demolished and the area was vacant.
1969	Topographic map	The railroad tracks and turnstile was no longer present. A large building was depicted along Iwilei Road. Aala station was depicted as Aala Triangle Park.
1976	City Directory	Sasaki Shell Service Station, 1101 North King Street
1976 – 1981	City Directory	Kokea Service Station (previously Manabe Service Station), 1065 North King Street
1976 – 1981	City Directory	Sub's Auto Repair, 587B North King Street
1976 – 1981	City Directory	Motor Service Company, 1138A North King Street
1976 – 1981	City Directory	Palama Auto Company, 1138 North King Street
1976 – 1989	City Directory	North King Cleaners, 615 North King Street
1976 – 1991	City Directory	King Service Station, 1070 North King Street
1976 – 1991	City Directory	Richards Union Service Station, 1136 North King Street
1976 – 1996	City Directory	Yamasaki Texaco Service Station, 1010 North King Street
1976 – 1981	City Directory	Wholesale Auto Repair (also listed as Bob's Auto Repair and Don's Car Doctor), 1138B North King Street
1976 – 2003	City Directory	Shell Mini Mart (previously listed as Pua Shell Station and Handi Pantry Mini Market Gas Station), 666 North King Street
1976 – 2024	City Directory	Tom's Chevron (previously listed as Lester's Chevron, A & V Chevron, and J P Chevron), 743 North King Street
1978	Aerial Photograph	The area to the southeast was developed with an apartment complex and park.
1981	City Directory	Honolulu Fire Department, 840 Iwilei Road
1996 – 2020	City Directory	Jiffy Lube (previously Wizard of Oil and Texaco Xpress Lube), 555 North King Street

1 = ERIS, 2025

5.2.1 SUMMARY OF HISTORICAL USE

King Street is one of Honolulu's oldest and most historically significant corridors, originating in the mid-19th century during the Hawaiian monarchy as a central thoroughfare connecting the waterfront to royal and civic institutions. Initially developed as a footpath, it evolved into a formal street lined with government buildings, churches, and markets. By the early 20th century, King Street became a major transportation and commercial artery with streetcar lines, road widening projects, and the establishment of residential subdivisions and civic landmarks. The western segment, particularly near Iwilei, was constructed over filled wetlands and hosted rail yards, rice mills, and industrial warehouses, reflecting early land reclamation and freight handling activities during the territorial period.

From the 1950s onward, King Street saw increased automobile use, road reconfiguration, and a rise in commercial properties such as gas stations, auto repair shops, and small businesses. Utility upgrades, zoning changes, and population growth reinforced its role as a dense mixed-use corridor. Present-day land use along King Street includes a combination of retail, civic institutions, mid-rise residential units, and aging commercial buildings. Potential environmental concerns along the corridor relate to former fuel stations, underground storage tanks, and auto-related operations, as well as subsurface conditions associated with historical landfilling and industrial use in the Iwilei area.

Current uses of the adjacent properties are listed in **Table 4-2, Section 4.4**.

5.2.2 HISTORICAL USE FINDINGS

ENPRO identified the following findings during the historical record review of the subject property, adjacent properties, and surrounding areas:

- The Kapalama Drainage Canal transects the northernmost portion of the subject property.
- Two fire stations were adjacent to the subject property[4]:
  - Honolulu Fire Department Station 8, 840 Iwilei Road
  - Palama Fire Station, 879 North King Street
- The Oahu Railway and Land Company's Round House and Car Shop was adjacent to the subject property, including:
  - Turn table
  - Boiler shop
  - Paint shop

[4] Tank records were requested by the Honolulu Fire Department for these properties, but were not received as of the date of this report.

- Machine shop
- Car shop
- Foundry

- A junk yard was depicted to the southeast of the subject property, at 1001 Liliha Street.
- The City Mill Company Lumber Yard was depicted on the adjacent property to the south.
- Gas stations were listed at:
  - Tom's Chevron, 743 North King Street
  - Shell Mini Mart, 666 North King Street
  - Yamasaki Texaco Service Station, 1010 North King Street
  - Kokea Service Station, 1065 North King Street
  - King Service Station, 1070 North King Street
  - Sasaki Shell Service Station, 1101 North King Street
  - Richard's Union Service Station, 1136 North King Street
- Auto/motorcycle repair businesses were identified at:
  - Jiffy Lube, 555 North King Street
  - Sub's Auto Repair, 587B North King Street
  - Palama Auto Company, 1138 North King Street
  - Motor Service Company, 1138A North King Street
  - Wholesale Auto Repair, 1138B North King Street
- Cleaners with potential for dry cleaning at North King Cleaners, 615 North King Street

5.2.3 PREVIOUS ENVIRONMENTAL REPORTS

No previous reports were provided to ENPRO for review.

5.3 REGULATORY RECORDS REVIEW

ERIS provided results of a regulatory agency database search in their Database Report dated August 22, 2025. ENPRO reviewed that report for information pertaining to storage and/or reported releases of hazardous substances and petroleum products on the subject property and on surrounding properties that may affect the subject property as required by the Practice.

The subject property was listed in the following databases as identified in ERIS's report. However, due to the nature of the subject property, and location accuracy of facilities in the ERIS

database, it is ENPRO's interpretation that the following listings are more likely associated with the adjoining properties, rather than the subject property.

- Resource Conservation and Recovery Act Very Small Quantity Generator (RCRA-VSQG)
- RCRA Non-Generators (NON GEN)
- Emergency Response Notification System (ERNS)
- The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database (FED BROWNFIELDS)
- HEER Sites of Interest (SHWS)
- Landfill Sites on the Hawaii Islands (SWF/LF)
- Leaking Underground Storage Tank (LUST)
- UST
- Facilities with Institutional Controls (INST)
- Brownfields Sites (BROWNFIELDS)
- Facility Registry Service/Facility Index (FINDS/FRS)
- Integrated Compliance Information System (ICIS)
- Historical Business Activity Risk (HIST RISK)
- Spills Listing (SPILLS)
- Hazardous Waste Management Facilities (HWM)

The ERIS Database Report identified a total of 840 properties and 2 "unplottable" sites with inadequate address information within the Practice's approximate minimum search distances (AMSDs) from the subject property. ENPRO reviewed each listing to assess whether the corresponding property details included in the Database Report revealed a potential environmental impact to the subject property. The following sites were identified for further investigation:

- 710 North King Street
- 76 Kapalama 7-11, 1136 North King Street
- 938 Kohou Street
- Aim King Street Shell, 666 North King Street
- Gennesart King Street Texaco, 743 North King Street
- Honolulu Community Action Program, 337 & 357 North King Street
- Kingsgate Plaza, 516 Dillingham Boulevard
- Island Movers, Inc., 414 Kuwili Street, Pier 42

- Iwilei Center VRP Site 34, 866 Iwilei Road
- Iwilei Fruit and Vegetable Warehouse, 920 Iwilei Road
- King's Service, 1070 North King Street
- Mahalo North King Auto, 1010 North King Street
- Senior Residences at Iwilei, 888 Iwilei Road
- State of Hawaii, 333 & 351 North King Street
- Steeltech Inc., 373 North Nimitz Highway

The remaining listed sites were not expected to have the potential to impact the subject property based on the following, or a combination thereof:

- The listed property was sufficiently distant from the subject property that the expected quantities and hazardous materials potentially present at the site were unlikely to impact the subject property
- The listed property was down-gradient or cross-gradient to the subject property and located at a sufficient distance that it would be unlikely to impact the subject property
- The listed property was identified in the UST or Small Quantity Generator (SQG) databases and was not on or adjoining the subject property, nor was the site listed in other databases indicating a release or environmental violations
- The listing for the facility suggested a short-term release had occurred (e.g., a traffic accident or illegal drugs founds at a residence) with associated response actions completed
- The quantity of the hazardous substances or petroleum product released from a listed facility was not considered to have resulted in contamination above the most stringent criteria that would require regulatory action
- The listed property record indicated that the site was not on or adjoining the subject property, was fully characterized after 2015, the release impacted soil only, and the release was not recognized as indicative of area-wide conditions
- The listed property record indicated that contamination at the site was limited to non-mobile contaminants originating from a localized source, impacted soil only, and was not on or adjoining the subject property
- The listed property record indicated the case was closed to the satisfaction of the lead regulatory agency after 2015 and residual contamination, if present, was not considered likely to affect the subject property based on one or more of the criteria described above

The ERIS Database Report is included in **Appendix E**.

In addition to the ERIS Database Report, ENPRO consulted government sources to obtain historical use information and aid in identifying RECs, C-RECs, and/or H-RECs for the subject property. The sources reviewed for this Phase I ESA included:

- HDOH Solid and Hazardous Waste Branch (SHWB) records
- HDOH Hazard Evaluation and Emergency Response (HEER) Office records

5.3.1 SHWB RECORDS

The HDOH SHWB was contacted on September 26, 2025 to obtain records for properties listed in **Section 5.3**.

The SHWB provided records for the following properties:

- 373 North Nimitz Highway
- 666 North King Street
- 743 North King Street
- 938 Kohou Street
- 1010 North King Street
- 1070 North King Street
- 1136 North King Street
- 414 Kuwili Street, Pier 42
- Liliha Civic Center
- 195 South King Street
- 920 Iwilei Road

Based on the review of the records listed above, only the sites listed below exhibited RECs or contain features and historical uses that justify further investigation. All other reviewed properties did not indicate environmental concerns requiring follow-up. The SHWB's response is provided in **Appendix C**.

373 North Nimitz Highway

A 1,000-gallon UST that historically stored leaded gasoline was removed from the property at 373 North Nimitz Highway, Honolulu, in June 1994. The tank, constructed of bare steel and reportedly last used around 1967, was taken out of service and excavated under oversight by the HDOH. During closure activities, a release was discovered, and impacted soil was identified and removed. The release was formally reported to the DOH through a confirmed release notification.

No immediate hazards such as fire, vapor exposure, or groundwater impact were identified, and the quantity of released material was not specified. Excavation of affected soils was noted as the primary remedial measure. The available documentation does not include confirmation of regulatory closure or verification that all contamination was removed.

1036 North King Street

Subsurface investigations conducted between 1987 and 1995 document a confirmed release of petroleum hydrocarbons associated with the former gasoline underground storage tank system formerly located at 1036 North King Street. Soil borings advanced in 1987 and 1989 identified isolated lead impacts at the former tank basin, while groundwater monitoring performed in 1991 detected benzene in monitoring well MW-3 at concentrations exceeding DOH cleanup levels. Three groundwater monitoring wells (MW-1 through MW-3) were installed in 1991 to further evaluate the extent of petroleum impacts. DOH correspondence issued between 1991 and 1994 requested additional sampling to characterize the benzene plume and to verify whether groundwater impacts persisted downgradient of the former UST location.

Additional groundwater sampling was completed in February 1995 by Cotton & Frazier Consultants. Analytical results from this sampling event indicated non-detect concentrations of benzene, toluene, ethylbenzene, and xylenes, with total petroleum hydrocarbons as gasoline detected at 0.078 mg/L, below applicable DOH cleanup criteria. No visual or olfactory evidence of hydrocarbon contamination was observed during the 1995 well evaluation. The monitoring wells were subsequently decommissioned in May 1995 through cutting, backfilling, and sealing in accordance with DOH direction.

Based on the information provided in the regulatory records, the former UST release has been investigated through multiple soil and groundwater assessments, and the DOH issued a written No Further Action determination in March 1995. All associated monitoring wells have since been properly abandoned, and no active environmental investigation or remediation activities are ongoing at the site.

920 Iwilei Road

Regulatory records for the former Iwilei Fruit and Vegetable Warehouse at 920 Iwilei Road (Facility ID 9-103747) document a petroleum release discovered during removal of a 2,000-gallon steel underground storage tank in 2002 during excavation activities, with petroleum odor observed in soil and sheen and globules noted in groundwater at the time of removal. Cleanup actions were initiated in conjunction with the tank excavation, and the release was reported to DOH in accordance with state regulatory requirements.

Communication logs and DOH correspondence from April through May 2002 document coordination between the Housing and Community Development Corporation of Hawaii, Kimura International, The Nakoa Companies, and DOH regarding closure notifications, removal scheduling, and site assessment obligations. Multiple updates were provided to DOH as removal dates shifted, and DOH issued guidance summarizing required procedures and reporting expectations for both tank closure and release response.

Subsequent DOH record-request files from 2003, 2010, 2017, and 2019 continue to list Facility ID 9-103747 in the state's UST/LUST inventory. No documentation of a DOH no further action (NFA) determination or case-closure letter for the 2002 release was identified in the

materials reviewed, and the later records reflect only the continued presence of the site within DOH's regulatory files.

1070 North King Street

This property historically operated as a Chevron retail gasoline station beginning in at least the 1960s and was formerly equipped with multiple underground storage tanks, including gasoline and waste-oil USTs. A documented release of approximately 800 gallons of unleaded gasoline occurred in 1987, resulting in impacts to soil and groundwater. Subsequent investigation identified petroleum-hydrocarbon–affected soils near the former dispenser islands, fuel USTs, and waste-oil UST area. In 1993–1994. Chevron conducted a full UST system removal, excavation of contaminated soil, extraction and disposal of petroleum-impacted groundwater, and onsite bioremediation of excavated materials. Post-remediation soil and groundwater sampling performed in late 1993 confirmed that contaminant concentrations met the DOH cleanup criteria applicable at the time. Following HDOH review, the agency issued a No Further Action letter on July 6, 1994, indicating that no additional remedial action was required for the documented release.

666 North King Street

A review of regulatory correspondence, release response submittals, environmental investigation reports, and no-further-action (NFA) determinations for the Shell service station at 666 North King Street, Honolulu, Oahu, Hawaii (HDOH Facility ID 9-101026) identified several historical petroleum releases that have undergone investigation and regulatory closure. DOH issued NFA determinations for releases reported in 2002 and 2003, indicating that soil impacts were below HDOH Tier 1 action levels and that excavated non-hazardous materials were properly managed and disposed; HDOH concluded that no additional action was required for Release No. 030030 and Release No. 020033.

