DEPARTMENT OF ENVIRONMENTAL SERVICES
KA ʻOIHANA LAWELAWE KAIĀPUNI
CITY AND COUNTY OF HONOLULU

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IN REPLY REFER TO:
WEC.PE 25-056

December 12, 2025

Ms. Mary Alice Evans, Director
Office of Planning and Sustainability Development
State of Hawai'i
235 South Beretania Street, 6th Floor
Honolulu, Hawai'i 96813

Dear Ms. Evans:

SUBJECT: Honouliuli Wastewater Treatment Plant Effluent Treatments and Outfall Improvements

The City and County of Honolulu, Department of Environmental Services is transmitting the subject Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the subject project. The DEA-AFONSI has been prepared pursuant to Chapter 343, Hawai'i Revised Statues, and Chapter 11-200.1, Hawai'i Administrative Rules.

Included in the DEA-AFONSI are an Archaeology Literature Review and Assessment, a Biological Survey Report, and copies of comments received during the early consultation process along with the corresponding responses regarding the subject project.

Should you have any questions, please contact our consultant Mr. Keola Cheng at (808) 946-2277.

Sincerely,

Digitally signed by Babcock, Roger W
Date: 2025.12.15 06:20:25 -10'00'

Roger Babcock, Jr., Ph.D., P.E.
Director

Enclosure

cc: ENV/WEC (Cindy Masuoka)
ENV/WEC (Kelli Katayama)
Carollo Engineers (Karl Hadler)
Carollo Engineers (Preston Merrell)
Carollo Engineers (Adrienne Fung)

From: dbedt.opsd.erp@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Tuesday, December 16, 2025 9:19:49 AM

Action Name

Honouliuli WWTP Effluent Treatment and Outfall Improvements

Type of Document/Determination

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

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds
- (9)(A) Propose any wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent

Judicial district

ʻEwa, Oʻahu

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

(1) 9-1-013:007

Action type

Agency

Other required permits and approvals

Please see Chapter 4, Section 4.3 for Permit and Approvals

Proposing/determining agency

Department of Environmental Services

Agency jurisdiction

City and County of Honolulu

Agency contact name

Cindy Masuoka

Agency contact email (for info about the action)

cmasuoka@honolulu.gov

Email address for receiving comments

publiccomment@wilsonokamoto.com

Agency contact phone

(808) 768-8761

Agency address

650 South King Street, 14th Floor
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 ENV is proposing to design and construct a new disinfection system for secondary treatment of effluent within the Honouliuli Wastewater Treatment Plant.

This forthcoming EA will focus on impacts associated with the proposed implementation of the UV disinfection system, while also reviewing other feasible alternatives including a peracetic acid (PAA) disinfection system.

Reasons supporting determination

Please see Chapter 6

Attached documents (signed agency letter & EA/EIS)

- Honouliuli-WWTP-Transmittal-Letter1.pdf
- HONOULIULI-WWTP-FINAL-DRAFT-EA1.pdf

ADA Compliance certification (HRS §368-1.5):

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

Action location map

- Project_Area1.zip

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.

HONOULIULI WWTP EFFLUENT TREATMENT & OUTFALL IMPROVEMENTS

DRAFT ENVIRONMENTAL ASSESSMENT

PREPARED FOR:
CAROLLO ENGINEERS

PREPARED BY:
WILSON OKAMOTO CORPORATION

DECEMBER 2025

DRAFT ENVIRONMENTAL ASSESSMENT
HONOULIULI WASTEWATER TREATMENT PLANT

Prepared For:
Carollo Engineers

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

DECEMBER 2025

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PREFACE

This Draft Environmental Assessment (EA) has been prepared in accordance with Chapter 343, Hawai'i Revised Statutes (HRS) and Title 11, Chapter 200.1 of the Hawai'i Administrative Rules (HAR), under the State of Hawaii, Department of Health (DOH).

The City and County of Honolulu (CCH), Department of Environmental Services (ENV) is proposing the design and construction of an ultraviolet (UV) disinfection system at the Honouliuli Wastewater Treatment Plant (HNWWTP) to meet US Environmental Protection Agency (EPA) National Pollutant Discharge System (NPDES) permit (No. HI 0020877) compliance requirements for treatment of enterococci (Proposed Action).

At the request of the City, this EA also includes a peracetic acid (PAA) disinfection system as a potential supplement or substitute for the Proposed Action (herein referred to as the Proposed Alternative). This consideration arose after the distribution of the Early Consultation Package (ECP) on May 27, 2025.

This Draft EA is being prepared pursuant to HRS § 343-5 (1), which states the actions that involve the use of state or county lands, or the use of state or county funds require an EA. This EA will evaluate the potential environmental, social, cultural, and economic impacts associated with the Proposed Action/Proposed Alternative. Pursuant to HRS §343-5(b), the ENV will be responsible for determining if the Final EA can be filed as a Finding of No Significant Impact (FONSI). This document is being prepared as an agency action for the CCH ENV.

Several technical studies have been prepared in conjunction with this EA, including an Archeological Literature Review and Assessment (ALRA) and a Biological Survey Report. These studies are included as appendices to this EA.

It should be noted that on May 27th, 2025, an Early Consultation Package for the Proposed Action was distributed to State and City and County of Honolulu agencies, as well as various community stakeholders.

Disclaimer: If you are experiencing any ADA compliance issues with this document, please contact our consultant at publiccomment@wilsonokamoto.com.

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SUMMARY

Type of Document:	Draft Environmental Assessment
Project Name:	Honouliuli WWTP Effluent Treatment & Outfall Improvements
Proposing and Determining Agency:	City and County of Honolulu (CCH) Department of Environmental Service (ENV)
Location:	ʻEwa District, Oʻahu, Hawaiʻi
Tax Map Key (TMK) parcel:	(1) 9-1-013:007
Land Area:	Approximately 48.7 acres
Record Free Owner:	City and County of Honolulu
State Land Use Classification:	Urban
City & County Development Plan:	ʻEwa Development Plan
City & County Zoning Designation:	Intensive Industrial (I-2)
SMA:	Not in a Special Management Area
Special Designation:	N/A
Flood Zone:	Zone D
Existing Use:	Wastewater treatment servicing the Leeward Coast
Proposed Action:	The ENV is proposing to design and construct a new disinfection system for secondary treatment of effluent within the Honouliuli Wastewater Treatment Plant. This forthcoming EA will focus on impacts associated with the proposed implementation of the UV disinfection system, while also reviewing other feasible alternatives including a peracetic acid (PAA) disinfection system.
Impacts:	No significant impacts are anticipated to result from the Proposed Action. 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.

Anticipated Determination:	Finding of No Significant Impact (FONSI)
Parties Consulted During Early Consultation:	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 Congresswoman Jill Tokuda Congressman Ed Case State Agencies Department of Agriculture Department of Accounting and General Services Department of Business, Economic Development and Tourism (DBEDT) Department of Education DBEDT Business Development and Support Division DBEDT Hawaii State Energy Office DBEDT Hawaii Housing Finance and Development Corporation DBEDT Land Use Commission Office of Planning and Sustainable Development, Environmental Review Program Department of Defense DOH - Environmental Management Division DOH - Hazard Evaluation and Emergency Response Office Department of Health DOH - Wastewater Branch DOH - Clean Water Branch DOH - Safe Drinking Water Branch Department of Land and Natural Resources (DLNR) DLNR Division of Aquatic Resources DLNR - Commission on Water Resource Management DLNR - Engineering Division DLNR - Division of Boating and Recreation DLNR - Office of Coastal and Conservation Lands DLNR - State Historic Preservation Division Department of Hawaiian Home Lands Office of Hawaiian Affairs Department of Transportation (DOT) DOT - Harbors Division DOT - Highways Division DOT - Airports Division Department of Defense - Hawaii Army National Guard Department of Human Services - Hawaii Public Housing Authority

State Representatives
Senator Mike Gabbard
Senator Kurt Favella
Representative Diamond Garcia
Representative Elijah Pierick
Representative David Alcos III
Representative Julie Reyes Oda

City and County of Honolulu Agencies
Board of Water Supply
Department of Community Services
Department of Design and Construction
Department of Environmental Services – Refuse Division
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 Andria Tupola
Councilmember Augie Tulba

Utility Companies
Hawai'i Gas
Hawaiian Telecom
Hawaiian Electric Company (HECO)
Spectrum Hawai'i

Other Interested Parties and Individuals
Hawai'i State Public Library
Ewa Beach Public and School Library
Neighborhood Board No.23 - 'Ewa

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CHAPTER 1 Introduction

1.1 Background Information

The Honouliuli Wastewater Treatment Plant (HNWWTP) was built in the 1970s and has served the growing communities of West O'ahu for decades. HNWWTP customers include the West Mamala region, which stretches from Hālawa to Makakilo, and includes Barbers Point, 'Ewa, Kapolei, and Mililani.

HNWWTP originally provided only primary treatment but has fully upgraded to secondary treatment to produce higher quality effluent. Completed in 2024, the Phase 1B project addressed the First-Amended Consent Decree (FACD, Civil No. 94-00765 DAE-KSC), which required HNWWTP to implement full secondary treatment. This includes new high-rate biological contactors and clarifiers sized to treat roughly 26 million gallons per day (MGD), with further expansion planned under Phase 1C.

Approximately 10 mgd of treated secondary effluent is sent to the Board of Water Supply's Honouliuli Water Recycling Facility, which provides further tertiary treatment to produce R-1 recycled water. HNWWTP's remaining treated effluent is discharged at a 200-foot deep ocean outfall that extends 9,300 feet (1.76 miles) offshore into the Pacific Ocean.

HNWWTP serves one of the island's fastest growing regions, with flows expected to increase alongside population growth within the Honouliuli sewer basin. Plant upgrades are necessary to accommodate projected future flows, which may reach 101 MGD by 2056.

The City and County of Honolulu (CCH), Department of Environmental Services (ENV) is proposing to design and construct a new ultraviolet (UV) disinfection system at the HNWWTP. The UV Project (herein referred to as the Proposed Action) is required to meet the compliance requirements and deadlines set by HNWWTP's National Pollutant Discharge Elimination System (NPDES) Permit No. HI 0020877 for the treatment of enterococci in the effluent. Pursuant to HRS § 343-5(b), ENV will be the "Approving Agency" and will determine the significance of potential environmental impacts.

At the request of CCH, this EA also includes a peracetic acid (PAA) disinfection system as a potential supplement or substitute for the Proposed Action (herein referred to as the Proposed Alternative). This consideration arose after the distribution of the Early Consultation Package (ECP) on May 27, 2025. UV remains the preferred technology based on the 2022 Disinfection Alternatives Analysis, but evaluating PAA provides flexibility in decision-making and supports transparency in the planning process. Both technologies can be accommodated within the same project footprint, avoiding additional disturbance or permitting requirements. PAA is a viable disinfectant; however, due to its limited shelf life, onsite generation would likely be required at this scale. Inclusion of PAA in the EA allows both chemical and non-chemical approaches to effluent disinfection are documented for future consideration

While CCH has not fully committed to the implementation of the PAA system, it is included in this EA to ensure that a range of feasible disinfection technologies are considered prior to final selection. As

such, the two technological processes that are being considered and carried forward for detailed evaluation are:

- Proposed Action: UV Disinfection System
- Proposed Alternative: PAA Disinfection System

This EA assesses the anticipated environmental effects of the Proposed Action – the construction and operation of a UV disinfection system at HNWWTP – as well as a reasonable substitute (a PAA disinfection system) and the No Action Alternative. Specifically, this effort encompasses an evaluation of primary, secondary, and cumulative effects, in alignment with chapter 343, HRS, Title 11, Chapter 200.1, Hawai'i Administrative Rules (HAR). The EA also identifies feasible means of avoiding potential significant adverse impacts 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."

The implementation of the Proposed Action mandates the preparation and processing of an EA pursuant to Hawai'i Environmental Review Law as outlined in § 343-5(a), HRS relevant statutes listed below:

> *"(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;*
>
> *(9) Proposes any wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty (50) single family dwellings or the equivalent."*

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 Draft 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 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 impacts, as well as the reasonable and feasible alternatives:
- To enable the ENV to consider the potential environmental consequences of implementing the Proposed Action and pursue the responsible development of the Project Site;
- To enable appropriate 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;
- To address cultural, archaeological, and environmental concerns, and coordinate with the State Historic Preservation Division (SHPD) and to conduct a Ka Pa'akai analysis as needed.

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 a 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 State Coastal Zone Management Program, HRS Chapter 205A
- Hawai'i Environmental Policy Act, HRS Chapter 344

City and County of Honolulu (CCH)

- O'ahu General Plan, Revised Charter of the CCH Section 6-1508
- City and County of Honolulu Zoning

Planning for improvements at HNWWTP was previously documented in the approved 2017 Final Environmental Impact Statement (FEIS) for the Secondary Treatment and Related Facility Improvements, which evaluated alternatives to achieve full secondary treatment and long-term regulatory compliance. The FEIS included the entire Honouliuli WWTP property (TMK: 1-9-1-013:007) and an additional property (TMK: 1-9-1-069:003). The FEIS provided baseline data on the site's ecological features in support of future environmental planning and compliance efforts. This FEIS expanded the scope of environmental review, incorporating a broader analysis of the site's physical and natural environmental conditions. This EA will focus on HNWWTP property and further evaluate the disinfection system alternatives.

HNWWTP operates under NPDES Permit HI0020877, which expired September 30, 2025. The permit is under administrative extension while Department of Health (DOH) processes CCH's renewal application.

Alternatives to be analyzed in the EA pursuant to HAR §11-200.1-18(c) are as follows:

- No Action Alternative
- UV disinfection
- PAA disinfection

The EA will compare these three options listed above in detail found in Chapter 5. As a note, CCH developed a Disinfection Alternatives Analysis report in 2022 to evaluate various disinfection alternatives. The report found UV disinfection to have relatively low life-cycle cost and comparably minimal environmental impacts.

1.2 Project Location and Surrounding Uses

The Proposed Project Area encompasses a portion of the existing HNWWTP, located at 91-1000 Geiger Road in ʻEwa Beach (See Figure 1-1). The HNWWTP site is adjacent to the Barbers Point Golf Course, with Ewa Mahiko District Park situated to the north and the Hawaiian Railway Society property located to the northwest of the project area. Additional key landmarks surrounding the Project Area include Coral Creek Golf Course, the Ewa Refuse Convenience Center, Coral Ridge Homes, Kamakana Aliʻi Mall and other master-planned communities. HNWWTP encompasses approximately 49 acres and is further identified as TMK [1] 9-1-013:007 (See Figure 1-2).

The new UV facility will be constructed downstream of the secondary treatment area, in-between digester No. 2 and the effluent connection box. The site is generally flat. This location is also right before the effluent flows to the Barbor's Point Outfall. Previous geotechnical studies indicate the presence of fill material and coralline deposits below the surface. The PAA system would be sited within the same footprint to minimize potential ground disturbance.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 1-1 PROJECT LOCATION MAP & SURROUNDING USES

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 1-2 TAX MAP KEY (TMK)

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CHAPTER 2 Project Description

2. Proposed Project

The CCH ENV is proposing a new UV disinfection system to the existing HNWWTP to provide further effluent treatment. Both the UV and PAA disinfection systems are effective methods for inactivating enterococci and other pathogens. While enterococci themselves are generally not harmful, their presence may indicate the potential presence of viruses, bacteria, and protozoa. The Proposed Action and Alternative systems will support NPDES compliance and future capacity goals.

The proposed improvements, whether UV or PAA, would occur within the existing, previously disturbed footprint of HNWWTP. Construction is anticipated to be phased to ensure the facility remains fully operational throughout project implementation.

2.1 Purpose and Objective

The purpose of the Proposed Action and Proposed Alternative is to provide secondary treatment upgrades to HNWWTP in order to comply with the NPDES permit. The objective of this project is to comply with regulatory requirements from the State of Hawaii Department of Health (DOH) and US EPA, and to provide a basis to meet future wastewater management's needs. This project seeks to address the following needs:

- Demonstrate continuing compliance with NPDES permit discharge limits;
- Improve effluent quality that assesses both chemical and non-chemical methods;
- Provide disinfection capacity for the projected flows through 2056;
- Enhance overall treatment reliability of HNWWTP.

The Proposed Action seeks to construct and operate a new UV disinfection system at HNWWTP to comply with NPDES enterococci limits by June 30, 2030.

2.2 Proposed Action and Proposed Alternative

The new addition of a UV disinfection system (Proposed Action) to the HNWWTP facility is an effective method to reduce harmful pathogens, like enterococci, from being discharged into surrounding waters. The UV system utilizes UV light to inactivate microorganisms, providing a chemical-free solution to pathogen control. Incorporating UV disinfection not only helps the facility comply with regulatory limits but also improves overall water safety, minimizing the risk of waterborne viral diseases in downstream ecosystems, marine habitats, and surrounding communities.

PAA dosing (Proposed Alternative) is also considered an effective disinfectant of bacterial indicator organisms such as e. coli and enterococci (Stampi et al, 2002, Liberti et al, 1999).

2.3 Construction Means and Methods

Construction activities, including staging and material storage, will occur entirely within the HNWWTP property, regardless of whether the UV or PAA disinfection system is selected. The proposed disinfection facilities are located between Digester No. 2 and the existing effluent connection box. Construction access to this area will require routing vehicles and equipment through

existing process areas and plant access roads, with coordination to maintain ongoing plant operations and minimize disruption to adjacent facilities.

Excavation and foundation work will require specialized methods due to the presence of coralline deposits, calcareous sandstone, and strongly cemented reef limestone, which are difficult to excavate using conventional equipment. Pneumatic hoe rams or similar heavy tools may be required for localized rock removal. Depending on final grades and groundwater conditions, temporary shoring and limited dewatering may be necessary. Construction activities will comply with applicable environmental and stormwater regulations.

2.3.1 Installation and Operation of UV Channels

The UV facility would be situated downstream of the primary treatment facility, where it will receive the effluent following biological treatment. The UV facility will connect to two existing 60-inch secondary effluent lines. Four channels would be installed, and will alternate operation.

After construction, the UV channels would provide continuous disinfection of secondary effluent. Each channel would contain two UV lamp banks, operating at lower power during normal conditions to extend lamp life. When one bank is offline for maintenance, the other can maintain disinfection. Major implementation steps include site excavation, tie-ins to existing secondary effluent lines, and start-up testing. The system relies on automated cleaning and controls to maintain lamp performance. Lamp life will also be monitored to ensure continuous adequate disinfection to the effluent.

2.3.2 Installation and Operation of the PAA Disinfection System

Typical PAA disinfection systems consist of a chemical storage and containment area, metering and transfer pumps, piping and instrumentation for controlled dosing, and a dedicated injection or mixing point within the effluent channel. At HNWWTP, the system would likely include double-walled storage tanks with secondary containment, chemical feed pumps housed in a ventilated enclosure, and corrosion-resistant piping and valves. Integration with the plant's existing electrical, SCADA, and safety systems would allow automated flow-paced dosing and alarm monitoring. Due to the limited availability of PAA on O'ahu and the chemical's short shelf life, the facility may consider on-site synthesis or bulk dilution of concentrated PAA delivered to the plant to maintain consistent supply. Proper ventilation, spill containment, and worker safety measures would be critical during storage, handling, and transfer operations.

After construction, PAA dosing would provide an effective method for disinfection and chemical destruction. This process occurs in two steps: "an initial almost instantaneous oxidation step followed by a much longer time step with a slow decay in PAA concentration" (2022, Disinfection Alternatives Analysis). Establishing a standardized method to control PAA dosing and residual monitoring remains a challenge. Site-specific information is needed to determine appropriate doses that address both immediate oxidant demand and the slower PAA decay, while avoiding toxicity and

disinfection byproducts (DBPs). PAA residual may require quenching with sodium bisulfite or another quenching agent to minimize toxicity impacts at the ocean outfall.

2.4 Hours of Operation

The disinfection system will operate continuously in coordination with the overall HNWWTP treatment process. The facility is staffed around the clock, with operations personnel on site 24 hours per day in rotating shifts to monitor, maintain, and control treatment processes and disinfection performance.

2.5 Project Timeline and Construction Costs

Currently a refined construction cost and schedule associated with the Proposed Action is being completed; however, a preliminary estimate is anticipated to amount to approximately $45-50 million for construction.

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CHAPTER 3 Description of Existing Conditions, Impacts, and Proposed 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 the Proposed Alternative and offers mitigation measures to address these impacts.

3.1 Climate, Greenhouse Gas Emissions, and Climate Change

3.1.1 Current Climate Conditions

The island of Oʻahu enjoys a subtropical climate with annual temperatures from 60°F to 85°F and a mean monthly temperature ranging from 73°F in January and February to about 81°F in August. Other significant features of the climate are moderate humidity and two types of wind patterns. The island receives either Trade Winds from the Northeast or South Kona winds averaging a range from 15 to 25 mph with gusts over 35 mph. Rainfall patterns across the island vary drastically over short distances due to the island's topography. Mountainous terrain influences local climate by obstructing, deflecting, and accelerating wind flow, which in turn affects precipitation distribution.
The Project Area, located on the leeward side of Oʻahu, experiences a relatively dry climate with a mean annual rainfall ranging from approximately 20 to 30 inches (51 to 76 cm) with summer months typically the driest. Although the Leeward region is generally dry, occasional severe storms can occur during the wet season, which typically spans October through April.

Average temperatures in the HNWWTP area range from 70°F to 88°F (21°C to 31°C) throughout the year, with warmer conditions in the summer months and slightly cooler temperatures during the winter. Winds in the area are predominantly trade winds blowing from the east or northeast. However, during occasional Kona storms, strong southerly winds may occur. When trade winds weaken, local land and sea breeze circulations can also develop. Wind speeds generally range from 5 to 15 miles per hour, offering relatively consistent ventilation throughout the year.

Impacts and Mitigation Measures

No significant adverse impacts to current climate conditions at or in the vicinity of the Project Area are anticipated as a result of construction or operation of the Proposed Action (UV)/Proposed Alternative (PAA). The Proposed Action/Proposed Alternative 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 is recognized as a significant threat to the State of Hawaiʻi (Gove et al., 2022). It contributes to a range of environmental stressors, including sea level rise, shifting rainfall patterns, rising air and ocean temperatures, and more frequent extreme weather events. These rapid changes are largely driven by increased greenhouse gas (GHG) emissions from human activities (Jay et al., 2023). Ongoing research shows that climate change has far-reaching effects on ecosystem functions, cultural relationships, and public health across Hawaiʻi (Gove et al., 2022).

Since 1950, air temperatures in Hawaiʻi 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°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, 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.

Impacts and Mitigation Measures

The construction and operation of the Proposed Action/Proposed Alternative 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 Site. The Proposed Action / Proposed Alternative will be designed accordingly and will take into consideration the context of the surrounding environment.

The Proposed Action/Proposed Alternative 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/Proposed Alternative 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 run off.

Construction activities may result in minimal and temporary 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.

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

3.2 Physiography

3.2.1 Geology and Topography

The island of Oʻahu was formed by volcanic activity around 3.7 million years ago and is composed of two primary volcanoes: Waiʻanae and Koʻolau. The Waiʻanae Volcano, now extinct, forms the Waiʻanae Mountain Range on the island's western side. On the eastern side, the Koʻolau Range represents the eroded remains of the extinct Koʻolau Volcano.

The Project Site is located within the coastal plain area called the Ewa Plains, south of the Scholfield plateau. Topography within the Ewa plains in the vicinity of HNWWTP is gently sloping and relatively flat. Ten-foot contours were used to analyze the elevation at HNWWTP property, which ranges from 35 ft above the mean sea level (MSL) in the southern portion of the site to approximately 40 ft MSL in the northern portion of the site (Figure 3-1). The area surrounding the Project Site is typically characterized as dry and historically associated with dryland agriculture and plantation-era farming.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 3-1 ELEVATIONS MAP

Impacts and Mitigation Measures

Adverse impacts to geological and topographical features or resources are not anticipated to result from the construction and operation of the Proposed Action/Proposed Alternative, either in the short-or long-term. The Proposed Action/Proposed Alternative is to be located within the already developed HNWWTP Facility. It is designed to integrate with HNWWTP and surrounding topography. Excavation and trenching may be necessary for the construction of facilities and installation of utilities, as well as, for emergency work on the proposed facilities.

3.2.2 Soils

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) provides access to soil maps and data available through field studies, soil mapping projects, and other technical soil services. According to the USDA NRCS, soils within the Project Area are primarily classified as Ewa Silty Clay Loam (EaB) and Lualualei Extremely Cobbly Clay (LPE) (See Figure 3-2). A description of each classification of soil is provided below.

According to the USDA Soil Conservation Service (SCS) Soil Survey of the Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i (USDA SCS 1972), O'ahu contains seven soil associations, one of which is found at the HNWWTP site. The soil association in the Project Area consists mainly of the Mamala Cobbly Silty Clay Loam (MnC) association, characterized by a shallow, well-drained soil with a clay texture formed from alluvium deposited over coral limestone and consolidated calcareous sand. The southeast corner of HNWWTP. A description of the MnC soil classification is provided below.

- *The Mamala soil series consists of shallow, well-drained soils that were used for sugarcane, truck crops, orchards and pastures. The Mamala Cobbly Silty Clay Loam has the following representative profile: the surface layer is dark reddish-brown silty clay loam; the subsoil is dark reddish-brown silty clay loam; and the substratum is coral limestone, and consolidated calcareous sand. The MnC is characterized by moderate permeability, and very slow to medium runoff. The erosion hazard is light to moderate, and the shrink-swell potential is low.*

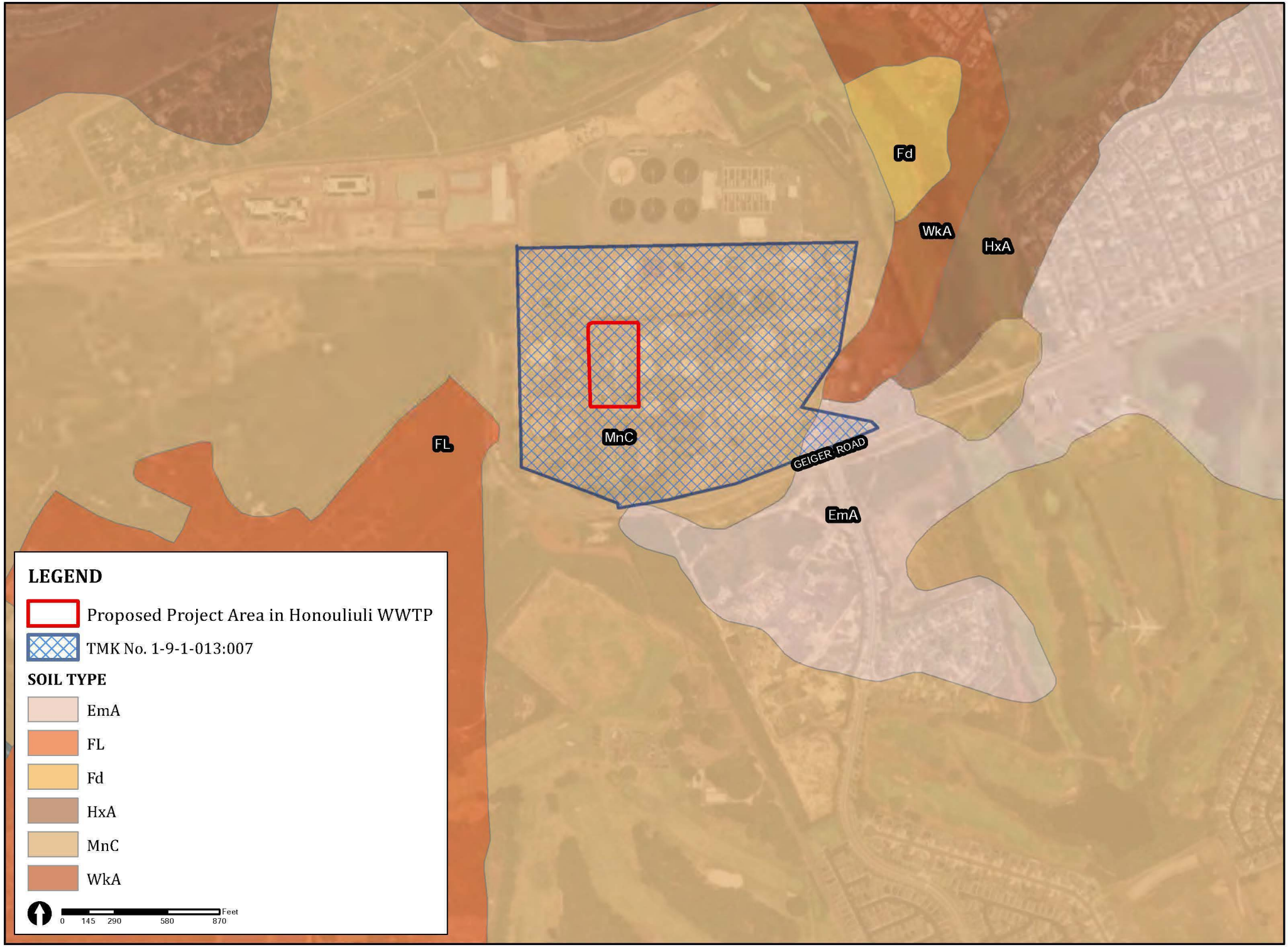
Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative is not anticipated to result in significant adverse impacts on soils in the Project Area. Construction activities will temporarily include ground disturbing activities during demolition and construction. Construction methods have been considered to preserve the integrity of existing facilities and implemented to maintain good working conditions to reduce the potential for accidental spills. In addition, sedimentation and erosion controls should be implemented to reduce impacts on the natural environment.

During operation, the primary objective of all the alternatives is to upgrade and improve the existing WWTP; thereby providing an additional level of treatment to the discharge of treated effluents through use of the proposed UV or PAA disinfection system. However, even with an improved system, there is the potential for wastewater spills to occur, which would result in contamination of the soil.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 3-2 SOILS MAP



3.3 Hydrology

The Hawaiian Islands rely heavily on volcanic rock aquifers as essential sources of potable water. These aquifers are recharged by rainfall infiltrating the porous rock, which is often confined by nonporous caprock at lower elevations and on coastal plains. Freshwater in these aquifers occurs as dike-impounded groundwater or as a freshwater lens floating on top of denser saltwater. Groundwater recharge in the area occurs through precipitation and seepage from surface water bodies, including irrigation systems.

HNWWTP is located mauka of West Loch, Pearl Harbor, in the ʻEwa District of Oʻahu. The facility treats municipal wastewater collected from surrounding service areas and discharges treated effluent via an ocean outfall in accordance with its NPDES permit.

3.3.1 Surface and Coastal Waters

The Project Site is situated within the Kaloʻi watershed, approximately 1.7 miles from the nearest coastline at Mamala Bay. Coastal waters in the vicinity of the Honouliuli WWTP are classified by the Hawaiʻi State Department of Health (DOH) Clean Water Branch as a Class A Open Coastal Waters pursuant to HAR §11-54-6(b)(2)(B). The objective of Class A Waters is to protect their use for recreational purposes and aesthetic enjoyment. Mamala Bay is also listed on DOH's Section 303(d) list of impaired waters that do not meet State water quality standards for one or more parameters (State of Hawaiʻi Quality Monitoring and Assessment Report, 2024).

HNWWTP discharges treated effluent to Mamala Bay through its ocean outfall, located in southwestern Oʻahu between Koʻolina and Pearl Harbor. The facility overlies the Department of Land and Natural Resources (DLNR) Waipahu-Waiawa aquifer (see Figure 3-3). The facility is located above the underground injection control (UIC) well line, which is a boundary between the exempted aquifer and underground source of drinking water. The UIC line serves as a key reference for these regulations, with different rules and restrictions applying to injection well activities in-land (mauka) versus seaward (makai) of the line (Underground Injection Control Program, 2025). Groundwater near HNWWTP is a source of drinking water; however, no public wells are located within 1 mile of the Project Area.

Surface water features in the area are limited. No perennial streams occur near HNWWTP (See Figure 3-4). Kaloʻi Gulch, which forms part of the natural drainage system, runs along the eastern border of the Project Site. Across the lower ʻEwa Plain, the gulch has largely been modified into a man-made channel, while engineered outlets exist at Oneʻula Beach Park, they seldom convey surface flow.

Impacts and Mitigation Measures

The construction of either the Proposed Action or the Proposed Alternative would be confined within the existing, previously developed HNWWTP footprint. No direct work would occur within surface or coastal waters. The potential for impacts is limited to temporary, indirect effects during construction, such as accidental spills, improper material handling, or increased erosion and dust that could migrate off-site. These impacts would be short-term and unlikely to measurably affect coastal water quality given the distance (1.7 miles) from Mamala Bay and absence of direct hydrological connections.

Erosion and sedimentation measures will be implemented at staging and ground improvement sites during construction activities. Therefore, off-site surface waters near the Project Site are not anticipated to be impacted as a result of stormwater runoff during construction activities. Construction activities will also be conducted in compliance with applicable stormwater permitting requirements under the Clean Water Act.

There is a possibility that the existing abandoned irrigation ditch mentioned above was permanently impacted (filled) during the site construction, according to the 2017 FEIS. However, since the ditch was no longer in use for irrigation purposes, no impacts to the ability to irrigate within the vicinity of the Proposed Action/Proposed Alternative are anticipated.

Operation of either disinfection system would not alter surface water drainage or stormwater flows, as HNWWTP does not treat stormwater. Instead, the project's purpose is to provide disinfection to the effluent prior to ocean discharge. The UV system provides effective inactivation of enterococci and other pathogens, while the PAA system achieves similar reductions. In both cases, effluent discharged to Mamala Bay would meet DOH CWB permit requirements, thereby supporting the protection of recreational and ecological uses of Class A waters.

The Proposed Action/Proposed Alternative will adhere to best management practices (BMPs) during construction and operation to preserve surface water resources, which will ensure that coastal waters are not impacted from the Proposed Project. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, and dust fences. Although not anticipated, if triggered, a water quality certification pursuant to Section 401 of the CWA will be obtained to ensure discharge, if any, into coastal waters complies with the CWA.

3.3.2 Groundwater Resources

The natural drainage of the ʻEwa Plain is mostly infiltrated. Streams from the Waiʻanae Mountains are intermittent and discharge only during heavy rainfall events. The ʻEwa region does not have many surface streams discharging into the ocean or Mamala Bay. No perennial streams are located near HNWWTP (see Figure 3-3); however, the Kaloi Gulch- a natural drainage feature – runs along with eastern edge of the survey area. The HNWWTP site is located within the Waipahu-Waiawa Aquifer system according to the State of Hawaii Department of Land and Natural Resources (DLNR) (see Figure 3-4). In addition, HNWWTP is also located within the South Oʻahu Basal Aquifer, which has been designated as a Sole Source Aquifer by the EPA. EPA review is not required for state, local, or privately funded projects (EPA 2014).

Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative will not have any significant impacts to the groundwater resources in the Project Areas of the region.

The UV disinfection system would not use groundwater as part of the treatment process. Appropriate BMPs will be utilized during construction work of the Proposed Action to mitigate any potential impacts to groundwater resources. Additionally, discharge related to the construction or operation of the Proposed Action will be required to comply with

applicable State water quality standards as specified in HAR, Chapter 11-54 "Water Quality Standards" and HAR, Chapter 11-55 "Water Pollution Control." Construction materials waste would need to be appropriately disposed of to prevent any leachate from contaminating groundwater. No long-term impacts to groundwater resources are anticipated.

All activities, near or within groundwater areas would comply with relevant regulations. Additionally, appropriate BMPs such as using silt fences and ensuring proper storage and handling of excavated materials—along with groundwater monitoring and thorough site preparation, would be employed to minimize potential negative impacts. As with any wastewater system, there is the potential of sewer line leaks or breaks that could affect groundwater quality; therefore, mitigation for operational impacts includes ensuring the proper operation and maintenance of the proposed facilities.

UV disinfection does not rely on chemical storage for treatment, eliminating risks associated with chemical contamination. UV systems require electrical power, quartz sleeves, and lamps, but these components pose no risk to groundwater resources.

However, proper chemical storage and handling of the Proposed Alternative is critical to ensure that impacts on the groundwater resources are negligible. The PAA would be delivered and stored onsite in bulk tanks. A release could pose a risk to subsurface soils and potentially infiltrate to groundwater if not properly contained. PAA decomposes into acetic acid, oxygen, and water which are less persistent than other disinfectants. However, acetic acid in concentrated amounts could temporarily alter local groundwater chemistry if a spill occurred due to its properties as an oxidizer.

Through regulatory protections, DOH regulations require secondary containment for chemical storage at wastewater treatment plants to prevent soil or groundwater contamination. HNWWTP also operates under a NPDES permit, which regulates discharges and requires monitoring to protect water resources.

Although the Proposed Action (UV disinfection) does not involve chemicals that could pose a spill risk, the PAA alternative would require careful design and management of storage and handling facilities to ensure groundwater resources remain protected.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 3-3 STREAM MAP

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 3-4 AQUIFER MAP

3.3.3 Wetlands

The National Wetland Inventory (NWI) indicates the presence of wetlands on land adjacent to the survey area on the north and east sides; however, no wetlands were identified in the survey area (see Figure 3-5). This wetland is part of the abandoned irrigation system from when the areas were used for agricultural purposes and no longer functions as an active irrigation ditch. Some standing water may be observed during rain events; however, surface water does not appear to persist throughout the year. North of the Project Area lies the Kaloʻi Gulch Stream, and several small ponds associated with Coral Creek Golf Course which are located to the east of the project site. Several of these smaller ponds are connected by small stream segments.

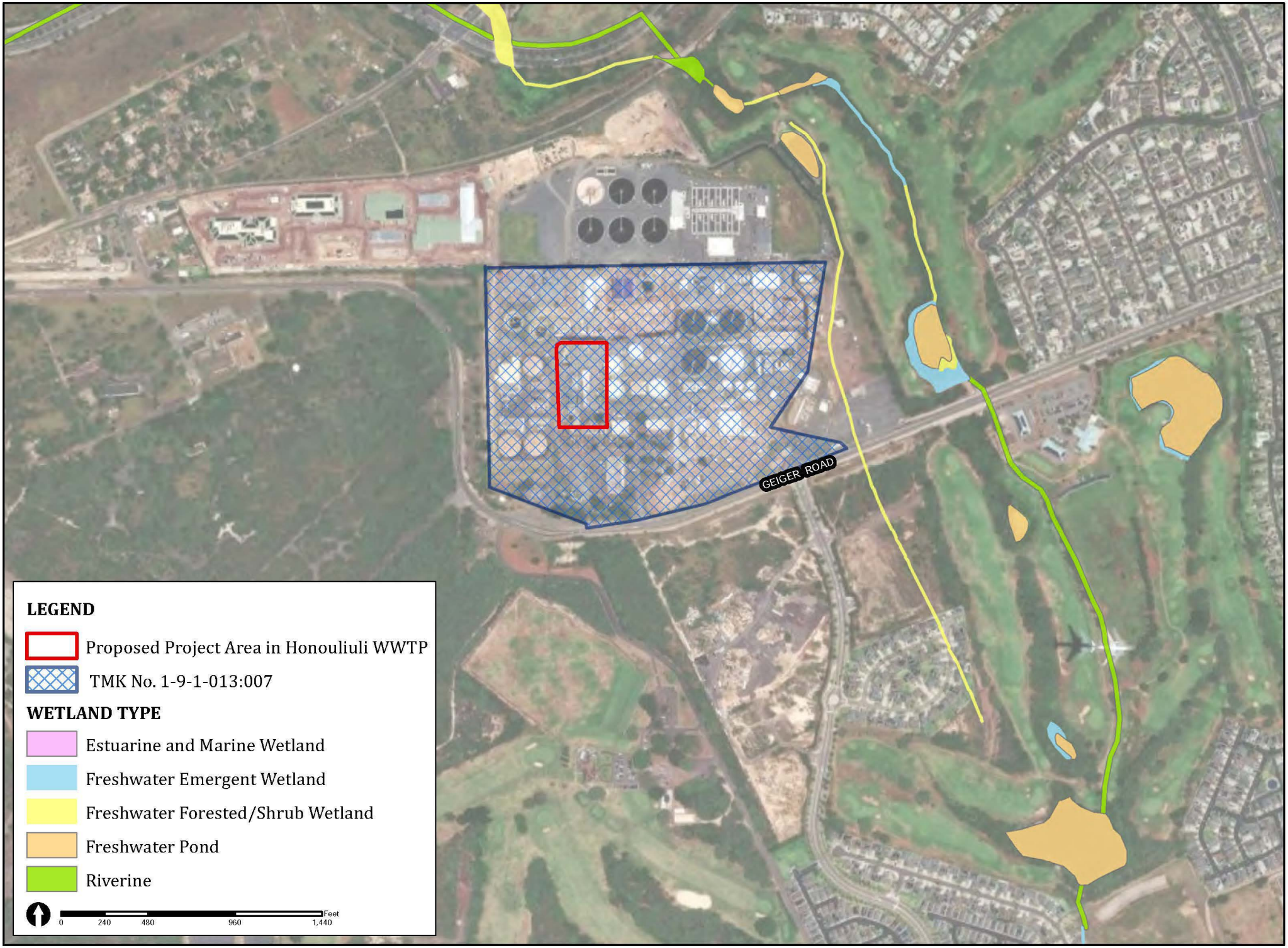
Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative is not anticipated to result in significant adverse impacts to wetlands in proximity to the Project Area. Although ground-disturbing activities associated with construction may temporarily increase the risk of sediment transport, construction methods have been designed to preserve the integrity of surrounding resources and to minimize offsite migration of pollutants. BMPs, such as silt fencing, sediment barriers, and stabilized construction entrances, will be implemented to prevent erosion and sedimentation that could adversely affect nearby wetlands.

To support long-term protection of wetland resources, the proposed upgrade – installation of a new UV disinfection system or the PAA disinfection alternative – will be designed and operated with safeguards to minimize the risk of inadvertent discharges. Routine inspections and system monitoring will ensure continued performance and structural integrity, reducing the potential for soil or water contamination that could affect adjacent wetlands. These measures will help maintain the environmental quality and function of nearby wetland areas in the long-term.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 3-5 WETLANDS MAP



3.4 Natural Hazards

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

The CCH also maintains the 2023 State Hazard Mitigation Plan (SHMP), which the State of Hawai'i Emergency Management Agency (HI-EMA) 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. SHMP, a FEMA-approved, five-year blueprint is designed to also identify, assess, and reduce the state's vulnerability to natural and human-made hazards.

The SHMP identifies the major natural hazards that impact the State's people, property, infrastructure, community lifelines, natural and cultural resources, and economy. Each hazard is assessed by describing the hazard locality, extent, previous occurrences and losses, and probability of future hazard events, in addition to existing populations, community lifelines, economy, environmental and cultural resources. The *Hazard Mitigation Plan* includes 84 mitigative actions to reduce or eliminate long-term vulnerabilities from hazards of concern. The following goals reflect the State's current concerns and priorities:

1. Reduce the long-term vulnerability of Hawaii's people, property, and jurisdictions, including State-owned or -operated buildings, infrastructure, and critical assets. This includes High Hazard Potential Dams and high-risk properties such as repetitive loss.
2. Promote actions designed to ensure long-term resiliency to natural hazards and climate change impacts.
3. Strengthen partnerships and leverage existing resources and capabilities to identify, assess, and reduce the impact of natural hazards.
4. Utilize state-of-the-art methods and technology and local knowledge to identify and analyze natural hazards and assess State capabilities to reduce the impact of those hazards.
5. Promote public awareness of natural hazards risks and public action to reduce long-term risks.
6. Provide a framework for robust local hazard mitigation planning and mitigation strategy implementation in alignment with this plan.
7. Build capacity and capabilities to increase disaster resiliency among historically underserved populations, individuals with access and functional needs, and in communities disproportionately impacted by disasters and climate change.

The 2020 Multi-Hazard Pre-Disaster Mitigation Plan for the CCH is currently undergoing its 5-year update to align with the SHMP. It will be expanded to include:

- Human and technological hazards,
- Hazard impacts on vulnerable populations, and cultural and natural resources, and
- Incorporate climate change impacts across all hazard types

The updated *Local Hazard Mitigation Plan* will protect public health, safety, and welfare by identifying risks from natural hazards, developing strategies for reducing hazard-related loss, and identifying cost-effective mitigation actions to address greater risks.

Both plans assist in identifying and creating risk reduction strategies from major natural hazards that could affect the State such as, climate change effects (including sea level rise (SLR) / coastal erosion), floods, tsunamis, strong windstorms/hurricanes, earthquakes, landslides/rockfalls, wildfires, and volcanic hazards.

3.4.1 Sea Level Rise

Climate change and associated impacts are discussed in detail in Section 3.1 above. This section will discuss SLR and coastal erosion impacts.

According to the UH Sea Level Center, Hawai'i has about 15 years to prepare for the impacts of SLR. An analysis of sea level data from 89 harbors – including in Hawai'i – compared with NOAA tidal and SLR projections, shows a sharp increase in flood days beginning in the mid-2030s (Thompson et al., 2021). In Honolulu, two to three high tide flooding events per month are expected by the early 2040s (Thompson et al., 2021).

Coastal erosion is a natural process but rising sea levels are accelerating its pace. Over the next 30 to 70 years, shoreline homes and businesses across the state are expected to face severe impacts from sea level rise, including chronic flooding.

Rising sea levels, along with projections of stronger and more frequent El Niño events and tropical cyclones around Hawai'i, signal increasing vulnerability to coastal flooding and erosion. The *Hawai'i Sea Level Rise Vulnerability and Adaptation Report* (2022) presents the latest global and regional SLR projections, based on NOAA-led intergovernmental findings. Models project 0.7 to 1.5 feet of SLR in Hawai'i by 2050 (PacIOOS, 2025), increasing to between 4 feet and 6 feet by 2100 (PacIOOS, 2025). These impacts may be intensified by compound flooding from rainfall, overwhelmed drainage systems, and coastal groundwater emergence. In response, the City and County of Honolulu's Climate Commission recommend using 3.2 feet of SLR as a planning benchmark for most development, and up to 6 feet for critical infrastructure with long lifespans or low tolerance for risk (Climate Change Commission, 2018).

The Project Site is not located within the 3.2-foot or in the 6-foot SLR exposure area (SLR-XA) (see Figure 3-6).

Impacts and Mitigation Measures

The Proposed Action, as well as the PAA alternative, is not expected to contribute to or be affected by SLR during or after construction. The Project Site is situated at elevations between 25 ft MSL in the southern portion of the site to 45 ft MSL in the northern portion of the site. In addition, the Project Site is approximately 1.7 miles inland from the nearest shoreline. Since the potential rise through 2050 ranges from 0.3 ft to 1.5 ft, the near-term impacts to HNWWTP will be minimal. However, SLR may increase coastal inundation and wind-related hazards from storms and tropical cyclones, potentially reducing the resilience of surrounding infrastructure.

Change in sea levels are anticipated to occur gradually and over many years, which should provide the CCH with sufficient time to plan and implement necessary measures. The CCH recognizes the threat of climate change and the importance of planning for its effects.

At the policy level, ongoing updates will be necessary to incorporate new scientific data and identify adaptive strategies. The Proposed Action/Proposed Alternative is expected to remain flexible and responsive to evolving practices, policies, and scientific advancements to climate change adaptation.

3.4.2 Flood and Tsunami Hazards

Floods are defined as the temporary inundation of land from excessive rainfall or other sources. Although floods are caused by natural events, most flood damage is a result of human occupation and land development left susceptible to flooding without adequate protection. O'ahu is vulnerable to flooding from various sources, including storms, storm surge, high surf, and on rarer occasions, tsunamis. According to the Department of Emergency Management (DEM), every year, flooding causes millions of dollars in damage. Between 1915 and 2018, floods caused by rainstorms, tsunamis, and hurricanes have claimed more than 140 lives and inflicted more than $200 million in direct and indirect damage on the island. HNWWTP is located to the north of the southwestern coastline on the island of Oʻahu.

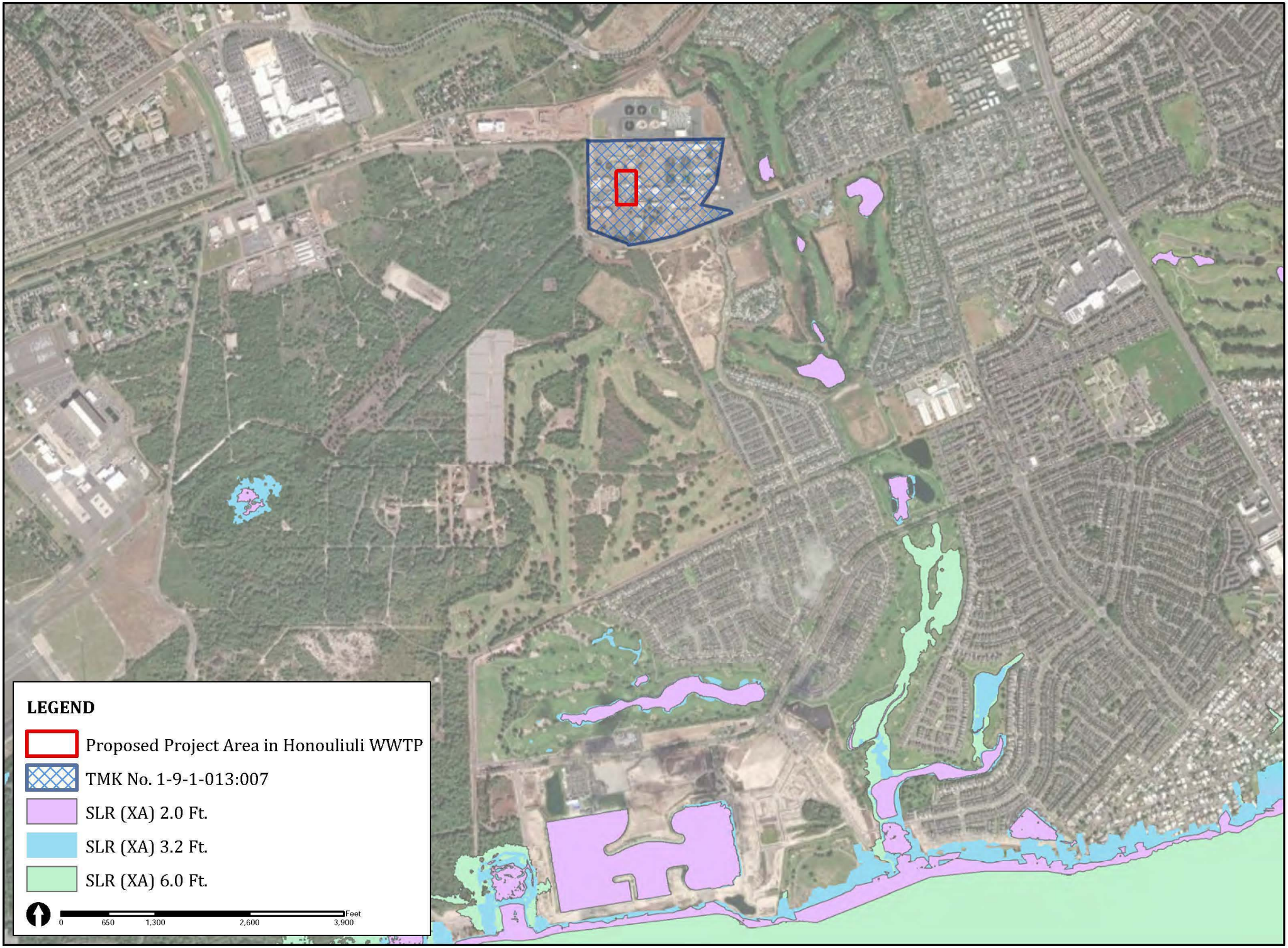
According to the Flood Insurance Rate Map (FIRM) prepared by FEMA, the Proposed Project Area is within Zone D (see Figure 3-7). The FIRM is the official flood map that shows a community's different flood hazard areas. These may include high-hazard (Special Flood Hazard Areas), moderate-to low-hazard areas, and undetermined areas. Zone D denotes an area of undetermined risk, while Zone X, to the north of the Project Area, corresponds to areas of minimal flood risk. The Zone D designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted. The designation of Zone D is also used when a community incorporates portions of another community's area where no map has been prepared (State of Hawaiʻi, DLNR, 2018).

Tsunamis are large sea waves generated by natural disturbances that displace a large water mass of water from its 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.

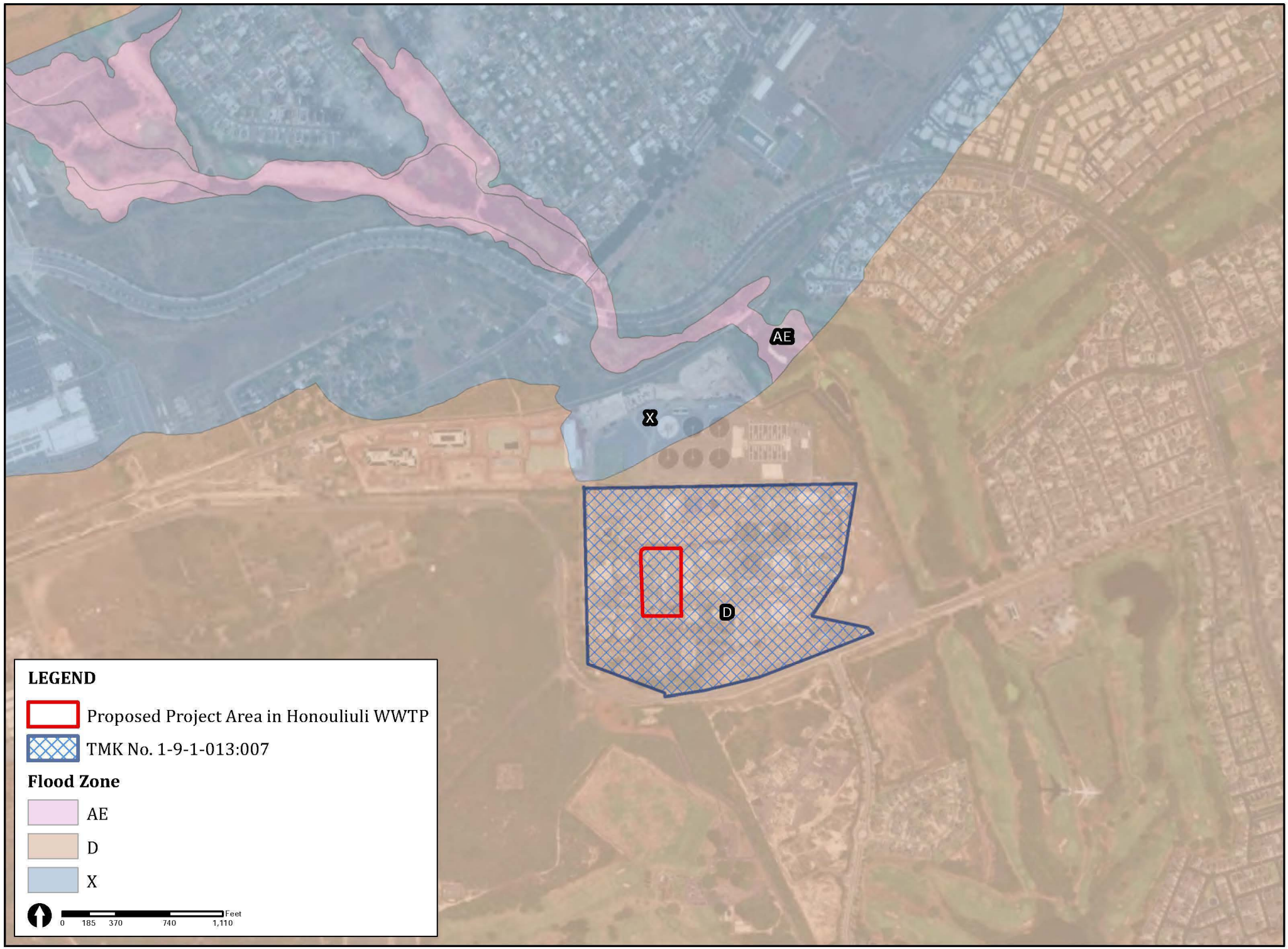
Since the early 1800's, approximately 50 tsunamis have impacted the State of Hawaiʻi. One of the most notable events was the 1946 tsunami, which reached wave heights of 11 meters and resulted in 6 deaths on Oʻahu alone (Dudley, 2021). Additional tsunamis affected Oʻahu in 1952, 1957, 1960, and 2011.

FIGURE 3-6 SEA LEVEL RISE EXPOSURE AREA (XA)



Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 3-7 FLOOD INSURANCE RATE MAP (FIRM)



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 save evacuation distance.

First is 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 second is 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 Site is situated within the Tsunami Safe Zone (see Figure 3-8). This zone refers to an area that lies outside of designated tsunami evacuation zones, as mapped by HI-EMA and the counties. These zones are delineated based on historical tsunami run-up data, coastal topography, and modeling of potential tsunami inundation.

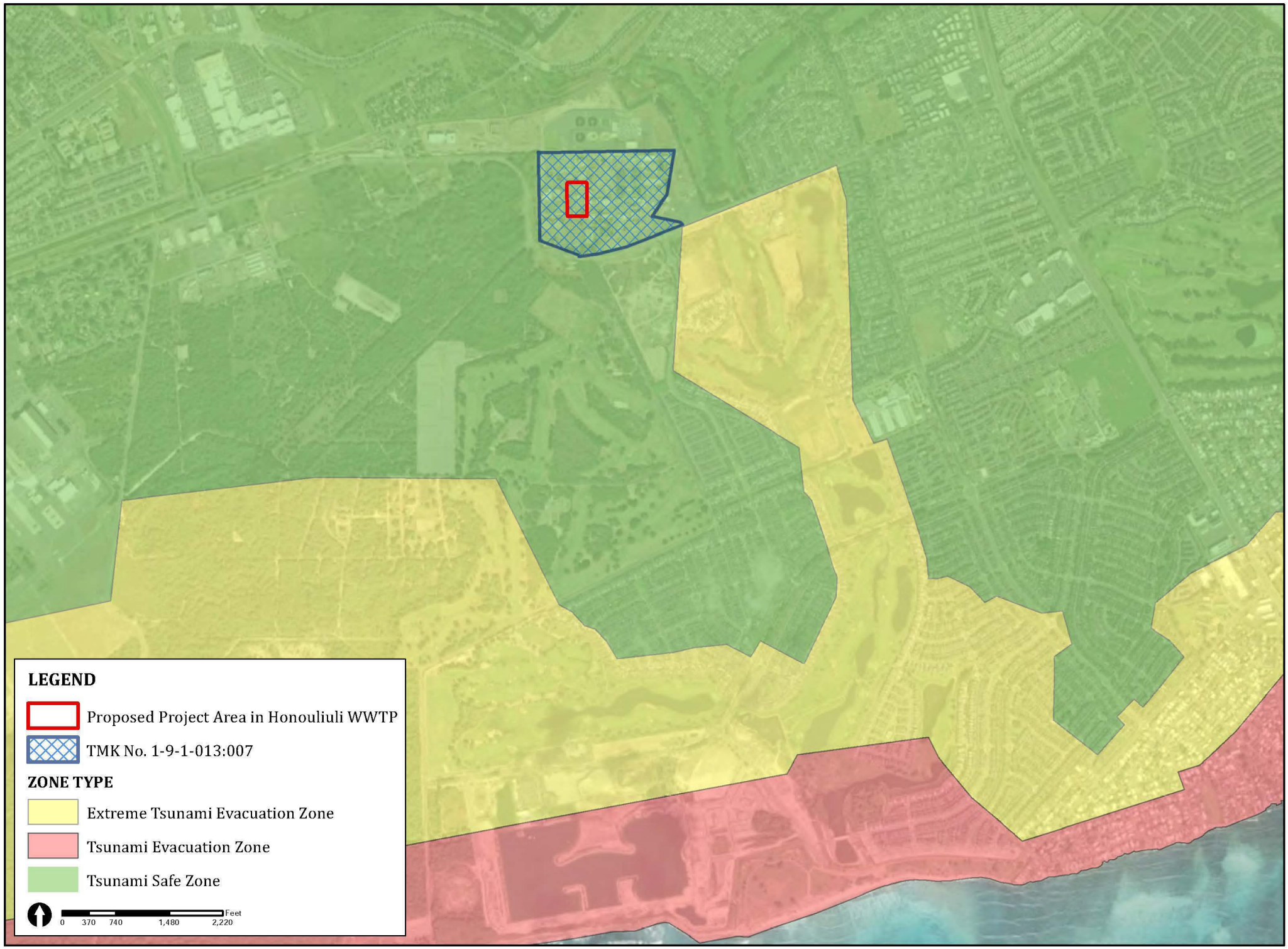
Impacts and Mitigation Measures

No significant adverse impacts on flood hazards at the Project Site or greater region are anticipated to result from the construction and operation of the Proposed Action or Proposed Alternative. In the short-term, applicable BMPs would be implemented, including, but not limited to, temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and compost filter socks so that impacts of flooding are not exacerbated from construction. In the long-term, the Proposed Action/Proposed Alternative will incorporate applicable drainage improvements (discussed in further detail in Section 3.17.3) and appropriate building codes related to flooding impacts.