A subsequent confirmed petroleum release (Release ID 080030) was reported in 2008 following Phase II ESA activities that identified low-level detections of petroleum hydrocarbons in soil and groundwater. A Confirmed Release Notification form submitted in 2008 documented the likely diesel release and noted that impacts were confined to soil. DOH reviewed the Phase II findings and required supplemental evaluation for cadmium and PCBs in the vicinity of boring B1, where TPH-O and TPH-D were detected at 300 mg/kg and 200 mg/kg, respectively, at 17–19 feet bgs .

Between 2008 and 2012, the responsible party completed multiple rounds of soil and groundwater sampling, installation of four groundwater monitoring wells, and quarterly release response reporting. Analytical results documented in the 2009 Monitoring Well Installation Report showed that all petroleum hydrocarbons, VOCs, metals, and PCBs were below applicable HDOH Tier 1 Environmental Action Levels (EALs) in both soil and groundwater, including at the location selected to address DOH's request for additional cadmium and PCB analysis. The consultant concluded that the vertical and lateral extent of petroleum impacts had been fully delineated and that no further investigation was warranted. Subsequent HDOH correspondence from 2009 to 2012 consistently acknowledged receipt of monitoring reports and required no additional corrective

action, with no exceedances of EALs reported during this period (e.g., 2010–2012 release response letters).

414 Kuwili Street, Pier 42

During removal of four 1,000-gallon underground storage tanks (USTs) at the Island Movers facility at Pier 42 in October 2000, petroleum-impacted soil and groundwater were encountered, and a confirmed release was reported to the Hawai‘i Department of Health (DOH). Contaminated soil was excavated, minimal free product was removed, and the extent of impacts was subsequently delineated through consultant investigations and DOH oversight. Semi-annual groundwater monitoring was conducted from 2001 through 2003. Across five consecutive sampling events, all petroleum-related constituents were either non-detect or detected at concentrations below DOH Tier 1 Environmental Action Levels, demonstrating a consistent decreasing trend from initial sampling. Based on the investigation results and sustained below-action-level groundwater conditions, DOH issued a No Further Action (NFA) determination for Release ID 010005 on July 24, 2003.

1010 North King Street

The site at 1010 North King Street, Honolulu has operated historically as a gasoline service station beginning at least in the 1960s, formerly under Texaco and later as Mahalo / Aloha Petroleum. Multiple underground storage tanks (USTs), dispensers, and associated piping were present during this operational period. Environmental investigations conducted in 1998 identified petroleum-impacted soil beneath dispenser and UST areas, including detections of toluene and oil-range hydrocarbons. This release was assigned Release ID 98-0145, and subsequent regulatory review concluded that reported concentrations were below Hawai‘i Tier 1 action levels. The Hawai‘i Department of Health (DOH) issued a No Further Action (NFA) determination for the 1998 release on March 30, 1999, formally closing the case.

A second release was discovered in December 2007 during removal of four USTs, dispensers, and product piping. Petroleum-impacted soil was documented beneath the former UST system, resulting in Release ID 080009. Over-excavation removed most impacted soil, leaving approximately 1.1 m^3 of residual petroleum-impacted soil below three meters depth, confined beneath asphalt and below DOH Tier 2 Environmental Action Levels for commercial/industrial land use. DOH reviewed the subsequent Environmental Hazard Assessment and UST closure documentation and issued an NFA determination on September 3, 2008, concluding that remaining contamination does not pose a significant risk under current commercial/industrial use. The site is currently considered closed from a regulatory standpoint, with only standard long-term management provisions applicable to the deeper residual soil impacts.

5.3.2 HEER OFFICE RECORDS

The HDOH HEER Office was contacted on September 26, 2025 to obtain records for the properties listed in **Section 5.3**.

ENPRO received a response from the HEER Office on October 24, 2025. The HEER Office provided records for the following properties, via links to the iHEER database:

- 333 & 351 North King Street
- 710 North King Street
- 866 Iwilei Road (Iwilei Center VRP Site 34)
- 888 Iwilei Road
- 938 Kohou Street

At the time of this report, no response has been received, and this information is not considered readily ascertainable.

ENPRO reviewed the HEER Office's iHEER database on October 21, 2025 and obtained information for the following properties (HDOH HEER Office):

- Oahu Railway & Land (OR&L) depot (333 & 351 North King Street)
- OR&L depot (355 North King Street)373 North Nimitz Highway
- 377 North King Street
- 393 North King Street
- 710 North King Street
- 866 Iwilei Road
- 888 Iwilei Road
- 938 Kohou Street
- 1020 Liliha Street

HDOH also maintained programmatic Environmental Hazard Management Plans (EHMPs) for the HART rail corridor and the Iwilei District.

OR&L Depot

The property was historically used by the Oahu Railway & Land (OR&L) depot, rail line, and associated automotive fueling and storage operations from the late 1800s through the 1970s. Four USTs – reportedly containing gasoline, diesel, fuel oil, and one unknown product – were removed in 1993 following a reported petroleum release to the HDOH. The site currently contains the historic OR&L Building, used for State offices, and an Annex storage structure.

Soil analytical results from a limited Phase II ESA showed exceedances of HDOH Tier 1 Environmental Action Levels for arsenic, cobalt, lead, diesel, motor oil, and 1,2,3-trichloropropane, primarily localized near the former UST area. Groundwater beneath the site is part of a brackish, non-potable aquifer and was not impacted. The assessment concluded that localized soil and vapor contamination, along with asbestos and lead-based paint hazards, can be

effectively managed through a Construction Environmental Hazard Management Plan (C-EHMP), vapor mitigation systems, and abatement by licensed contractors.

373 North Nimitz Highway

According to a 1994 *Underground Storage Tank Closure Report* prepared by Edward K. Noda & Associates, one 1,000-gallon steel gasoline underground storage tank (UST) was removed from 373 North Nimitz Highway. During excavation, stained soils and corrosion were observed on the tank, and approximately 45 gallons of residual gasoline were recovered. About 10 cubic yards of stained soil were excavated and tested. Laboratory results for petroleum hydrocarbons, benzene, toluene, ethylbenzene, and lead were below Hawaii Department of Health (DOH) cleanup criteria. The excavation was backfilled with clean material, and the tank was properly disposed of.

A follow-up 1995 *Soil Excavation Report* documented additional soil removal and confirmation sampling from the former UST area. Approximately 10 cubic yards of petroleum-contaminated soil were excavated, aerated, and disposed of offsite. Groundwater collected from the excavation contained low levels of benzene, toluene, and ethylbenzene, all below DOH cleanup standards. The site was backfilled and resurfaced, and no further remedial work was recommended. The former release was addressed to regulatory satisfaction, and no ongoing environmental concerns were identified.

377 North King Street

The Iwilei Civic Center property and adjacent parcels have a long history of industrial and transportation-related uses, including operations by the OR&L Company, fuel storage, vehicle maintenance, and warehouse distribution. Multiple investigations between 1992 and 2002 confirmed the presence and subsequent removal of several underground storage tanks and petroleum-contaminated soil. A 2,000-gallon tank removed in 2002 released petroleum hydrocarbons to soil and groundwater, but confirmatory sampling verified cleanup to HDOH standards and the case was closed. Previous assessments also noted minor petroleum and lead detections at concentrations less than DOH cleanup thresholds.

393 North King Street

A 2017 *Sampling and Analysis Plan* prepared by Amec Foster Wheeler for the City and County of Honolulu under the EPA Brownfields Program identified recognized environmental conditions at 393 North King Street associated with historical and regional contamination from adjacent properties. The site lies immediately north of the former Oahu Railway and Land Company rail yard and near the former Von Hamm Textiles facility, where prior investigations documented soil and groundwater impacts from petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and heavy metals. The plan noted potential migration of contaminants onto the subject property, which is underlain by a shallow groundwater aquifer, and recommended soil, groundwater, and soil gas sampling to assess petroleum, metals, solvent, and pesticide impacts and evaluate potential vapor intrusion concerns.

710 North King Street

The 710 North King Street property in Honolulu, now occupied by the Kalihi-Palama Health Center, was found to contain elevated concentrations of lead and barium in shallow soils during a 2016 investigation. The detected concentrations exceeded state action levels for unrestricted land use but were less than thresholds considered hazardous for commercial or construction worker exposure. During site redevelopment in 2019–2020, contaminated soil generated from trenching was excavated, characterized, and disposed of at the PVT Landfill in Waianae. Laboratory testing of the excavated and stockpiled material confirmed that no other contaminants, including petroleum hydrocarbons, solvents, pesticides, or PCBs, exceeded Hawaii Department of Health screening levels.

All trenches were subsequently backfilled with clean soil and the property was capped with new building foundations and pavement. As a result, the only remaining concern is limited residual soil beneath undisturbed areas that may still contain low levels of lead and barium. These areas are confined under the existing structure and paved surfaces, eliminating direct exposure risk. The site is considered environmentally stable, with no indication of groundwater or surface water impact, and proper controls are in place should any future excavation disturb subsurface soil.

866 Iwilei Road

The Iwilei Center property, encompassing approximately 3.83 acres at 866 and 850 Iwilei Road and 505 Kaaahi Street in Honolulu, was historically used for industrial purposes including gas manufacturing, auto repair, and rail yard operations. These historic uses resulted in petroleum hydrocarbons, metals, pesticides, and chlorinated solvents being detected in soil and groundwater. Environmental investigations conducted between 2019 and 2024 under the Hawaii Department of Health's (DOH) Voluntary Response Program (VRP Site No. 34) confirmed the presence of total petroleum hydrocarbons (DRO and RRO), lead, arsenic, chlordane, dieldrin, and polycyclic aromatic hydrocarbons (PAHs) at concentrations greater than DOH Environmental Action Levels. The contaminants were determined to have originated from former industrial activities predating current ownership. Following extensive site characterization, hazard evaluation, and remedial alternatives analysis, the DOH selected a remedy involving institutional and engineering controls to manage remaining contamination.

In April 2024, a Site-Specific EHMP was implemented to govern long-term management of impacted soil and groundwater through maintenance of the existing concrete and asphalt cap, worker training, and proper handling of contaminated media during construction. The property received a Letter of Completion from the DOH in September 2024, and an Environmental Covenant Agreement was recorded in July 2025 to formalize ongoing land-use restrictions, including limitation of certain areas to nonresidential use. The City and County of Honolulu now owns the property and conducts annual cap inspections per the EHMP. The 2025 inspection confirmed the cap remains intact with no evidence of exposure or new releases.

888 Iwilei Road

The property at 888 to 920 Iwilei Road in Honolulu was historically used for industrial and commercial purposes, including produce warehousing and storage. A 2,000-gallon underground storage tank (UST) was located on-site and removed in May 2002 after petroleum contamination was observed in surrounding soils. Subsequent testing detected elevated levels of total petroleum hydrocarbons (TPH) and trace concentrations of lead near the former tank. Cleanup activities, including excavation and disposal of contaminated soil, were reportedly completed later that year. The Hawai'i Department of Health (HDOH) issued a "No Further Action" letter in October 2002, confirming that regulatory closure requirements had been met for the UST release.

Follow-up subsurface investigations conducted in 2001 and 2012 confirmed the presence of limited residual petroleum impacts but no widespread contamination. Petroleum hydrocarbons were detected in two soil borings, while groundwater and soil vapor samples showed no contaminants at concentrations greater than state environmental action levels. A 2012 soil vapor survey found trace concentrations of petroleum-related compounds such as benzene, toluene, and xylenes, though all were below HDOH thresholds. The same investigation also confirmed that groundwater monitoring wells were properly closed.

938 Kohou Street

In 2017, petroleum and solvent contamination was identified in soil and groundwater along the eastern edge of 938 Kohou Street, adjacent to a former gas station. Laboratory testing detected gasoline-range petroleum hydrocarbons (GRO), polycyclic aromatic hydrocarbons (PAHs), and the ethylbenzene at concentrations greater than HDOH action limits. The HDOH subsequently assigned Release ID #201710021521 AT to the property to track the documented release.

Follow-up testing in 2018 included sub-slab soil-vapor sampling to evaluate possible vapor intrusion from the contaminated area. All detected compounds, including trichloroethene, tetrachloroethene, acetone, and minor hydrocarbons, were present at concentrations less than HDOH screening levels, indicating no indoor air concern for current or future occupants. The site remains under HDOH oversight, with a requirement to prepare a Construction Environmental Hazard Management Plan and remove any remaining underground storage tanks before redevelopment.

866 Iwilei Road

GRO, PAHs, and ethylbenzene were detected along the site's eastern boundary, associated with a former gas station release (HDOH Release ID #201710021521 AT). Follow-up testing found no vapor intrusion risk, and the site remains under HDOH oversight requiring management of residual contamination during future redevelopment.

1020 Liliha Street

The Mayor Wright Homes property at 1020 Liliha Street in Honolulu, Hawaii, occupies approximately 14.8 acres and has been developed since at least 1914. Historical records show

mixed residential and light industrial uses, including an auto painting facility, auto repair and storage areas, a soy processing plant, and a large garden. The existing 35 multi-story residential buildings were constructed in the early 1950s and remain in use as public housing. An active gasoline service station has operated directly west of the property since the 1960s.

Environmental investigations conducted between 2016 and 2018 identified trace amounts of petroleum hydrocarbons, solvents, and pesticides in soil and groundwater at concentrations less than Hawaii Department of Health action levels. However, elevated concentrations of lead were detected in surface soils adjacent to several buildings, attributed to deteriorating exterior lead-based paint. The Hawaii Department of Health has requested additional sampling to delineate the extent of lead-impacted soils and evaluate potential residual termiticides and soil vapor risks. The site is slated for full redevelopment, and no active remediation is currently underway.

HART Programmatic EHMP

The 2014 *Programmatic Environmental Hazard Evaluation and Environmental Hazard Management Plan* for the Honolulu Rail Transit Project identifies several areas along the rail alignment where contamination may be present from past industrial, agricultural, and military activities. Historic sugarcane and rice cultivation between Ewa and Aiea likely left residual pesticides and metals in soil, while long-term fuel storage, vehicle repair, and warehouse operations in areas such as Waipahu, the Airport Industrial Area, Kapalama-Iwilei, and Kaka‘ako have contributed to petroleum and solvent contamination in soil and groundwater. Notable sites include the former Aiea Laundry Facility, where a chlorinated solvent plume extends toward Aiea Bay, and the former Ewa Junction Fuel Drumming Facility, where petroleum storage and transfer operations occurred.

Additional potential impacts may result from abandoned fuel pipelines, underground tanks, and other former industrial uses along the guideway. Although remediation has been completed at several properties, residual contamination may remain and could be encountered during construction or future subsurface work. The EHMP recommends appropriate soil and groundwater management practices, monitoring, and reporting procedures to prevent exposure and migration of contaminants.

Iwilei District Programmatic EHMP

The HDOH’s *Programmatic Environmental Hazard Evaluation and Environmental Hazard Management Plan* (March 2015) documents widespread petroleum and metal contamination throughout the Iwilei District in Honolulu, historically associated with bulk fuel storage, pipelines, and industrial operations. Petroleum hydrocarbons, volatile organic compounds, and metals such as lead, arsenic, and cadmium are present in soil, groundwater, and soil vapor due to historical releases and use of debris-laden fill from the Chinatown fires. Free-phase petroleum and hydrocarbon vapors have been detected at shallow depths, and localized methane generation has also been reported.

Although contamination remains beneath portions of the district, state oversight and long-term management measures—such as soil capping, vapor barriers, and institutional controls—have

reduced exposure risks under current conditions. However, subsurface work continues to require careful management to prevent exposure to contaminated soil, groundwater, and vapors. The document establishes standard procedures for construction, reporting, and contamination response within the district to protect human health and the environment (HDOH, 2015).

5.3.3 REGULATORY RECORDS FINDINGS

ENPRO identified the following findings during the government record review of the subject property and surrounding areas:

- Environmental investigations conducted between 1992 and 1997 for 333 and 351 North King Street documented historical fuel storage and hydraulic lift operations but found no evidence of active contamination; former tanks were removed, and follow-up sampling confirmed clean soil and groundwater, with remaining concerns limited to manageable asbestos, lead paint, and possible PCB materials.
- In June 1994, a 1,000-gallon steel underground storage tank formerly used for leaded gasoline at 373 North Nimitz Highway was removed; a release was discovered during closure, impacted soil was excavated and reported to the HDOH, but no documentation of regulatory closure or confirmation of complete remediation was provided.
- A former gasoline UST release was investigated through multiple soil and groundwater assessments between 1987 and 1995, with early data indicating benzene-impacted groundwater near the former tank pit at 1036 N King Street; subsequent 1995 confirmation sampling reported no remaining petroleum impacts, and DOH issued a No Further Action letter the same year, documenting that the historical release had been fully addressed.
- DOH records document a 2002 petroleum release discovered during removal of a 2,000-gallon UST at 920 Iwilei Road, with petroleum-impacted soil and groundwater observed during excavation.
- Historical operations at 1070 North King Street resulted in petroleum-impacted soil and groundwater, which were investigated and addressed through UST removal, contaminated soil excavation, groundwater extraction, and onsite bioremediation completed in 1993–1994.
- 666 North King Street is an active Shell retail gasoline station with three 10,000-gallon USTs installed in 1984, and has a documented history of petroleum releases reported in 2002, 2003, and 2008, all of which underwent investigation, soil and groundwater sampling, and regulatory review.
- A petroleum release was discovered at 414 Kuwili Street, Pier 42, during the October 2000 removal of four USTs, followed by soil excavation and multi-year groundwater monitoring.
- 1010 North King Street was historically operated as a Texaco and later Aloha Petroleum service station with multiple UST systems and history of releases.

- A 2,000-gallon UST was removed from 377 North King Street in 2002. A petroleum release to soil and groundwater was documented, and confirmatory sampling verified cleanup to the HDOH standards of the time and the case was closed.
- A 2017 Amec Foster Wheeler *Sampling and Analysis Plan* identified off-site petroleum, solvent, and metal contamination from adjacent historic rail yard and industrial operations as recognized environmental conditions with potential to affect soil, groundwater, and vapor quality at 393 North King Street.
- Shallow soils at 710 North King Street previously contained elevated lead and barium, but affected soil was removed and replaced with clean fill during redevelopment; remaining low-level contamination is confined beneath the new building and pavement and managed under a long-term EHMP.
- The Iwilei Center property (866 & 850 Iwilei Rd and 505 Kaaahi St) was historically impacted by petroleum hydrocarbons, metals, and pesticides from former industrial uses. It was investigated and remediated under the Hawaii DOH Voluntary Response Program, received a 2024 Letter of Completion, and is now managed under an EHMP and 2025 Environmental Covenant that maintain engineering and institutional controls
- A former 2,000-gallon LUST at 888 Iwilei Road was removed and remediated under HDOH oversight in 2002. Subsequent investigations confirmed only minor residual petroleum impacts at concentrations less than regulatory levels.
- GRO, PAHs, and ethylbenzene were detected along 938 Kohou Street's eastern boundary from a former gas station release. Follow-up testing found no vapor intrusion risk, and the site remains under HDOH oversight requiring management of residual contamination during future redevelopment.
- The 14.8-acre Mayor Wright Homes site has been occupied since the early 1900s with historical auto-related and residential uses. Past investigations found minor petroleum, solvents, and pesticides at concentrations less than applicable action levels but confirmed elevated concentrations of lead in surface soils from deteriorating exterior paint. Further investigation is planned to address remaining data gaps before redevelopment.
- The 2014 HART Programmatic EHMP identifies residual pesticide, solvent, and petroleum contamination along the rail alignment from historical agricultural, industrial, and military uses requiring soil and groundwater management to prevent exposure and migration during construction.
- HDOH identified widespread petroleum and metal contamination in the Iwilei District from historical fuel storage and industrial activities; residual impacts remain in soil, groundwater, and vapor but are managed under state oversight through engineered and administrative controls to prevent exposure during future subsurface work.

5.4 VAPOR ENCROACHMENT SCREENING

ENPRO reviewed ERIS's Database Report for sites related to former dry cleaners, gas stations and manufactured gas plants with recorded releases within the AMSDs specified by ASTM's Standard Guide for Vapor Encroachment Screening of Property Involved in Real Estate Transactions (ASTM E2600-22).

ENPRO's review for potential vapor encroachment conditions (VECs) accounts for the following factors:

- Site land use
- Contaminant type
- Location of known or suspect contaminated property within the area of concern
- Soil characteristics
- Groundwater depth
- Preferential pathways
- Cleanup status

Potential VECs evaluated included all RECs, including H-RECs and C-RECs, with identified releases of petroleum products or other potentially volatile contaminants of concern.

Because there are not structures on the subject property and the subject property is intended to remain in use as a roadway, there are no VECs identified. However, the following sites are known or suspected to be sources of VOC contaminants and, therefore, may warrant further assessment via soil vapor sampling and analysis to address potential worker safety issues:

- 393 North King Street
- 710 North King Street
- 866 Iwilei Road
- 938 Kohou Street
- 615 North King Street.

6.0 INTERVIEWS

ENPRO interviewed the people listed in **Table 6-1** in accordance with the Practice to obtain information regarding the past and current use and activities on the subject and adjacent properties to identify potential RECs in connection with the subject property. Findings from the interview process may also be incorporated in other sections of this report as appropriate.

Table 6-1

Interviewed Parties

Name	Affiliation	Role
Mr. Ryan Morrissey	Project Manager for the subject property	Key Site Manager and User Representative
Ms. Remy Navasca	Store Manager, Aloha Mart	Current Occupant
Mr. Miguel Caguioa	Store Manager, 7/11	Current Occupant
Unnamed Representative[1]	Planner for the Planning & Design Section, HDOH SHWB	Local Government Agency, File Review
Unnamed Representative[2]	Administrative Assistant, HDOH HEER Office	Local Government Agency, File Review
Unnamed Representative[3]	Information Specialist, HFD	Local Government Agency, File Review

* An attempt to interview this contact was made. However, no response has been received as of the date of this report.

[1] Information provided by the HDOH SHWB is presented in **Section 5.3.4**.

[2] Information provided by the HDOH HEER Office is presented in **Section 5.3.5.**

[3] Information provided by the HFD is presented in **Section 5.3.3**.

6.1 KEY SITE MANAGER

Mr. Ryan Morrissey, Project Manager for the subject property, completed a subject property questionnaire supplied by ENPRO on August 20, 2025. Mr. Morrissey, who has been familiar with the site for three years, provided the following pertinent information:

- The subject property is a public roadway and utility corridor.
- Current and past uses of adjacent properties include residential, office buildings, retail, and public parks.
- Light industrial properties are also present in the vicinity of the subject property.

A copy of the completed subject property questionnaire is included in **Appendix C**.

6.2 USER

In accordance with the Practice, the User (the Client) of this Phase I ESA provided information regarding:

- Title record information
- Environmental liens and AULs
- Specialized knowledge and experience
- Commonly known or reasonably ascertainable information
- Valuation reduction for environmental issues
- Reason for performing the Phase I ESA

The information above was provided via ENPRO's User questionnaire (**Appendix C**) and is described in detail in **Section 3.0**.

A copy of the completed subject property questionnaire is included in **Appendix C**.

6.3 CURRENT OWNERS, OPERATORS, AND OCCUPANTS

Interviews were conducted with representatives of the current owners, operators and non-residential occupants of adjacent properties as described in the following subsections.

6.3.1 7/11, 1136 NORTH KING STREET

Ms. Remy Navasca, Store Manager for Aloha Mart, was interviewed in person at the time of the site reconnaissance on September 5, 2025. Ms. Navasca, who has worked at the property as the manager for 19 years, provided the following pertinent information:

- The on-site monitoring well is a sentry monitoring well
- There are inspection ports at each of their USTs and they are inspected monthly
- There has not been any evidence of a release

6.3.2 SHELL, 666 NORTH KING STREET

Mr. Miguel Caguioa, Store Manager for 7/11, was interviewed in person at the time of the site reconnaissance on September 5, 2025. Mr. Caguioa, who has worked at the location for three months, did not have any information regarding the on-site monitoring well and was unaware of any releases at the property.

7.0 NON-SCOPE SERVICES

The following potential business environmental risks (BERs), which are not considered RECs as defined by the Practice, were observed or determined to be potential concerns during this Phase I ESA:

- Suspect asbestos-containing materials (ACM)
- Suspect lead-containing paint (LCP)/lead-based paint (LBP)
- Ecologically sensitive areas
- Contaminants of emerging concern (CECs)

While noted, these potential BERS were not evaluated for their potential to impact the subject property. General information regarding potential BERs at the subject property is provided in the following sections.

7.1 CONTAMINANTS OF EMERGING CONCERN

CECs describe chemicals that are not yet federally regulated but are known or suspected of causing harm to human health or the environment. These substances may be present on a property, and even significantly contaminate it, but wouldn't be covered under the scope of a Phase I ESA until they were defined as hazardous substances under CERCLA.

While PFAS compounds are regulated by several states, including Hawaii, not all PFAS compounds are yet federally regulated as of this writing. PFAS compounds, other than perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), are considered CECs, while PFOA and PFOS are currently classified as hazardous substances under CERCLA. Once defined as hazardous substances under CERCLA, other PFAS compounds will fall under the scope of the Practice and be subject to CERCLA liability. There are several other CECs and substances not defined as hazardous substances under CERCLA (e.g., methane) that may present a BER.

7.2 SENSITIVE ECOLOGICAL AREAS

According to the ERIS Database Report, the Kapalama Canal was depicted as a sensitive ecological area.

7.3 SUSPECT ASBESTOS-CONTAINING MATERIALS

In July 1989, under the Toxic Substances Control Act (TSCA), the United States Environmental Protection Agency (EPA) promulgated an Asbestos Ban Phaseout Rule. Beginning

in 1990 and taking effect in three stages, the rule prohibits the importation, manufacture, and processing of 94 percent of all remaining asbestos products in the United States over a period of seven years. Presently, asbestos has not been prohibited from all construction building materials. However, in 1991, this rule was vacated and remanded by the Fifth Circuit Court of Appeals. As a result, most of the original ban on the manufacture, importation, processing, or distribution in commerce for most asbestos-containing products originally covered in the 1989 final rule was overturned.

Suspect ACM should be sampled and analyzed for possible asbestos content prior to activities (e.g., renovation, demolition) that may damage or disturb the material. If the materials are asbestos-containing, the building owner must comply with applicable EPA National Emissions Standards for Hazardous Air Pollutants (NESHAPS), Occupational Safety and Health Administration (OSHA), state and local regulations. However, there are no structures on the subject property.

7.4 SUSPECT LEAD-CONTAINING PAINT

There is no commercial property definition of a lead-based paint. Regulations specifically addressing lead-based paint (LBP) include Housing and Urban Development (HUD) guidelines (1995) and the Consumer Product Safety Act (1977). These regulations are for housing and consumer products.

OSHA regulations apply to worker protection during renovation and demolition activities when working with lead containing paint (LCP), regardless of if the paint meets the definition of lead-based paint (LBP). If lead is present in painted materials at a concentration greater than 100 parts per million, laboratory analysis for Toxicity Characteristic Leaching Procedure (TCLP) lead is required for waste generated during renovation activities. However, there are no structures on the subject property.

8.0 FINDINGS AND OPINIONS

ENPRO's assessment yielded the following findings:

- The subject property was developed as a roadway. Historic urban generated fill is likely underlying the roadway.
- Minor oil staining was observed throughout the subject property.
- Houseless encampments were plentiful in the southwest portions of the subject property.
- The Kapalama Drainage Canal transects the northernmost portion of the subject property.
- A potential, but unconfirmed dry cleaning establishment was identified, North King Cleaners, 615 North King Street
- A junk yard was depicted to the southeast of the subject property, at 1001 Liliha Street.
- The City Mill Company Lumber Yard was depicted on the adjacent property to the south.
- Two fire stations were adjacent to the subject property:
    - Honolulu Fire Department Station 8, 840 Iwilei Road
    - Palama Fire Station, 879 North King Street

  Tank records were requested from the Honolulu Fire Department for these facilities, but no response has been received as of the date of this report.

- The OR&L's Round House and Car Shop was adjacent to the west of King Street and north of Iwilei Road, including, turn table, boiler shop, paint shop, machine shop, car shop, and foundry. Multiple HEER records were associated with the OR&L site:
    - Environmental investigations conducted between 1992 and 1997 for 333 and 351 North King Street documented historical fuel storage and hydraulic lift operations but found no evidence of active contamination. Former tanks were removed, and follow-up sampling confirmed clean soil and groundwater, with remaining concerns limited to manageable asbestos, lead paint, and possible PCB materials.
    - A 2,000-gallon UST was removed from 377 North King Street in 2002. A petroleum release to soil and groundwater was documented, and confirmatory sampling verified cleanup to the HDOH standards of the time and the case was closed.