As it relates to tsunami impacts, the Project Site is approximately 1 mile from the nearest shoreline and is entirely within the CCH's tsunami evacuation safe zone and will not cause impacts to the tsunami evacuation areas nor exacerbate the impacts of a tsunami.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 3-8 TSUNAMI EVACUATION ZONE MAP



3.4.3 Hurricane and Wind Hazards

High winds, such as those from hurricanes and tropical storms can cause severe damage potential to businesses, public buildings, and infrastructure on O'ahu. Windspeeds are influenced by barometric pressure at the center of hurricanes and tropical storms, with the lowest pressure and size of the storms' radius determining the area of maximum destruction. Small scale wind bursts, termed "microbursts" and "mini swirls", may reach speeds in excess of 200 miles per hour.

Hurricanes are tropical cyclones with winds of 74 miles per hour (mph) or higher. While actual hurricane strikes on the Hawaiian Islands are rare, passing storms can still cause significant wind and storm surge damage, depending on factors such as wind strength, storm radius, timing, and proximity. The most recent hurricane to cause significant damage is Hurricane Iniki in September 1992, which caused approximately $1.8 million in damages, primarily affecting the Waiʻanae Coast of Oʻahu before striking Kauai.

Hurricane intensity is categorized using the Saffir-Simpson Hurricane scale, ranging from Category 1 (low damage) to Category 5 (catastrophic damage). Strongest winds typically occur on the right side of the hurricane's eyes, decreasing with distance. Hurricanes generally affect the Hawaiian Islands from later summer to early winter months, but their impacts vary based on atmospheric conditions, location, and coastal features.

HNWWTP, located in ʻEwa Beach, Oʻahu, is not in the highest-risk zone for hurricanes or wind hazards, but it is still vulnerable to moderate-to-severe tropical storms impacts, including high winds, heavy rainfall, and coastal flooding – especially considering its low-lying, nearby coastal location, and critical infrastructure.

In the event that a hurricane is predicted, construction equipment would be secured and all applicable Federal, State, and CCH requirements would be implemented to reduce potential damage. In addition, when a hurricane is forecasted and evacuation is required, the nearest Public Emergency / Hurricane Evacuation Shelter is located at ʻEwa Elementary School, approximately 0.7 miles north of HNWWTP. ʻEwa Elementary School is one of 127 Potential Hurricane Refuge Areas designated on Oʻahu by the Hawaiʻi Emergency Management Agency in preparation for potential hurricanes and public emergencies. The level of protection currently assessed at these facilities ranges from tropical storm-strength winds to hurricane Category 5-strength winds. Other Potential Hurricane Refuge Areas situated within a 3-mile radius of the Project Site are the following:

- ʻEwa Elementary – 91-1280 Renton Rd (1.0 mi northeast of Project Area)
- Holomua Elementary – 91-1561 Keaunui Dr. (1.9 mi east of Project Area)
- Keoneula Elementary School – 91-970 Kaileolea Dr. (2.2 mi southeast of Project Area)
- Ilima Intermediate – 91-884 Fr. Weaver Rd. (2.7 mi southeast of Project Area)
- Kapolei High School – 91-970 Kapolei Pkwy. (2.7 mi west of Project Area)

Impacts and Mitigation Measures

The potential for hurricanes, while relatively rare, is present across the State of Hawaiʻi. Neither construction nor operation related activities are expected to impact hurricanes or the frequency of hurricanes in the Project Area. However, during construction of the Proposed Action or

Proposed Alternative, there is the potential that a hurricane could occur. Pre-storm protocols will be implemented, including securing or removing temporary structures, scaffolding, and loose materials before a hurricane warning. To safeguard against hurricane damage, the Proposed Project's improvements will be designed in compliance with American Society of Civil Engineers and International Building Code (IBC) standards for wind exposure. This includes incorporating reinforced structural elements, wind-resistant materials, and fastening systems capable of withstanding high wind pressures. Emergency response plans and staff training will also be conducted to ensure preparedness for securing the site in advance of a storm event.

A public emergency siren operated by the State of Hawaii Department of Defense (HDoD), which would be used in the event of a hurricane, is located at Ewa Makai Middle School, approximately 1.4 miles southeast of the site. This alarm may not be audible at HNWWTP, as these sirens are typically audible within 0.5 miles. However, information would also be available via television, internet, radio, or a mobile phone device.

As a long-term measure, the wastewater management facilities would be designed and constructed to meet all applicable IBC and Federal, State, and CCH requirements to help protect against potential structural impacts resulting from a hurricane or accommodate future meteorological events related to climate change. Back-up power supply would be available at the facilities to help prevent sanitary sewer overflows (SSOs) during emergencies and power outages.

3.4.4 Earthquake and Seismic Hazards

Seismic hazards refer to the risks posed by potential earthquakes, which can lead to events such as landslides, ground fissures, rockfalls, and tsunamis. In Hawai'i, most earthquakes are linked to volcanic activity primarily centered on the Island of Hawai‘i. The largest recorded earthquakes in the region have been caused by seismotectonic activity at depths of 30 to 40 kilometers, involving fractures in the Earth's lithosphere, as well as magma intrusions that release built-up compressive stress. The most recent earthquake that originated on land occurred on February 9, 2024, registering a magnitude of 5.7 and striking near Mauna Loa on the Island of Hawai‘i.

The National Seismic Hazard Model (NSHM) for the State of Hawai‘i assesses the likelihood of earthquakes and ground shaking. Initially developed in 1998 and updated in 2021, the NSHM uses data and advanced modeling techniques to identify areas across the Hawaiian Islands with significant potential for damaging ground motion. According to the 2021 update, the Project Area falls within a zone that has a 25 to 50 percent chance of experiencing slight or greater damaging earthquake shaking over the next 100 years (Petersen et al. 2021).

Impacts and Mitigation Measures

The Proposed Action, as well as the PAA alternative, does not have any relation to the occurrence or severity of seismic risk. However, the Proposed Action could be impacted by such an event. The Proposed Action/Proposed Alternative would comply with geotechnical recommendations for seismic hazards and meet prevailing design standards to reduce the vulnerability to earthquakes and seismic hazards at that time.

3.4.5 Wildfire Hazards

Wildfires are a significant environmental hazard, defined as uncontrollable fires started from events such as lightning, or human causes. Wildfires can spread rapidly if favorable conditions such as increased periods of drought, high winds, high temperatures, and vulnerable topography are present. Recent decades have seen an increase in the amount and devastation of wildfires, due to changing weather patterns, residential development, and fire suppression policies. Wildfires can threaten life, property, but they can also harm the environment by threatening important natural resources such as endangered species.

In Hawai'i, the average annual cost to suppress wildfires exceeds $1.1 million, with about 1,000 wildfires and over 17,000 acres burning each year. The National Fire Danger Rating System (NFDRS) classifies wildfires into three types:

1. Ground fires, which burn decayed roots and organic material underground, spreading slowly with little smoke;
2. Surface fires, which burn grasses, shrubs, and small trees near the ground, growing rapidly depending on fuel, moisture, slope, and wind; and
3. Crown fires, typically ignited by surface fires and burn forest canopy, with passive crown fires affecting small groups of trees and active crown fires creating a continuous wall of flames.

The greatest danger of fire is where wildlands border urban areas. The state's average number of wildland fires over the last decade is more than 1,000 wildfires burning more than 20,000 acres each year (HEMA, 2023). Historically, most of these fires have been directly caused by humans, either directly or by negligence. As further evidenced by recent events in West Maui, wildfires pose a significant threat to health and human safety and must be taken very seriously.

In September 2024, a wildfire burned approximately 100 acres of dry brush and vegetation near Coral Sea Road in Ewa Beach, the district where the current Project Area is located. The fire occurred about three miles from HNWWTP. Typical of many areas, larger fires tend to occur during droughts and drier seasons, but wet periods may increase the quantity of available vegetative fuels, leading to an increase both in fire risk and in the frequency that mitigation measures such as firebreaks and fuels reduction need to be applied.

Impacts and Mitigation Measures

The Project Site is within the 'Ewa Beach zone and is categorized as high risk for fire hazards (see Figure 3-9). The Proposed Action, as well as the PAA alternative, 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. The DLNR-DOFAW specifies standards for prevention, pre-suppression, and suppression in the Fire Management Handbook. The document provides a structured approach to providing public / firefighter safety and minimizing ecological damage. The State's general fund and federal cost share programs through the U.S. Forest Service provide funding for fire management programs.

In addition, BMPs will be implemented to manage and reduce fire hazards to the Project Area, following practices outlined in the CCH Multi-Hazard Pre-Disaster Mitigation Plan and the Hawai'i Wildfire Management Organization (HWMO). The West O'ahu Community Wildfire Protection Plan (CWPP, 2016), which has been updated in 2024 and presented by HWMO,

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FIGURE 3-9 FIRE RISK AREA MAP

provides a detailed list of priority projects and establishes a comprehensive framework for wildfire hazard assessment, community values, and recommended strategies for risk reduction. (HWMO, 2024). The CWPP remains a cornerstone for wildfire risk mitigation.

The State of Hawai'i DLNR-DOFAW, the Honolulu Fire Department (HFD), and the O'ahu Wildfire Information and Education Coordinating Group (OWIE) were the primary collaborators in developing the Multi-Hazard Pre-Disaster Mitigation Plan. The plan outlines strategies for fire protection, hazard assessment, wildfire mitigation priorities, and public outreach and education. It identifies and ranks areas in need of hazardous fuel reduction and recommends appropriate treatment types and methods for both federal and non-federal lands to help safeguard at-risk communities and critical infrastructure. Additionally, the plan includes measures to reduce the risk of structural ignitability within vulnerable areas.

3.4.6 Volcanic Hazards

The island of O'ahu was once formed by the Ko'olau and Wai'anae shield volcanoes, which are now considered extinct. Volcanic activity in Hawaii is primarily concentrated on Hawaii Island, where four out of five volcanoes are classified as active. These volcanoes are typically characterized by the gentle outflow of fluid lava and are less explosive compared to continental margin volcanoes. As a result, the Project Area is not directly impacted by volcanic threats originating from Hawaii Island.

Nevertheless, the Project Area could potentially be affected by volcanic smog, also known as vog, if eruptions occur on other Hawaiian Islands. vog is a hazy mixture composed of volcanic dust and gases, primarily sulfur dioxide. CCH classifies the threat of vog as minor, acknowledging that particulate matter and chemical emissions associated with vog can pose potential environmental and health risks.

Vog can cause respiratory issues, particularly for individuals with pre-existing respiratory conditions, and can also lead to acid rain, which may harm vegetation and impact water quality. Additionally, the presence of vog can reduce visibility and affect air travel. Although the Project Area is not directly threatened by active volcanoes on O'ahu, 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.

Impacts and Mitigation Measures

The Proposed Action, as well as the PAA alternative, will not have significant adverse impacts on volcanic hazards and will not exacerbate any impacts associated with volcanic hazards. The Project Area is not located near a lava flow hazard area, however, vog has the potential to impact the Project Area.

The impact of vog varies based on proximity to the source and local weather conditions. Under typical trade-wind patterns, vog is carried southwest from Kīlauea's vents, circulating around the southern tip of Hawai'i Island and becoming trapped in an eddy system along the island's leeward side. When southerly winds occur, vog can affect the entire island. However, as the gas travels, it transforms into ammonium sulfate, which is generally removed from the atmosphere before it reaches O'ahu. High humidity can intensify the effects of vog, making it more prominent during the winter months when Kona winds are more common.

3.5 Biological Resources

On March 18, 2025, a Biological Survey Report was completed by AECOS Inc. for the project site. Biologists conducted a botanical survey, avian survey, and mammalian survey of the Project area. Additional information regarding the report is included herein as Appendix A and summarized below.

3.5.1 Flora

Plants were identified as they were encountered and plants not immediately recognized during the survey were photographed and collected for later identification at the laboratory. A listing of all plant taxa encountered in the survey area is presented on Table 1: Listing of Plants for Honouliuli in Appendix A.

In total, 32 species of vascular plants, all angiosperms (flowering plants), were recorded. Among these, there were no native indigenous plants; and no endemic species – native and unique to the Hawaiian Islands – were recorded.

Impacts and Mitigation Measures

No plant species that are listed or proposed for listing as endangered or threatened under federal of Hawai'i State endangered species laws (HDNLR, 1998; USFWS, nd-a) were observed during the survey. The survey area contains no sensitive vegetation, and in fact, no native plant species were recorded as present within the Project Area.

As a result, no mitigation measures related to native indigenous plants and endemic species are necessary for the Proposed Action/Proposed Alternative.

3.5.2 Avian Fauna

The assessment of avian fauna provides critical insight into ecological health and biodiversity of the study area. According to the report, a total of 7 bird species, representing 5 separate families, were encountered across the project area. All species that were observed are non-native species which were introduced to the Hawaiian Islands. See Table 2: Listing of Birds Observed within the Project area in Appendix A.

3.5.2.1 Seabirds

There is potential presence of seabirds in the Project area. Several protected night-flying seabird species in Hawai'i – such as the Hawaiian Petrel (*Pterodroma sandwichensis*), Wedge-tailed Shearwater (*Ardenna pacifica*), Newell's Shearwater (*Puffinus newelli*), and Band-rumped Storm-Petrel (*Hydrobates castro*)—may pass through the area. During the summer and fall, fledgling seabirds traveling from inland nesting sites to the ocean can become disoriented by artificial lighting. Disorientation may lead to collisions with buildings or the ground, and birds that survive such impacts are vulnerable to predation by non-native mammals (Podolsky et al., 1998; Ainley et al., 2001; Day et al., 2003). Predation by introduced mammals is the leading cause of mortality for Hawaiian Petrels and Newell's Shearwaters at their nesting sites (USFWS, 1983; Ainley et al., 2001), while collisions with man-made structures are the second most significant cause of death for these species in Hawai'i. However, the Project area does not contain suitable nesting habitat for any of these seabird species.

The White Tern (*Gygis alba*), or manu o Kū, is an indigenous seabird listed as threatened under the State of Hawai'i's endangered species law, HRS 195D (HDLNR, 2015). On the main Hawaiian Islands, the species' population is largely confined to central urban and suburban Honolulu, with documented nesting and breeding occurring between Aloha Tower and Niu Valley (VanderWerf & Downs, 2018). The Project site in 'Ewa Beach lies well outside this range, making it unlikely that White Terns would nest within the area.

Impacts and Mitigation Measures

No birds that are listed or proposed for listing as endangered or threatened under federal of Hawai'i State endangered species laws (HDNLR, 1998; USFWS, nd-a) were recorded as present in the Project Area. In addition, no native birds were recorded as present in the Project Area.

However, if the Project design or construction schedule requires lighting at night, the risk of unintentionally downing nocturnally flying seabirds will increase. To reduce potential impacts, the following measures are recommended:

- Use fully shielded outdoor lighting so that the bulb is only visible from below bulb height and operate lights only when necessary;
- Equip all exterior lights with motion sensors or timer controls, or turn them off when not in active use; and
- Avoid night-time construction during the seabird fledging season, which occurs from September 15 to December 15. All outdoor lighting should comply with "dark sky" standards (HDLNR-DOFAW, 2016).

As a result, no mitigation measures related to endangered or threatened bird species are necessary for the Proposed Action/Proposed Alternative.

3.5.3 Aquatic and Marine Flora and Fauna

Surveys for aquatic flora and fauna were not performed under this scope of work; however, a literature review of available data was done to determine species likely to be present in the Mamala Bay area in the 2017 FEIS for the HNWWTP.

Impacts and Mitigation Measures

Construction at HNWWTP will be confined within the existing facility and will not occur in or adjacent to marine habitats. Therefore, no direct disturbance to aquatic or marine species is anticipated. Potential construction-related runoff could carry sediment or pollutants into drainage systems that eventually discharge to the coast.

The Proposed Action (UV) results in beneficial impacts to aquatic and marine flora and fauna by reducing pathogen loads without introducing chemical residuals.

The PAA alternative is a manufactured chemical blend that has a relatively short shelf life compared to chlorine-based disinfectants. The PAA's behavior in the environment , once applied in wastewater, breaks down rapidly, decomposing into acetic acid, hydrogen peroxide, oxygen, and water. The initial disinfection reaction occurs almost instantaneously, while

residual PAA decays within minutes to hours depending on temperature, pH, and organic matter in the effluent. The PAA alternative could pose adverse effects if residual oxidants or by products enter coastal waters. These oxidants may stress or damage sensitive species, including fish, invertebrates, and coral. Since PAA degrades quickly, the risk of long-term persistence in coastal waters is low.

With regard to the Proposed Alternative (PAA), careful management of chemical use and discharge condition is required to ensure that the system operates safely and that no residual PAA or byproducts adversely affect marine life. The combination of residual control, monitoring, and compliance with State and Federal water quality standards will ensure that the HNWWTP continues to protect the ecological integrity of the surrounding marine environment.

3.5.4 Mammals

No mammals were encountered in the survey area. However, there is a possibility that the small Indian mongoose (*Herpestes javanicus*), and one or more of the four Muridae (rats and mice) currently established on the Island of Oʻahu utilize this area to some extent. These mammalian species are introduced and deleterious to native ecosystems and native fauna.

In addition, there is a possibility that the endangered Hawaiian hoary bat or ʻōpeʻapeʻa (*Lasiuris cinereus semotus)* uses resources in the area. This bat species is rare but has a widespread distribution in Hawaiʻi. There were no trees suitable for roosting that are present on the site. The potential adverse impacts to the Hawaiian hoary bat can be avoided or monimized by avoiding the use of barbed wire fencing (USFWS-PIFWO, 2023).

Impacts and Mitigation Measures

With regard to the Hawaiian hoary bat, cutting branches or the entire monkeypod can avoid adverse impact to Hawaiian hoary bat if done outside of the pupping season (June 1 to September 15 of each year). In addition, potential adverse impacts to the Hawaiian hoary bat can be avoided or minimized by avoiding the use of barbed wire for fencing (AECOS, 2025).

As a result, no mitigation measures related to mammals are necessary for the Proposed Action/Proposed Alternative.

3.5.5 Critical Habitat

Federally delineated Critical Habitat is not present in the Project Area (USFWS, 2022). No equivalent designation exists under state law.

Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative will not impact any designated critical habitat. As a result, no mitigation measures related to critical habitat are necessary.

3.6 Historic and Archaeological Resources

Honua Consulting (Honua) prepared an Archaeological Literature Review and Assessment (ALRA) report on June 2025 (See Appendix B). The ALRA is not an archaeological inventory survey (AIS) and did not include a field assessment. However, the ALRA has been prepared in compliance with the Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and the Hawai‘i Administrative Rules (HAR) Chapter 13-275 and can be used to consult with the State Historic Preservation Division (SHPD) to satisfy environmental review under HRS Chapter 343; and for review under Section 106 of the National Historic Preservation Act (NHPA). 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 potential above-ground historic properties or component features; and

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

3.6.1 Traditional Background of the Project Area

The Project Area is located within the Honouliuli Ahupua‘a (see Figure 3-10), which is situated in the ‘Ewa Moku (District) and has been home to Hawaiian traditions once ruled by chiefs of the Maweke-Kumuhonua lineage. From the 1500s to 1700s, there were several political power shifts on O‘ahu, including the defeat of the ruling ‘Ewa chief Peleioholani, a son of Kuali‘i, around 1740. In 1778, Kahahana – descended from the ‘Ewa line of chiefs but raised in the court of Kahekili on Maui, assumed control of O‘ahu and the ‘Ewa region. His rule continued until Kamehameha I unified the Hawaiian Island around 1810 through conquest. After Kamehameha's takeover of O‘ahu, at least two of his chiefs established residences in Pu‘uloa, and later, Liholiho (Kamehameha II) built a house there (Kamakau 1992:255).

The Honouliuli ahupua‘a is the largest on the island of O‘ahu (approximately 43,000 acres) and includes about 12 miles of marine coastline from Keahi Point in the east to Pili o Kahe in the west at the boundary with Nānākuli (See Figure 5 in Appendix B).

The formal, more traditional ‘inoa (name) for ‘Ewa was once Ke-‘Āpana-o-‘Ewa with several variant interpretations of the name. One mo‘olelo (oral-historical account) shares about Kāne and Kanaloa marking the district's boundaries by throwing a stone that was lost and later found at Pili o Kahe (Pukui et al. 1974:28). Another possible meaning of ‘Ewa is "unequal" according to an 1883 newspaper series in the *Saturday Press* (published in Honolulu).

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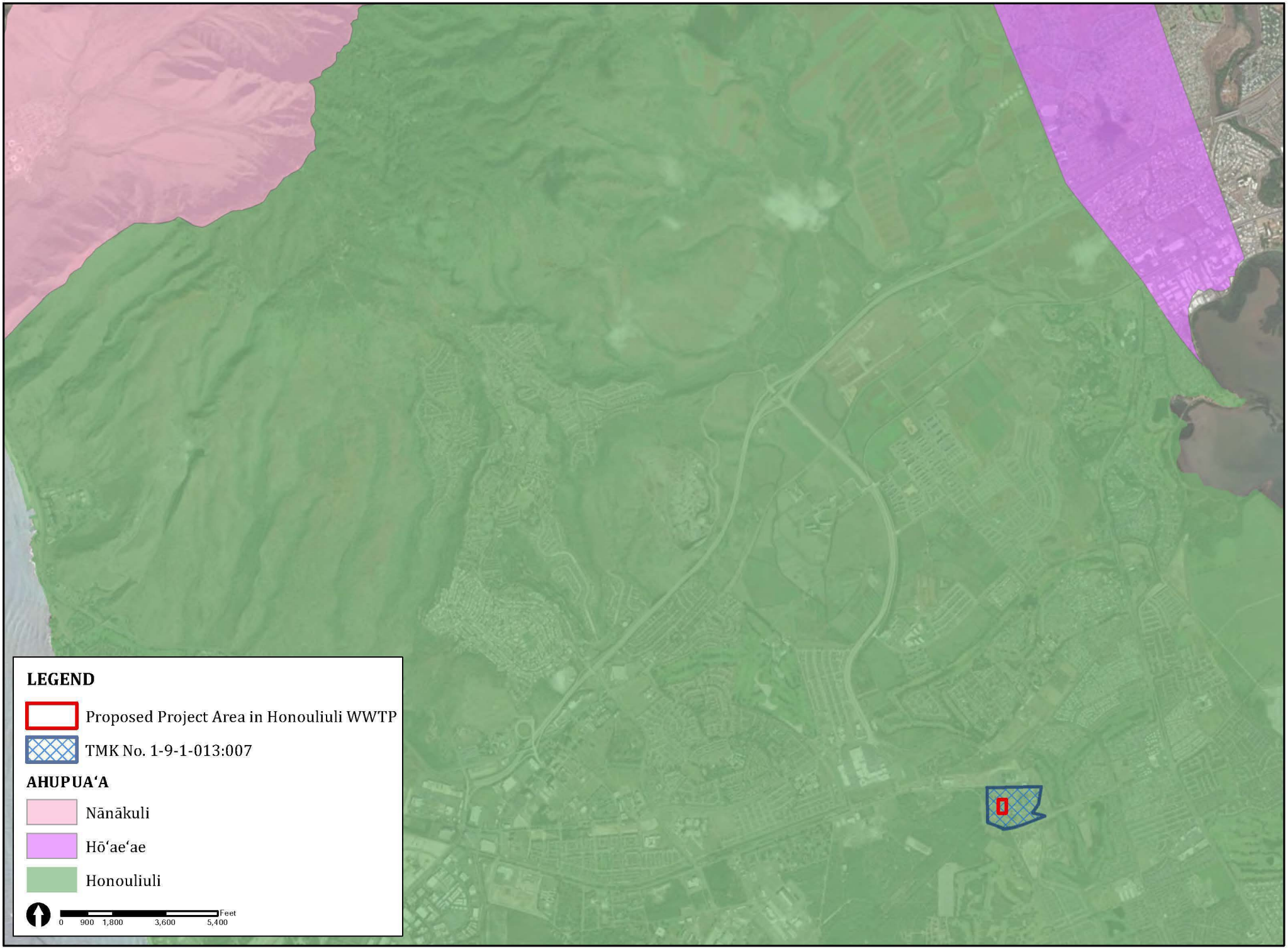
FIGURE 3-10 AHUPUA'A MAP



3.6.2 Current Project Area

The current project area is approximately 1.79 miles inland from the nearest coastline. Moving inland from the coastal limestone flats, soil conditions improve due to the accumulation of alluvium carried from the uplands through a network of gulches, the most prominent being Honouliuli proper. This process created arable land that supported Hawaiian subsistence farming. The current Area of Potential Effect (APE) / project area lies within this transitional zone, characterized by thin soil overlying limestone and/or basaltic bedrock.

Several miles north-northeast of the project area was a traditional loʻi kalo (irrigated taro) and settlement area that was once focused around the mouth of the Honouliuli Gulch. Because of its composition of older alluvium (Qao) formed by streams draining the uplands to the north, this soil is generally shallow making the area "not prime farmland." The nearest heiau (traditional Hawaiian temple) to the current project area is Puʻu o Kapolei heiau, located about 2 miles west of the project area. Before the development of modern professional archaeology on Oʻahu, early efforts focused on compiling and surveying prominent traditional Hawaiian features, as seen in works by McAllister (1933) and Thrum (1938).

3.6.3 Historic Period of the Project Area

Beginning around the late 18th to early 19th century and continuing through the 19th century, life on Oʻahu underwent significant transformation due to the arrival and growing influence of foreign political, economic, and ideological systems. Consequently, traditional Hawaiian settlement patterns, subsistence practices, and religious institutions were largely abandoned or significantly diminished. By the late 1800s, much of the Honouliuli ahupuaʻa has been acquired by a small number of large landowners and converted into cattle ranches, sugarcane plantations, sisal farms, and other agricultural enterprises (Tuggle and Tomonari-Tuggle 1997; Gosser at al. 2011).

Following the arrival of foreigners, the landscape of Honouliuli, the ʻEwa plains, and surrounding areas (such as the Waiʻanae Mountain slopes) were significantly altered. Extensive deforestation occurred due to the harvesting of sandalwood for export to China and the cutting of other trees for construction in Honolulu. The introduction of livestock such as goats, sheep, and cattle, further damaged native vegetation, which was replaced by invasive species like haole koa (*Leucaena leucocephala*), guava, lantana, and aggressive grasses.

Population estimates for ʻEwa were calculated by various researchers during this pivotal period in Hawaiian History. Yucha et al. (2015) highlights the devastating effects of disease on the Hawaiian people in the moku of ʻEwa, citing records from Artemas Bishop of the Waiawa Protestant Station. The population declined from 4,015 in 1832 to 3,423 in 1836. After a brief period of stability, another drop occurred due to a measles outbreak in 1849, followed by a deadly smallpox epidemic in 1853-1854 that claimed around 400 lives.

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).

No kuleana (commoner) parcels or Land Commission Award (LCA) claims are located in or near the project area. While approximately 100 individual LCA claims were made within the Honouliuli ahupuaʻa, they were situated several miles away, near the mouth of the Honouliuli Stream and along the shore of Puʻuloa (Pearl Harbor). The project area, or direct APE, falls within Land Commission Award 11216:8 (Royal Patent 6071) to Kekauʻōnohi – a high ranking aliʻi nui, great-granddaughter os Kekaulike (King of Maui), and close relative of Kamehameha I. As aliʻi nui awards did not require detailed surveys or land use records, there is no documentation of mid-19th century land use for this area. Kekauʻōnohi's award encompassed all unclaimed lands within the ahupuaʻa, totaling 43,250 acres (Indices of Awards 1920).

In 1877, James Campbell acquired the majority of the Honouliuli Ahupuaʻa. Shortly thereafter, he began drilling for potable water in the area and, within roughly a decade, was supplying water to Honolulu. By 1881, Campbell has also established a successful cattle ranching operation in Honouliuli (ibid.). Then, in 1889, James Campbell leased his Honouliuli land to Benjamin Dillingham, who established the Oʻahu Railway & Land Co. (OR&L) the following year. Dillingham then subleased land below 200 feet elevation to William Castle, who founded the ʻEwa Plantation Co. for sugarcane cultivation, while higher elevation areas were used by the Oʻahu Sugar Co. for similar purposes (ibid.).

The ʻEwa Plantation Company operated from 1890 to 1970 and included the current project area. Artesian wells and irrigation ditches were constructed to access groundwater and improve lowland soil conditions for agriculture. By the early 1900s, the ʻEwa Plantation Co. had expanded to cover much of the eastern portion of the Honouliuli Ahupuaʻa, including the current project area. It was recognized for its high productivity per cultivated acre. The expansion of the sugar industry created a growing need for housing to accommodate the rising number of immigrant field workers. Between the 1890s and 1940s, over 1,200 homes were constructed across eight separate villages for employees of the ʻEwa Sugar Plantation. Today, only four villages remain, Renton, Tenney, Varona, and Fernandez.

In 1995, Tenney Village, Varona Village, and Renton Village were listed on the Hawaiʻi Register of Historic Places (HRHP) as part of the ʻEwa Sugar Plantation Villages Historic District, also known as ʻEwa Villages (State Inventory of Historic Places [SIHP] #50-80-12-09786).

As mentioned previously, Benjamin Franklin Dillingham spearheaded the development of the OR&L system, which began operations in 1889. The railway extended across the western side of Oʻahu, from Honolulu through the ʻEwa Plains and beyond. By 1982, it reached the ʻEwa Sugar Plantation, followed by the Waianae Plantation in 1895, the Waialua Mill in 1898, the Kahuku Mill in 1899, and Wahiawā by 1906 (Rewick 2012). The railroad was originally intended to transport passengers and agricultural products from Honolulu (Hungerford 1963; Treiber 2005). It was built near sugar mills and military installations. During World War II, the U.S. military took over the OR&L tracks to move personnel and supplies across the island.

The OR&L right-of-way (ROW) was added to both the State and National Registers in 1975 (SIHP #50-80-12-09714, NR #75000621) and features the longest narrow-gauge railroad stretch in Hawai'i, spanning 15 miles from West Loch to Nānākuli. The 40-ft-wide ROW consists of a well-preserved raised roadbed. Additionally, the Hawaiian Railway Society's ʻEwa Railroad Yard, located west of the current Project area, was listed on the State Register in 2012 (SIHP #50-80-12-07387).