- A 2017 Amec Foster Wheeler *Sampling and Analysis Plan* identified off-site petroleum, solvent, and metal contamination from adjacent historic rail yard and industrial operations as recognized environmental conditions with potential to affect soil, groundwater, and vapor quality at 393 North King Street.

- Gas stations were listed at:
  - Tom's Chevron, 743 North King Street

    Two monitoring wells were present at the site, which has been used as a gas station from at least 1976 to present. No additional information was readily available.

  - Shell Mini Mart, 666 North King Street

    Operated as a service station from at least 1976 to present. One monitoring well was observed on the property during the site reconnaissance. 666 North King Street is an active Shell retail gasoline station with three 10,000-gallon USTs installed in 1984, and has a documented history of petroleum releases reported in 2002, 2003, and 2008, all of which underwent investigation, soil and groundwater sampling, and regulatory review.

  - Yamasaki Texaco Service Station, 1010 North King Street

    Operated as a service station from at least 1976 to 1996. 1010 North King Street was historically operated as a Texaco and later Aloha Petroleum service station with multiple UST systems and history of releases.

  - Kokea Service Station, 1065 North King Street

    Operated as a service station from at least 1976 to 1981. No additional information was readily available.

  - King Service Station, 1070 North King Street

    Operated as a service station from at least 1976 to 1991. Historical operations at 1070 North King Street resulted in petroleum-impacted soil and groundwater, which were investigated and addressed through UST removal, contaminated soil excavation, groundwater extraction, and onsite bioremediation completed in 1993–1994.

  - Sasaki Shell Service Station, 1101 North King Street

    Listed in the City Directory in 1976 only. No additional information was readily available.

- 7/11, 1136 North King Street

  Operated as a service station from at least 1976 to present. One sentry monitoring well was present on the property. An interview with the store manager indicated that the USTs were closely monitored and that there was no evidence of a release from the site.

- Auto/motorcycle repair at:
  - Jiffy Lube, 555 North King Street, from at least 1996 to present
  - Sub's Auto Repair, 587B North King Street, from at least 1976 to 1981
  - Palama Auto Company, 1138 North King Street, from at least 1976 to 1981
  - Motor Service Company, 1138A North King Street, from at least 1976 to 1981
  - Wholesale Auto Repair, 1138B North King Street, from at least 1976 to 1981
- A 1,000-gallon steel underground storage tank formerly used for leaded gasoline at 373 North Nimitz Highway was removed; a release was discovered during closure, impacted soil was excavated and reported to the HDOH, but no documentation of regulatory closure or confirmation of complete remediation was provided. Three monitoring wells were observed at the property during the site reconnaissance.
- A former gasoline UST release was investigated through multiple soil and groundwater assessments between 1987 and 1995, with early data indicating benzene-impacted groundwater near the former tank pit at 1036 N King Street; subsequent 1995 confirmation sampling reported no remaining petroleum impacts, and DOH issued a No Further Action letter the same year, documenting that the historical release had been fully addressed.
- DOH records document a 2002 petroleum release discovered during removal of a 2,000-gallon UST at 920 Iwilei Road, with petroleum-impacted soil and groundwater observed during excavation.
- A petroleum release was discovered at 414 Kuwili Street, Pier 42, during the October 2000 removal of four USTs, followed by soil excavation and multi-year groundwater monitoring.
- Shallow soils at 710 North King Street previously contained elevated lead and barium, but all affected soil was removed and replaced with clean fill during redevelopment. Remaining low-level contamination is confined beneath the new building and pavement and managed under a long-term EHMP.
- The Iwilei Center property (866 & 850 Iwilei Rd. and 505 Kaaahi St.) was historically impacted by petroleum hydrocarbons, metals, and pesticides from former industrial uses. It was investigated and remediated under the Hawaii DOH Voluntary Response Program, received a 2024 Letter of Completion, and is now

managed under an EHMP and 2025 Environmental Covenant that maintain engineering and institutional controls.

- A former 2,000-gallon LUST at 888 Iwilei Road was removed and remediated under HDOH oversight in 2002. Subsequent investigations confirmed only minor residual petroleum impacts at concentrations less than applicable regulatory levels.
- GRO, PAHs, and ethylbenzene were detected along 938 Kohou Street's eastern boundary from a former gas station release. Follow-up testing found no vapor intrusion risk, and the site remains under HDOH oversight requiring management of residual contamination during future redevelopment.
- The 14.8-acre Mayor Wright Homes site at 1020 Liliha Street has been occupied since the early 1900s with historical auto-related and residential uses. Past investigations found minor petroleum, solvent, and pesticide contamination at concentrations less than applicable action levels but confirmed elevated lead concentrations in surface soils from deteriorating exterior paint. Further investigation is planned to address remaining data gaps before redevelopment.
- The 2014 HART Programmatic EHMP identifies residual pesticide, solvent, and petroleum contamination along the rail alignment from historical agricultural, industrial, and military uses requiring soil and groundwater management to prevent exposure and migration during construction.
- HDOH identified widespread petroleum and metal contamination in the Iwilei District Programmatic EHMP from historical fuel storage and industrial activities. Residual impacts remain in soil, groundwater, and vapor but are managed under state oversight through engineered and administrative controls to prevent exposure during future subsurface work.

Of these findings, the following are identified as RECs, CRECs, and HRECs:

RECs:

- The subject property was developed as a roadway, likely with urban generated fill material. Urban generated fill material may potentially contain contaminants such as heavy metals, PAHs and PCBs.
- Cleaners with potential for dry cleaning at North King Cleaners, 615 North King Street.

  Although this operation has not been confirmed to have been a dry cleaner, that use has not been ruled out. Dry cleaners are environmentally significant because they commonly use chlorinated solvents such as perchloroethylene, which are toxic, persistent, and can readily contaminate soil and groundwater through spills, leaks, or improper waste disposal. Even minor releases during routine operations can lead to long-term subsurface contamination concerns.
- A junk yard was depicted to the southeast of the subject property, at 1001 Liliha Street.

Junkyards are often considered environmentally significant due to the potential for releases of petroleum products, heavy metals, and other hazardous substances from vehicle fluids, batteries, and scrap materials. Spills, leaks, or improper storage of these materials can result in contamination of soil and groundwater over time.

- The City Mill Company Lumber Yard was depicted on the adjacent property to the south.

  Lumber yards may involve the storage or treatment of wood with chemical preservatives such as creosote, pentachlorophenol, or chromated copper arsenate (CCA). These substances can leach into soil or groundwater through spills, runoff, or improper handling of treated materials.

- The OR&L's Round House and Car Shop was west of King Street and north of Iwilei Road, including, turn table, boiler shop, paint shop, machine shop, car shop, and foundry. Railroad roundhouses and associated facilities such as car shops, boiler shops, paint shops, machine shops, and foundries are considered environmentally significant due to their historical use of petroleum products, solvents, paints, and heavy metals. Activities such as equipment maintenance, metalworking, and fuel or lubricant storage commonly resulted in spills, leaks, and disposal of hazardous materials that may have impacted soil or groundwater quality.

- Current and former gas stations at:
  - Tom's Chevron, 743 North King Street
  - Kokea Service Station, 1065 North King Street
  - Shell Service Station, 1101 North King Street

  Regulatory records were not readily accessible for these sites. Gas stations, particularly those constructed with single-wall steel underground storage tanks common in the 1970s and 1980s, are considered environmentally significant due to the high risk of fuel leaks and releases from corroded or failing tanks and piping. Such failures can result in petroleum hydrocarbons and volatile organic compounds (VOCs) contaminating surrounding soil and groundwater.

- Former auto/motorcycle repair:
  - Sub's Auto Repair, 587B North King Street
  - Palama Auto Company, 1138 North King Street
  - Motor Service Company, 1138A North King Street
  - Wholesale Auto Repair, 1138B North King Street

  Auto and motorcycle repair facilities are considered environmentally significant because they commonly store and use petroleum products, solvents, degreasers, and other hazardous materials during maintenance operations. Spills, leaks, or improper disposal of these substances can result in contamination of soil or groundwater over time.

- A 1,000-gallon steel underground storage tank, formerly used for leaded gasoline at 373 North Nimitz Highway, was removed and a release was discovered during closure. Impacted soil was excavated and reported to the HDOH, but no documentation of regulatory closure or confirmation of complete remediation was provided. Three monitoring wells were observed at the property during the site reconnaissance.

  This condition is considered a REC because a release of leaded gasoline was documented, and there is no evidence confirming that remediation was completed or regulatory closure was obtained. The presence of monitoring wells further suggests possible residual contamination in soil or groundwater.

- A petroleum release from the former 2,000-gallon UST at 920 Iwilei Road was confirmed in 2002, with documented soil and groundwater impacts and no available DOH case-closure or NFA documentation.

  This condition is considered a REC due to a documented release and there is no evidence confirming that remediation was completed or regulatory closure was obtained.

- GRO, PAHs, and ethylbenzene were detected along 938 Kohou Street's eastern boundary from a former gas station release. Follow-up testing found no vapor intrusion risk, and the site remains under HDOH oversight requiring management of residual contamination during future redevelopment.

  This condition is considered a REC because residual petroleum-related contamination remains in place under regulatory oversight. Although vapor intrusion risk has been ruled out, the requirement for management of contaminated soil during future redevelopment indicates that impacts have not been fully remediated.

- The 14.8-acre Mayor Wright Homes site at 1020 Liliha Street has been occupied since the early 1900s with historical auto-related and residential uses. Past investigations found minor petroleum, solvent, and pesticide contamination at concentrations less than applicable action levels, but elevated concentrations of lead were detected in surface soils from deteriorating exterior paint. Further investigation is planned to address remaining data gaps before redevelopment.

  This condition is considered a REC due to historical auto-related operations and the documented presence of petroleum hydrocarbons, solvents, and pesticide residues in soil at the site. While these contaminants were reported at concentrations less than applicable action levels, their occurrence indicates potential historical releases associated with former site activities.

CRECs:

- Shallow soils at 710 North King Street previously contained elevated lead and barium, but all affected soil was removed and replaced with clean fill during redevelopment. Remaining low-level contamination is confined beneath the new building and pavement and managed under a long-term EHMP.

- The Iwilei Center property (866 & 850 Iwilei Rd. and 505 Kaaahi St.) was historically impacted by petroleum hydrocarbons, metals, and pesticides from former industrial uses. The site was investigated and remediated under the Hawaii DOH Voluntary Response Program, received a 2024 Letter of Completion, and is now managed under an EHMP and 2025 Environmental Covenant that maintain engineering and institutional controls.
- The 2014 HART Programmatic EHMP identifies residual pesticide, solvent, and petroleum contamination along the rail alignment from historical agricultural, industrial, and military uses requiring soil and groundwater management to prevent exposure and migration during construction.
- HDOH identified widespread petroleum and metal contamination throughout the Iwilei District from historical fuel storage and industrial activities; residual impacts remain in soil, groundwater, and vapor but are managed under state oversight through engineered and administrative controls to prevent exposure during future subsurface work as described in the Iwilei District Programmatic EHMP.
- Two petroleum releases were confirmed at 1010 North King Street in 1998 and 2007, both investigated and closed with DOH NFA determinations, with only a small volume of residual petroleum-impacted soil remaining in place beneath asphalt at depths greater than three meters and assessed as posing no significant risk under current commercial/industrial use.

HRECs:

- A former 2,000-gallon LUST at 888 Iwilei Road was removed and remediated under HDOH oversight in 2002. Subsequent investigations confirmed only minor residual petroleum impacts at concentrations less than applicable regulatory levels and a no further action designation was issued for the site.
- The former gasoline UST release at 1036 North King Street was fully investigated and closed by DOH in 1995 with confirmation sampling showing no remaining petroleum impacts.
- A documented 1987 gasoline release was fully remediated, and post-remediation confirmation sampling demonstrated that soil and groundwater contaminant concentrations met applicable DOH cleanup criteria, and DOH issued a formal NFA determination in 1994, providing regulatory closure.
- All documented petroleum releases from 666 North King Street were fully investigated and closed by the Hawai‘i DOH with No Further Action determinations, and no contaminants remained above applicable environmental action levels.
- DOH issued an NFA determination for Pier 42 in July 2003 as all constituents from the petroleum release decreased and remained below DOH Tier 1 EALs.

***De minimis*:**

- Minor oil staining was observed throughout the subject property.

  The subject property is a roadway. Roadways are considered environmentally significant due to historical maintenance activities and vehicle emissions that can result in the accumulation of lead and other heavy metals in adjacent soils. Leaded gasoline use prior to its phase-out, along with surface sealing, and striping, often contributed to residual contamination along road corridors and right-of-way areas.

BERs:

- The Kapalama Drainage Canal transects the northernmost portion of the subject property.
- Two fire stations were adjacent to the subject property:
  - Honolulu Fire Department Station 8, 840 Iwilei Road
  - Palama Fire Station, 879 North King Street

Data Gap:

- Regulatory records from the SHWB Solid Waste Program and Honolulu Fire Department were not provided prior to the date of this report.

8.1 DATA GAPS

Data gaps are not uncommon in ESAs. A data gap by itself is not inherently significant. The significance is determined by other information and professional experience as to whether the data gap raises reasonable concerns about activities that may present a REC.

8.1.1 GENERAL DATA GAPS

ENPRO identified the following data failures or data gaps during this ESA. These data gaps did not affect ENPRO's ability to form an opinion regarding RECs, C-RECs, or H-RECs in connection with the subject property:

- The SHWB Solid Waste Program records were not provided for review prior to the date of this report.

8.1.2 SIGNIFICANT DATA GAPS

No significant data gaps were encountered in this Phase I ESA.

8.2 DELETIONS

This Phase I ESA is intended to identify RECs on the subject property for due diligence in preparation of the Iwilei-Kapalama DB Electrical Infrastructure Improvements Alignments. This report does not correspond to a planned transaction; therefore all transaction-related language has been removed. The Practice includes language regarding the validity of the report, based on how many days have elapsed from the date the information was collected. The Practice states that the Phase I ESA report is valid for 365 days, provided selected components (interviews, a search for environmental liens, a review of government records, the visual reconnaissance of the subject property and surrounding properties, and the Environmental Professional declarations) are updated to be current within 180 days of its intended use. After 365 days, the Phase I ESA would need to be performed again to be considered valid for the purposes of a proposed transaction or re-financing according to the Practice.