According to a 1913 map (see Section 2.3 – Appendix B), the Project area contained no structures or cultural resources at the time and was located just east of a large sisal plantation operated by Hawaiian Fiber Co., with a fence line separating the two. North of the area were the O.R.&L. main railway line, a sugar mill, and plantation worker camps.

Prior to the modern era of residential, light industrial, and commercial development in the Project area and its surrounding, military activity – aside from sugarcane agriculture – had the most significant impact on the landscape. The current Project area is situated just east of the former Naval Air Station Barbers Point (NAS-BP), now decommissioned.

3.6.4 Summary of Historic Properties

Table 3-1 below provides summary details of previously identified historic properties within the vicinity of the current Project Area. Additional Information regarding the report is included herein as Appendix B and summarized below.

Table 3-1: Historic Properties near the Project Area	
SIHP # 50-80-12-09714, NR #75000621	The OR&L ROW was listed on the State and National Registers in 1975. The OR&L ROW includes the longest stretch of narrow-gauge railroad track in Hawai'i, extending 15 miles from West Loch in Honouliuli to the west side of O'ahu in Nanakuli (Cummins 1974a:2; Rewick 2012:3).
SIHP # 50-80-12-07387	The OR&L ROW and Hawaiian Railway Society's (HRS) 'Ewa Railroad Yard (OR&L Railroad Baseyard). Located west of the current APE/project area, was nominated to the State Register in 2012 (Rewick 2012).
SIHP #50-80-08-09761	Railway Rolling Stock, The Railroad Yard includes several train cars that are listed on the State and National Registers, including locomotives #6 ("Kailua", built 1889) and #12 (built 1912) and the #64 Dillingham parlor car (built 1924).
SIHP # 50-80-08-09708, NR #74000719	The Waialua Agricultural Company locomotive #6 ("WaCo 6"). WaCo 6 is the only locomotive designed and built in Hawai'i and the only fully operational and restored Hawaiian sugar plantation locomotive in the world (Cummins 1974b; HHF 2016).
SIHP # 50-80-12-05127, NR #16000273	The project area is adjacent to, but just east (and not part) of the extensive (decommissioned) NAS-BP. This site, listed as 'Ewa Plain Battlefield, was nominated to the State and National Register of Historic Places (NRHP) in 2013 (Frye and Resnick 2013).
SIHP # 50-80-12-09786	In 1995, Tenney Village, Varona Village and Renton Village were placed on the HRHP as the 'Ewa Sugar Plantation Villages Historic District or Ewa Villages. It should be noted that although Fernandez Village is currently existing, it was renovated in the 1970s without guidance and lost much of its integrity, becoming ineligible for the historic (State or National) registers (Moy 1995).

Impacts and Mitigation Measures

No significant impacts on historic and archaeological resources in the region are anticipated. The ALRA indicates that there are no above-ground historic properties in the Project Area, which was completely cleared back in 1977-78. Due to the ground disturbance from the installation of the wastewater treatment infrastructure and related features, the likelihood of encountering intact historic properties or associated features during subsurface excavation for the Proposed Action is low. The Project Area is part of a larger parcel owned and managed by CCH for wastewater treatment. These facilities were originally constructed in 1978, following significant land clearing and mechanical modification of the ground surface (see Figure 16 of Appendix B).

In general, construction and excavation activities of the Proposed Action or Proposed Alternative within the Project Area will take place within an already developed site. As such, any new building or subsurface work will occur in areas that have previously undergone significant ground disturbance. These methods minimize impacts to potentially sensitive upper soil layers by concentrating disturbance at specific shaft or access points, rather than through widespread open trenching. Consequently, the potential to encounter intact cultural resources is considered low.

The Project Area is adjacent to, but was never included within, the actively cultivated fields of the ʻEwa Plantation Co. – a large-scale commercial sugarcane operation that operated for roughly a century (see Figures 11, 13, and 15 of Appendix B). The Project area is located just east of, and outside, the boundaries of the former NAS-BP and the NRHP-listed ʻEwa Plain Battlefield (SIHP # 50-80-12-05127, NR #16000273).

No historic or archaeological sites have been previously identified within the Project Area.

It should be noted that the Proposed Action/Proposed Alternative is subject to Chapter 6E, HRS, review by the SHPD. Through this process, the SHPD will make a determination of the effects of the Proposed Action/Proposed Alternative with regard to historic and archaeological resources. If there are potential impacts, the SHPD will require various mitigation measures to minimize any impacts. In addition, Honua recommends consultation with the SHPD-Archaeology Branch to obtain its concurrence and to determine if any specific identification or mitigation measures are needed for the Proposed Action/Proposed Alternative (i.e., an AIS or archaeological monitoring). Should any previously unidentified archaeological resources, including human remains, artifacts, or cultural deposits, be encountered during construction, all work in the immediate Project Area shall cease immediately. The discovery shall be reported to SHPD, and work will not resume until SHPD has assessed the discovery and appropriate mitigation measures have been implemented, as required by law, HRS Chapter 6E-43 and 6E-43.6.

3.7 Cultural Resources and Practices

Cultural resources are defined for the purposes of this EA as those associated with cultural practices and traditions. Cultural practices are activities imbued with cultural or spiritual meaning; they can be traditional or modern. They may include traditional Hawaiian practices, but also the cultural practices of other communities and ethnic groups. Assessment of the Proposed Project's impacts on cultural practices, per HRS 343, Hawaiʻi Register of Historic Places Criterion E, and Act 50, consider effects on a cultural practitioners' ability to access the locations and resources needed to undertake cultural practices. Also, considered here are the wahi pana (storied places) that are instilled with cultural significance through their appearance in moʻolelo, mele (songs), oli (chants), and other oral history traditions associated with the Project area.

Articles IX and XII of the State Constitution, other State laws, and the courts of the State require government agencies to protect and preserve cultural beliefs, practices, and resources of Kānaka ʻŌiwi (Native Hawaiians) and other ethnic groups. To assist decision-makers in the protection of cultural resources, Chapter 343, HRS and HAR Section 11-200.1 rules for the environmental impact assessment process require project proponents to assess Proposed Projects for their potential impacts to cultural properties, practices, and beliefs.

This process was clarified by Act 50, Session Laws of Hawai'i (SLH) 2000. Act 50 recognized the importance of protecting Native Hawaiian cultural resources and required that EAs include the disclosure of the effects of a Proposed Action on the cultural practices of the community and State and the Native Hawaiian community in particular. Specifically, the Environmental Council suggested that cultural impact assessments (CIA) should include information relating to the practices and beliefs of a particular cultural or ethnic group or groups. Such information may be obtained through public scoping, community meetings, ethnographic interviews, and oral histories.

The State and its agencies have an obligation to preserve and protect Native Hawaiians' customarily and traditionally exercised rights to the extent feasible. State law further recognizes that the cultural landscapes provide living and valuable cultural resources where Native Hawaiians have and continue to exercise traditional and customary practices, including hunting, fishing, gathering, and religious practices. In Ka Pa'akai, the Hawai'i Supreme Court provided government agencies with an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development interests. This is accomplished through:

1) The identification of valued cultural, historical, or natural resources in the Project Site, including the extent to which traditional and customary Native Hawaiian rights are exercised in the Project Site;

2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the Proposed Project; and

3) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

The ALRA prepared by Honua, along with prior studies in the surrounding region, investigated a range of various elements including burial sites, traditional land-use and practices, religious sites, and other archaeological and historical elements such as historic properties. Although no direct evidence of hunting or gathering was identified, the discovery of remains from extinct animals suggests a potential link to historical hunting and gathering activities in the Project Area (DAGS, February 2021).

Impacts and Mitigation Measures

The Project Area does not contain any known sites of cultural significance or historic sites; therefore, potential adverse impacts to traditional and cultural practices in the vicinity of the Project Area are not anticipated. The Project Area is currently being used by the existing HNWWTP, and no cultural sites were previously recorded.

The construction of the Proposed Action/Proposed Alternative will not cause disturbance to any traditional sacred site or the traditional cultural objects near the Project Area. In addition, the Proposed Action will not lead to any degradation of resources that are used by Native Hawaiians for subsistence or traditional cultural practices near the Project Area. Moreover, the Proposed Action will not obstruct culturally significant landforms or way-finding features. Lastly, it will not result in the loss of access to the shoreline or other areas that are customarily

used by Native Hawaiians or other people for source gathering or traditional practices. No mitigation measures are proposed. As noted above in Section 3.6, should any unidentified archaeological 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. Although due to the lack of new subsurface activity, no such encounters are anticipated.

3.8 Air Quality

Air quality refers to the presence of chemical, physical, or biological pollutants in the atmosphere that can affect human health, safety, and the environment, including plants and animals. Ambient concentrations of air pollutants are determined by emission sources and the transportation of emissions from distant sources. For the Proposed Project, relevant sources of pollution include mobile sources such as vehicles and construction equipment, as well as stationary sources such as generators. Potential air quality impacts in the vicinity of the HNWWTP UV Project area would occur from both construction and operational activities associated with implementation of the proposed improvements.

The State of Hawai'i, Clean Air Branch (CAB) is responsible for air pollution control in the State. Primary services are provided by its Engineering, Monitoring, and Enforcement sections. CAB conducts engineering analysis, permitting, monitoring investigations, and enforcement of federal and state air pollution control laws and regulations.

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 pollution in Hawai'i originates from both human-made and natural sources. Industrial activities, such as power generation and refining, contribute to pollution, as do mobile sources like vehicles, trucks, and buses. Additionally, agricultural practices, including burning, and natural phenomena like volcanic eruptions and windblown dust, also play significant roles in air quality. As of 2022, CAB operates 16 air quality monitoring stations across four islands. The U.S. Environmental Protection Agency (EPA) oversees 26 active monitoring stations on O'ahu, which collect hourly or daily pollutant data that is submitted to the EPA's Air Quality System (AQS). The closest CAB air quality monitoring station to the project area is in Kapolei, identified as Station ID: KA5.

Impacts and Mitigation Measures

In the short and long term, no significant impacts on air quality are anticipated as a result of the construction and operation of the Proposed Action or Proposed Alternative. In the short-term, it is anticipated that the various construction activities associated with the Proposed Action/Proposed Alternative will result in the irrevocable release of GHGs. Construction

related emissions include tailpipe emissions from construction equipment, delivery trucks, and workers commuting to and from the construction site. The quantities of GHGs released from construction related activities will be negligible and the usage of equipment would be sporadic and not simultaneous. Moreover, the contractors for the construction of the applicable projects will be required to prepare a dust control plan compliant with the provisions of Chapter 11-60.1, HAR, Air Pollution Control.

3.9 Water Quality and Effluent

The effluent from HNWWTP is conveyed 8,760 feet offshore to a depth of approximately 200 feet where it is dispersed by a 1,750-foot-long diffuser pipe at the Barbers Point Ocean Outfall. The effluent is of a lower density than seawater causing it to rise into the water column where ocean currents dilute and disperse it (Biological Resources Assessment for Honouliuli WWTP Upgrade and Expansion Project, 2015).

To ensure compliance with the NPDES permit requirements, the Proposed Action (UV) and the Proposed Alternative (PAA) disinfection system, will be designed to effectively treat effluent under both average and peak flow conditions. The system will be appropriately sized to handle variable influent rates, including those occurring during storm events, to maintain consistent pathogen removal.

Pretreatment processes upstream of the Proposed Action will be optimized to reduce turbidity and improve UV transmittance, thereby enhancing disinfection efficiency, while pretreatment upstream of the Proposed Alternative will be optimized to reduce turbidity and limit PAA demand, supporting effective chemical disinfection.

Redundant UV channels and automated monitoring systems will be incorporated to minimize the risk of system downtime or underperformance. These measures, combined with regular maintenance and operational oversight, will ensure that treated effluent discharged from HNWWTP continues to meet applicable water quality standards outlined in the facility's NPDES permit. HNWWTP Facility is governed by NPDES Permit No. HI0020877 (effective March 30, 2014). The wastewater treatment plant upgraded to secondary treatment to meet the 2010 Consent Decree. The secondary treatment improvements resulted in the reduction of biological oxygen demand (BOD) and total suspended solids (TSS).

Additional planning and design efforts will be undertaken to ensure the project complies with relevant Clean Water Branch requirements, including Section 401 Water Quality Certification (WQC) and NPDES requirements during construction. The wastewater system plans will adhere to the applicable provisions of HAR, Chapter 11-62, "Wastewater Systems," as amended on March 21, 2016.

Impacts and Mitigation Measures

In the short term, for the Proposed Action/Proposed Alternative, potential construction-related impacts to the mapped wetland within the project area would be minimized through compliance with the State and CCH water quality regulations pertaining to grading, excavation, and stockpiling activities.

If temporary sediment basins are used, they would remain dry under normal conditions and would temporarily retain water only during and following storm events, until the collected runoff is either absorbed or evaporated. Where feasible, vegetated drainage swales would be incorporated to improve stormwater quality.

During the operation of this UV system, with the proposed treatment processes, permit compliance will be accomplished in the following ways:

- Design the UV system with sufficient capacity to handle peak flows and incorporate flow equalization upstream to maintain consistent disinfection performance. Influent and effluent flow meters at HNWWTP would be used to optimize UV dosage.
- Maintain effective primary and secondary treatment to reduce turbidity and ensure high UV transmittance, thereby improving system efficiency and effluent quality.
- A flow-paced composite sampler will collect effluent samples downstream of the point where recycled water facility brine joins with the secondary clarifier effluent.
- The sampler will support daily composite reporting requirements and provide standard locations for operators to collect grab samples.

During the operation of the PAA system, potential adverse impacts on water quality are expected to be minimal and primarily associated with system operation and chemical handling. If not properly controlled, residual concentrations of PAA or its byproducts could enter the effluent stream at concentrations exceeding permitted limits. With proper engineering controls, dosing accuracy, and containment design, these risks are low and manageable. No significant long-term degradation of water quality is anticipated. All potential risks associated with chemical handling and residual oxidants will be effectively managed through containment, monitoring, and adherence to permit conditions. Therefore, no significant adverse impacts on water quality are anticipated from the Proposed Alternative.

3.10 Odor Control

Under normal operating conditions, the UV disinfection system does not give off an odor. Unlike chemical disinfection methods such as chlorination, UV treatment does not introduce chemicals or byproducts that produce noticeable smells. However, if upstream treatment is insufficient (e.g., poorly settled solids or high organic content), odors may still be present in the wastewater stream before it reaches the UV unit – but the UV system itself is not the source.

In comparison, the PAA disinfection system is also not anticipated to generate noticeable odors beyond the confines of the HNWWTP. While the PAA has a distinct, vinegar-like scent, any odor would be limited to the immediate vicinity of the chemical storage and dosing areas.

Impacts and Mitigation Measures

Construction of the UV disinfection system is not anticipated to release extraneous sewage gases that could result in unpleasant odors. In addition, the operation of the proposed UV disinfection system is not expected to generate odors, as it does not involve the use of chemicals or biological processes that typically provide odor-causing compounds.

Any odors present near the UV system would likely originate from upstream treatment processes (e.g., primary clarification, sludge handling), not the UV equipment itself. Therefore, odor-related impacts from the UV system are anticipated to be minimal.

Similarly, the construction of the PAA system is not expected to result in any substantial air quality or odor impacts. Once operational, the PAA system is not expected to produce significant odors. Peracetic acid has a mild, vinegar odor that may be detectable; however, the system will be enclosed and equipped with ventilation and vapor controls to prevent off-site odor emissions.

Standard HNWWTP odor control practices, such as covering tanks, maintaining aeration, and routine housekeeping, will continue to be implemented as part of overall plant operations.

3.11 Noise

Congress passed the Noise Control Act in 1972 in an effort to protect citizens from unregulated noise pollution. In 1978, the Quiet Communities Act was passed, allowing states and local jurisdictions to oversee noise pollution. In Hawaii, DOH regulates noise control rules and regulations. HRS Chapter 342F and Chapter 11-46 of the Hawaii Administrative Rules describe the regulations used to ensure control of noise pollution within communities. These rules and regulations will primarily correspond to potential construction noises.

HNWWTP is located within a suburban area of ʻEwa Beach, Oʻahu, characterized by ongoing residential, commercial, and infrastructure development. While it may have previously been considered more isolated, increasing urbanization in the region – particularly around East Kapolei and Hoʻopili – places the facility within an increasingly developed urban fringe.

An acoustic study was prepared by Ebisu & Associated near HNWWTP in 2015 as part of the 2017 FEIS. During daytime hours, ambient noise levels along the HNWWTP property lines are primarily influenced by off-site sources, including motor vehicle traffic and aircraft activity, which dominate over noise generated by HNWWTP itself. Noise monitoring data indicates that these off-site sources had a greater impact on recorded levels than on-site operations. Based on measurements that were collected during this study, the HNWWTP remains in full compliance with the DOH noise limit of 70 decibels (dBA) for both daytime and nighttime periods.

Impacts and Mitigation Measures

In the short term, noise from construction activities is unavoidable. Additionally, noise levels may increase due to the operation of heavy vehicles and equipment during construction. Noise mitigation strategies will be incorporated throughout the project design to identify and minimize sources of noise, and to use appropriate design practices and materials that reduce sound levels and prevent potential complaints. Nighttime construction is currently not anticipated, but if nighttime construction is performed, a noise variance will be required from DOH. While the noise may be somewhat noticeable, efforts will be made to minimize disruptions through the use of noise-reducing practices and adherence to local regulations, such as:

- Limiting construction to daytime hours (typically between 7:00 am to 6:00 pm) to reduce noise impacts during sensitive early morning or evening periods; and
- Provide advance notice to nearby stakeholders or facility staff when high-noise activities are scheduled.

Construction noise impacts, of the Proposed Action/Proposed Alternative, will be managed in accordance with the provisions of HAR, Title 11, Chapter 46, "Community Noise Control" regulations. These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels stated in the DOH Administrative Rules. It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulatory limits. Also, the guidelines for heavy equipment operation and noise curfew times, as set forth by the DOH noise control rules, will be adhered to; or, if necessary, a noise permit shall be obtained. In the long term, operation of the Proposed Project is not anticipated to result in adverse noise impacts.

Once operational, the Proposed Action/Proposed Alternative should not produce noise pollution louder than ambient noise of the surrounding land uses and traffic. Occasional maintenance will add minimal amounts of vehicular noise. If significant maintenance is required, cranes and other equipment may be used. In the long term, operation of the Proposed Action/Proposed Alternative is not anticipated to result in adverse noise impacts.

3.12 Hazardous Materials

Hazardous materials are substances (physical, chemical, or biological) that can potentially harm humans, animals, or the environment, either on their own or when interacting with other factors. These materials are classified as hazardous based on their ignitability, corrosiveness, reactivity, and toxicity. Toxic materials pose a hazard through ingestion or absorption, which can be potentially fatal or harmful to a person. The extent of the impact that hazardous materials and waste may have on human health and the environment depends on their types, quantities, toxicities, and management practices.

Hazardous materials refer to any substances, compounds, mixtures, or solutions that pose risks to human health and the environment (HI-EMA, 2023). These materials can be involved in incidents at fixed locations such as wastewater treatment plants, solid waste facilities, and nonpoint sources, as well as during transportation or improper storage. EPA classifies over 1,300 substances as hazardous, subjecting them to stricter regulation under laws like the Emergency Planning and Community Right-to-Know Act (EPCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Clean Air Act (CAA).

In regard to disaster and emergency declarations, there have been "no federal, state, or U.S. Department of Agricultural disasters declarations or proclamations for hazardous material-related incidents that have been issued to Hawai'i or any of its counties" (State of Hawai'i Hazard Mitigation Plan, 2023). However, there is a 100 percent chance of a hazardous material incident occurring in any given year in the State. The magnitude of the incident may vary from minor releases to major events in which potentially thousands of gallons may be released affecting large populations of people.

In Hawai‘i, hazardous materials are commonly transported via the island's highway system, but they may also be moved by ships, barges, and pipelines. If released, these materials can contaminate air, water, and soil, leading to serious health risks, including injury, illness, or even death. Depending on local weather conditions, the spread of hazardous materials can occur quickly via wind or water. “In-transit hazardous materials releases occur frequently. Most incidents are minor, but others cause significant impacts such as injury, evacuation, environmental damage, and the need for clean-up. Regulations in 49 CFR 171.15 and 171.16 govern situations where hazardous materials are released and the resulting required notifications and reporting” (State of Hawai‘i Hazard Mitigation Plan, 2023).

Impacts and Mitigation Measures

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

Operationally, the two disinfection systems differ in their handling of hazardous materials. The Proposed Action is a non-chemical disinfection process that uses high-intensity ultraviolet lights to inactivate microorganisms. Potential hazards are limited to the handling, replacement, and disposal of UV lamps and the operation of electrical components requiring proper maintenance procedures. Improper disposal of spent lamps could pose a minor contamination risks if not managed through approved hazardous waste recycling programs.

In contrast, the Proposed Alternative would introduce a new chemical-handling process that is not currently present at the HNWWTP. PAA is a strong oxidizing agent and, in concentrated form, is classified as a hazardous material due to its corrosive and reactive properties. PAA is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) (Thermo Fisher Scientific, 2025). Additionally, PAA is classified under Hazard Class 5.1 (oxidizing substances) and 5.2 (organic peroxides). Both are subclasses of oxidizing chemicals, but they differ in their properties and risks. Potential risks include worker exposure during chemical transfer, leaks or spills from storage tanks or feed lines, and localized surface contamination if containments are not properly maintained. These risks can be effectively managed through secondary containment, automated dosing control, and facility-specific safety procedures.

The Proposed Action/Proposed Alternative will not exacerbate existing hazards related to hazardous materials. Appropriate precautionary measures will be taken to reduce the potential of material release and associated impacts.

The contractor will adhere to the DOH, Hazard Evaluation and Emergency Response guidelines for any potentially encountered hazardous contaminants or spills. Additionally, all applicable CCH and Prevention Control BMPs would be implemented to ensure that accidental releases are minimized and contained. Any hazardous waste that is generated during construction will be handled in accordance with HAR, Chapters 11-260.1 to 11-279.1.

No secondary or cumulative impacts related to soils or hazardous waste are expected from the implementation of the Proposed Action/Proposed Alternative. No long-term impacts on soil are anticipated during the operation or during the construction and development of the Proposed Action/Proposed Alternative. There may be the potential for petroleum spillage associated with construction vehicles and equipment. To minimize the possibility for spills of hazardous materials, the following is recommended if and when the Proposed Action/Proposed is implemented:

- Unused materials and excess fill will be disposed of at an authorized waste disposal site.
- Hazardous materials, including chemicals, petroleum-based projects, and waste materials, including solid and liquid waste, would be stored in areas specifically designed to prevent discharge into stormwater runoff. Areas used for storage of toxic materials would be designed with full enclosure in mind.

Any hazardous materials that may be identified prior to or during construction of the Proposed Action/Proposed Alternative will be disposed of properly.

With the implementation of appropriate engineering controls, staff training, and compliance with hazardous material regulations, both the Proposed Action and the Proposed Alternative are expected to operate safely within the facility's overall safety and environmental management framework. No significant long-term hazardous materials impacts are anticipated.

3.13 Transportation

3.13.1 Public Transportation

While the immediate vicinity of HNWWTP is not directly served by high-frequency public transit, public transportation services are available within a reasonable distance from the Project site. The CCH's bus system, TheBus, provides several routes that operate throughout the broader 'Ewa and Kapolei regions. These routes offer connections to major destinations such as Waipahu, 'Ewa Beach town center, Kapolei Transit Center, and downtown Honolulu. The closest TheBus routes operate primarily along Farrington Highway and Fort Weaver Road, with select stops located within several miles of HNWWTP. However, there is limited access to the facility via public transit, and the final approach to HNWWTP typically requires private vehicle use or walking from the nearest transit stop.

Additionally, the Skyline rail transit system, recently launched by the Honolulu Authority for Rapid Transportation (HART), extends to East Kapolei with plans for further expansion. While the current rail alignment does not directly serve HNWWTP area, future phases may improve regional transit connectivity, depending on long-range development patterns and infrastructure planning in the 'Ewa Plain.

Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative is not expected to significantly impact public transportation services or infrastructure.

3.13.2 Traffic

HNWWTP is located within the ʻEwa District, where regional roadway networks already experience high traffic volumes during peak travel periods. Primary access to the facility is provided via Farrington Highway, Fort Weaver Road, and Kapolei Parkway, which serve both commuter and industrial traffic. Existing conditions along these corridors are characterized by moderate to occasional heavy congestion during the morning and afternoon peak hours, with queuing at major intersections and delays resulting from high turning movements.

HNWWTP operations may contribute additional truck and service vehicle traffic to the surrounding network, although these volumes are relatively minor compared to regional commuter flows. Nevertheless, the mix of industrial vehicles with passenger cars and transit, increases the potential for localized delay at access points. According to the *Oʻahu Regional Transportation Plan 2035,* "the number of people traveling on H-1, Farrington Highway, and Fort Weaver Road just before the Kunia Interchange is projected to increase from 183,600 trips per day in 2007 to 276,600 in 2035, an increase of 51 percent. Traffic congestion east-west and north-south collector and connector roadways in ʻEwa is also increasing, even outside the peak commuting hours" (2013, ʻEwa Development Plan). Regional growth in ʻEwa and Kapolei, including new residential, commercial, and public infrastructure projects, is anticipated to generate additional traffic demand in the project vicinity.

According to the 2017 FEIS for the HNWWTP, a traffic analysis report (TAR), which included an analysis of traffic near the Project site, was prepared by Austin, Tsutsumi & Associates, Inc. The Project Area is bordered by Geiger Road to the south, Roosevelt Avenue to the west, Renton Road to the north, and Coral Greek Golf Course to the east. The primary access to the HNWWTP is through an entrance on Geiger Road, west of the Coral Creek golf Course and south of the HNWWTP Control Building. The Septage Receiving Station is accessed through a separate entrance from Geiger Road east of the main entrance. The Ewa Convenience Center is accessed from Geiger Road west of the main WWRTP entrance.

The Proposed Action will be constructed within the existing footprint of HNWWTP, located on an already developed and disturbed area. The facility is accessed via established entry points and internal roads off Geiger Road, and no new road infrastructure is required.

Impacts and Mitigation Measures

During construction, there will be a short-term increase in traffic volumes associated with the delivery of construction materials, equipment, and worker vehicles. This may include occasional use of heavy trucks, particularly during site preparation, concrete delivery, and equipment installation phases. However, all construction and traffic will access the site via existing roadways, and staging areas will be located within the Project Area property to avoid impacts on public roadways. Construction activities are anticipated to be scheduled to minimize peak hour disruptions. Any increase in traffic is expected to be temporary and managed through standard traffic control measures as needed.

When construction is finished and the new UV treatment system is operational, traffic levels will return to existing baseline conditions. The Proposed Action/Proposed Alternative is not expected to have long-term adverse impacts to traffic flow.

In addition, to address these conditions, the Proposed Action/Proposed Alternative may implement a Traffic Management Plan (TMP), schedule construction trips during off-peak hours, coordinate closely with ongoing State and City roadway improvements, and maintain access for transit, pedestrians, and bicyclists. Operational measures such access management, turn-lane enhancements, and coordination with City signal timing will further minimize localized impacts.

Consultation is anticipated with the Hawai'i Department of Transportation (HDOT), CCH Department of Transportation Services (DTS), and DPP. With these measures and agency coordination in place, the Proposed Action/Proposed Alternative is expected to have less than significant traffic impacts during both construction and operations.

3.13.3 Existing Roadway Systems

Kualaka'i Parkway is generally a north-south, two-way, four-lane, divided arterial roadway. This roadway begins to the north as a full diamond interchange with the H-1 Freeway and ends to the south at a T-intersection with Kapolei Parkway.

Kapolei Parkway is generally an east-west, two-way, six-lane, divided arterial roadway in the vicinity of the Project. This roadway begins in the west near the Kapolei Target Store and extends east until it crosses Renton Road and turns to the south. Kapolei Parkway continues past its intersection with Papipi Road as Hailipo Street.

Roosevelt Avenue is generally an east-west, two-way, two-lane undivided collector roadway in the vicinity of the Project. This roadway begins in the west near its intersection with Boxer Road and extends east until it terminates at its intersection with Essex Road and continues as Geiger Road.

Geiger Road is generally an east-west, two-lane, undivided two-way collector roadway in the vicinity of the Project. This roadway begins in the west where Roosevelt Ave becomes Geiger Road at the intersection with Essex Road and terminates to the east where Geiger road becomes Iroquois Road at its intersection with Fort Weaver Road.

Ewa Refuse Convenience Center Driveway is approximately 450 ft east of the Geiger Road / Essex Road intersection and provides access to the refuse center.

Honouliuli Driveway 1 is the westernmost Project driveway along Geiger Road and provides direct access to HNWWTP.

Honouliuli Driveway 2 is the easternmost Project driveway along Geiger Road and provides direct access to HNWWTP.

Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative is not expected to significantly impact any existing roadway systems.

3.13.4 Projected Conditions

Primary access to the HNWWTP UV project would be maintained via Geiger Road throughout the duration of the project. Construction activities are not expected to impact traffic flow in the area, and no road closures or detours are expected. Normal access for the facility personnel and service vehicles will be maintained throughout the duration of the project.

Impacts and Mitigation Measures

Although no major transportation or traffic impacts are anticipated, minor short-term and localized effects on traffic may still occur due to the presence of construction equipment and personnel along Geiger Road.

To minimize potential transportation and traffic impacts, construction traffic will be limited to Geiger Road using designated access and haul routes, with staging areas provided onsite to prevent road queuing. Traffic control measures, such as clear signage and flaggers when necessary, will be implemented to maintain safety and avoid disruptions.

Construction activities will be scheduled to avoid peak travel times where feasible, and sufficient on-site parking will be provided for workers. Dust and debris will be managed through regular street sweeping and vehicle cleaning protocols. Facility personnel and stakeholders will receive advance notice of construction schedules, ensuring continued safe and efficient access throughout the project duration.

3.13.5 Federal Aviation Administration

HDOT indicated that the project site is located approximately 9,293 feet from the end of Runway 22R at Kalaeloa Airport. Pursuant to Federal Aviation Administration (FAA) regulations (14 CFR Part 77.9), construction or alteration within 20,000 feet of a public-use airport that may exceed a 100:1 surface requires submittal of FAA Form 7460-1, Notice of Proposed Construction or Alteration. Construction equipment and staging area heights, including any temporary cranes, will be evaluated. Coordination with HDOT-Airports Division and the FAA will continue through the final design.