9.0 CONCLUSIONS

We have performed a Phase I ESA of the subject property in conformance with the scope and limitations of the Practice. Any exceptions to, or deletions from, this practice are described in Sections 2.5 and 8.2 of this report.

This assessment has revealed numerous RECs, HRECs, CRECs, BERs, and *de minimis* conditions in connection with the subject property, as described in **Table 9-1.** Significant data gaps encountered in this investigation are detailed in **Section 8.1.2**.

Table 9-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Recognized Environmental Conditions (REC)			
Historic Use:			
Historic roadway and fill material: Urban generated fill material is suspect in soil underlying the roadway and project alignment. Urban generated fill is associated with potential debris from the historic Chinatown fire, roadway use and industrial activities and may contain contaminants such as heavy metals, PAHs and PCBs.	**REC**: Condition indicative of a release		✓
Adjoining and/or Nearby Site Contamination Likely to Impact the Subject Property:			
Potential dry cleaner: Drycleaners are environmentally significant because they commonly use chlorinated solvents such as perchloroethylene, which are toxic, persistent, and can readily contaminate soil and groundwater through spills, leaks, or improper waste disposal.	**REC**: Condition indicative of a release	✓	
Junk Yard: Junkyards are often considered environmentally significant due to the potential for releases of petroleum products, heavy metals, and other hazardous substances from vehicle fluids, batteries, and scrap materials. Spills, leaks, or improper storage of these materials can result in contamination of soil and groundwater over time.	**REC**: Condition indicative of a release		✓
Lumber Yard: Lumber yards may involve the storage or treatment of wood with chemical preservatives such as creosote, pentachlorophenol, or chromated copper arsenate. These substances can leach into soil or groundwater through spills, runoff, or improper handling of treated materials.	**REC**: Condition indicative of a release		✓
Railroad: Railroad roundhouses and associated facilities such as car shops, boiler shops, paint shops, machine shops, and foundries are considered environmentally significant due to their historical use of petroleum products, solvents, paints, and heavy metals. Activities such as equipment maintenance, metalworking, and fuel or lubricant storage commonly resulted in spills, leaks, and disposal of hazardous materials that may have impacted soil or groundwater quality. Releases are known to have occurred at the site.	**REC:** Release		✓

Table 9-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Current and former gas stations at: • Tom's Chevron, 743 North King Street • Kokea Service Station, 1065 North King Street • Shell Service Station, 1101 North King Street Regulatory records were not readily accessible for these sites. Gas stations, particularly those constructed with single-wall steel underground storage tanks common in the 1970s and 1980s, are considered environmentally significant due to the high risk of fuel leaks and releases from corroded or failing tanks and piping.	**REC**: Condition indicative of a release		✓
Former auto/motorcycle repair at: • Sub's Auto Repair, 587B North King Street • Palama Auto Company, 1138 North King Street • Motor Service Company, 1138A North King Street • Wholesale Auto Repair, 1138B North King Street Auto and motorcycle repair facilities are considered environmentally significant because they commonly store and use petroleum products, solvents, degreasers, and other hazardous materials during maintenance operations. Spills, leaks, or improper disposal of these substances can result in contamination of soil or groundwater over time.	**REC**: Condition indicative of a release		✓
Leaded gasoline release from a storage tank at 373 North Nimitz Highway.	**REC:** Release		✓
Gasoline and related constituents were detected along 938 Kohou Street's eastern boundary from a former gas station release.	**REC:** Release		✓
Previous investigations at 1020 Liliha Street indicate the presence of petroleum, solvent, pesticide, and metals at the site.	**REC:** Release		✓
Historical Recognized Environmental Condition (HREC)			
A former 2,000-gallon LUST at 888 Iwilei Road was removed and remediated under HDOH oversight in 2002.	HREC	✓	
The former gasoline UST release at 1036 North King Street was fully investigated and closed by DOH in 1995 with confirmation sampling showing no remaining petroleum impacts.	HREC	✓	
A documented 1987 gasoline release was fully remediated, and post-remediation confirmation sampling demonstrated that soil and groundwater contaminant concentrations met applicable DOH cleanup criteria, and DOH issued a formal NFA determination in 1994, providing regulatory closure.	HREC	✓	
All documented petroleum releases from 666 North King Street were fully investigated and closed by the Hawai'i DOH with No Further Action determinations, and no contaminants remained above applicable environmental action levels.	HREC	✓	
DOH issued an NFA determination for Pier 42 in July 2003 as all constituents from the petroleum release decreased and remained below DOH Tier 1 EALs.	HREC	✓	

Table 9-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Controlled Recognized Environmental Condition (CREC)			
Shallow soils at 710 North King Street previously contained elevated lead and barium, but all affected soil was removed and replaced with clean fill during redevelopment; remaining low-level contamination is confined beneath the new building and pavement and managed under a long-term Environmental Hazard Management Plan (EHMP).	CREC	✓	
The Iwilei Center property (866 & 850 Iwilei Rd, 505 Kaaahi St) was historically impacted by petroleum hydrocarbons, metals, and pesticides from former industrial uses; it was investigated and remediated under the Hawaii DOH Voluntary Response Program, received a 2024 Letter of Completion, and is now managed under an EHMP and 2025 Environmental Covenant that maintain engineering and institutional controls.	CREC	✓	
The 2014 HART Programmatic EHMP identifies residual pesticide, solvent, and petroleum contamination along the rail alignment from historical agricultural, industrial, and military uses requiring soil and groundwater management to prevent exposure and migration during construction.	CREC	✓	
HDOH identified widespread petroleum and metal contamination in the Iwilei District from historical fuel storage and industrial activities; residual impacts remain in soil, groundwater, and vapor but are managed under state oversight through engineered and administrative controls to prevent exposure during future subsurface work as described in the Iwilei District Programmatic EHMP.	CREC	✓	
Two petroleum releases were confirmed at 1010 North King Street in 1998 and 2007, both investigated and closed with DOH NFA determinations, with only a small volume of residual petroleum-impacted soil remaining in place beneath asphalt at depths greater than three meters and assessed as posing no significant risk under current commercial/industrial use.	CREC	✓	
***De minimis* Conditions**			
Surface Staining			
Minor oil staining was observed throughout the subject property.	*De minimis*	✓	
Roadway			
Roadways are considered environmentally significant due to historical maintenance activities and vehicle emissions that can result in the accumulation of lead and other heavy metals in adjacent soils. Leaded gasoline use prior to its phase-out, along with surface sealing, striping, and equipment maintenance operations, often contributed to residual contamination along road corridors and right-of-way areas.	*De minimis*	✓	
Business Environmental Risk (BER)			
Contaminants of emerging concern (CECs):			
CECs may be present on the subject property, but are not covered under the scope of the Practice until they are defined as hazardous substances under federal regulation.	BER	✓	

Table 9-1
PH1 ESA Findings and Recommendations Summary

Findings	Category	Routine Solution	Phase II ESA
Sensitive Ecological Areas:			
According to the ERIS Database Report, the Kapalama Canal was depicted as a sensitive ecological area.	BER	✓	
Suspect asbestos-containing material (ACM):			
ACM may be present on the subject property.	BER	✓	
Suspect lead-containing paint (LCP):			
LCP may be present in paint used for roadway markings.	BER	✓	

9.1 RECOMMENDATIONS

The Practice does not require the environmental professional to provide recommendations regarding identified environmental conditions at the subject property. As a service to its clients, ENPRO provides recommendations to further evaluate and/or address potential environmental concerns, if warranted, as described below.

Based on the findings of this investigation, ENPRO recommends the following additional actions and/or investigations:

- Historic urban fill material underlying roadway: conduct soil sampling for heavy metals, PAHs, and PCBs throughout the subject property
- Adjoining properties: conduct additional soil sampling in the vicinity of adjacent properties which may impact the subject property
- Conduct soil vapor sampling, where appropriate, if warranted based on initial soil data or field observations, (in the vicinity of known or suspected sources of volatile organic compounds) to address potential worker safety issues
- Follow applicable Programmatic EHE/EHMPs

A Phase II ESA investigation may be conducted in-situ, prior to construction, or during construction via stockpile sampling and analysis.

10.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

In expressing the opinions stated in this report, ENPRO has exercised a degree of skill and care ordinarily exercised by a reasonably prudent environmental professional in the same community and in the same time frame given the same or similar facts and circumstances. The independent conclusions represent our professional judgment based on information and data available to us during this assignment.

If you have any questions regarding this report, please contact the ENPRO contact listed on the cover of this report at (808) 262-0909.

Researched by: Kimberly Kim, Environmental Professional

Surveyed by: Kimberly Kim, Environmental Professional

Written by: Kimberly Kim, Environmental Professional

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

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

Reviewed by:



Kenton Beal
President, ENPRO Environmental

11.0 REFERENCES

Publications:

Name of Publication:	Surface Waters and Wetlands Map
Author of Publication:	National Wetlands Inventory
Information Obtained:	Surface water data
Name of Publication:	Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy For Hawaii
Author of Publication:	Mink, J.F. and L.S. Lau
Published by:	Water Resources Research Center, University of Hawaii at Manoa, Honolulu, Hawaii
Date of Publication:	1990
Information Obtained:	Groundwater data
Name of Publication:	DOH Aquifers
Author of Publication:	Hawaii Statewide GIS Program
Date of Publication:	November 22, 2022
Information Obtained:	Groundwater data
Name of Publication:	Groundwater Well Index
Author of Publication:	State of Hawaii, Department of Natural Resources, Commission on Water Management
Date of Publication:	January 2001
Information Obtained:	Groundwater wells
Name of Publication:	SDWB System
Author of Publication:	State of Hawaii, Department of Health, Safe Drinking Water Branch
Date of Publication:	2022
Information Obtained:	Groundwater wells
Name of Publication:	Groundwater Levels for the Nation
Author of Publication:	United States Geological Survey
Information Obtained:	Area groundwater depth
Name of Publication:	Web Soil Survey
Author of Publication:	USDA, Natural Resources Conservation Service
Information Obtained:	Soil classification
URL:	https://websoilsurvey.nrcs.usda.gov/app/

Publications:

Name of Publication:	Soil Survey for the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii
Author of Publication:	Foote, Donald E. et al.
Published by:	U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station.
Date of Publication:	1972
Information Obtained:	Soil classification

Name of Publication:	Topographic Maps, Honolulu Quadrangle, Hawaii
Author of Publication:	United States Geological Survey (USGS)
Date of Documents:	1953, 1959, 1969, 1978, 1983, 1998, 2013, 2017, 2024
Information Obtained:	Historical use

Name of Publication:	Aerial photographs
Published by:	ERIS
Date of Publication:	Year 2025
Date of Documents:	1952, 1959, 1968, 1978, 1985, 1993, 2004, 2006, 2011, 2015, 2017, 2022, 2024
Information Obtained:	Historical use

Name of Publication:	Sanborn fire insurance maps
Published by:	ERIS
Date of Publication:	1914, 1927, 1950, 1951, 1955
Information Obtained:	Historical use

Name of Publication:	Database Report
Author of Publication:	ERIS
Date of Publication:	August 22, 2025
Information Obtained:	Regulatory database records

Name of Publication:	Ownership records and Tax Map Key maps
Author of Publication:	City and County of Honolulu
Information Obtained:	Ownership records

Name of Publication:	Tax Map Key Info and Permitting
Author of Publication:	City and County of Honolulu Department of Planning and Permitting (DPP)
Information Obtained:	Permit records

Name of Publication:	iHEER System
Author of Publication:	Hazard Evaluation and Emergency Response Office
Date Accessed:	October 21, 2025
Information Obtained:	Historical use

Publications:

Name of Publication:	Code of Federal Regulations, Title 40, Part 761, Rules for Controlling PCBs under the Toxic Substance Control Act,
Author of Publication:	U.S. Environmental Protection Agency
Date of Publication:	December 14, 1990
Information Obtained:	PCB regulations

Contacts:

Agency or Business:	Michels Corporation
Representative:	Mr. Ryan Morrissey
Telephone Number:	773-318-6441
Date Received:	August 20, 2025
Information Obtained:	Historical and current use

Agency or Business:	Solid and Hazardous Waste Branch (SHWB)
Location of Agency:	2827 Waimano Home Road, Suite 100, Pearl City
Telephone Number:	808-586-4226
Date Received:	October 1, 2025
Information Obtained:	Regulatory records

Agency or Business:	Hazard Evaluation and Emergency Response (HEER)
Location of Agency:	2385 Waimano Home Road, Suite 100, Pearl City
Telephone Number:	808-586-4249
Date Received:	Pending
Information Obtained:	Regulatory records

Agency or Business:	Hawaii Electric Company
Location of Agency:	820 Ward Ave, Honolulu
Telephone Number:	(808) 548-7311
Information Obtained:	Transformer records

12.0 APPENDICES

Appendix A: Figures

Appendix B: Photographs

Appendix C: Communications/Interviews

Appendix D: Historical Information

Appendix E: Regulatory Database Information

Appendix F: Qualifications

APPENDIX E

EA Early Consultation Package

Comment and Response Letters

Rachel Lavatai

From: CEPOH-RO, POH <CEPOH-RO@usace.army.mil>
Sent: Sunday, July 13, 2025 2:37 PM
To: Rachel Lavatai
Cc: CEPOH-RO, POH
Subject: RE: Honolulu District Contact Form: IWILEI-KAPALAMA Electrical Infrastructure Early Consultation Package

Aloha Ms. Lavatai,

Thank you for reaching out. At this time, we are not able to adequately review and provide comments on all Draft Environmental Assessments and Environmental Impact Statements that we receive and that do not have an active application for a permit.

For your general reference though, the Corps' regulatory authorities are based on two laws: Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403) and Section 404 of the Clean Water Act (CWA).

Section 404 of the Clean Water Act requires that a Department of the Army (DA) permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403). Section 10 waters are those waters subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or other waters identified by the Honolulu District.

DA authorization is required if you propose to place dredged and/or fill material into waters of the U.S., including wetlands and/or perform work in navigable waters of the U.S.

If you have any additional questions or would like to submit an application, please contact me or the Regulatory staff at our main business line at 808-835-4303. You can also submit application packages directly to this email inbox, through the RRS link below my signature line, or through our website: https://www.poh.usace.army.mil/Missions/Regulatory/How-to-Apply/

Respectfully,

Jason Brewer
Acting Honolulu Branch Chief, Regulatory Division
Guam Field Office, Honolulu District
U.S. Army Corps of Engineers
PSC 455 Box 188
FPO, AP 96540-1088
Office: 808-835-4056; 671-339-2108
Mobile: 808-283-0549
Jason.d.brewer@usace.army.mil

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Jason Brewer
U.S. Army Corps of Engineers (USACE)
PSC 455 Box 188
FPO, AP 96540-1088

Subject: Early Consultation Package for the
Iwilei and Kapalama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Brewer:

Thank you for your email dated July 13, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge that USACE is not able to adequately review and provide comments on all Draft EA's and Environmental Impact Statements without an active application for a permit, we appreciate your comments that were provided and have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18.

The Pre-Construction Notification (PCN) required under the Nationwide Permit 57 (NWP 57) is being finalized and will be distributed for review.

A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

Outlook

Iwilei and Kapalama Electrical Infrastructure EA Early Consultation

From Browning, Joy <joy_browning@fws.gov>
Date Thu 6/12/2025 1:35 PM
To Public Comment <publiccomment@wilsonokamoto.com>

Aloha,

To assist with your project planning, please see below for instructions on identifying species that may be in your area and avoidance and minimization measures that may need to be incorporated into your project.

The Pacific Island Fish and Wildlife Office (PIFWO) has transitioned to the use of the Information for Planning and Consultation (IPaC) online portal, https://ipac.ecosphere.fws.gov/, for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species and designated critical habitat in your project area. Using IPaC expedites the process for species list distribution and takes minimal time to complete.

Please note that the accuracy of your species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change the species list. Verification can be completed by visiting the IPaC website at regular intervals during project planning and implementation. An updated list may be requested through the IPaC system by completing the same process used to obtain the initial species list. We hope this process provides efficiencies to our partners in obtaining a species list.

For recommended avoidance and minimization measures, you can visit the following webpage https://www.fws.gov/office/pacific-islands-fish-and-wildlife/library

Sincerely,

Joy Browning

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Ms. Joy Browning
United States Fish & Wildlife Services
300 Ala Moana Boulevard #5231
Honolulu, HI 96850
<joy_browning@fws.gov>

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Ms. Browning:

Thank you for your letter dated June 12, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project.

We acknowledge your comments, and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. The proper steps will be taken to obtain and verify an official list of species for the following project. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix C.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

STATE OF HAWAIʻI
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, Hawaiʻi 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaiʻi 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: https://planning.hawaii.gov/

Coastal Zone Management Program

Environmental Review Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented Development

Statewide Geographic Information System

Statewide Sustainability Branch

DTS 202506121559NA
Transmitted via email

June 26, 2025

Mr. Keola Cheng, Director of Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Iwilei and Kapālama Electrical Infrastructure
Honolulu, Oʻahu, Hawai'i

Thank you for the opportunity to provide comments during the early consultation phase for the Environmental Assessment (EA) for the proposed Iwilei and Kapālama Electrical Infrastructure project. This project, being conducted on behalf of the Hawai'i Community Development Authority (HCDA), is crucial for supporting future housing development at the Liliha Civic Center, Mayor Wright Homes, and Kamehameha Schools Bishop Estate Kapālama Kai, Phase 1, by undergrounding new 25kV electrical lines and upgrading existing infrastructure.

The project's alignment spans approximately 1.1 miles, primarily along Iwilei Road and North King Street, extending to the intersection of Kokea Street and Kohou Street. We note the project's importance in addressing Honolulu's housing shortage, with these developments collectively expected to add over 7,700 new housing units: approximately 600 at Liliha Civic Center, about 2,464 at Mayor Wright Homes, and 4,500 to 5,000 at Kapālama Kai Phase I. The current electrical infrastructure is indeed insufficient to support this anticipated increase in demand.

Given the scope and significance of this project, we offer the following comments for consideration in the Draft EA.

1. Hawaiʻi Coastal Zone Management (CZM)
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 Hawaiʻi Revised Statutes (HRS) § 205A-1. Pursuant to HRS § 205A-4, in implementing the objectives of the CZM program, agencies shall consider

ecological, cultural, historic, aesthetic, recreational, scenic, open space values, coastal hazards, and economic development. As the proposed action will require governmental approval, to aid in the agency decision making process, the Draft EA should include a discussion of the project's consistency with the policies of the Hawai'i CZM Program, HRS § 205A-2, as amended.

2. Transit-Oriented Development (TOD)
Office of Planning and Sustainable Development (OPSD) recommends consultation with the City and County of Honolulu (City) and other area landowners regarding development being planned in the Project's service area, as the City has recently announced plans to redevelop its lands around the Kuwili rail station at much higher densities than might have been contemplated in prior planning efforts and the State Iwilei Infrastructure Improvement Master Plan issued in 2023. It might be useful to include a map of the Project's service area to help identify whether this particular Project will need to service the additional housing and mixed-use development being planned for the larger area.

Given that the Project Area is a large part of the State of Hawai'i's plan for transit-oriented development (TOD) and is within a half-mile radius of future rail transit stations, the Draft EA should detail how the electrical infrastructure supports TOD goals beyond simply providing power to new housing. This could include discussing how the enhanced electrical system might facilitate future public transit operations or related commercial developments that are integral to TOD.

3. Construction Impact Mitigation (Beyond HDD):
While horizontal directional drilling (HDD) is noted for minimizing surface disruption, the EA should further elaborate on specific mitigation measures for other potential construction impacts. This includes plans for traffic management, noise control, dust suppression, and waste disposal, particularly along heavily trafficked routes like Iwilei Road and King Street.

Details on the designated work areas along King Street for drilling pits and manhole installations, and how these will impact local businesses and residents, would be valuable.

4. Coordination with Utility Companies and Agencies:
We appreciate the ongoing coordination with Hawaiian Electric Company (HECO). The EA should also clearly outline the coordination efforts and agreements with other relevant utility providers (e.g., Hawai'i Gas, Hawaiian Telecom, Spectrum Hawai'i) and city/county departments (e.g., Department of Design and Construction, Board of Water Supply, Department of Environmental

Services) to ensure seamless integration and avoid conflicts with existing underground infrastructure.

5. Emergency Preparedness:
The installation of emergency generators and shelters is noted. The EA should detail the proposed maintenance schedule and emergency response plans for these systems, especially in the context of potential natural disasters common to Hawai'i.

6. Long-term Maintenance and Resilience:
The decision to use HDD to install conduits beneath the Kapālama Canal due to concerns about long-term maintenance and liability is well noted. The EA should discuss the long-term maintenance strategy for all new underground electrical infrastructure, including accessibility for repairs and upgrades, and how the system is designed for resilience against climate change impacts.

7. Final Environmental Impact Statement (3/2025), State Infrastructure Improvement Master Plan and Liliha Civic Center Master Plan
The Hawai'i Housing Finance and Development Corporation (HHFDC) prepared the Final Environmental Impact Statement for the State Iwilei Infrastructure Improvement Master Plan area to serve as a reference document for individual project environmental review documents. The aim of this endeavor was to reduce the need for studies that would essentially duplicate the studies done under that EIS. OPSD recommends examining how the Master Plan FEIS might be utilized and referenced to meet the environmental review requirements for this Proposed Action. The FEIS can be found at the following links:
2025-03-23-OA-FEIS-Iwilei-Infrastructure-Improvement-MP-and-Liliha-Civic-Center-MP-Vol-1.pdf
2025-03-23-OA-FEIS-Iwilei-Infrastructure-Improvement-MP-and-Liliha-Civic-Center-MP-Vol-2.pdf
2025-03-23-OA-FEIS-Iwilei-Infrastructure-Improvement-MP-and-Liliha-Civic-Center-MP-Vol-3.pdf

8. Section 2.
Project Location and Setting, Clarification regarding the Iwilei and Kapālama neighborhoods. OPSD requests that the first paragraph be revised to more accurately reflect the TOD Council's and HCDA's role in the resulting project. We recommend the following language be used for this purpose.

"The Project Area for the Proposed Action is located within the Iwilei and Kapālama neighborhoods of Honolulu, Oahu (see Figure 1). This area was

identified as a State TOD Priority Area in the *State Strategic Plan for Transit-Oriented Development* issued in 2017 by the Hawai'i Interagency Council for Transit-Oriented Development (TOD Council). In 2022, Act 184 was enacted, which identified the construction and improvement of infrastructure in transit-oriented development zones as crucial for supporting the renewal and redevelopment of these areas. Act 184 amended HRS Chapter 206E to task HCDA with establishing a TOD infrastructure improvement program to assist in providing infrastructure needed in designated TOD areas. The Proposed Action was identified in City and State infrastructure planning for the TOD Area as one of the immediate, critical infrastructure needs to enable planned housing projects in the area to move forward."

We look forward to reviewing the Draft Environmental Assessment and appreciate the opportunity to provide input on this significant infrastructure project. If you have any questions regarding this comment letter, please contact Seiji Ogawa, Land Use Division, Seiji.ogawa@hawaii.gov, (808) 587-2898. Please reference DTS202506121559NA for all future correspondence regarding this comment letter.

Mahalo,

Mary Alice Evans

Mary Alice Evans
Director

c: Ms. Michele Kaneko, Hawai'i Community Development Authority
Mr. Ryan Morrissey, Michels Pacific Energy, Inc.

WILSON OKAMOTO CORPORATION
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10906-02
July 23, 2026

Ms. Mary Alice Evans
Office of Planning & Sustainable Development
State of Hawaii
P.O. Box 2359
Honolulu, HI 96813

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure
Kapālama, Oʻahu, Hawaiʻi

Dear Ms. Evans:

Thank you for your letter dated June 26, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18.

The Draft EA will look to include discussions about the Project's consistency with the policies of the Hawaiʻi CZM Programs, HRS § 205A-2, as amended. More emphasis will be included within the Draft EA on how the Project will service Transit-Oriented Development (TOD) development. Details of the economic impacts from construction, beyond horizontal directional drilling (HDD), and plans for mitigation efforts will also be included in the Draft EA.

The Draft EA will discuss the short- and long-term maintenance strategy for all new underground electrical infrastructure, includes its accessibility for repairs and upgrades, and how the system is designed for resilience against climate change impacts. The previously completed 2025, Final Environmental Impact Statement (FEIS) for the Iwilei Infrastructure Improvement Master Plan area, done by the Hawaiʻi Housing Finance and Development Corporation (HHFDC), will be referenced throughout the Draft EA to reduce duplicate studies done under the FEIS.

A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawai‘i Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

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 HAWAI'I | KA MOKU'ĀINA O HAWAI'I
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWE LAULĀ
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)25.095

JUL 11 2025

RECEIVED
JUL 14 2025

Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

Dear Keola Cheng:

Subject: Environmental Assessment Early Consultation
Iwilei Kapalama Electrical Infrastructure
Honolulu, Oahu, Hawaii

Thank you for the opportunity to provide comments on the subject project. The proposed action involves undergrounding new 25kV electrical lines and upgrading existing infrastructure that would benefit future redevelopment of the Liliha Civic Center property, identified by Tax Map Key (1) 1-5-007:001, along with other properties in the area. We provide the following comments:

- Conceptual plans for the redevelopment of the Liliha Civic Center property were included in the Final Environmental Impact Statement (FEIS) for the Iwilei Infrastructure Improvement Master Plan and Liliha Civic Center Master Plan. This FEIS was published to the State of Hawaii, Office of Planning and Sustainable Development, Environmental Review Program's website on March 23, 2025.

- Attached is a site plan that outlines the approximate boundaries for right-of-entries (ROEs) that have been granted to the Hawaii Community Development Authority, the Honolulu Authority for Rapid Transportation, and HomeAid Hawaii for various portions of the Liliha Civic Center property. It should be assumed that construction activities for the proposed action would occur while these ROEs are still in effect, and work should be coordinated as appropriate with these entities.

If you have any questions, your staff may call David DePonte of the Public Works Division at (808) 586-0492, or e-mail at david.c.deponte@hawaii.gov.

Sincerely,

KEITH A. REGAN
Comptroller

Attachment
c: Michele Kaneko, HCDA w/ attach
James Kurata, DAGS CSD w/ attach


HCDA
Construction Staging & Storage
HART
Guideway Construction
Home Aid
Kauhale
N KING ST

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Keith A. Regan
Department of Accounting and General Services
State of Hawaii
P.O. Box 119
Honolulu, HI 96810-0119

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Regan:

Thank you for your letter dated July 11, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. Thank you for bringing to our attention the conceptual plans for the redevelopment of the Liliha Civic Center property published in the Final Environmental Impact Statement (FEIS) for the Iwilei Infrastructure Improvement Master Plan and Liliha Civic Center. Construction of the Proposed Action will be coordinated as appropriate with the boundaries of the right-of-entries (ROEs) as outlined in the attached site plan to your comment letter. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

JOSH GREEN, M.D.
GOVERNOR OF HAWAI'I
KE KIA'ĀINA O KA MOKU'ĀINA 'O HAWAI'I

STATE OF HAWAII
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:
218283 SL

July 18, 2025

Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826
Sent via e-mail to: publiccomment@wilsonokamoto.com

Facility/Site: Admin: Environmental Assessment (EA), Draft EA, and Environmental Impact Statement (EIS) Requests

Subject: Response to Request for Environmental Assessment Early Consultation, Iwilei and Kapālama Electrical Infrastructure, Honolulu, O'ahu, Hawai'i, dated June 9, 2025

Dear Mr. Cheng,

The Hawaii Department of Health (HDOH) Hazard Evaluation and Emergency Response (HEER) Office has reviewed the Early Consultation Package for the Iwilei-Kapalama Electrical Infrastructure project that was provided to our office by Rachel Lavatai on July 17, 2025. The HEER Office manages investigations and cleanup of sites with releases of hazardous substances that pose potential environmental or human health hazards in accordance with Hawaii Revised Statute (HRS) 128D and Hawaii Administrative Rule (HAR) 11-451. Sites managed by the HEER Office are depicted on our publicly accessible iHEER website "viewer" at https://eha-cloud.doh.hawaii.gov/iheer#!/viewer. Documents for each site are available clicking on the site icon and selecting the "Details" tab.