Impacts and Mitigation Measures

Construction activities of the Proposed Action/Proposed Alternative would occur entirely within the existing HNWWTP property and would not include tall permanent structures or lighting that could interfere with airport operations. Temporary construction equipment, such as cranes or elevated platforms, may excceed height thresholds under FAA regulations (14 CFR Part 77), resulting in short-term airspace considerations during construction. Coordination and consultation with HDOT-Airport Divisions (HDOT-A) will be implemented to mitigate these potential impacts.

The Proposed Action/Proposed Alternative will also comply with HDOT's Technical Assistance Memorandum (TAM) to ensure that construction activities do not create glare, smoke, dust, lighting, or wildlife attractants that could affect aviation operations.

The Proposed Action/Proposed Alternative is not expected to significantly impact aviation.

3.14 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's visual character is predominantly industrial due to the presence of existing treatment facilities. Both the Proposed Action and Proposed Alternative would occur entirely within the existing HNWWTP boundary and would not expand the visual footprint of the facility.

HNWWTP is visible from nearby golf courses, such as Coral Creek Golf Course to the east, Barbers Point Golf Course to the south, and residential neighborhoods along the western and northwestern property boundaries. Views of HNWWTP from the golf courses are partially obstructed by a tree canopy between the site and the courses. The project site is also visible from a rail trail/bike path along the old OR&L railway, immediately north of the expansion area. Trees within the expansion property act as a visual screen between HNWWTP and Coral Creek Golf Course, residential areas, and the rail trail. Other properties within sight of the project site are primarily industrial.

Impacts and Mitigation Measures

Due to partial screening provided by existing trees, visual impacts on the Coral Creek and Barbers Point Golf courses are expected to be minimal. During construction, temporary fencing may be installed around the site to visually shield construction equipment, any aesthetic impacts are anticipated to be short-term, ending after the construction is complete.

In the short term, during construction activities, the presence of cranes and other heavy construction equipment could alter a portion of the viewshed from nearby buildings within the WWTP site. During, construction fencing surrounding the construction site may be provided as needed to provide a visual screen. Any construction impacts regarding visual aesthetics are expected to be short-term and would cease after construction. Construction areas will be kept orderly and any debris will be removed promptly upon completion of work.

The Proposed Action/Proposed Alternative will feature new structures that align with the industrial character of the existing facility, designed to blend with current structures and comply with CCH regulations.

Regardless of the alternative implemented, anticipated indirect impacts to visual aesthetics are associated with upgrades and improvements to the treatment system to allow future developments (residential, commercial and industrial) in the sewer basin to connect to the existing wastewater system.

The Proposed Action/Proposed Alternative is not expected to significantly impact the visual and aesthetic resources.

3.15 Socio-Economic Characteristics

The Project Area is located within the Ewa Gentry Census Designated Place (CDP). According to the 2020 Census, the population of the ʻEwa Gentry CDP was 25,707 which is an approximately 13.2% increase from the population recorded in the 2010 Census.

According to the ʻEwa Development Plan (2013), DPP has projected that Oʻahu will need over 88,000 new homes to meet expected population growth between 2005-2035. The ʻEwa district has been chosen as one of three locations to build majority of the new homes. DPP has projected a population growth from 68,700 in 2000 to over 164,000.

The ʻEwa Beach is a collection of diverse residential areas and subdivisions that is divided into five CDPs:

- Ewa CDP
- Ewa Villages CDP
- Ewa Gentry CDP
- Ocean Point CDP
- West Loch Estate CDP

The Project Area is located within the Ewa Gentry CDP. According to the 2020 Census, the population of the ʻEwa Gentry CDP was 25,707 which is an approximately 13.2% increase from the population recorded in the 2010 Census.

The 2020 American Community Survey (ACS) was reviewed for both zones along with the CCH and summarized in Table 3-2 below.

Table 3-2: Ewa Gentry CDP and Honolulu CDP Demographic Characteristics

Subject	Ewa Gentry CDP	Honolulu CDP
Total Population	25,707	1,016,508
Age (%)		
Under 5 years	7.6	5.5
Under 18 years	20.7	20.4
65 years and over	10.8	20.2
Median age	34.9	39.0
Race (%)		
White	12.9	21.1
Black or African American	2.8	2.8
American Indian and Alaskan Native	0.3	0.3
Asian	46.3	42.8
Native Hawaiʻian or other Pacific Islander	6.9	9.8
Two or more races	29.6	23.1
Hispanic or Latino	11.6	9.6
Total Households	8,016	337,061
Average household size	3.64	2.28
Median household income ($)	131,755	104,264
Owner occupied housing unit rate (%)	68.7	59.5
Median gross rent ($)	2,517	2,054
Persons in poverty (%)	2.7	9.1

Based on the data shown, the Ewa Gentry CDP and Honolulu CDP have a similarly aged population. The Ewa Beach CDP has a median age of 39.5 which is slightly greater than the overall median age for the CCH CDP, which is 39.0 years.

Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative is not anticipated to have significant adverse impacts to the socio-economic characteristics of the project region. In the short term, development of the Proposed Action may provide temporary construction jobs, in addition to construction expenditures. Activities related to the development of the Proposed Action/Proposed Alternative will generate positive benefits to the local economy through indirect sales associated with supplying goods and services to construction companies, including local supplies and vendors.

In the long-term, the Proposed Action/Proposed Alternative will accommodate projected future flows and support development and population growth on O‘ahu by supporting new housing, commercial properties, and community facilities, ultimately enhancing the area . Moreover, the Proposed Action is not anticipated to affect land and housing speculation, property values of area homes, or affordable housing in the area, ultimately enhancing the capacity of the existing East Interceptor System. Furthermore, the Proposed Action is expected to improve public health sanitation, creating a more desirable environment for residents and businesses.

3.16 Public Services and Facilities

3.16.1 Police, Fire and Medical Services

Police protection in the Project Area is provided by the Honolulu Police Department (HPD). The Project Area falls within HPD’s District 8 patrol jurisdiction, which covers approximately 25 miles, extending from the ‘Ewa Communities through Kapolei and Wai‘anae to Ka‘ena Point. District 8 has two stations serving this region. The Kapolei District Station is located approximately 6 miles southeast of the Project Area. The Wai‘anae substation is located approximately 15 miles west-northwest of the Project Area.

Fire protection in the area is provided by the Honolulu Fire Department (HFD). The Project Area is located within Zone 5 of the HFD’s Fire Response Zones. HNWWTP is within a two-mile radius of two fire stations: Fire Station 43 East Kapolei, located approximately 2.2 miles west-northwest of the Project Area, and Fire Station 24 Ewa Beach, located about 2.0 miles east-southeast of the Project Area.

The nearest full-service hospital is the Queen’s Medical Center West O‘ahu, located approximately 3.9 miles north of the Project Area.

Pre-hospital emergency medical care and emergency ambulance service on O‘ahu is provided by the CCH’s Department of Emergency Services, Emergency Medical Services (EMS) Division. The Department has 22 ambulance units under two districts. The Project Areas falls within District 1, which is covered by an EMS unit at the East Kapolei Fire Station, approximately 2.2 miles west-

northwest of the Project Area. All EMS units are advanced life support (ALS) units, staffed by at least two paramedics.

Impacts and Mitigation Measures

In the short and long term, no significant impacts are anticipated for police, fire, and medical services in the Project Area. BMPs will be implemented to mitigate potential impacts to the public safety of the surrounding environment. BMPs may include necessary signs, lights, barricades, and other safety equipment installed and maintained by the contractor, as well as adequate notification made to residents in the project vicinity to alert them to any construction activities or safety measures in place.

Regarding fire protection, construction drawings will be submitted to the HFD for review, ensuring the provision of fire apparatus access per the requirements of the National Fire Protection Association (NFPA) 1, Fire Code. The Proposed Project will be designed and built-in compliance with the applicable CCH fire code requirements.

Adequate access for emergency medical services will also be prioritized, with clear and unobstructed pathways provided for emergency vehicles, including ambulances, throughout the project area.

In the long-term, while the Proposed Action/Proposed Alternative may require occasional police, fire, and medical services protection as well as medical services, it is anticipated that there will be no significant impacts to the overall demand for these services.

3.16.2 Educational Facilities

The Project Area is within the Leeward Oʻahu district, within the Campbell-Kapolei School Complex Area. The nearest schools to the Project Site are:

- Ewa Makai Middle School (approx. 0.6 mi.)
- Ewa Elementary School (approx. 0.7 mi.)
- Kapolei Middle School (approx. 0.8 mi.)
- Keoneula Elementary School (approx. 1.0 mi)
- Holomua Elementary School (approx. 1.0 mi)

There are no childcare facilities in close proximity to the project area. The nearest childcare facilities include:

- Seagulls Schools (two locations, approx. 1.3 mi. and 1.7 mi.)
- Plant Preschool School (approx. 1.4 mi.)
- Kamaʻaina Kids (approx. 1.9 mi.)
- Ewa Plains Enrichment Program (approx. 2 mi)

Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative is not anticipated to have significant adverse impacts on existing educational facilities at or near the Project Area.

3.16.3 Recreational Facilities

The CCH Department of Parks and Recreation (DPR) operates and manages several recreational facilities in close proximity to the Proposed Action. The Project Area falls within District 3: Leeward Oʻahu, which spans Waipahū to Mākaha. Along with general park management and maintenance, the DPR offers various recreation and community programs to the community, including culture and arts, arts and crafts, sports, aquatics, therapeutic recreation, senior citizen and special event programs. The closest facility to the Project Area is ʻEwa Mahiko District Park. Other CCH facilities near the Project Area include the following:

- ʻEwa Beach Community Park
- Kapolei Community Park
- Kapolei Regional Park

Impacts and Mitigation Measures

Significant impacts to recreational facilities are not anticipated to occur as a result of the construction and operation of the Proposed Action or Proposed Alternative.

3.16.4 Solid Waste Management

Located at the southwest corner of HNWWTP is the Ewa Convenience Center at 91-1000 Geiger Road which accepts residential municipal solid waste only. Multiple roll-off dumpsters are used onsite for the separate collection of different types of materials:

- Combustibles are processed at the Honolulu Program for Waste Energy Recovery (H-POWER),
- Waste-to-energy facility located at the Campbell Industrial Park in Kapolei,
- Non-combustibles are taken to the Waimanalo Gulch Landfill in Kahe Valley,
- Yard waste is hauled to mulching and composting sites, and
- Large appliances, tires, and auto batteries are taken to recycling facilities.

There are plans to limit the amount of solids disposed of at the Waimanalo Gulch Landfill. As a result, solids generated at other wastewater treatment plants are trucked to HNWWTP for further processing and ultimate disposal. In addition, construction-related debris generated during facility improvements of the Proposed Action is transported by private haulers to the PVT Land Company Landfill located in Nānākuli.

Impacts and Mitigation Measures

The Proposed Action/Proposed Alternative is not anticipated to significantly impact solid waste management services or operations in the vicinity of the project. In the short term, construction associated with the development of the Proposed Action/Proposed Alternative will result in an increase in construction-related waste generation and consequently will require scaling solid waste disposal/management services.

With excavation taking place within the project area, leftover material may not be kept on site; therefore, coordination with local landfills and recycling centers for the disposal of

construction debris and/or hazardous materials may be required. The ultimate disposal location will depend on space availability at local landfills. Disposal would be in accordance with appropriate regulations and standards and with the industry's best practices.

During operation, the Proposed Action/Proposed Alternative is expected to have minimal impact on solid waste disposal operations within the project area. Solid waste that is generated at HNWWTP would continue to be disposed of in accordance with the appropriate regulations and standards. The upgrade of HNWWTP to full secondary treatment would increase the solids production indirectly. This secondary treatment would alter the microbial community and potentially increase the amount of biodegradable organic matter that needs to be settled or removed.

The Proposed Action is not anticipated to have any significant long-term impact on solid waste management in the area.

3.17 Infrastructure and Utilities

3.17.1 Water system

CCH Board of Water Supply (BWS) is the municipal water service provider for the Project Area. Municipal drinking water is provided by groundwater sources, which are dependent on rainfall (See Section 3.3.2). The BWS monitors rainfall and groundwater levels to ensure that the island's drinking water is preserved.

HNWWTP site is located within the Waipahu-Waiawa system, which is the primary source of drinking water for the Project Area. The closest well is approximately 3.1 miles north. For industrial and irrigation purposes, the BWS utilizes the Honouliuli Water Recycling Facility (HWRF), operated by Veolia Water North America and located on the western side of HNWWTP, which recycles wastewater for non-potable uses. The HWRF provides tertiary treatment to approximately 10 mgd of secondary effluent from the WWTP.

Impacts and Mitigation Measures

In the short term, water system improvements near the HNWWTP UV project may be required to improve the reliability of the existing potable water system and any potential expansion of HNWWTP. Coordination and collaboration with the BWS would be needed during design to avoid or minimize the potential for conflict regarding the reclamation and reuse of wastewater. Construction drawings would be submitted to BWS review as part of the building permit application process and the estimated volume of water required during construction and availability of the water would be confirmed during review and approval of the building permit application.

Both the Proposed Action and Proposed Alternative would occur entirely within the existing, previously disturbed HNWWTP footprint and would not require new water service connections or off-site infrastructure improvements. Construction activities for either alternative would result in short-term water use for dust control, concrete curing, and equipment cleaning. These temporary demands would not adversely affect the municipal water supply or service capacity.

During operation, neither the UV nor the PAA disinfection systems would significantly increase potable or non-potable water demand. The UV system may require periodic rinse water for lamp and channel cleaning, while the PAA system may generate small quantities of wash water during equipment rinsing and containment cleaning associated with chemical handling. Without appropriate controls, these small volumes of rinse or wash water could enter on-site drainage systems; however, such effects would be minor and avoided through containment and BMPs.

To minimize potential construction and operational effects on the water system, both alternatives will implement standard mitigation measures. These include efficient water use for dust suppression in accordance with BWS conservation guidelines; containment and proper disposal of all wash and rinse water; and compliance with NPDES permit conditions and on-site BMPS. Coordination with BWS will occur as needed for temporary construction water use.

Overall, the Proposed Action/Proposed Alternative is not anticipated to have any significant long-term impacts on the water system and is intended to enhance the facility's treatment capacity and regulatory compliance, particularly with respect to effluent quality.

3.17.2 Wastewater System

The CCH ENV, Division of Wastewater Treatment and Disposal is responsible for the collection and treatment of wastewater in the Project Areas. Improvements to the existing wastewater treatment system is the focus of the ongoing evaluation and subject of this DEA. As mentioned earlier, HNWWTP currently operates under a NPDES Permit (No. HI0020877) expiring September 30, 2025. The permit is under administrative extension while DOH processes CCH's renewal application. Wastewater is collected primarily by gravity to 16 pump stations that are distributed throughout the Honouliuli Sewershed. The wastewater is then pumped through force mains to the interceptor sewers leading to HNWWTP, where it is treated and discharged through the Barbers Point Deep Ocean Outfall, located approximately 1.7 miles offshore at a depth of about 200 feet.

Impacts and Mitigation Measures

In the short term, construction is proposed to occur at the existing HNWWTP site. The facility would continue to operate during construction activities, which are anticipated to continue over a few years. The effluent discharged will remain in compliance with the 2010 Consent Decree. Occasional, temporary interruptions to existing processes may be necessary to facilitate the connection of new structure and facilities to the existing system. Temporary pumping and bypass pumping may be utilized as needed. The designated staging area within HNWWTP will be planned to avoid any impacts to existing sewer lines in the vicinity of the Project Area.

The long-term goal of this Proposed Action/Proposed Alternative is to improve the water quality parameters as it would provide the additional treatment capacity to meet future population growth and development.

3.17.3 Drainage System

The drainage system around HNWWTP, which includes storm drains, culverts, catch basins, and conveyance channels, is owned and maintained by the CCH Department of Facility Maintenance – Storm Water Quality Division. The drainage system at and around the Project Area is designed to manage stormwater runoff from paved areas, buildings, and surrounding lands, which ensures that drainage does not interfere with wastewater operations or cause localized flooding.

Impacts and Mitigation Measures

The Proposed Action is not expected to significantly impact the existing stormwater drainage system. However, minor, localized effects may occur during construction. Temporary construction activities (i.e., excavation, staging, equipment laydown) could disrupt surface grading and runoff patterns. Erosion and sedimentation controls, such as silt fences, inlet protection, sediment basins, would be necessary to prevent construction-related impacts to the drainage system. Any short-term construction-related effects will be mitigated through standard erosion and sediment control practices.

In the long term, significant adverse impacts to the drainage system are not anticipated to the site's existing drainage system and no changes to natural drainage patterns or stormwater discharge points are proposed. The Proposed Action will maintain compliance with applicable stormwater regulations and incorporate appropriate long-term site controls to preserve drainage function.

3.17.4 Electrical and Communications Systems

Electrical power is provided by Hawaiian Electric Company (HECO). The two major HECO facilities, Kahe and Waiau Power Plants, are located within approximately 5 miles of HNWWTP. Telephone services are provided by Hawaiian Telcom and Spectrum. Spectrum also provides cable services within the Project Area. These services are transmitted through the underground and aerial lines located in the Project Area. Located on the HNWWTP property are two cell phone towers, one on the southeast corner and the other in the northwest corner.

No impacts on the two cell phone towers and their current vehicular access ways are anticipated.

Impacts and Mitigation Measures

It is anticipated that the Proposed Action will increase energy consumption that would be necessary at the existing HNWWTP during construction of the new UV treatment system and when it becomes operational. Electrical demand for this UV treatment system varies depending on the type of UV lamp. UV treatment systems using a low-pressure UV lamp consume approximately 100-250 kWh per million gallons of treated water, while medium-pressure systems use more energy, estimated at 460 to 560 kWH per million gallons.

Alternatively, a PAA disinfection system would reduce onsite energy demand but introduces the need for chemical storage, handling, and transport, shifting the balance of efficiency considerations from electricity use to chemical supply chain management. The PAA alternative would further reduce onsite electrical demand but require continuous chemical production, delivery, and monitoring, shifting energy and emissions considerations to the

broader supply chain. Both systems reflect the City's intent to balance efficiency, conservation, and sustainability in wastewater infrastructure for the State.

Coordination with HECO, Hawaiian Telcom, and Spectrum, would be conducted to minimize and/or avoid potential conflicts with any underground and overhead utility lines in the Project Area. Proposed improvements, including staging areas, would be designed to avoid any existing electrical and communications lines, any existing easement or facilities, and to provide continued access for the maintenance of HECO facilities.

3.17.5 Gas System

Hawaii Gas Company, LLC maintains an underground 4" distribution line in the project vicinity. There are no known major gas lines within the Proposed Project Area.

Impacts and Mitigation Measures

Coordination with Hawai'i Gas Company would be necessary to minimize and avoid potential conflicts with any existing gas utilities in the project vicinity. Although there are no known major gas lines within the Proposed Project Area, coordination would ensure that proposed construction activities and any associated gas-handling systems do not interfere with existing infrastructure. None of the proposed project components are anticipated to require natural gas as a fuel source.

Based on the initial coordination, impacts would not be anticipated during construction or operation of the Proposed Action/Proposed Alternative.

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CHAPTER 4 Plans, Policies, and Controls

4. Relationship to Plans, Policies, and Controls

Pursuant to § 11-200.1-24, HAR, Chapter 4 describes the relationship of the Proposed Action to various "*land use and natural or cultural resource plans, policies, and controls for the affected area*." This Chapter discusses 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 (ENV) *"…has decided to proceed, notwithstanding the absence of full reconciliation."*

To facilitate describing the relationships of the Proposed Action and the Proposed Alternative to the numerous land use and natural or cultural resource plans, policies, and controls for the affected area, some of those plans, policies, and controls are presented in tabular form, and are described with text and/or the following letter code:

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

4.1 State Land Use Plans and Policies

4.1.1 Chapter 226, HRS, 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 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. The Proposed Action's consistency with applicable goals, objectives and policies of Part 1 is discussed in Table 4-1, and an assessment of conformance with Part 3 is discussed in Table 4-2. Part 2 of the State Plan, which primarily covers internal government affairs, is not related to the Proposed Action.

Table 4-1: The Hawai'i State Plan	S	NS	N/A
§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.	**X**		
(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.	**X**		
(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.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies of the State with regards to State goals. The Proposed Action/Proposed Alternative will contribute to a strong and viable economy by supporting wastewater management infrastructure. Efficient wastewater services are essential for the community's well-being and overall economic stability. Additionally, the project will create job opportunities during the construction phase.			

Table 4-1: The Hawai‘i State Plan	S	NS	N/A
A well-designed and efficiently operated facility will help maintain cleanliness in the area and improve the environment. The Proposed Action/Proposed Alternative aligns with the goals of well-being by providing essential infrastructure for growing populations.			
§226-5 Objectives and policies for population. (a) It shall be the objective 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. To achieve the population objective, it shall be the policy of this State to:			
(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.			**X**
(2) Encourage an increase in economic activities and employment opportunities on the Neighbor Islands consistent with community needs and desires.			**X**
(3) Promote increased opportunities for Hawai‘i's people to pursue their socio-economic aspirations throughout the islands.			**X**
(4) Encourage research activities and public awareness programs to foster an understanding of Hawai‘i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai‘i's population.			**X**
(5) Encourage federal actions that will promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			**X**
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			**X**
(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.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies of the State with regards to land and water resources for the population. The installation of a new UV Treatment Facility or PAA disinfection system at HNWWTP supports the coordinated planning and development of water resources by improving the treatment capacity and quality of secondary effluent water. This enhances the sustainable use of water in the region and supports anticipated population and infrastructure growth in the Ewa region and other parts of O‘ahu. By treating wastewater to a higher standard, the project helps enable further development without compromising environmental or public health standards, aligning with the intent of coordinated land and water resource planning.			
§226-6 Objectives and policies for the economy--in general. (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. (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.			**X**
(2) Expand Hawai‘i's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			**X**
(3) Promote Hawai‘i as an attractive market for environmentally and socially sound investment activities that benefit Hawai‘i's people.			**X**
(4) Transform and maintain Hawai‘i as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			**X**
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.			**X**
(6) Seek broader outlets for new or expanded Hawai‘i business investments.			**X**

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(7) Expand existing markets and penetrate new markets for Hawai'i's products and services.			X
(8) Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.			X
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.	X		
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai'i's small scale producers, manufacturers, and distributors.			X
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.	X		
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawaii.			X
(13) Foster greater cooperation and coordination between the public and private sectors in developing Hawai'i's employment and economic growth opportunities.	X		
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			X
(15) Maintain acceptable working conditions and standards for Hawai'i's workers.	X		
(16) Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and non-discrimination measures.			X
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(18) Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy, particularly with respect to emerging industries in science and technology.			X
(19) Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.	X		
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new, potential growth industries in particular.			X
(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.			X

Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies of the State for the economy. Both the Proposed Action and Proposed Alternative 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 expenditure 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/Proposed Alternative 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/Proposed Alternative will maintain and improve acceptable working conditions and standards. Although the primary focus of the Proposed Action/Proposed Alternative is on wastewater infrastructure, it will indirectly support the economic base by ensuring efficient wastewater treatment services for the region. A well-functioning wastewater system is crucial for supporting other industries and businesses, as it promotes cleanliness, environmental stewardship, and a favorable living environment – all essential factors for economic growth and diversification.

Furthermore, by improving wastewater management and maintaining a cleaner environment, the Proposed Action/Proposed Alternative indirectly contributes to preserving the scenic beauty and aloha spirit that are integral to Hawaii's tourism industry. An effective wastewater system helps protect natural resources, landscapes, and cultural values, enhancing the overall appeal of the state to both visitors and residents. In summary, the Proposed Action not only addresses wastewater infrastructure but also has far-reaching positive impacts on the local economy, workforce development, and the preservation of Hawaii's unique cultural and environmental assets.

Table 4-1: The Hawai‘i State Plan	S	NS	N/A
§226-7 Objectives and policies for the economy-agriculture. (a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives: (1) Viability of Hawaii's sugar and pineapple industries. (2) Growth and development of diversified agriculture throughout the State. (3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being To achieve the agriculture objectives, it shall be the policy of this State to:			
(1) Establish a clear direction for Hawaii's agriculture through stakeholder commitment and advocacy.			**X**
(2) Encourage agriculture by making the best use of natural resources.			**X**
(3) Provide the governor and the legislature with information and options needed for prudent decision-making for the development of agriculture.			**X**
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			**X**
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai‘i's economy.			**X**
(6) Seek the enactment and retention of federal and state legislation that benefits Hawai‘i's agricultural industries.			**X**
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawai‘i's food producers and consumers in the State, nation, and world.			**X**
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			**X**
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			**X**
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			**X**
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			**X**
(12) In addition to the State's priority on food, expand Hawai‘i's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.			**X**
(13) Promote economically competitive activities that increase Hawai‘i's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.			**X**
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture			**X**
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			**X**
(16) Facilitate the transition of agricultural lands in economically non-feasible agricultural production to economically viable agricultural uses.			**X**
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i‘a, māla, and irrigated lo‘i, and growth of traditional Hawaiian crops, such as kalo, ‘uala, and ‘ulu.			**X**
(18) Increase and develop small-scale farms.			**X**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for the economy related to agriculture.			

Table 4-1: The Hawai‘i State Plan	S	NS	N/A
226-8 Objective and policies for the economy--visitor industry. (a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai‘i's economy. (b) To achieve the visitor industry objective, it shall be the policy of this State to:			
(1) Support and assist in the promotion of Hawai‘i's visitor attractions and facilities.			X
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai‘i's people.			X
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.			X
(4) Encourage cooperation between the public and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			X
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai‘i's people.			X
(6) Provide opportunities for Hawai‘i's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
(7) Foster a recognition of the contribution of the visitor industry to Hawai‘i's economy and the need to perpetuate the aloha spirit.			X
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai‘i's cultures and values.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for the economy related to the visitor industry.			
§226-9 Objective and policies for the economy--federal expenditures. (a) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai‘i's economy. (b) To achieve the federal expenditures objective, it shall be the policy of this State to:			
(1) Encourage the sustained flow of federal expenditures in Hawai‘i that generates long-term government civilian employment.			X
(2) Promote Hawaii's supportive role in national defense, in a manner consistent with Hawaii's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawaii's economy.			X
(3) Promote the development of federally supported activities in Hawai‘i that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai‘i's environment.			X
(4) Increase opportunities for entry and advancement of Hawai‘i's people into federal government service.			X
(5) Promote federal use of local commodities, services, and facilities available in Hawai‘i.			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai‘i.			X
(7) Pursue the return of federally controlled lands in Hawai‘i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for the economy related to federal expenditures.			
§226-10 Objective and policies for the economy--potential growth and innovative activities. (a) Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawai‘i's economic base. (b) To achieve the potential growth activity objective, it shall be the policy of this State to:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawaii's economy, including but not limited to			X

Table 4-1: The Hawai'i State Plan	S	NS	N/A
diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors.			
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawai'i through the export of services or products or substitution of imported services or products.			X
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements.			X
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity.			X
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus.			X
(6) Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people.			X
(7) Enhance and promote Hawai'i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.			X
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, and underground resources and solid waste.			X
(9) Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new economic activities into the State.			X
(10) Provide public incentives and encourage private initiative to attract new industries that best support Hawai'i's social, economic, physical, and environmental objectives.			X
(11) Increase research and the development of ocean related economic activities such as mining, food production, and scientific research.			X
(12) Develop, promote, and support research and educational and training programs that will enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i.			X
(13) Foster a broader public recognition and understanding of the potential benefits of new, growth oriented industry in Hawai'i.			X
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii's social, economic, physical, and environmental objectives.			X
(15) Increase research and development of businesses and services in the telecommunications and information industries.			X
(16) Foster the research and development of non-fossil fuel and energy efficient modes of transportation			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for the economy related to potential growth and innovative activities.			
226-10.5 Objectives and policies for the economy--information industry. (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. (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			X

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai'i to accommodate future growth and innovation in Hawaii's economy.			X
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawaii.			X
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawaii, using technology to communicate with their headquarters, offices, or customers located out-of-state.			X
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry.			X
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.			X
(7) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry.			X
(8) Foster a recognition of the contribution of the information industry to Hawaii's economy.			X
(9) Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives or policies outlined above for the economy related to telecommunications and information technology industries.			
§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources. (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. (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.	X		
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	X		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	X		
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	X		
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.	X		
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.	X		
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			X
(8) Pursue compatible relationships among activities, facilities, and natural resources.	X		
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.			X
The Proposed Action/Proposed Alternative will support the objective and policies for the physical environment related to land-based, shoreline, and marine resources. The Proposed Action (UV) is consistent with the objectives and policies above. By constructing a new UV disinfection system within HNWWTP, the project enhances effluent quality and reduces reliance on chemical disinfectants, thereby supporting prudent use of land and water resources and protecting fragile environmental systems. The Proposed Alternative (PAA) is generally consistent with the objectives and policies for land-based, shoreline, and marine resources. Its effectiveness depends on optimized dosing and monitoring to ensure that residual oxidants do not impact aquatic species or ecosystems. With safeguards in place, the system supports conservation, water quality protection, and compatibility with marine and shoreline resource use.			

Table 4-1: The Hawai'i State Plan	S	NS	N/A
Both the Proposed Action/Proposed Alternative are fully contained within the existing HNWWTP footprint, avoiding land disturbance and minimizing potential impacts to natural resources. While certain policies relating to private incentives and shoreline accessibility are not directly applicable, the project broadly supports the State's conservation ethic and contributes to the protection of coastal and marine resources.			
§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources. (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 (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.	**X**		
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			**X**
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	**X**		
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.	**X**		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies for the physical environment related to scenic, natural beauty, and historic resources. The design of the Proposed Action/Proposed Alternative will maintain all scenic attributes of the Project Area. As discussed in Section 3.6.4 (Summary of Historic Properties) of the EA, the Proposed Action/Proposed Alternative is not expected to have any impacts on historic or archaeological sites because no historic or archaeological sites have been previously identified within the Project Area. Additionally, as discussed in Section 3.14 (Visual and Aesthetic Resources) of the EA, the Proposed Action/Proposed Alternative is not expected to have an impact on the views, supporting the objectives and policies for the physical environment. The Proposed Action/Proposed Alternative is within an area that has already been disturbed.			
§226-13 Objectives and policies for the physical environment--land, air, and water quality. (a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives: (1) Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources. (2) Greater public awareness and appreciation of Hawai'i's environmental resources. (b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:			
(1) Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources.			**X**
(2) Promote the proper management of Hawai'i's land and water resources.	**X**		
(3) Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.	**X**		
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.	**X**		
(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.			**X**
(6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.	**X**		
(7) Encourage urban developments in close proximity to existing services and facilities.	**X**		
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies for the physical environment related to land, air, and water quality. As discussed in Section 3.3 (Hydrology), BMPs will be implemented during construction to minimize runoff from construction-related activities. In addition, all required permits will be obtained as mentioned in Section 3.9 (Water			

Table 4-1: The Hawai'i State Plan	S	NS	N/A
Quality and Effluent). Furthermore, construction is not expected to introduce or mobilize any substances in the soil that could negatively impact the underlying groundwater. Construction waste materials will be properly disposed of to prevent the generation of leachate that could contaminate groundwater. The Proposed Alternative provides an effective measure to improve treated effluent quality, reducing pathogens before discharge to coastal waters. Because PAA breaks down rapidly into acetic acid, oxygen, and water, it does not persist in the environment; however, careful dosing and residual monitoring are required to ensure byproducts do not affect marine life. With these safeguards, the system supports the State's goal of achieving high-quality surface, groundwater, and coastal waters. As discussed in Section 3.4 (Natural Hazards), the Project Area is not susceptible to erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic activity, or other natural hazards, and the Proposed Action/Proposed Alternative will not worsen any existing hazard conditions. All structures will be designed in accordance with CCH's building code. Potential impacts from natural hazards can be further minimized by following established civil defense evacuation procedures. As discussed in Section 3.8 (Air Quality), the Proposed Action/Proposed Alternative is expected to have short-term impacts within the project area. Temporary air quality effects related to construction activities can be mitigated. Ambient carbon monoxide levels from vehicle traffic are anticipated to remain well below both State and federal air quality standards. Long-term impacts on air quality are expected to be minimal, as indirect emissions associated with the Project's electricity usage and solid waste disposal are likely to be negligible. As previously stated, the Project Area is situated within the existing urban fringe context and has access to existing infrastructure in regard to utilities such as water, wastewater, electrical, and communication systems.			
§226-14 Objective and policies for facility systems--in general. (a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives. (b) To achieve the general facility systems objective, it shall be the policy of this State to :			
(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.	**X**		
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.	**X**		
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.	**X**		
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.	**X**		
Discussion: The Proposed Action / Proposed Alternative will support the objectives and policies for facility systems in general. The Proposed Action/Proposed Alternative supports the CCH's environmental and infrastructure goals as outlined in HRS Chapter 226. This Proposed Action/Proposed Alternative advances coordinated planning efforts by enhancing wastewater treatment capacity and quality to accommodate the region's growth while maintaining alignment with State and County capital improvements. The facility upgrade ensures system operations remain within available resources capacities and are cost-effective for users. The adoption of the UV disinfection technology and the consideration of the PAA disinfection system promotes flexibility in treatment processes, enabling adaptation to changing regulatory requirements and public demands, while supporting efficient and sustainable resource use. Additionally, the Proposed Action/Proposed Alternative is consistent with the city's emphasis on pursuing alternative financing and cost-saving strategies during planning, construction, and maintenance phases, further contributing to the long-term fiscal and environmental sustainability of wastewater infrastructure.			
§226-15 Objectives and policies for facility systems—solid and liquid wastes. (b) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives: (1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.			

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(2) Provision of adequate sewerage facilities of physical and economic activities that alleviate problems in housing, employment, mobility, and other areas. (c) To achieve solid and liquid waste objectives, it shall be the policy of this State to:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	X		
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	X		
(3) Promote research to develop more efficient and economical treatment and disposals of solid and liquid wastes.	X		
Discussion: The Proposed Action/Proposed Alternative will support and is consistent with the policies that involve facility systems related to solid and liquid wastes. The Proposed Action/Proposed Alternative supports key objectives of the Hawaii State Plan by enhancing sewerage infrastructure to accommodate planned growth and ensure sustainable development. By providing advanced disinfection, the Proposed Action promotes the reuse of treated water, reducing liquid waste discharge and conserving valuable water resources. The Proposed Alternative may indirectly support water reuse applications by reducing formation of harmful disinfection byproducts (DBPs). The Proposed Alternative enhances wastewater infrastructure to support planned growth while promoting conservation through potential water reuse opportunities. By reducing harmful disinfection byproducts, PAA-treated effluent may be more suitable for recycling into non-potable uses, thereby reducing liquid waste discharge and conserving valuable water resources. Successful implementation, however, requires careful dosing and continuous monitoring to ensure residual oxidants and byproducts do not impair water quality. The City's evaluation of PAA also reflects the State's commitment to research and adoption of innovative treatment technologies that improve efficiency and sustainability. Additionally, the facility reflects the adoption of more efficient and economical wastewater treatment technologies, consistent with the State's emphasis on research and innovation in solid and liquid waste management. The evaluation of the UV and PAA system represents the City's consideration of advanced and cost-effective treatment technologies to improve disinfection reliability.			
§226-16 Objective and policies for facility systems--water. (a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities. (b) To achieve the facility systems water objective, it shall be the policy of the State to:			
(1) Coordinate development of land use activities with existing and potential water supply.	X		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.	X		
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.	X		
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.			X
(5) Support water supply services to areas experiencing critical water problems.			X
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.			X
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies for facility systems related to water by enhancing the quality and availability of reclaimed water within existing resource capacities. The Proposed Action aligns with coordinated land use and water supply by planning and providing a reliable source of treated water that can supplement potable supplies, particularly in areas facing critical water shortages. Through the use of advanced UV disinfection technology, the facility promotes efficient, economical, and sustainable water use, contributing to the productive use of wastewater and runoff. Additionally, the project supports proactive research and innovation to meet future water requirements. These efforts reinforce Hawaii's commitment to a resilient and sustainable water management system in line with long-term state planning goals. The Proposed Alternative is generally consistent with State policies for water facility systems. It supports research into alternative treatment methods and indirectly sustains domestic and agricultural water resources by protecting groundwater and coastal waters.			
§226-17 Objectives and policies for facility systems--transportation.			

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives: (1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods. (2) A statewide transportation system consistent with planned growth objectives throughout the State (b) To achieve the transportation objectives, it shall be the policy of this State to:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter.			X
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives.			X
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.			X
(4) Provide for improved accessibility to shipping, docking, and storage facilities.			X
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs.			X
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.			X
(7) Encourage a variety of carriers to offer increased opportunities and advantages to inter-island movement of people and goods.			X
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs.			X
(9) Encourage the development of transportation, systems and programs which would assist statewide economic growth and diversification.			X
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment.			X
(11) Encourage safe and convenient uses of low-cost, energy-efficient, non-polluting means of transportation.			X
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives.			X
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for facility systems related to transportation. While the facility may support planned growth in 'Ewa Beach region indirectly, it does not directly contribute to or alter the transportation system. Its primary function is related to wastewater treatment, making this objective not applicable to the Proposed Action/Proposed Alternative.			
§226-18 Objectives and policies for facility systems—energy. (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.. (b) To achieve the 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 (c) To further achieve the energy objectives, it shall be the policy of this State to:			
(1) Support research and development as well as promote the use of renewable energy sources.			X

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(2) Ensure a sufficient supply of energy to enable power systems to support the demands of growth.	X		
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits.			X
(4) Promote all cost-effective conservation of power and fuel supplies through measures, including: (A) Development of cost-effective demand-side management programs; (B) Education; (C) Adoption of energy-efficient practices and technologies; and (D) Increasing energy efficiency and decreasing energy use in public infrastructure.	X		
(5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies.	X		
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies.	X		
(7) Promote alternate fuels and transportation energy efficiency.			X
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications.	X		
(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives.			X
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects.			X
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources.			X
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawaii.			X
Discussion: The Proposed Action/Proposed Alternative supports Hawai'i's energy objectives by promoting the use of energy-efficient technologies that could reduce overall electricity demand and operation costs. By incorporating the new UV disinfection system, the facility minimizes reliance on chemical treatments, thereby reducing sufficient and reliable energy supply to support growth, while maximizing efficiency and cost-effectiveness in public infrastructure. Alternatively, a PAA disinfection system would reduce onsite energy demand but introduces the need for chemical storage, handling, and transport, shifting the balance of efficiency considerations from electricity use to chemical supply chain management. In regard to the above objective, §226-18(c)(4)(A-D), the PAA alternative would further reduce onsite electrical demand but require continuous chemical production, delivery, and monitoring, shifting energy and emissions considerations to the broader supply chain. Both systems reflect the City's intent to balance efficiency, conservation, and sustainability in wastewater infrastructure for the State.			
§226-18.5 Objectives and policies for facility systems--telecommunications. (a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people. (b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand. (c) To further achieve the telecommunications objective, it shall be the policy of this State to:			
(1) Facilitate research and development of telecommunication systems and resources.			X
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunication planning.			X

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(3) Promote efficient management and use of existing telecommunication systems and services.			X
(4) Facilitate the development of education and training of telecommunication personnel.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for facility systems related to telecommunications.			
§226-19 Objectives and policies for socio-cultural advancement--housing. (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. (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.			X
(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.			X
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.			X
(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.			X
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			X
(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.			X
(8) Promote research and development of methods to reduce the cost of housing construction in Hawai'i.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for socio-cultural advancement related to housing.			
§226-20 Objectives and policies for socio-cultural advancement--health. (a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives: (1) Fulfillment of basic individual health needs of the general public. (2) Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities. (3) Elimination of health disparities by identifying and addressing social determinants of health. (b) To achieve the health objectives, it shall be the policy of this State to:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			X
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			X
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			X
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			X
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.	X		

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement			X
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.			X
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies for socio-cultural advancement regarding health. The Proposed Action/Proposed Alternative supports public health by improving wastewater treatment and ensuring environmentally sanitary conditions. While policies related to health care delivery, insurance costs, education, and social determinants of health are not directly applicable, the Proposed Action/Proposed Alternative provides indirect benefits through reduced pathogen exposure and improved environmental quality.			
§226-21 Objective and policies for socio-cultural advancement--education. (a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations. (b) To achieve the education objective, it shall be the policy of this State to:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			X
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			X
(3) Provide appropriate educational opportunities for groups with special needs.			X
(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.			X
(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.			X
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			X
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			X
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			X
(9) Support research programs and activities that enhance the education programs of the State.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for socio-cultural advancement related to education.			
§226-22 Objective and policies for socio-cultural advancement--social services. (a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being. (b) To achieve the social services objective, it shall be the policy of this State to:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			X
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			X

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			X
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for socio-cultural advancement related to social services.			
§226-23 Objective and policies for socio-cultural advancement--leisure. (a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations. (b) To achieve the leisure objective, it shall be the policy of this State to:			
(1) Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.			X
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.			X
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.			X
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved			X
(5) Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.			X
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs			X
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai'i's people.			X
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			X
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai'i's population to participate in the creative arts.			X
(10) Assure adequate access to significant natural and cultural resources in public ownership.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for socio-cultural advancement related to leisure.			
§**226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being.** (a) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations. (b) To achieve the individual rights and personal wellbeing objective, it shall be the policy of this State to:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
(2) Uphold and protect the national and state constitutional rights of every individual.			X
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			X
(4) Ensure equal opportunities for individual participation in society.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for socio-cultural advancement related to individual rights and personal well-being.			

Table 4-1: The Hawai'i State Plan	S	NS	N/A
§226-25 Objective and policies for socio-cultural advancement--culture. (a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people. (b) To achieve the culture objective, it shall be the policy of this State to:			
(1) Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i.			**X**
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.			**X**
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.			**X**
(4) Encourage the essence of the aloha spirit in people's daily-activities to promote harmonious relationships among Hawai'i's people and visitors.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for socio-cultural advancement related to culture.			
§226-26 Objectives and policies for socio-cultural advancement--public safety. (a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives: (1) Assurance of public safety and adequate protection of life and property for all people. (2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances. (3) Promotion of a sense of community responsibility for the welfare and safety of Hawai'i's (b) To achieve the public safety programs objectives, it shall be the policy of this State to:			
(1) Ensure that public safety programs are effective and responsive to community needs.			**X**
(2) Encourage increased community awareness and participation in public safety programs.			**X**
(c) To achieve the public safety programs objectives, it shall be the policy of this State to:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			**X**
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			**X**
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			**X**
(d) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war related, natural, or technological disasters and civil disturbances at all times.			**X**
(2) Enhance the coordination between emergency management programs throughout the State.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact any of the objectives and policies outlined above for socio-cultural advancement related to public safety.			
§226-27 Objectives and policies for socio-cultural advancement--government. (a) Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives: (1) Efficient, effective, and responsive government services at all levels in the State. (2) Fiscal integrity, responsibility and efficiency in the state government and county governments. (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.	**X**		
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.			**X**
(3) Minimize the size of government to that necessary to be effective.			**X**

Table 4-1: The Hawai'i State Plan	S	NS	N/A
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawai'i.			X
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.	X		
(6) Provide for a balanced fiscal budget.			X
(7) Improve the fiscal budgeting and management system of the State.			X
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			X
Discussion: The Proposed Action/Proposed Alternative supports the following objectives and policies for socio-cultural advancement with regard to government. The Proposed Action/Proposed Alternative ensures environmentally healthful and sanitary conditions, enhancing pathogen removal in treated effluent; it provides a necessary public service; and it demonstrates government responsiveness to community health and environmental concerns through improved wastewater treatment.			

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*."

Table 4-2: Part III of the Hawai'i State Plan	S	NS	N/A
§226-103 Economic priority guidelines. (a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawai'i's people and achieve a stable and diversified economy:			
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.			X
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			X
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.	X		
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			X
(5) Streamline the building and development permit and review process, and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where public health, safety, and welfare would not be adversely affected.			X
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawai'i's small-scale producers, manufacturers, and distributors.			X
(7) Continue to seek legislation to protect Hawai'i from transportation interruptions between Hawai'i and the continental United States.			X
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics: (a) An industry that can take advantage of Hawai'i's unique location and available physical and human resources. (b) A clean industry that would have minimal adverse effects on Hawai'i's environment.			X

Table 4-2: Part III of the Hawai'i State Plan	S	NS	N/A
(c) An industry that is willing to hire and train Hawai'i's people to meet the industry's labor needs. (d) An industry that would provide reasonable income and steady employment.			
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawai'i business.			X
(10) Enhance the quality of Hawai'i's labor force and develop and maintain career opportunities for Hawai'i's people through the following actions: (a) Expand vocational training in diversified agriculture, aquaculture, and other areas where growth is desired and feasible. (b) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities. (c) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired. (d) Promote career opportunities in all industries for Hawai'i's people by encouraging firms doing business in the State to hire residents. (e) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on-the-job training opportunities. (f) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			X
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			
Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawai'i's residents and visitors.			X
Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provides for adequate shoreline setbacks and beach access.			X
Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			X
Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai'i's significant natural, scenic, historic, and cultural resources.			X
Develop and maintain career opportunities in the visitor industry for Hawai'i's people, with emphasis on managerial positions.			X
Support and coordinate tourism promotion abroad to enhance Hawai'i's share of existing and potential visitor markets.			X
Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			X
Support law enforcement activities that provide a safer environment for both visitors and residents alike.			X
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			X
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai'i.			X
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			X
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			X
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			X

Table 4-2: Part III of the Hawai'i State Plan	S	NS	N/A
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			X
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			X
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawai'i's agricultural community			X
(6) Seek favorable freight rates for Hawai'i's agricultural products from interisland and overseas transportation operators.			X
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			X
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			X
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			X
(e) Priority guidelines for water use and development:			
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			X
(2) Encourage the improvement of irrigation technology and promote the use of non-potable water for agricultural and landscaping purposes.			X
(3) Increase the support for research and development of economically feasible alternative water sources.			X
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			X
(f) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			X
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			X
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			X
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			X
(g) Priority guidelines to promote the development of the information industry:			
(1) Establish an information network, with an emphasis on broadband and wireless infrastructure and capability that will serve as the foundation of and catalyst for overall economic growth and diversification in Hawaii.			X
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			X
(3) Encourage the development of small businesses in the information field such as software development; the development of new information systems, peripherals, and applications; data conversion and data entry services; and home or cottage services such as computer programming, secretarial, and accounting services.			X
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			X
(5) Encourage research activities, including legal research in the information and telecommunications fields.			X
(6) Support promotional activities to market Hawaii's information industry services.			X
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			X

Table 4-2: Part III of the Hawai'i State Plan	S	NS	N/A
Discussion: The Proposed Action/Proposed Alternative supports the objectives and policies outlined within the Hawai'i State plan for economic priority guidelines, pursuant to HRS §226-103(a)(3). The Proposed Action/Proposed Alternative provides limited direct applicability to economic policies but is generally consistent with the intent of supporting a stable and diversified economy. By improving wastewater infrastructure, the project underpins future housing and business development in 'Ewa, ensuring reliable sanitary services that are critical to long-term economic growth. While most policies are not directly applicable, the project indirectly supports clean industry practices and compliance with environmental regulations, which help create favorable conditions for economic stability.			
§226-104 Population growth and land resources priority guidelines.			
(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.			**X**
(2) Manage a growth rate for Hawai'i's economy that will parallel future employment needs for Hawai'i's people.			**X**
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.	**X**		
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			**X**
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			**X**
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			**X**
(7) Support the development of high technology parks on the neighbor islands.			**X**
(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.	**X**		
(2) Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			**X**
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			**X**
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			**X**
(5) In order to preserve green belts, give priority to state capital improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a non-contiguous new urban core.			**X**
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			**X**
(7) Pursue rehabilitation of appropriate urban areas.			**X**
(8) Support the redevelopment of Kaka'ako into a viable residential, industrial, and commercial community.			**X**
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.			**X**
(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.			**X**

Table 4-2: Part III of the Hawai'i State Plan	S	NS	N/A
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			X
(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.	X		
(13) Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.	X		
Discussion: The Proposed Action/Proposed Alternative will support the population growth and land resources priority guidelines. The Proposed Action aligns with priority guidelines related to population growth and land resources by enhancing wastewater treatment capacity to support planned growth, maintain critical infrastructure in already developed areas, and minimizing environmental impacts through the use of a chemical-free disinfection method within a previously disturbed site. Proper wastewater management is a critical aspect of infrastructure that supports and facilitates the distribution of future growth throughout the State. By efficiently utilizing land resources for essential waste disposal 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. The Proposed Alternative supports the wise use of Hawai'i's limited land resources by situating improvements entirely within the existing HNWWTP property. This approach avoids the need for new land conversion, protects shoreline and conservation areas from disturbance, and ensures that land resources remain available for future generations. Because the proposed project is inland and contained within a previously developed site, it does not encroach upon or diminish Hawai'i's shoreline, open spaces, or scenic resources, thereby maintaining the integrity of these important environmental and cultural assets. In addition, the proposed project does not require groundwater use and would not affect sustainable yield or groundwater recharge capacity.			
§226-105 Crime and criminal justice Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			X
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			X
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			X
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			X
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			X
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the objectives and policies outlined within the Hawai'i State plan related to crimes and criminal justice.			
§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.			X
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			X
(3) Improve information and analysis relative to land availability and suitability for housing.			X
(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.			X

Table 4-2: Part III of the Hawai'i State Plan	S	NS	N/A
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawai'i's people for the purchase of initial owner-occupied housing.			X
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			X
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			X
(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.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the objectives and policies outlined within the Hawai'i State plan related to affordable housing.			
§226-107 Quality education. Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement.			X
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs.			X
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force.			X
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities.			X
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for: (A) The electronic exchange of information; (B) Statewide electronic mail; and I Access to the Internet. Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives.			X
(6) Pursue the establishment of Hawai'i's public and private universities and colleges as research and training centers of the Pacific.			X
(7) Develop resources and programs for early childhood education.			X
(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education.			X
(9) Strengthen and expand educational programs and services for students with special needs.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the objectives and policies outlined within the Hawai'i State plan related to quality education.			
§226-108 Sustainability. Priority guidelines and principles to promote sustainability:			
(1) Encouraging balanced economic, social, community, and environmental priorities.			X
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State.	X		
(3) Promoting a diversified and dynamic economy.			X
(4) Encouraging respect for the host culture.	X		
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.	X		
(6) Considering the principles of the ahupua'a system.	X		
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai'i.	X		
Discussion: The Proposed Action will support the priority guidelines related to sustainability by promoting responsible planning that respects Hawaii's natural resource limits and enhances environmental stewardship. By utilizing a chemical-free UV disinfection system within an existing facility footprint, the project supports sustainable wastewater management that meets current public health needs without compromising those of future generations. Additionally, it			

Table 4-2: Part III of the Hawai'i State Plan	S	NS	N/A
reflects key traditional values embodied in the ahupua'a system by protecting downstream ecosystems and reinforcing the shared responsibility of government and community to achieve a sustainable Hawaii. The Proposed Alternative supports the State's sustainability objectives by improving wastewater treatment within the existing HNWWTP footprint, balancing community infrastructure needs with environmental protection. The project respects Hawai'i's natural resource limits by avoiding expansion into undeveloped lands, enhancing effluent quality to safeguard coastal waters, and protecting resources important to Native Hawaiian cultural practices. By strengthening critical public facilities today, the project meets current needs while ensuring that water resources and public health are protected for future generations, in keeping with the principles of sustainability and the ahupua'a system.			
§226-109 Climate change adaptation. Priority guidelines for climate change adaptation:			
(1) Ensure that Hawaii's people are educated, informed, and aware of the impacts climate change may have on their communities.			**X**
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies.	**X**		
(3) Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State.			**X**
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change.			**X**
(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change.			**X**
(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments.	**X**		
(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.	**X**		
(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.			**X**
(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans.			**X**
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.			**X**
Discussion: The Proposed Action/Proposed Alternative will support the priority guidelines related to climate change adaptation. As discussed under Section 3.1.2 (Observed Climate Change), the development and operation of the Proposed Action is not anticipated to directly contribute to or substantially impact climate change or climate change related conditions at or within the vicinity of the Project Area. The Proposed Action represents an adaptive strategy that enhances the treatment plant's ability to respond to climate-related stressors, such as changes in water quality or increased risks to public health. By incoporating sustainable and robust technology, the Proposed Action helps to moderate potential environmental harm and supports long-term sector resilience in the face of evolving climate conditions. The Proposed Alternative is consistent with the State's climate change adaptation guidelines by protecting coastal waters and marine ecosystems that help buffer the impacts of climate change. While the project does not directly conduct education or climate research, it contrinutes to adaptation by reducing pollutant loads to Mamala Bay, supporting the resilience of natural resources such as coral reefs and nearshore waters. Through environmental review and consultation, the project also provides opportunities for stakeholder input and incorporates values aligned with Native Hawaiian stewardship practices.			

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.

Table 4-3: Hawai'i State Functional Plans		S	NS	N/A
1	**Agricultural State Functional Plan (1991)**			
Purpose: Continued viability of agriculture throughout the State.				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Agricultural State Functional Plan.				
2	**Conservation Lands State Functional Plan (1991)**			
Purpose: Addresses issues of population and economic growth and its strain on current natural resources; broadening public use of natural resources while protecting lands and shorelines from overuse; additionally, promotes the aquaculture industry.				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Conservation Lands State Functional Plan.				
3	**Education State Functional Plan (1989)**			
Purpose: Improvements to Hawai'i's educational curriculum, quality of educational staff, and access to adequate facilities.				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Education State Functional Plan.				
4	**Employment State Functional Plan (1990)**			
Purpose: Improve the qualifications, productivity, and effectiveness of the State's workforce through better education and training of workers as well as efficient planning of economic development, employment opportunities, and training activities.				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Employment State Functional Plan				
5	**Energy State Functional Plan (1991)**			
Purpose: Lessen the reliance on petroleum and other fossil fuels in favor of alternative sources of energy so as to keep up with the State's increasing energy demands while also becoming a more sustainable island state; achieving dependable, efficient, and economical statewide energy systems.				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Energy State Functional Plan.				
6	**Health State Functional Plan**			
Purpose: Improve the health care system by providing for those who do not have access to private health care providers; increasing preventative health measures; addressing 'quality of care' elements in private and public sectors to cut increasing costs.				**X**
Discussion: The Health State Functional Plan is not directly applicable to the Proposed Action/Proposed Alternative.				
7	**Higher Education Functional Plan (1984)**			
Purpose: Prepare Hawai'i's citizens for the demands of an increasingly complex world through providing technical and intellectual tools.				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Higher Education Functional Plan.				
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				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Historic Preservation State Functional Plan.				
9	**Housing State Functional Plan (1989)**			
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				**X**
Discussion: The Housing State Functional Plan is not directly applicable to the Proposed Project.				

Table 4-3: Hawai‘i State Functional Plans		S	NS	N/A
10	**Human Services State Functional Plan (1991)**			
Purpose: Refining support systems for families and individuals by improving elderly care, increasing preventative measures to combat child/spousal abuse and neglect; providing means for ‘self-sufficiency’				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Human Services State Functional Plan.				
11	**Recreation State Functional Plan (1991)**			
Purpose: Manage the use of recreational resources via addressing issues: (1) ocean and shoreline recreation, (2) mauka, urban, and other recreation, (3) public access to shoreline and upland recreation areas, (4) resource conservation and management, (5) management of recreation programs/facilities/areas, and (6) wetlands protection and management.				**X**
Discussion: The Proposed Action/Proposed Alternative is not directly applicable to the Recreation State Functional Plan and does not involve provision or management of recreational facilities, programs, or shoreline access, and therefore is not directly applicable to this functional plan. However, by improving effluent disinfection and protecting coastal water quality in Mamala Bay, the project provides indirect support for safe shoreline recreation and the conservation of recreational resources.				
12	**Tourism State Functional Plan (1991)**			
Purpose: Balance tourism/economic growth with environmental and community concerns; development that is cognizant of the limited land and water resources of the islands; maintaining friendly relations between tourists and community members; development of a productive workforce and enhancement of career and employment opportunities in the visitor industry.				**X**
Discussion: The Proposed Project is not directly applicable to the Tourism State Functional Plan.				
13	**Transportation State Functional Plan (1991)**			
Purpose: Development of a safer, more efficient transportation system that also is consistent with planned physical and economic growth of the state; construction of facility and infrastructure improvements; develop a transportation system balanced with new alternatives; pursue land use initiatives which help reduce travel demand.				**X**
Discussion: The Proposed Action is not directly applicable to the Transportation State Functional Plan.				

4.1.3 Chapter 205, HRS, State Land Use Law

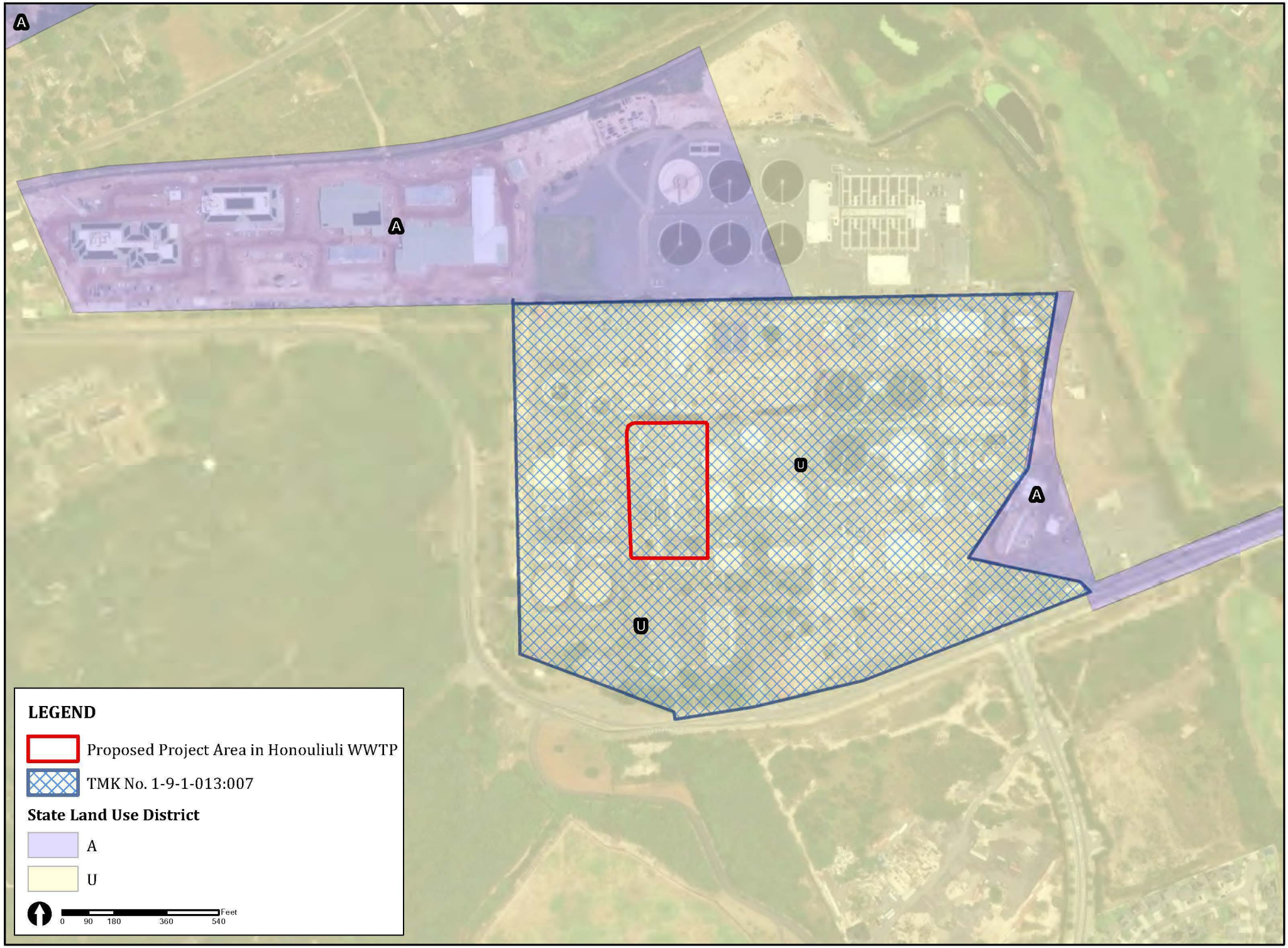
The State Land Use Law, Chapter 205, HRS, is intended to preserve, protect and encourage the development of lands in the State for uses that are best suited to the public health and welfare of Hawai‘i’s people. Under Chapter 205, HRS, all lands in the State of Hawai‘i are classified by the State Land 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 for the Proposed Action/Proposed Alternative is situated within an Urban District (See Figure 4-1). The Urban District is generally characterized by “city-like” concetrations of people, structures, and services. This may also include vacant land used for future development. The jurisdictionof the Urban District lies primarily with the County. In general, lot sizes and uses permitted in the district area are established by the County through ordinances or rules. Thus, the purpose and intent of the Proposed Action (UV) or Proposed Alternative (PAA) falls into the acceptable usage of the State Land Use districts.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 4-1 CITY AND COUNTY OF HONOLULU STATE LAND USE MAP



4.1.4 Hawai'i Coastal Zone Management Program

The National Coastal Zone Management (CZM) Program was created through passage of the CZM 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/Proposed Alternative conformance with the ten objectives and numerous policies of the State of Hawai'i CZMP is set forth in Table 4-4 below. The Proposed Action/Proposed Alternative is not located within the Special Management Area (SMA) as designated by the CCH. Therefore, no SMA permits are required for the Proposed Action/Proposed Alternative.