After reviewing the proposed "route" of your electrical infrastructure project, it appears that your project is within or adjacent to several sites with identified contamination in the surface and/or subsurface soil and, in some cases, in the groundwater. The following is a list of those sites:

- Iwilei Center VRP Site 34, iHEER ID 2826: https://eha-cloud.doh.hawaii.gov/iheer#!/site/2826/details/view
- Senior Residences at Iwilei, iHEER ID 362: https://eha-cloud.doh.hawaii.gov/iheer#!/site/362/details/view
- Liliha Civic Center, iHEER ID 2692: https://eha-cloud.doh.hawaii.gov/iheer#!/site/2622/details/view

- Iwilei Project Site, iHEER ID 290:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/290/details/view
- Iwilei Civic Center Kauhale Project, iHEER ID 3348:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/3348/details/view
- 333 & 351 N King Street, iHEER ID 1511:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/1511/details/view
- 393 North King Street, iHEER ID 1512:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/1512/details/view
- Kukui Gardens, iHEER ID 888:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/888/details/view
- Mayor Wright Homes Redevelopment Project, iHEER ID 2986:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/2986/details/view
- 710 North King Street, iHEER ID 29:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/29/details/view
- Kaiulani Elementary School Building Exterior Soils, iHEER ID 2912:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/2912/details/view
- Hawaii Hochi, iHEER ID 2873:
  https://eha-cloud.doh.hawaii.gov/iheer#!/site/2873/details/view

Please note that iHEER only displays sites where releases have been identified and reported to our office. There may be additional subsurface contamination present within your project route that has not yet been discovered or reported to the HEER Office. We recommend that you retain a qualified environmental consultant to evaluate soil and groundwater conditions along the project route and develop a plan to remediate and/or manage the contamination prior to the start of excavation. Below are links to our Standard Comments for Environmental Assessments and a Fact Sheet for selecting an environmental consultant:

- Standard Comments (EA/EIS):
  HEER-Standard-Comments-Rev-8-2-2021-for-Posting.pdf
- Choosing and Environmental Consultant Fact Sheet:
  https://health.hawaii.gov/heer/files/2020/05/HowToChooseAConsultant05062020.pdf

In accordance with HRS 128D and HAR 11-451, if your investigation identifies contamination at concentrations greater than HDOH Tier 1 Environmental Action Levels (EALs) that constitutes a release or threat of a release of a hazardous substance or contaminant that poses a potential human health or the environment hazard, then it must be reported immediately to the HEER Office. At that time the HEER Office will work with you to determine what further actions must be taken to comply with state regulations, which may include additional site characterization and remediation prior to continuing with your project. As such, it is in your interest to adequately investigate and characterize the project site area prior to the start of excavation to avoid costly delays to your construction project.

Failure to adequately characterize the soil and groundwater along your project route prior to disturbing it and/or properly manage the disturbed media, may result in fines or other penalties if it is determined that a violation of HRS 128D has occurred. Additionally, improper transport, storage and off-site disposal of contaminated media may be a violation of solid and hazardous waste regulations found in HRS 342 subject to additional penalties.

If you have any questions, please feel free to contact me at 808-586-4249 or by email at sven.lindstrom@doh.hawaii.gov.

Sincerely,



Sven Lindstrom
Voluntary Cleanup Program Specialist
Site Discovery, Assessment and Remediation
Hazard Evaluation and Emergency Response Office
Hawaii Department of Health

cc: Rachel Lavatai (via e-mail)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Sven Lindstrom
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Early Consultation Package for the Iwilei and Kapalama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Lindstrom:

Thank you for your letter dated July 18, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments, and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. Per your comment letter, the Proposed Action is located within or adjacent to several sites with identified contamination in surface and/or subsurface soil and groundwater. We acknowledge your recommendation to evaluate these conditions along the project route and to develop a plan to remediate or manage contamination prior excavation. To avoid potential construction delays, it is in our best interest to adequately investigate and characterize the project area before work begins. In response, Michels consulted with ENPRO Environmental to conduct a due diligence assessment of potential contamination within the Project Area. The findings from the report will be incorporated into the Final EA as part of the contamination assessment.

A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HO'OKELE

Deputy Directors
Nā Hope Luna Ho'okele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF TRANSPORTATION | KA 'OIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

DIR0002053
STP 8.3946

July 8, 2025

VIA EMAIL: publiccomment@wilsonokamoto.com

Mr. Keola Cheng, Director – Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Cheng:

Subject: Environmental Assessment (EA) Early Consultation
Iwilei and Kapalama Electrical Infrastructure
Honolulu, Oahu, Hawaii

Thank you for your letter, dated June 9, 2025, requesting the Hawaii Department of Transportation's (HDOT) review and comments on the subject project. HDOT understands that the Hawaii Community Development Authority is proposing to upgrade existing 12 kilovolt (kV) electrical infrastructure by installing new underground 25 kV distribution systems to support future demand for the planned Liliha Civic Center, Mayor Wright Homes, and Kapalama Kai Phase 1.

1. The proposed project area is approximately 0.54 miles from the Daniel K. Inouye International Airport (HNL). All projects within 5 miles from Hawaii State airports are advised to read the Technical Assistance Memorandum (TAM) for guidance with development and activities that may require further review and permits. The TAM can be viewed at this link: https://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports_08-01-2016.pdf

2. The proposed project area is approximately 12,144 feet from the end of Runway 22L at HNL. Federal Aviation Administration (FAA) regulation requires the submittal of FAA Form 7460-1 Notice of Proposed Construction or Alteration pursuant to the Code of Federal Regulations, Title 14, Part 77.9, if the construction or alteration is within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet. Construction equipment and staging area heights, including heights of temporary construction cranes, need to be included in the submittal. The form and criteria for submittal can be found at the following website: https://oeaaa.faa.gov/oeaaa/oe3a/main/#/home. Please provide a copy of the FAA response to the Part 77 analysis to the HDOT Airport Planning Section.

3. Standing water has the potential to become a wildlife hazard. The HDOT recommends that the contractor incorporate measures during construction to minimize hazardous wildlife attractants in compliance with the FAA Advisory Circular (AC) 150/5200-33C Hazardous Wildlife Attractants On or Near Airports. If the project results in a wildlife attractant, these hazards shall be immediately mitigated upon notification by the HDOT and/or FAA.

4. The upcoming draft EA should provide a discussion of the existing overhead and proposed underground linear utility alignments or structures that may have potential impacts to any identified right-of-way (ROW) or intersections with state highway facilities during construction.

5. The proposed underground work is not anticipated to significantly impact our state highway facilities. However, any work done within the ROW that crosses state roadways shall obtain all required construction plan approvals, and Use and Occupancy Permits from the HDOT for the following locations:

    a. Intersection of North King Street with Liliha Street (portion under state jurisdiction)

    b. Intersection of North King Street with North Nimitz Highway (state jurisdiction)

6. Describe strategies to reduce carbon emissions from the project, if any. Suggestions include:

    a. Implement energy-efficient technologies and practices, such as light-emitting diode lighting.

    b. Use sustainable, recycled, or low-emission materials in construction and manufacturing.

Please submit land use entitlement-related requests for review or correspondence to the HDOT Land Use Intake email address at DOT.LandUse@hawaii.gov.

If there are any questions, please contact Mr. Blayne Nikaido, Planner, Land Use Section of the HDOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,

EDWIN H. SNIFFEN
Director of Transportation

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Edwin H. Sniffen
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, HI 96813-5097

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Sniffen:

Thank you for your letter dated July 8, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments, and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. Any work done with the ROW that may cross state roadways shall obtain all required construction plan approvals, and Use and Occupancy Permits from the HDOT for the locations mentioned in your letter.

A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix C.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

BOARD OF WATER SUPPLY
KA ʻOIHANA WAI
CITY AND COUNTY OF HONOLULU

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

RICK BLANGIARDI
MAYOR
MEIA

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

ERWIN KAWATA
DEPUTY MANAGER
HOPE MANAKIA

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EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

July 11, 2025

Mr. Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaiʻi 96826

RECEIVED
JUL 14 2025
WILSON OKAMOTO CORPORATION

Dear Mr. Cheng:

Subject: Your Letter Dated June 9, 2025 Requesting Comments on the Environmental Assessment Early Consultation for the Iwilei and Kapālama Electrical Infrastructure Project off Iwilei Road, North King Street, Pua Lane, Kōkea Street, Kohou Street, and the Kapālama Canal

Thank you for your letter regarding the proposed electrical infrastructure project.

The Board of Water Supply has water mains traversing through the entirety of the public right-of-way project site. Additionally, we are in the design phase of a water system improvement project along North King Street from Liliha Street to Beretania Street. These water mains should be located within paved roadways and made accessible for repairs and maintenance during all phases of the project. Any structures should be adequately set back from the water main easements for the safety of the public and to prevent damage to the structures in the event of main breaks, repair, and maintenance.

The construction drawings should be submitted for our approval, and the construction schedule should be coordinated to minimize impact to the water system.

If you have any questions, please contact Daniel Koge, Project Review Branch of our Water Resources Division at (808) 748-5444.

Very truly yours,

Erwin Kawata

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

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Ernest W. Lau
Board of Water Supply
State of Hawaii
630 South Beretania Street
Honolulu, HI 96843

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Lau:

Thank you for your letter dated July 11, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. The presence of water mains traversing the entirety of the public right-of-way of the Project Site has been made note of. All water mains within and surrounding the Project Site will be accounted for. Structures within the vicinity of any of the water mains will be adequately setback. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

DEPARTMENT OF COMMUNITY SERVICES
KA 'OIHANA LAWELAWE KAIĀULU
CITY AND COUNTY OF HONOLULU
925 DILLINGHAM BOULEVARD, SUITE 200 • HONOLULU, HAWAI'I 96817
PHONE: (808) 768-7762 • FAX: (808) 768-7792 • WEB: www.honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

ANTON C. KRUCKY
DIRECTOR
PO'O

AEDWARD LOS BANOS
DEPUTY DIRECTOR
HOPE PO'O

June 25, 2025

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826
Attention: Mr. Keola Cheng

RECEIVED
JUN 30 2025
WILSON OKAMOTO CORPORATION

Dear Mr. Cheng:

SUBJECT: Pre-Consultation: DRAFT Environmental Assessment
Iwilei and Kapālama Electrical Infrastructure
Approximately 1.1 miles following portions of Iwilei Road,
North King Street, Kokea Street and Kohou Street

Thank you for notifying us that Wilson Okamoto Corporation is preparing a Draft Environmental Assessment for the above-named project, pursuant to Chapter 343, Hawai'i Revised Statutes.

Our review indicates that the proposed project is located near several properties of note to the Department of Community Services (DCS), including our own offices at **925 Dillingham Boulevard** (Kapālama Hale). DCS also manages the City's Special Needs Housing inventory, which includes the following eight (8) sites leased (or intended to be leased) out to non-profit service providers working within the Iwilei and Kapālama neighborhoods:

1) **350 Sumner Street** — shelter by The Institute for Human Services, Inc.
2) **431 Kuwili Street** — hygiene center, medical respite, and rentals by Mental Health Kokua, Hawai'i Homeless Healthcare Hui, and Steadfast Housing, respectively
3) **445 North King Street** — medical respite and kauhale by Premier Medical Group Hawaii
4) **546 Kaaahi Street** — shelter by The Institute for Human Services, Inc.
5) **806 & 818 Iwilei Road** — behavioral crisis center and rentals by the Department of Health
6) **866 Kuwili Street** — shelter by The Institute for Human Services, Inc., et al.
7) **1122 Banyan Street** — rentals by Banyan Housing LP
8) **1216 Pua Lane** — rentals by Pualani Manor Corp.

Furthermore, DCS is currently monitoring program compliance for a project at **551 Dillingham Boulevard**, a non-congregate shelter owned and operated by The Institute for Human Services, Inc.

We ask that the project take into consideration the health, safety, accessibility, and long-term wellbeing of area residents and others living nearby and/or involved with activities in the project vicinity.

Thank you for providing us the opportunity to comment on this matter.

Sincerely,

Anton C. Krucky
Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Anton C. Krucky
Department of Community Services
State of Hawaii
925 Dillingham Boulevard, Suite 200
Honolulu, HI 96817

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Krucky:

Thank you for your letter dated June 25, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. The Proposed Project will account for the health, safety, accessibility, and long-term wellbeing of area residents. Your comment also indicated that there are several properties pertaining to the City's Special Needs Housing Inventory, managed by the Department of Community Services, that are adjacent to the Project Site, as well as DCS's own offices. These properties and their users will be considered throughout the construction and operational phases of the Proposed Project. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

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

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAI'I 96813
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

HAKU MILLES, P.E.
DIRECTOR
PO'O

MARK YONAMINE, P.E.
DEPUTY DIRECTOR
HOPE PO'O

July 3, 2025

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Iwilei and Kapālama Electrical Infrastructure
Honolulu, O'ahu, Hawai'i

Thank you for the opportunity to review and comment. Our Civil Division (CD) has comments as follows:

- Proposed open cut and horizontal directional drilling at the King Street and Kōkea Street intersection adjacent to the bridge shall not affect the bridge foundation and wing wall in any way.
- Provide final open location and details to the Department of Design and Construction for review and approval.
- Please ensure that standard cover is being provided for new lines and accurate as-builts are recorded when the project is completed.

Should you have any further questions, please contact Timothy Trang, Civil Division Chief, at (808) 768-8836.