Table 4-4: Hawai'i Coastal Zone Management Act	S	NS	N/A
Recreational Resources			
Objective: Provide coastal recreational opportunities accessible to the public.			
Policies			
(A) Improve coordination and funding of coastal recreational planning and management; and			**X**
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:			
i. Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;			**X**
ii. Requiring restoration of coastal resources that have significant recreational and ecosystem value, including, but not limited to, coral reefs, surfing sites, fishponds, sand beaches, and coastal dunes, when these resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when restoration is not feasible or desirable;			**X**
iii. Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			**X**
iv. Providing an adequate supply of shoreline parks and other recreational facilities suitable public recreation;			**X**
v. Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;	**X**		
vi. Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;	**X**		
vii. Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and			**X**
viii. Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting that dedication against the requirements of section 46-6.			**X**
Discussion: The Proposed Action/Proposed Alternative is generally consistent with the objectives and policies of the Hawai'i CZM Act for recreational resources. While the Proposed Action does not directly provide recreational facilities or shoreline access, it indirectly supports recreational opportunities by improving water quality in coastal areas, ensuring safer conditions for swimming, surfing, fishing, and other ocean activities. By improving disinfection of effluent discharged to Mamala Bay, the project supports CZM objectives to protect coastal water quality and marine ecosystems. The project will comply with applicable CZM requirements and is not located in an SMA. Objectives relating to shoreline access, parks, or new recreational facilities are not applicable.			

Table 4-4: Hawai‘i Coastal Zone Management Act	S	NS	N/A
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;	**X**		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and			**X**
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies of the Hawai'i CZM Act for historic resources and prehistoric resources in the coastal zone management area, significant in Hawaiian and American history and culture. Because no location in Hawai‘i is more than 30 miles from the ocean, the CZM area encompasses the entire State. Accordingly, land-based activities are recognized as having a direct influence on the quality of coastal waters and associated marine resources. As discussed in Section 3.6 (Historic and Archaeological Resources), Honua Consultants prepared an ALRA report for the Proposed Action to identify and analyze resources. No significant impacts on historic and archaeological resources in the region are anticipated. In addition, no historic or archaeological sites have been previously identified within the Project Area. The addition of the Proposed Alternative was not assessed under the ALRA. The footprint of the Proposed Alternative would be the same as the Proposed Action.			
Scenic and Open Space Resources			
Objective: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.			
Policies			
(A) Identify valued scenic resources in the coastal zone management area;			**X**
(B) Ensure that new developments are compatible with their visual environment by designing and locating those developments to minimize the alteration of natural land forms and existing public views to and along the shoreline;	**X**		
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and			**X**
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies of the Hawai'i Coastal Zone Management Act for scenic and open space resources. It does not introduce new visual impacts or alter shoreline views, as construction is confined to the existing HNWWTP.			
Coastal Ecosystems			
Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.			
Policies			
(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;	**X**		
(B) Improve the technical basis for natural resource management;	**X**		
(C) Preserve valuable coastal ecosystems of significant biological or economic importance, including reefs, beaches, and dunes;	**X**		
(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and	**X**		
(E) Promote water quantity and quality planning and management practices that reflect the tolerance of freshwater and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support plans and policies regarding coastal zone management. The Project Area is not located within an SMA zone. By upgrading the HNWWTP to include UV disinfection or PAA disinfection, both processes directly enhance water quality and protect marine ecosystems, particularly reefs and nearshore habitats. While they do not involve new management plans for research, the project implements best-available technology to minimize disruption and safeguard Hawai‘i’s coastal ecosystems.			
Economic Uses			
Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.			

Table 4-4: Hawai'i Coastal Zone Management Act	S	NS	N/A
Policies			
(A) Concentrate coastal dependent development in appropriate areas;			**X**
(B) Ensure that coastal dependent development and coastal related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts in the coastal zone management area; and			**X**
(C) Direct the location and expansion of coastal development to areas designated and used for that development and permit reasonable long-term growth at those areas, and permit coastal development outside of presently designated areas when:			**X**
i. Use of designated locations is not feasible;			**X**
ii. Adverse environmental effects and risks from coastal hazards are minimized; and			**X**
iii. The development is important to the State's economy;			**X**
Discussion: The Proposed Action/Proposed Alternative will have no significant impact on the objectives and policies of the Hawai'i CZM Act for economic resources.			
Coastal Hazards			
Objective: Reduce hazard to life and property from coastal hazards.			
Policies			
(A) Develop and communicate adequate information about the risks of coastal hazards;			**X**
(B) Control development, including planning and zoning control, in areas subject to coastal hazards;	**X**		
(C) Ensure that developments comply with requirements of the National Flood Insurance Program; and	**X**		
(D) Prevent coastal flooding from inland projects.			**X**
Discussion: The Proposed Action/Proposed Alternative 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/Proposed Alternative. The Project Site is not located along the shoreline. Additionally, it is situated within the Tsunami Safe Zone, according to the Tsunami Evacuation Zone maps for O'ahu. Because the Project Site is located outside of the mapped tsunami evacuation areas, it is not expected to be directly impacted by tsunami inundation. As discussed in Section 3.4.2, Flood Insurance Rate Maps (FIRM) for the area, prepared by the Federal Emergency Management Agency (FEMA), designates the northern portion of Project Site within Zone X and the remaining parcel designated as Zone D. Regardless of the Flood Zone designation, BMPs are recommended. Project design and construction will comply with applicable floodplain management requirements under FEMA's National Flood Insurance Program (NFIP) and CCH flood hazard regulations.			
Managing 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;			**X**
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and			**X**
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.			**X**
Discussion: The Proposed Action/Proposed Alternative will have no significant impact on the objectives and policies of the Hawai'i CZM Act for managing development. Both the Proposed Action/Proposed Alternative will occur within an existing, previously developed inland facility and does not involve coastal development or management of coastal resources or hazards. Therefore, this objective is not applicable to the Proposed Action or Proposed Alternative. 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/Proposed			

Table 4-4: Hawai'i Coastal Zone Management Act	S	NS	N/A
Alternative and seek relevant public comment on subjects of concern for EA documentation. The filing and publication of this Draft EA with the State of Hawai'i, Office of Planning and Sustainable Development (OPSD) Environmental Review Program (ERP), 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 Project. The Early Consultation/Pre-Assessment Package for the Proposed Action was mailed out on May 27th, 2025, to the following agencies, organizations, and stakeholders listed in Section 7.1 under Early Consultation.			
Public Participation			
Objective: Stimulate public awareness, education, and participation in coastal management.			
Policies:			
(A) Promote public involvement in coastal zone management processes;	**X**		
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and	**X**		
(C) Organize workshops, policy dialogues, and site-specific mitigation to respond to coastal issues and conflicts.			**X**
Discussion: The Proposed Action/Proposed Alternative will support the objectives and policies of the Hawai'i CZM Act for public participation. 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 Project. Comments and responses will be included in the Final EA. If deemed necessary by 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 Chapter 7 for a list of the agencies, organizations and individuals that have been consulted for the Proposed Action. As mentioned in Chapter 1, the Proposed Alternative (PAA) was taken into consideration by the City, after the distribution of the Early Consultation Package (ECP).			
Beach and Coastal Dune Protection			
Objective: (A) Protect beaches and coastal dunes for: (i)Public use and recreation; (ii) The benefit of coastal ecosystems; and (iii) Use as natural buffers against coastal hazards; and (B) Coordinate and fund beach management and protection.			
Policies:			
(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;			**X**
(B) Prohibit construction of private shoreline hardening including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities; and			**X**
(C) Minimize the construction of public shoreline hardening structures including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;			**X**
(D) Minimize grading of and damage to coastal dunes;			**X**
(E) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and			**X**

Table 4-4: Hawai'i Coastal Zone Management Act	S	NS	N/A
(F) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.			X
Discussion: The Proposed Action/Proposed Alternative will have no significant impact on the objectives and policies of the Hawai'i CZM Act for beach and coastal dune protection. The Proposed Action/Proposed Alternative is generally not applicable to beach protection policies, as it does not involve shoreline structures, dunes, or beach transit corridors. However, because it is located inland at the HNWWTP facility, the project is consistent with policy intent to keep new structures away from the shoreline setbacks. Indirectly, the Proposed Action/Proposed Alternative supports coastal recreation by improving nearshore water quality, which benefits beaches and shorelines users.			
Marine and Coastal Resources			
Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.			
Policies			
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;	X		
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;	X		
(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;			X
(D) Promote research, study, and understanding of ocean and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources; and			X
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.	X		
Discussion: The Proposed Action/Proposed Alternative will have no significant impact on the objectives and policies of the Hawai'i CZM Act for marine and coastal resources. The Proposed Action/Proposed Alternative is generally consistent with the marine and coastal resources' objective and policies. While it is not a marine resource development or research project, both the UV and PAA disinfection system enhances wastewater treatment, thereby reducing potential impacts to marine waters. Implementation of either system requires coordination with the DOH CWB and other regulatory agencies to ensure effective and efficient management of discharges to Mamala Bay. In addition, both systems reflect the application of modern wastewater treatment technologies that contribute to safeguarding marine and coastal resources.			

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.

Table 4-5: Hawai'i Environmental Policy Act	S	NS	N/A
§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:			
(1) Population			
(A) Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation.	X		
(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.			X
Discussion: The Proposed Action/Proposed Alternative will support the Hawai'i Environmental Policy Act's objectives regarding population.			

Table 4-5: Hawai'i Environmental Policy Act	S	NS	N/A
While it does not regulate population levels, the UV system would help mitigate environmental impacts linked to population growth in the service area. Enhanced pathogen inactivation reduces the risk of water quality degradation in Mamala Bay as urban development increases wastewater flows. The PAA system similarly strengthens the facility's capacity to handle population-driven wastewater demands by improving effluent quality and minimizing future degradation of coastal waters.			
(2) Land, water, mineral, visual, air, and other natural resources			
(A) Encourage management practices which conserve and fully utilize all-natural resources.	**X**		
(B) Promote irrigation and wastewater management practices which conserve and fully utilize vital water resources.	**X**		
(C) Promote the recycling of wastewater.			**X**
(D) Encourage management practices which conserve and protect watersheds and water sources, forest, and open space areas.	**X**		
(E) Establish and maintain natural area preserves, wildlife preserves, forest reserves, marine preserves, and unique ecological preserves.			**X**
(F) Maintain an integrated system of state land use planning which coordinates the state and county general plans.	**X**		
(G) Promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized.			**X**
Discussion: The Proposed Action/Proposed Alternative will support the Hawai'i Environmental Policy Act's objectives regarding land, water, mineral, visual, air, and other natural resources. The Proposed Action aligns with efforts to conserve and fully utilize natural resources by improving wastewater treatment efficiency and protecting vital water resources. The upgrade contributes to the conversation and protection of watershed and water sources by reducing contaminants in discharged water, thereby supporting the health of downstream ecosystems. While construction may temporarily affect land, air, and water resources, these impacts are expected to be minimal and managed appropriately. The Proposed Alternative also strengthens effluent treatment; this contributes to the conservation of coastal and water resources and helps safeguard Malama Bay from further degradation. It is also consistent with broader land use planning objectives that call for the efficient use of urban lands to meet public facility needs. Although it does not directly involve preserve management or solid waste programs, the PAA system indirectly supports future water recycling efforts by improving the quality of treated effluent.			
(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.	**X**		
(B) Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.			**X**
Discussion: The Proposed Action/Proposed Alternative will support the Hawai'i Environmental Policy Act's objectives regarding Flora and fauna. As described in detail in Section 3.5 (Biological Resources), the flora and fauna species found in the vicinity of the Project Area is consistent with the highly altered environment; therefore, the Proposed Action is not anticipated to have adverse impacts on flora and fauna. However, measures to prevent adverse effects to protected species will be in place to ensure that construction activities will not result in the permanent displacement of flora and fauna. Additionally, according to the biological survey report for the project area, no endangered or threatened plant species were identified. Similarly, no endangered species or threatened mammals or birds were observed on the property. While no new species will be introduced, construction and operational activities will continue to follow the BMPs to minimize any potential disturbance to existing wildlife and habitat. Overall, the Proposed Action aligns with the goals of protecting indigenous species by maintaining and improving environmental conditions downstream. As mentioned in Chapter 1, the Proposed Alternative (PAA) was taken into consideration by the City, after the distribution of the Early Consultation Package (ECP) and was not assessed under the Biological Survey Report completed by AECOS Inc. The Proposed Alternative would be located within the same footprint as the Proposed Action though.			
(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.			**X**

Table 4-5: Hawai‘i Environmental Policy Act	S	NS	N/A
(B) Protect the shorelines of the State from encroachment of artificial improvements, structures, and activities.	X		
(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.			X
Discussion: The Proposed Action/Proposed Alternative will support the Hawai‘i Environmental Policy Act’s objectives regarding Parks, recreation, and open space. Although HNWWTP and the Proposed Action/Proposed Alternative are not directly located on the shoreline, the facility discharges treated effluent that ultimately affects coastal waters. By improving effluent disinfection through UV and PAA technology, the project helps protect nearshore marine environments from contamination. This supports shoreline protection goals by reducing potential adverse impacts on coastal water quality. However, the Proposed Action/Proposed Alternative does not involve direct shoreline development or encroachment.			
(5) Economic development			
(A) Encourage industries in Hawai‘i which would be in harmony with our environment.	X		
(B) Promote and foster the agricultural industry of the State; and preserve and conserve productive agricultural lands.			X
(C) Encourage federal activities in Hawai‘i to protect the environment.	X		
(D) Encourage all industries including the fishing, aquaculture, oceanography, recreation, and forest products industries to protect the environment.	X		
(E) Establish visitor destination areas with planning controls which shall include but not be limited to the number of rooms.			X
(F) Promote and foster the aquaculture industry of the State; and preserve and conserve productive aquacultural lands.			X
Discussion: The Proposed Action/Proposed Alternative supports the Hawai‘i Environmental Policy Act’s objectives regarding Economic development by promoting industries that operate in harmony with the environment. By improving the effluent quality and enabling safer wastewater reuse, the Proposed Action indirectly fosters sustainable agriculture and conserves valuable water resources. Additionally, both the UV and PAA disinfection systems are consistent with policies that encourage industries in harmony with the environment by protecting coastal water quality. They align with federal and statement environmental protection efforts through compliance with NPDES and DOH standards. Both systems also safeguard marine and coastal water quality, which supports the sustainability of industries such as fishing, aquaculture, and recreation.			
(6) Transportation			
(A) Encourage transportation systems in harmony with the lifestyle of the people and environment of the State.			X
(B) Adopt guidelines to alleviate environmental degradation caused by motor vehicles.			X
(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.			X
Discussion: The Proposed Action/Proposed Alternative is not anticipated to affect the Hawai‘i Environmental Policy Act’s objectives regarding Transportation. Although construction activities may involve vehicle emissions and noise temporarily, the Proposed Action/Proposed Alternative does not include transportation system planning or policy adoption aimed at energy conservation or pollution reduction from vehicles. The Proposed Action/Proposed Alternative is not anticipated to alter traffic flow.			
(7) Energy			
(A) Encourage the efficient use of energy resources.	X		
Discussion: The Proposed Action/Proposed Alternative will support the Hawai‘i Environmental Policy Act’s objectives regarding Energy. The Proposed Action is an energy-efficient technology that optimizes UV dosage to effectively treat effluent to levels meeting NPDES requirements.			
(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.			X
(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.			X

Table 4-5: Hawai'i Environmental Policy Act	S	NS	N/A
(C) Encourage the reduction of environmental pollution which may degrade a community.			X
(D) Foster safe, sanitary, and decent homes.			X
(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.			X
Discussion: The Proposed Action/Proposed Alternative is not anticipated to affect the Hawai'i Environmental Policy Act's objectives regarding Community life and housing.			
(9) Education and culture			
(A) Foster culture and the arts and promote their linkage to the enhancement of the environment.			X
(B) Encourage both formal and informal environmental education to all age groups.			X
Discussion: The Proposed Action/Proposed Alternative is not anticipated to affect the Hawai'i Environmental Policy Act's objectives regarding Education and culture.			
(10) Citizen participation			
(A) Encourage all individuals in the State to adopt a moral ethic to respect the natural environment; to reduce waste and excessive consumption; and to fulfill the responsibility as trustees of the environment for the present and succeeding generations.			X
(B) Provide for expanding citizen participation in the decision-making process so it continually embraces more citizens and more issues.	X		
Discussion: The Proposed Action/Proposed Alternative will support the Hawai'i Environmental Policy Act's objectives regarding Citizen participation. The Proposed Action/Proposd Alternative aligns with the goal of fostering environmental stewardship by contributing to improve water quality and supporting sustainable resource management. Additonally, the Draft EA process encourages and provides opportunities for expanded citizen participation, allowing community members to review the project, provide input, and voice concerns. This process supports transparency and inclusivity in environmental engage in decision-making.			

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 Project 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:

Table 4-6: City and County of Honolulu: General Plan – Objectives and Policies	**S**	**NS**	**N/A**
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.			**X**
2. Provide adequate support facilities to accommodate future numbers of visitors to O‘ahu while seeking to minimize disruption to residents and protect the natural environment.			**X**
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.			**X**
4. Establish geographic growth boundaries to accommodate future population growth while at the same time protecting valuable agricultural lands, environmental resources, and open space.			**X**
5. Support family planning and social equity.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective A of Section I of the CCH’s General Plan related to population.			
Objective B. To establish a pattern of population distribution that will allow the people of O‘ahu 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.			**X**
2. Encourage development within the secondary urban center at Kapolei and the ‘Ewa and Central O‘ahu urban-fringe areas to relieve developmental pressures in the remaining urban-fringe and rural areas and to meet housing needs not readily provided in the primary urban center.			**X**
3. Manage land use and development in the urban-fringe and rural areas so that: a. Development is contained within growth boundaries; and b. Population densities in all areas remain consistent with the character, culture, and environmental qualities desired for each community.			**X**
4. Direct growth according to Policies 1, 2, and 3 above by providing development capacity and needed infrastructure to support a distribution of O‘ahu's resident population.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective B of Section I of the CCH’s General Plan related to population distribution.			
II. **Economic Activity**			
Objective A. To promote diversified economic opportunities that enable all the people of O‘ahu to attain meaningful employment and a decent standard of living.			
1. Support a strong, diverse, and dynamic economic base that protects the natural environment and is resilient to changes in global conditions.			**X**
2. Encourage the viability of businesses and industries, including support for small businesses, which contribute to the economic and social well-being of O‘ahu resident.			**X**
3. Pursue opportunities to grow and strategically develop non-polluting industries such as healthcare, agriculture, renewable energy, and technology in appropriate locations that contribute to O‘ahu’s long-term environmental, economic, and social sustainability.			**X**
4. Support entrepreneurship and innovation through creative efforts such as partnerships with businesses and non-profit organizations, and by encouraging complementary policies that support access to capital markets.			**X**

5. Foster a healthy business climate by streamlining regulatory processes to be transparent, predictable, and efficient.			**X**
6. Encourage the development of local, national, and world markets for the products of O'ahu-based industries.			**X**
7. Explore and encourage alternate economic models that reflect traditional cultural values and improve economic resilience, i.e., subsistence, barter and a culture of reciprocity and sharing.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective A of Section II of the City and County of Honolulu's General Plan related to economic activity.			
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. Encourage the visitor industry to support the quality of the visitor experience, the economic and social well-being of communities, the environment, and the quality of life of residents.			**X**
2. Respect and emphasize the value that Native Hawaiian culture, its cultural practitioners, and other established ethnic traditions bring to enrich the visitor experience and appreciation for island heritage, culture, and values.			**X**
3. Guide the development and operation of visitor accommodations and attractions in a manner that avoids unsustainable increases in the cost of providing public services and infrastructure, and that respects existing lifestyles, cultural practices, and natural, cultural, and historic resources.			**X**
4. Partner with the private sector to support the long-term viability of Waikīkī as a world-class visitor destination and as O'ahu's primary resort area, and to support adequate adaptation strategies against climate change impacts.			**X**
5. Provide related public expenditures for rural and urban-fringe areas that are highly impacted by the visitor industry.			**X**
6. Provide for a high-quality, livable, and safe environment for visitors and residents in Waikīkī, and support measures to ensure visitors' and residents' safety in all areas of O'ahu.			**X**
7. Concentrate on the quality of the visitor experience in Waikīkī, rather than on development densities.			**X**
8. Facilitate the development of the following secondary resort areas: Ko 'Olina, Turtle Bay, Hoakalei, and Mākaha Valley in a manner that respects existing lifestyles and the natural environment			**X**
9. Preserve scenic qualities of O'ahu for residents and visitors alike.			**X**
10. Encourage physical improvements, social services, and cultural programs that contribute to a high-quality visitor experience, while seeking financial support of these improvements from the visitor industry.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective B of Section II of the CCH's General Plan related to the viability of Oahu's visitor industry.			
Objective C. To ensure the long-term viability, continued productivity, and sustainability of agriculture on O'ahu			
1. Foster a positive business climate for agricultural enterprises of all sizes, as well as innovative approaches to farming as a business, to ensure the continuation of agriculture as an important component of O'ahu's economy			**X**
2. Support agricultural diversification to strengthen the agricultural industry and make more locally grown food available for local consumption.			**X**
3. Foster market opportunities and increased consumer demand for safe, locally grown, fresh, processed, and value-added agricultural products.			**X**
4. Streamline the implementation of regulations to enhance a producer's ability to develop, market, and distribute locally grown food and products.			**X**
5. Identify the economic benefits of local food production for local markets. Provide economic incentives to encourage local food production and sustainability, and encourage agricultural and aquaculture occupations.			**X**
6. Promote small-scale farming activities and other operations, such as truck farming, flower growing, aquaculture, livestock production, taro growing, subsistence farms, and community gardens.			**X**

7. Encourage landowners to actively use agricultural lands for agricultural purposes, and to pursue the long-term preservation of agricultural land with high productivity potential for agricultural production.			**X**
8. Encourage sustainable agricultural production to coexist on lands with renewable energy generation.			**X**
9. Prohibit the urbanization of agricultural land located outside the City's growth boundaries.			**X**
10. Support and encourage technologies and agricultural practices that conserve and protect water, soil, air quality, and drainage areas, reduce carbon emissions, and promote public health and safety.			**X**
11. Support and encourage the availability and use of non-potable water for irrigation, where feasible			**X**
12. Provide plans, incentives, and strategies to ensure the affordability of agricultural land for farmers.			**X**
13. Encourage both public and private investments to improve and expand agricultural infrastructure, such as irrigation systems, agricultural processing centers, and distribution networks.			**X**
14. Promote farming as a desirable and fulfilling occupation by encouraging agricultural education and training programs and by raising public awareness and appreciation for agriculture.			**X**
15. Protect the right to farm by enforcing right-to-farm laws, enacting policies to protect agricultural operations, and imposing meaningful buffer zones.			**X**
16. Seek ways to discourage agricultural theft and vandalism.			**X**
17. Recognize the scenic value of agricultural lands as an open-space resource and amenity.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective C of Section II of the CCH's General Plan related to the viability of agriculture on O'ahu.			
Objective D. To use the economic resources of the sea in a sustainable manner.			
1. Encourage the fishing industry to maintain its viability at a level that does not degrade or damage marine ecosystems.			**X**
2. Encourage the ongoing development of aquaculture, ocean research, and other ocean related industries.			**X**
3. Encourage the expansion of ocean recreation activities for residents and visitors that are operated in a sustainable manner.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective D of Section II of the CCH General Plan related to economic resources of the sea.			
Objective E. To ensure meaningful employment and economic equity.			
1. Support public and private training and employment programs to prepare residents for existing and future jobs, including those for historically marginalized communities.	**X**		
2. Make full use of State and Federal employment and training programs.			**X**
3. Encourage the provision of retraining programs for workers in industries with planned reductions in their labor force.			**X**
4. Identify emerging industries, encourage investments needed to support the industries, and develop a skilled workforce in these fields.			**X**
Discussion: The Proposed Action/Proposed Alternative will support Objective E of Section II the CCH General Plan related to employment and economic equity. In the short-term, project construction expenditures will confer positive benefits on the local economy. These benefits would be derived from the creation of construction and construction support jobs as well as revenues generated by the procurement of building supplies and materials. In the long-term, once the Proposed Project/Proposed Alternative are operational, they will require personnel to manage and maintain the facilities. This includes staff for waste offloading, facility attendants, equipment operators, administrative personnel, and more. The Proposed Project/Proposed Alternative will create employment opportunities for the local workforce, offering jobs that support ongoing waste management operations.			
Objective F. To maintain federal programs and economic activity on O'ahu consistent with the City's infrastructure and environmental goals.			
1. Take full advantage of Federal programs and grants which will contribute to the economic and social well-being of O'ahu's residents.			**X**

2. Encourage the Federal government to pay for the cost of public services used by Federal agencies.			**X**
3. Encourage the Federal government to lease new facilities rather than construct them on tax-exempt public land.			**X**
4. Encourage the military to purchase locally all needed services and supplies which are available on Oʻahu .			**X**
5. Encourage the continuation of a high level of military-related employment both on and off base in the Hickam-Pearl Harbor, Wahiawā, Kailua-Kāneʻohe, and ʻEwa areas.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective F of Section II of the CCH General Plan related to economic activity as the Proposed Project/Proposed Alternative does not involve any federal funds.			
Objective G. To bring about orderly economic growth on Oʻahu.			
1. Concentrate economic activity and government services in the primary urban center and in the secondary urban center at Kapolei.			**X**
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			**X**
3. Maintain sufficient land in appropriately located commercial and industrial areas to help ensure a favorable business climate on Oʻahu.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective G of Section II of the CCH General Plan related to economic activity.			
III. **Natural Environment**			
Objective A. To protect and preserve the natural environment.			
1. Protect Oʻahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.	**X**		
2. Seek the restoration of environmentally damaged areas and natural resources.	**X**		
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.	**X**		
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	**X**		
5. Require sufficient setbacks from Oʻahu's shorelines to protect life and property, preserve natural shoreline areas and sandy beaches, and minimize the future need for protective structures or relocation of structures.			**X**
6. Design and maintain surface drainage and flood-control systems in a manner which will help preserve natural and cultural resources.			**X**
7. Protect the natural environment from damaging levels of air, water, carbon, and noise pollution.	**X**		
8. Protect plants, birds, and other animals that are unique to the State of Hawaiʻi and the Island of Oʻahu.	**X**		
9. Increase tree canopy and ensure its integration into new developments, and protect significant trees on public and private lands.			**X**
10. Increase public awareness, appreciation, and protection of Oʻahu's land, air, and water resources.	**X**		
11. Support the State and federal governments in the protection of the unique environmental, marine, cultural and wildlife assets of the Northwestern Hawaiian Islands.			**X**
12. Plan, prepare for, and mitigate the impacts of climate change on the natural environment, including strategies of adaptation.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the Objective A of Section III of the CCH General Plan related to natural environment. The Proposed Action supports protecting Oʻahu's natural environment by being located entirely within the disturbed HNWWTP boundary, avoiding impacts to shorelines, and sensitive areas. It improves effluent quality, helping restore marine and aquatic resources, and is designed with flood hazard considerations in mind. Shoreline setbacks, tree canopy, and wildlife assets of the Northwestern Hawaiian Islands (NWHI) policies are not applicable.			