Sincerely,

Haku Milles, P.E., LEED AP
Director

HM:krn (941168)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Haku Milles
Department of Design and Construction
State of Hawaii
650 South King Street, 11th Floor
Honolulu, HI 96813

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Milles:

Thank you for your letter dated July 3, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. The proposed open cut and horizontal directional drilling at the King Street and Kokea Street intersection adjacent to the bridge shall not affect the bridge, also standard cover will be provided for new lines and accurate as-builts will be recorded when the Project is complete. Final open location and construction details will be sent to the Department of Design and Construction for review and approval. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

DEPARTMENT OF FACILITY MAINTENANCE
KA 'OIHANA MĀLAMA HALE
CITY AND COUNTY OF HONOLULU

1000 ULU'OHIA STREET, SUITE 215, KAPOLEI, HAWAI'I 96707
PHONE: (808) 768-3343 • Fax: (808) 768-3381 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

GENE C. ALBANO, P.E.
DIRECTOR AND CHIEF ENGINEER
PO'O A ME LUNA NUI 'ENEKINIA

WARREN K. MAMIZUKA
DEPUTY DIRECTOR
HOPE PO'O

IN REPLY REFER TO:
DRM 25-193

July 11, 2025

RECEIVED
JUL 16 2025

Mr. Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Su9ite 400
Honolulu, Hawai'i 96826

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Iwilei and Kapalama Electrical Infrastructure

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

We support the use of horizontal directional drilling (HDD) to install underground electrical infrastructure while minimizing surface disruption. We agree that the use of HDD will allow for the installation of underground conduits and cables without the need for extensive trenching and will significantly reduce the impact on traffic flow, businesses and nearby communities.

We also concur with the upgrading to the existing 25Kv and 12kV electrical distribution systems and supporting infrastructure components.

If you have any questions, please call Mr. Ray Jyo of the Division of Road Maintenance at (808) 768-3697.

Sincerely,

for Gene C. Albano, P.E.
Director and Chief Engineer

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Gene C. Albano
Department of Facility Maintenance
State of Hawaii
1000 Ulu'ohia Street, Suite 215
Kapolei, HI 96707

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Albano:

Thank you for your letter dated July 11, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments, and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

DEPARTMENT OF PLANNING AND PERMITTING
KA ʻOIHANA HOʻOLĀLĀ A ME NĀ PALAPALA ʻAE
CITY AND COUNTY OF HONOLULU

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

RICK BLANGIARDI
MAYOR
MEIA

DAWN TAKEUCHI APUNA
DIRECTOR
PO'O

BRYAN GALLAGHER, P.E.
DEPUTY DIRECTOR
HOPE PO'O

REGINA MALEPEAI
2ND DEPUTY DIRECTOR
HOPE PO'O KUALUA

RECEIVED
JUL 14 2025
WILSON OKAMOTO CORPORATION

July 7, 2025

2025/ELOG-1137(LM)

Mr. Keola Cheng
1907 South Beretania Street, Suite 400
Honolulu, Hawaiʻi 96826
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

SUBJECT: Environmental Assessment Early Consultation Comments for Iwilei and Kapālama Electrical Infrastructure (Project) Iwilei and Kapālama

This is in response to your letter, received June 12, 2025, requesting comments on the scope and content to be addressed in a Draft Environmental Assessment (DEA), as required under Hawaii Revised Statutes (HRS) Chapter 343, for the installation of underground electrical infrastructure spanning approximately 1.1 miles along Iwilei Road, North King Street, Kokea Street, and Kohou Street. The following items should be addressed in the DEA:

1. Long-term Planning Policies and Objectives: The DEA should address the proposed Project's consistency with the relevant policies of the General Plan and the Primary Urban Center Development Plan.

2. Land Use Ordinance (LUO; Revised Ordinances of Honolulu [ROH] Chapter 21): The Project is located within two Transit-Oriented Development (TOD) Plan areas. Therefore, proposed utilities should ensure that TOD policies are not hindered.

3. Street Trees: Undergrounding of electrical infrastructure must not impede or interfere with the street tree standards. Be aware that work in the right of way may require street tree approvals.

4. Flood Zone: The DEA should identify the subject property's flood zone, as mapped by the Federal Emergency Management Agency, and evaluate the proposed Project's compliance with the ROH Chapter 21A, the City's Flood Hazard Areas Ordinance, which is available online at:

https://www.honolulu.gov/rep/site/ocs/roh/ROH_Chapter_21A_.pdf

5. Climate Change and Sea Level Rise: Mayor's Directive 18-2, issued on July 16, 2018, requires all City departments and agencies to use the Hawaii *Sea Level Rise Vulnerability and Adaptation Report*, the *Sea Level Rise Guidance* and the *Climate Change Brief* in planning decisions. For infrastructure, a planning benchmark of up to six feet of sea level rise is advised.

   The DEA should also explore project alternatives, site design, project design features (elevated structures, alternative foundations, etc.), Best Management Practices, and appropriate mitigation measures to reduce, to the extent possible, potential impacts related to hazards. Relevant sources of information are available online at the following links:

   - Mayor's Directive No. 18-2 (2018) regarding climate change and sea level rise:

     www.honolulu.gov/rep/site/dpptod/climate_docs/MAYORS_DIRECTIVE_18-2.pdf

   - Sea Level Rise Vulnerability and Adaptation Report:

     http://climate.hawaii.gov/wp-content/uploads/2019/02/SLR-Report_Dec2017-with-updated-disclaimer.pdf

   - State Sea Level Rise Exposure Area (SLR-XA) Mapping Tool:

     www.pacioos.hawaii.edu/shoreline/slr-hawaii/

   - Guidance for Using the SLR-XA:

     https://climate.hawaii.gov/wp-content/uploads/2020/12/Guidance-for-Using-the-Sea-Level-Rise-Exposure-Area.pdf

   - Honolulu Office of Climate Change, Sustainability and Resiliency Climate Ready Oahu Web Explorer:

     www.resilientoahu.org/water

   - NOAA Storm Surge Mapping tool:

     https://www.nhc.noaa.gov/nationalsurge/

6. Wetlands and Sensitive Species:

The DEA should identify the presence or potential presence of any protected wetlands, sensitive habitat, flora species, and fauna species. A Biological Survey should be conducted, and the report included. The DPP recommends reaching out the U.S. Fish and Wildlife Service (USFWS) to obtain a list of species that are known to occur, or may potentially occur, in the project vicinity. Known, mapped wetlands can be viewed on the USFWS National Wetlands Inventory *Wetlands Mapper*. The DEA must evaluate potential impacts to each identified sensitive species, and provide standard agency-required mitigation measures as well as any applicable site-specific mitigation measures to avoid or minimize potential impacts to each identified species, critical habitat and habitat applicable to the site. The Wetlands Mapper is available online at:

https://www.fws.gov/wetlands/data/mapper.html.

7. Historic and Cultural Resources:

The DEA should identify whether any archaeological sites are within or nearby the project site. Please be advised that in December 2020, the State Historic Preservation Division (SHPD) began using a new online system to better track consultation requests:

https://shpd.hawaii.gov/hicris/landing.

Finally, please contact the appropriate Neighborhood Boards and any relevant neighborhood associations or commissions to request an opportunity to present the Project proposal at Neighborhood Board meeting and/or association meeting(s).

Thank you for the opportunity to comment on this proposal. Should you have any questions, please contact Laura Mo, of our Urban Design Branch, at (808) 768-8025, or laura.mo@honolulu.gov.

Very truly yours,

Jordan Oeldy

FOR Dawn Takeuchi Apuna
Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

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

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Honolulu, Oʻahu, Hawaiʻi

Dear Ms. Takeuchi Apuna:

Thank you for your letter dated July 7, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. The Draft EA will address the Proposed Project's consistency with the policies of the General Plan and the Primary Urban Center Development Plan. The Draft EA will identify the appropriate flood zone, as mapped by the Federal Emergency Management Agency (FEMA), and evaluate the Proposed Project's compliance with the ROH Chapter 21A, the City's Flood Hazard Areas Ordinance. The DEA will explore project alternatives, alternative alignments, project design features, Best Management Practices (BMPs), and appropriate mitigation measures to reduce potential impacts related to hazards. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

DEPARTMENT OF TRANSPORTATION SERVICES
KA 'OIHANA LAWELAWE 'ŌHUA
CITY AND COUNTY OF HONOLULU

711 KAPI'OLANI BOULEVARD, SUITE 1600
HONOLULU, HAWAI'I 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

TP8/25-942511

August 8, 2025

Mr. Keola Cheng, Director
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

RECEIVED
AUG 26 2025

Dear Mr. Cheng:

SUBJECT: Environmental Assessment Early Consultation Iwilei and Kapalama Electrical Infrastructure Honolulu, O`ahu, Hawai'i

Thank you for the opportunity to provide written comments regarding the Environmental Assessment Early Consultation Iwilei and Kapalama Electrical Infrastructure Honolulu, O`ahu, Hawai'i. We have the following comments.

1. Impacts to streets. The project shall avoid any long-term impacts to City and County of Honolulu (City) street facilities including travel lanes, bikeways, and sidewalks.

2. Planned Improvements. The project shall consider and avoid any impacts to upcoming North King Street Complete Streets project and Kapalama Canal Catalytic project. The City is in design phase for King Street Complete Street project plans are available online at https://www.honolulu.gov/completestreets/kalihi/.

3. Street Usage Permit. A street usage permit from the Department of Transportation Services (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), Oahu 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

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.

Should you have any questions, please contact Bartholomew Mikitowicz, of my staff, at (808) 768-6681.

Very truly yours,

J. Roger Morton
Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. J. Roger Morton
Department of Transportation Services
State of Hawaii
711 Kapiolani Boulevard, Suite 1600
Honolulu, HI 96813

Subject: Early Consultation Package for the
Iwilei and Kapalama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Morton:

Thank you for your letter dated August 8, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments, and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. The Draft EA will address the Proposed Project's consistency with the comments provided by DTS. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

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

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

RICK BLANGIARDI
MAYOR
MEIA

SHELDON K. HAO
FIRE CHIEF
LUNA NUI KINAI AHI

JASON SAMALA
DEPUTY FIRE CHIEF
HOPE LUNA NUI KINAI AHI

June 27, 2025

Mr. Keola Cheng, Planning Director
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

RECEIVED
JUN 30 2025

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Iwilei and Kapālama Electrical Infrastructure
Honolulu, O'ahu, Hawai'i
Tax Map Key: 1-5-040: 003

In response to your letter dated June 9, 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 duration of the project.

Should you have questions, please contact Battalion Chief Pao-Chi Hwang of our Fire Prevention Bureau at 808-723-7151 or hfdfpb1@honolulu.gov.

Sincerely,

KEVIN MOKULEHUA
Assistant Chief

KM/MD:sk

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Kevin Mokulehua
Honolulu Fire Department
State of Hawaii
636 South Street
Honolulu, HI 96813

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Mokulehua:

Thank you for your letter dated June 27, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. The Project will account for all fire apparatus access roads remaining open for the duration of the Project. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

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

July 7, 2025

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

This is in response to your letter of June 9, 2025, requesting input on the Environmental Assessment Early Consultation for the proposed Iwilei and Kapālama Electrical Infrastructure project in Honolulu.

Based on the information provided, the Honolulu Police Department (HPD) recommends adequate notification be made island wide, as well as to area residents, businesses, and schools due to the potential ingress and egress of construction vehicles, equipment, and deliveries. The HPD also recommends all necessary lights, signs, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project. Lastly, we recommend acquiring police services to ensure traffic flow is not adversely affected.

If there are any questions or concerns, please call Major Elgin Arquero of District 5 (Kalihi) at (808) 723-8208.

Sincerely,

GLENN HAYASHI
Assistant Chief of Police
Support Services Bureau

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Glenn Hayashi
Honolulu Police Department
State of Hawaii
801 South Beretania Street
Honolulu, HI 96813

Subject: Early Consultation Package for the
Iwilei and Kapālama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Hayashi:

Thank you for your letter dated July 7, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. Measures will be taken to provide adequate notification island-wide, as well as the proper safety equipment and materials will be installed and maintained on site by the contractor. HPD will also be contacted if police services are necessary to ensure traffic flow remains relatively uninterrupted. A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services

Charter
COMMUNICATIONS

July 1, 2025

Iwilei and Kapalama Electrical Infrastructure
Honolulu, O'ahu, Hawai'i

Attn: Mr. Keola Cheng

Subject: Environmental Assessment Early Consultation
Iwilei and Kapalama Electrical Infrastructure
Honolulu, O'ahu, Hawai'i

Aloha Mr. Cheng,

The exact locations, and route of all CATV facilities must be verified in the field due to construction variances. The location of the proposed project may influence Spectrum's existing CATV plant in your work area.

However, if the work or repairs being preformed requires special machinery, with a specific height requirement, the contractor preforming the work, will be required to notify our office prior to preforming any work. Spectrum may need to reattach or move or plant system, if we must relocate our existing plant system, charges may apply.

Currently, Spectrum utilizes both HECO's aerial and HT's underground infrastructure to provide our CATV services in the area that passes through your project location. Before any digging toning is required. Call "One Call Center" at 866-423-7287 to set up toning. This information has been provided to help minimize delays and prevent damage to existing CATV structures within the project area. Should you have any questions or concerns, please feel free to contact me at 808-625-8592 or email me via Paul.caspillo@charter.com.

Mahalo,

Paul Caspillo

Paul Caspillo
Construction Coordinator

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10906-02
July 23, 2026

Mr. Paul Caspillo
Charter Communications
Spectrum Hawaii
200 Akamainui Street
Mililani, HI 96789
<paul.caspillo@charter.com>

Subject: Early Consultation Package for the
Iwilei and Kapalama Electrical Infrastructure Project
Kapālama, Oʻahu, Hawaiʻi

Dear Mr. Caspillo:

Thank you for your letter dated July 1, 2025, regarding the Environmental Assessment- Early Consultation Package for the Iwilei and Kapālama Electrical Infrastructure Project on the island of Oʻahu.

We acknowledge your comments and they have been considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawaiʻi Administrative Rules, Title 11, Chapter 200.1, Section 18. Prior to construction of the Proposed Project, exact locations of Spectrum's SATV facilities will be accounted and verified. Machinery for repairs, with specific height requirements, performed by the contractor, will notify Spectrum's offices prior to performing the work. Spectrum will be notified per the "One Call Center" at 866-423-7287, as outlined in your comment letter, to prevent any damages to existing CATV services in the Project Area.

A record of your comments, along with this response, have been reproduced and are appended to the Draft EA in Appendix E.

Please note that the Draft EA has been published and made available for review, and comment in the current issue of the State of Hawaiʻi's Environmental Review Program (ERP) *The Environmental Notice.*

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Ms. Michelle Kaneko, Hawaiʻi Community Development Authority
Mr. Ryan Morrissey, Michels Preconstruction Services