The Proposed Alternative also supports this objective, as it is also confined to the existing HNWWTP and improves water quality. Proper management of residuals is important to avoid discharge impacts. Like UV, it considers flood hazards and is not subject to shoreline setback requirements. Policies on tree canopy and the NWHI are not applicable.			
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.	**X**		
2. Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas.	**X**		
3. Locate and design public facilities, infrastructure and utilities to minimize the obstruction of scenic views.	**X**		
4. Protect and expand public access to the natural and coastal environment for recreational, educational, and cultural purposes, and maintain access in a way that does not damage natural, historic, or cultural resources.			**X**
Discussion: The Proposed Action/Proposed Alternative will support Objective B of Section III of the CCH General Plan related to the natural environment. As mentioned in Section 3.3.3, Wetlands, the Proposed Action/Proposed Alternative is not anticipated to result in significant adverse impacts to wetlands in proximity to the Project Area. The UV system supports this objective by improving effluent quality to protect coastal and marine resources while avoiding any obstruction of scenic views, since construction remains within HNWWTP. Public access policies are not applicable. As discussed in Section 3.14 (Visual Resources and Aesthetic), the Proposed Action/Proposed Alternative is not expected to have significant long-term impacts on the natural landmarks and scenic views of O'ahu. The PAA system also supports this objective by protecting water quality and natural resources, with the caveat of residual monitoring. Like UV, it is confined to HNWWTP, avoids impacts on scenic views, and does not affect public access.			
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.			**X**
2. Streamline approval and permit procedures, in a transparent manner, for housing and other development projects.			**X**
3. Encourage innovative residential developments that result in lower costs, sustainable use of resources, more efficient use of land and infrastructure, greater convenience and privacy, and a distinct community identity.			**X**
4. Support and encourage programs to maintain and improve the condition of existing housing.			**X**
5. Make full use of government programs that provide assistance for low- and moderate-income renters and homebuyers.			**X**
6. Maximize local funding programs available for affordable housing.			**X**
7. Provide financial and other incentives to encourage the private sector to build homes for low- and moderate-income residents.			**X**
8. Encourage and participate in joint public-private development of low- and moderate-income housing.			**X**
9. Encourage the replacement of low- and moderate-income housing in areas which are being redeveloped at higher densities.			**X**
10. Promote the design and construction of dwellings which take advantage of O'ahu's year-round moderate climate and use other sustainable design techniques.			**X**
11. Encourage the construction of affordable homes within established low-density and rural communities by such means as 'ohana units, duplex dwellings, and cluster development that embraces the 'ohana concept by maintaining multi-generational proximity for local families			**X**
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.			**X**
13. Encourage the production and maintenance of affordable rental housing.			**X**

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.			X
15. Encourage equitable relationships between landowners and leaseholders, between landlords and tenants, and between condominium developers and owners.			X
16. Support collaborative partnerships that work toward immediate solutions to house and service homeless populations and also toward long-term strategies to prevent and eliminate homelessness.			X
17. Support programs to address all facets of homelessness, so that every homeless person has a place to stay, along with the infrastructure and support services that are needed.			X
Discussion: The Proposed Action/Proposed Alternative will not impact Objective A of Section IV of the CCH General Plan related to housing.			
Objective B. To minimize speculation in land and housing.			
1. Encourage the State government to coordinate its urban-area designations with the developmental policies of the City.			X
2. Discourage speculation in lands outside of areas planned for urban use, reduce the prevalence of vacant dwelling units, and reduce the use of residential dwelling units for short-term vacation rentals			X
3. Seek public benefits from increases in the value of land owing to City and State developmental policies and decisions.			X
4. Require government-assisted housing to be delivered to qualified purchasers and renters.			X
5. Ensure that owners of housing properties, including government-subsidized housing, maintain housing affordability over the long term			X
Discussion: The Proposed Action/Proposed Alternative will not impact Objective B of Section IV of the CCH General Plan related to housing.			
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.			X
2. Encourage the fair distribution of low- and moderate-income housing throughout the island.			X
3. Encourage the co-location of residential development and employment centers with commercial, educational, social, and recreational amenities in the development of desirable communities.			X
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			X
5. Support mixed-use development and higher-density redevelopment in areas surrounding rail transit stations.			X
6. Discourage residential development in areas where the topography makes construction difficult or hazardous, where sea level rise and flooding are a hazard, and where providing and maintaining roads, utilities, and other facilities would be extremely costly or environmentally damaging.			X
7. Encourage public and private investments in older communities as needed to keep the communities vibrant and livable.			X
8. Encourage the military to provide housing for active duty personnel and their families on military bases and in areas turned over to military housing contractors.			X
Discussion: The Proposed Action/Proposed Alternative will not impact Objective C of Section IV of the CCH General Plan related to housing.			
V. **Transportation & 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.			
1. Develop a comprehensive, well-connected and integrated ground transportation system that reduces carbon emissions and enables safe, comfortable and convenient travel for all users, including motorists, pedestrians, bicyclists, and public transportation users of all ages and abilities			X

2.	Provide multi-modal transportation services to people living within the ‘Ewa, Central O‘ahu, and Pearl City-Hawai‘i Kai corridors primarily through a mass transit system including exclusive right-of-way rail transit and feeder-bus components as well as through the existing highway system.			**X**
3.	Provide multi-modal transportation services outside the ‘Ewa, Central O‘ahu, and Pearl City-Hawai‘i Kai corridors primarily through a system of express- and feeder-buses as well as through the highway system with limited to moderate improvements sufficient to meet the needs of the communities being served.			**X**
4.	Work with the State to ensure adequate and safe access for communities served by O‘ahu's coastal highway system, and to plan for the relocation of highways and roads subject to sea level rise away from coastlines			**X**
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.			**X**
6.	Support the development of transportation plans, programs, and facilities that are based on Complete Streets features. Maintain and improve road, bicycle, pedestrian, and micromobility facilities in existing communities to eliminate unsafe conditions.			**X**
7.	Design street networks to incorporate greater roadway and pathway connectivity.			**X**
8.	Make transportation services safe and accessible to people with limited mobility: the young, elderly, disabled, and those with limited incomes			**X**
9.	Consider environmental, social, cultural, and climate change and natural hazard impacts, as well as construction and operating costs, as important factors in planning transportation system improvements			**X**
10.	Reduce traffic congestion and maximize the efficient use of transportation resources by pursuing transportation demand management strategies such as carpooling, telecommuting, flexible work schedules, and incentives to use alternative travel modes.			**X**
11.	Enhance pedestrian-friendly and bicycle-friendly travel via public and private programs and improvements.			**X**
12.	Maintain separate aviation facilities for general aviation operations to supplement the capacity of the Daniel K. Inouye International Airport.			**X**
13.	Support improvements to Kalaeloa Barbers Point Harbor as O‘ahu’s second deep-water harbor.			**X**
14.	Support the operation, maintenance and improvement of Honolulu Harbor as O‘ahu’s primary cargo and ocean transportation hub.			**X**
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.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective A of Section V of the CCH General Plan related to transportation and utilities.				
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.				
1.	Develop and maintain an adequate, safe, and reliable supply of fresh water in a cost-effective way that supports the long-term sustainability of the resource and considers the impacts of climate change.			**X**
2.	Help to develop and maintain an adequate, safe, and reliable supply of water for agricultural and industrial needs in a resource-integrated and cost-effective way that supports the long-term health of the resource.			**X**
3.	Use technologies that provide water, waste disposal, and recycling services at a reasonable cost and in a manner that addresses environmental and community impacts.	**X**		
4.	Encourage the increased availability and use of recycled or brackish water to meet nonpotable demands.			**X**
5.	Pursue strategies and programs to reduce the per capita consumption of water and the per capita production of waste.			**X**
6.	Provide safe, reliable, efficient, and environmentally sound waste-collection, waste-disposal, and recycling services that consider the near- and long-term impacts of climate change during the siting and construction of new facilities.	**X**		

7.	Pursue programs to expand on-island recycling and resource recovery from O'ahu's solid-waste and wastewater streams.			**X**
8.	Support initiatives that educate the community about the importance of conserving resources and reducing waste streams through reduction, reuse, and recycling.			**X**
9.	Require the safe use and disposal of hazardous materials.	**X**		

Discussion: The Proposed Action/Proposed Alternative will support Objective B of Section V of the CCH General Plan related to water resources and waste disposal.

The Proposed Action will significantly improve wastewater processing and disinfection. Effluent that is processed will be significantly healthier on a microbial scale, minimizing bacterial, fungal, and viral threats within the discharge.

The Proposed Alternative supports O'ahu's water and waste management objectives by using disinfection technology that addresses environmental and community impacts, improving the reliability of wastewater treatment in the face of climate change, and ensuring the safe handling of hazardous materials.

As discussed in Section 3.12 (Hazardous Materials), 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 Project will be disposed properly. Design features specific to the reduction of the potential effects of hazardous spills will be implemented, where appropriate.

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

1.	Maintain and upgrade utility systems in order to avoid major breakdowns and service interruptions.	**X**		
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.	**X**		
3.	Facilitate timely and orderly upgrades and expansions of utility systems.	**X**		
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.	**X**		

Discussion: The Proposed Action/Proposed Alternative will support Objective C of Section V of the CCH General Plan related to utilities.

The Proposed Action/Proposed Alternative will contribute to the overall efficiency and reliability of the waste management utility system, reducing the risk of major breakdowns and service interruptions. In addition, both the UV and PAA disinfection systems demonstrate an effort to facilitate the orderly expansion and upgrade of the waste management utility system. By improving the waste management facilities and practices, the proposed project 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 O'ahu as a desirable place to live and visit.

1.	Provide adequate resources to ensure the maintenance and improvement of transportation systems and utilities.	**X**		
2.	Evaluate the social, cultural, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.	**X**		
3.	Require the installation of underground utility lines wherever feasible.			**X**
4.	Seek improved taxing powers for the City in order to provide a more equitable means of financing transportation and utility services.			**X**
5.	Evaluate impacts of sea level rise on existing public infrastructure, especially sewage treatment plants, roads, and other public and private utilities located along or near O'ahu's coastal areas, and avoid the placement of future public infrastructure in threatened areas.	**X**		

Discussion: The Proposed Action/Proposed Alternative will support Objective D of Section V of the CCH General Plan related to transportation and utilities.

The social, cultural, economic, and environmental impacts of the Proposed Action/Proposed Alternative are evaluated in Chapter 3 and mitigation measures are described where applicable. Mitigation measures may include the identification of alternative routes to access the site. On a broader policy level, new information will continually need to be incorporated within future assessments to identify where efforts should be focused when developing adaptation strategies to SLR impacts. It is anticipated that the Proposed Action/Proposed Alternative 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.			
VI. **Energy**			
Objective A. To increase energy self-sufficiency through renewable energy and maintain an efficient, reliable, resilient, and cost-efficient energy system.			
1. Encourage the implementation of a comprehensive plan to guide and coordinate energy conservation and renewable energy development and utilization programs.			**X**
2. Support and encourage programs and projects, including economic incentives, regulatory measures, and educational efforts, and seek to eliminate O'ahu's dependence on fossil fuels.			**X**
3. Ensure access to an adequate reserve of fuel and energy supplies to aid disaster response and recovery			**X**
4. Support the increased use of solid waste energy recovery and other biomass energy conversion systems			**X**
5. Support and participate in research, development, demonstration, commercialization, and optimization programs aimed at developing cost-effective and environmentally sound renewable energy supplies.			**X**
6. Support State and federal initiatives to utilize renewable energy sources.			**X**
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			**X**
8. Encourage and equitably incentivize the use of commercially available renewable energy systems in public facilities, institutions, residences, and business developments.			**X**
9. Consider health, safety, environmental, cultural, and aesthetic impacts, as well as resource limitations, land use patterns, and relative costs in all major decisions on renewable energy.			**X**
10. Work closely with the State and federal governments in the formulation and implementation of all City energy-related programs and regulations, including updating building energy codes.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective A of Section VI of the CCH General Plan related to energy.			
Objective B. To conserve energy through the more efficient management of its use and through more energy-efficient technologies.			
1. Ensure that the efficient use of energy is a primary factor in the preparation and administration of land use plans and regulations.			**X**
2. Provide incentives and, where appropriate, mandatory controls to achieve energy-efficient and sustainable siting and design of new developments. Support the increased use of nationally recognized energy efficiency and resource conservation rating and certification systems.			**X**
3. Provide incentives and, where appropriate, mandatory controls to reduce energy consumption in existing buildings and outdoor facilities, and in design and construction practices.			**X**
4. Promote the development of a multi-modal transportation system that minimizes and seeks to eliminate fossil fuel consumption and greenhouse gas emissions.			**X**
5. Encourage the implementation of an adaptable and reliable electrical grid, energy transmission, energy storage, microgrids, and energy generation technologies.			**X**
6. Support the availability and use of energy efficient vehicles, especially hybrid, fuel cell, and pure electrical vehicles.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective B of Section VI of the CCH General Plan related to energy.			
Objective C. To foster an ethic of energy conservation that inspires residents to engage in sustainable practices			
1. Provide citizens with the information they need to fully understand severe climate change, supply chain issues, costs, security, and other issues associated with O'ahu's dependence on imported fossil fuels.			**X**
2. Increase consumer awareness of available renewable energy sources and their costs and benefits.			**X**

3. Provide information concerning the impact of public and private decisions on future energy generation, transmission, storage, and use.			**X**
4. Provide communities with timely, relevant, and accurate information concerning renewable energy facilities proposed in their area, and ensure adequate buffer zones required for health or safety.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective C of Section VI of the CCH General Plan related to energy.			
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.			**X**
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.	**X**		
3. Require new developments to provide or pay the cost of all essential community services, including roads, utilities, schools, parks, and emergency facilities that are intended to directly serve the development.			**X**
4. Facilitate and encourage compact, higher-density development in urban areas designated for such uses.			**X**
5. Encourage the establishment of mixed-use town centers that are compatible with the physical and social character of their community			**X**
6. Facilitate transit-oriented development in rail transit station areas to create live/work/play multi-modal communities that reduce travel and traffic congestion			**X**
7. Encourage the clustering of development to reduce the cost of providing utilities and other public services.	**X**		
8. Locate new industries and new commercial areas so that they will be well-related to their markets and suppliers, and to residential areas and transportation facilities			**X**
9. Locate community facilities on sites that will be convenient to the people they are intended to serve			**X**
10. Discourage uses which are major sources of noise, air, and light pollution	**X**		
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.	**X**		
12. Prohibit new airfields, high-powered electromagnetic-radiation sources, and storage places for fuel and explosives from locating on sites where they will endanger or disrupt nearby communities.			**X**
13. Promote opportunities for the community to participate meaningfully in planning and development processes, including new forms of communication and social media.			**X**
Discussion: The Proposed Action/Proposed Alternative will support Objective A of Section VII of the CCH General Plan related to physical development and urban design. The impacts on nearby water, wastewater, drainage, electrical, and communication systems have been evaluated under Section 3.17 (Infrastructure and Utilities). Communication and coordination with the appropriate agencies will be conducted prior to the development of the Proposed Action/Proposed Alternative. 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/Proposed Alternative will 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 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.	**X**		
2. Coordinate plans in the private and public sectors that support research, monitoring, and educational programs on climate change.			**X**
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	**X**		
Discussion: The Proposed Action/Proposed Alternative 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/Proposed Alternative will be appropriately designed to take into consideration the context of the surrounding environment and 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/Proposed Alternative 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.			**X**
2. Encourage the development of attractive residential communities in downtown and other business centers.			**X**
3. Maintain and improve downtown as the financial and office center of the island, and as a major retail center			**X**
4. Provide for the continued viability of the Hawai'i Capital District as a center of government activities and as an attractive park-like setting in the heart of the city.			**X**
5. Encourage the development of attractive residential communities in downtown and other business centers.			**X**
6. 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.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective C of Section VII of the CCH General Plan related to physical development and urban design.			
Objective D. To develop a secondary urban center in Ewa with its nucleus in the Kapolei area.			
1. Support public projects that are needed to facilitate development of the secondary urban center at Kapolei.			**X**
2. Encourage the development of a major residential, commercial, and employment center within the secondary urban center at Kapolei.			**X**
3. Encourage the continuing development of the area encompassing Campbell Industrial Park, Kalaeloa Barbers Point Harbor, and West Kapolei as a major industrial center.			**X**
4. Coordinate plans for the development of the secondary urban center at Kapolei with the State and federal governments, major landowners and developers, and the community.			**X**
5. Cooperate with the State and federal governments in the improvements to the deep-water harbor at Kalaeloa Barbers Point.			**X**
6. Encourage the development of the Ocean Pointe/Hoakalei Communities as a major residential and recreation area emphasizing recreational activities and a waterfront commercial center containing light-industrial, commercial, and visitor accommodation uses.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective D of Section VII of the CCH General Plan related to physical development and urban design.			
Objective E. To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live.			
1. Develop and maintain urban-fringe areas as predominantly residential areas characterized by generally lower-rise, lower-density development which may include significant levels of retail and service commercial uses as well as satellite institutional and public uses geared to serving the needs of households.			**X**
2. Coordinate plans for developments within the 'Ewa and Central O'ahu urban-fringe areas with the State and federal governments, major landowners and developers, agricultural industries, and the community.			**X**
3. Maintain a "green belt" of open space and agricultural land around developed communities in the 'Ewa and Central O'ahu areas of O'ahu.			**X**
4. Maintain rural areas that reflect an open and scenic setting, dominated by small to moderate size agricultural pursuits, with small towns of low-density and low-rise character, and which allows modest growth opportunities tailored to address area residents' future needs			**X**
5. Encourage the development of a variety of housing choices including affordable housing in rural communities, to give people the choice to continue to live in the community that they were raised in.			**X**

6. Ensure the social and economic vitality of rural communities by supporting infill development and modest increases in heights and densities around existing rural town areas where feasible to maintain an adequate supply of housing for future generations.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective E of Section VII of the CCH General Plan related to physical development and urban design.			
Objective F. To create and maintain attractive, meaningful, and stimulating environments throughout O'ahu.			
1. Encourage distinctive community identities for both new and existing communities and neighborhoods.			**X**
2. Require the consideration of urban design principles in all development projects.			**X**
3. Require developments in stable, established communities and rural areas to be compatible with the existing communities and areas.	**X**		
4. Provide design guidelines and controls that will allow more compact development and intensive use of lands in the primary urban center and along the rail transit corridor.			**X**
5. Seek to protect residents' quality of life and to maintain the integrity of neighborhoods by strengthening regulatory and enforcement strategies that address the presence of inappropriate non-residential activities.			**X**
6. Promote public and private programs to beautify the urban and rural environments.			**X**
7. Design public structures to meet high aesthetic and functional standards and to complement the physical character of the communities they will serve.	**X**		
8. Design public street networks to be safe and accessible for users of all ages and abilities, to accommodate multiple modes of travel to be visually attractive and to support sustainable ecological processes, such as stormwater infiltration.			**X**
9. Recognize the importance of using Native Hawaiian plants in landscaping to further the traditional Hawaiian concept of mālama 'āina and to create a more Hawaiian sense of place.			**X**
Discussion: The Proposed Action/Proposed Alternative will support Objective F of Section VII of the CCH General Plan related to creating and maintaining an attractive, meaningful, and stimulating environment. The Proposed Action/Proposed Alternative will not adversely affect the visual resources of the area. As mentioned in Section 3.14 (Visual and Aesthetic Resources), regardless of which process is implemented, anticipated indirect impacts to visual aesthetics are associated with upgrades and improvements to the treatment system to allow future developments (residential, commercial, and industrial) in the sewer basin to connect to the existing wastewater system. Both the UV and PAA systems support O'ahu's community design objectives by ensuring that improvements remain compatible with the existing HNWWTP site and by meeting high functional standards that protect public health and serve the surrounding community.			
Objective G. To promote and enhance the social and physical character of O'ahu's older towns and neighborhoods.			
1. Encourage new construction in established areas to be compatible with the character and cultural values of the surrounding community.			**X**
2. Encourage, wherever desirable, the rehabilitation of existing substandard structures.			**X**
3. Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.			**X**
4. Seek the satisfactory relocation of residents before permitting their displacement by new development, redevelopment, or neighborhood rehabilitation.			**X**
5. Acknowledge the cultural and historical significance of kuleana lands, the ancestral ownership of kuleana lands, and promote policies that preserve and protect kuleana lands.			**X**
6. Support and encourage cohesive neighborhoods which foster interactions among neighbors, promote vibrant community life, and enhance livability.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective G of Section VII of the CCH General Plan related to physical development and urban design.			
VIII. **Public Safety**			
Objective A. To prevent and control crime and maintain public order.			
1. Provide a safe environment for residents and visitors on O'ahu.			X
2. Provide adequate, safe, and secure criminal justice facilities.			**X**

3. Provide adequate training, staffing, and support for City public safety agencies.			**X**
4. Emphasize improvements to police and prosecution operations which will result in a higher proportion of wrongdoers who are arrested, convicted, and punished for their crimes.			**X**
5. Support policies and programs that expand access to treatment, rehabilitation, and reentry programs for adult and juvenile offenders			**X**
6. Keep the public informed of the nature and extent of criminal activity on O'ahu.			**X**
7. Establish and maintain programs to encourage public cooperation in the prevention and solution of crimes, and promote strong community-police relationships.			**X**
8. Seek the help of State and federal law-enforcement agencies to curtail the activities of organized crime syndicates on O'ahu.			**X**
9. Conduct periodic reviews of criminal laws to ensure their relevance to the community's needs and values.			**X**
10. Cooperate with other law-enforcement agencies to develop new methods of addressing crime. Support communication and coordination across federal, State and City law enforcement and corrections agencies.			**X**
11. Encourage the improvement of rehabilitation programs and facilities for criminals and juvenile offenders.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective A of Section VIII of the CCH General Plan related to 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.	**X**		
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.	**X**		
3. Participate with State and federal agencies in the funding and construction of flood control projects, and prioritize the use of ecologically sensitive flood-control strategies whenever feasible.	**X**		
4. Collaborate with State and federal agencies to provide emergency warnings, protection, mitigation, response, and recovery, during and after major emergencies such as tsunamis, hurricanes, and other high-hazard events.	**X**		
5. Cooperate with State and federal agencies to provide protection from war, civil disruptions, pandemics, and other major disturbances.	**X**		
6. Reduce hazardous traffic conditions.	**X**		
7. Provide adequate resources to effectively prepare for and respond to natural and manmade threats to public safety, property, and the environment.	**X**		
8. Foster disaster-ready communities and households through implementation of resilience hubs and other resiliency strategies.	**X**		
9. Plan for the impacts of climate change and sea level rise on public safety, in order to minimize potential future hazards.	**X**		
10. Develop emergency management plans, policies, programs, and procedures to protect and promote public health, safety, and welfare of the people.	**X**		
11. Provide educational materials on emergency management preparedness, fire protection, traffic hazards, and other unsafe conditions.	**X**		
Discussion: The Proposed Action/Proposed Alternative 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 safety standards to ensure the security of public health and the protection of workers during construction and through day-to-day operations. In addition, the FEMA FIRM flood hazard parameters to avoid new risks in coastal and flood-prone areas will be implemented. The system will be integrated into HNWWTP's emergency management plans, with coordination among DOH, EPA, FEMA, and other agencies to maintain reliable operation during disasters. By improving effluent quality, the project protects public health and reduces environmental threats under both normal and hazard conditions. Construction activities are confined within HNWWTP to minimize traffic hazards, and the system strengthens long-term resiliency of wastewater infrastructure against climate change and sea level rise.			

The Proposed Alternative also supports this objective by meeting CCH requirements and OSHA/HIOSH standards, with stricter protocols for chemical handling, storage, secondary containment, spill prevention, ventilation, eyewash/shower stations, worker safety protocols and hazard communicating training. It is designed in compliance with FEMA FIRM flood hazard parameters and includes safeguards to protect chemical storage areas from inundation or disruption. The system will be incorporated into HNWWTP's emergency management plans, requiring close coordination with DOH Hazard Evaluation and Emergency Response (HEER) Office, EPA, HIOSH, and other agencies to address potential chemical standards during disasters. By improving effluent quality, the PAA system protects public health and the environment, while contingency planning is necessary to ensure chemical supply chain continuity during climate events, pandemics, or civil disruptions. Construction impacts are confined within the WWTP, but recurring chemical supply deliveries create an ongoing traffic consideration, and the system contributes to long-term resiliency with increased focus on secure chemical logistics.			
IX. Health and Education			
Objective A. To protect the health and well-being of residents and visitors.			
1. Encourage the provision of health-care facilities that are accessible to both employment and residential centers.			**X**
2. Provide prompt and adequate ambulance and first-aid services in all areas of O'ahu.			**X**
3. Coordinate City health codes and other regulations with State and federal health codes to facilitate the enforcement of air-, water-, and noise-pollution controls.	**X**		
4. Integrate public health concerns such as air and water pollution as a consideration in land use planning decisions.	**X**		
5. Encourage healthy lifestyles by supporting opportunities that increase access to and promote consumption of fresh, locally grown foods.			**X**
6. Encourage healthy lifestyles through walkable and livable communities, safe street crossings, safe routes to schools, and parks and pathways for pedestrians and bicyclists.			**X**
7. Support efforts to make healthcare accessible and affordable for everyone.			**X**
8. Support efforts to improve and expand access to mental health, drug treatment, community-based programs, and other similar programs for those requiring such services.			**X**
9. Support becoming an age-friendly city that provides people of all ages with user-friendly parks and other public gathering places, that offers safe streets and multi-modal transportation options, that provides an adequate supply of affordable housing, that encourages growth in needed and desirable jobs, that provides quality health-care and support services, and that encourages civic participation, social inclusion, and respect between interest groups.			**X**
10. Plan for our aging population's growing health-care, personal service, and diverse daily activity needs, and encourage these services to be provided in a timely manner, including age-specific social activities.			**X**
Discussion: The Proposed Action/Proposed Alternative will support Objective A of Section IX of the CCH General Plan related to health and education. The Proposed Action supports public health by aligning with CCH, DOH, and EPA standards for water quality and noise, aligning with health code enforcement to reduce waterborne pollution. Minimal noise and air impacts are expected during construction and will be managed under OSHA/HIOSH and CCH standards. The Proposed Alternative also supports public health objectives by complying with health codes and improving effluent quality, while requiring additional monitoring of chemical handling, storage, and discharge residual monitoring to ensure no adverse impacts on water quality in land use planning decisions.			
Objective B. To provide a wide range of educational opportunities for the people of O'ahu.			
1. Support education programs that encourage the development of employable skills.			**X**
2. Encourage the provision of informal educational programs for people of all age groups.			**X**
3. Encourage the after-hours use of school buildings, grounds, and facilities.			**X**
4. Encourage the construction of school facilities that are designed for flexibility and high levels of use			**X**
5. Facilitate the appropriate location of childcare facilities as well as learning institutions from the preschool through the university levels.			**X**

6. Encourage outdoor learning opportunities and venues that reflect our unique natural environment and Native Hawaiian culture.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective B of Section IX of the City and County General Plan related to health and education.			
Objective C. To make Honolulu the center of higher education in the Pacific.			
1. Encourage continuing improvement in the quality of higher education in Hawai'i, as well as ways to make higher education more affordable.			**X**
2. Encourage the development of diverse opportunities in higher education.			**X**
3. Encourage research institutions to establish branches on O'ahu.			**X**
4. Establish Honolulu as a knowledge center and international Pacific crossroads hub.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective C of Section IX of the CCH General Plan related to higher education.			
X. Culture and Recreation			
Objective A. To foster the multiethnic culture of Hawai'i and respect the host culture of the Native Hawaiian people.			
1. Recognize the Native Hawaiian host culture, including its customs, language, history, and close connection to the natural environment, as a dynamic, living culture and as an integral part of O'ahu's way of life.			**X**
2. Promote the preservation and enhancement of local cultures, values and traditions.	**X**		
3. Encourage greater public awareness, understanding, and appreciation of the cultural heritage and contributions to Hawai'i made by O'ahu's various ethnic groups.			**X**
4. Foster equity and increased opportunities for positive interaction among people with different ethnic, social, and cultural backgrounds.			**X**
5. Preserve the identities of the historical communities of O'ahu.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support Objective A of Section X of the CCH General Plan related to culture and recreation. The Proposed Action/Proposed Alternative support this objective by avoiding impacts to cultural or historic communities and protection the natural environment that underpins Native Hawaiian and multiethnic traditions. By improving effluent quality and safeguarding coastal resources, both alternatives indirectly preserve cultural values and practices closely tied to the 'āina and the kai. Policies related to fostering public cultural awareness and encouraging equity and social interaction are not applicable, as the project is limited to infrastructure upgrades within the existing HNWWTP footprint. Overall, both alternatives are consistent with cultural protection objectives, with the PAA system requiring added oversight to ensure safe chemical management in support of these values.			
Objective B. To protect, preserve and enhance O'ahu's cultural, historic, architectural, and archaeological resources.			
1. Promote the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.			**X**
2. Identify and, to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.	**X**		
3. Cooperate with the State and federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.	**X**		
4. Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts			**X**
5. Seek public and private funds, and encourage public participation and support, to protect, preserve and enhance social, cultural, historic, architectural, and archaeological resources.			**X**
6. Provide incentives for the restoration, preservation, maintenance, and enhancement of social, cultural, historic, architectural, and archaeological resources.			**X**
7. Encourage the protection of areas that are historically important to Native Hawaiian cultural practices and to the cultural practices of other ethnicities, in order to further preserve and continue these practices for future generations.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support Objective B of Section X of the CCH General Plan related to culture and recreation. As described in Sections 3.6 (Historic and Archaeological Resourcecs) and 3.7 (Cultural Resources and Practice), Honua Consulting prepared an ALRA report on June 2025 (See Appendix B). The ALRA is not an archaeological inventory survey			

(AIS) and did not include a field assessment. However, the ALRA has been prepared in compliance with HRS Chapter 6E-8 and the Hawai'i Administrative Rules (HAR) Chapter 13-275 and can be used to consult with SHPD to satisfy environmental review under HRS Chapter 343; and for review under Section 106 of the NHPA. According to the ALRA, no significant impacts on historic and archaeological resources in the region are anticipated.

Both the Proposed Action/Proposed Alternative are consistent with this objective by avoiding direct impacts to cultural, historic, architectural, or archaeological resources, since all work will occur within the existing HNWWTP footprint. While the project does not involve restoration, incentives, or interpretive use of cultural sites, it indirectly supports preservation goals by protecting water quality and the natural environment that sustain Native Hawaiian and multiethnic cultural practices. The PAA alternative carries an additional requirement for careful chemical monitoring and management to ensure no indirect impacts to cultural resources.

Objective C. To foster the visual and performing arts.			
1. Encourage and support programs and activities for the visual and performing arts.			**X**
2. Encourage creative expression and access to the arts by all segments of the population.			**X**
3. Provide permanent art in appropriate City public buildings and places.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact Objective C of Section X of the CCH General Plan related to culture and recreation.			
Objective D. To provide a wide range of recreational facilities and services that are readily available to residents and visitors alike, and to balance access to natural areas with the protection of those areas.			
1. Develop, maintain, and expand a community-based park system to meet the needs of the diverse communities on O'ahu.			**X**
2. Develop, maintain, and expand a system of regional parks and specialized recreation facilities, based on the cumulative demand of residents and visitors.			**X**
3. Develop, maintain, and improve urban parks, squares, and beautification areas in high-density urban place			**X**
4. Encourage public and private natural reserves and botanical and zoological parks to foster greater awareness and appreciation of the natural environment.			**X**
5. Encourage the State to develop, improve, and maintain a system of natural resource-based parks, such as beach, shoreline, and mountain parks.			**X**
6. Ensure that public recreational facilities balance the demand for facilities against capital and operating cost constraints so that they are adequately sized and properly maintained.			**X**
7. Ensure and maintain convenient and safe access to beaches, ocean environments and mauka recreation areas in a manner that protects natural and cultural resources.			**X**
8. Encourage ocean and water-oriented recreation activities that do not adversely impact the natural environment and cultural assets, or result in overcrowding or overuse of beaches, shoreline areas and the ocean.	**X**		
9. Require all new developments to provide their residents with adequate recreation space.			**X**
10. Utilize our unique natural environment in a responsible way to promote cultural events and activities, and maintain cultural practices.			**X**
11. Encourage the after-hours, weekend, and summertime use of public school facilities for recreation			**X**
12. Provide for safe and secure use of public parks, beaches, and recreation facilities.			**X**
13. Create and promote recreational venues for kūpuna and keiki and for kama'āina and malihini.			**X**
14. Encourage the State and federal governments to transfer excess and underutilized land to the City for public recreation use.			**X**

Discussion: The Proposed Action/Proposed Alternative will support Objective D of Section X of the City and County General Plan related to culture and recreation.

Both the Proposed Action/Proposed Alternative supports this recreational policy by improving water quality, thereby safeguarding the natural environment and cultural resources that underpin safe and sustainable ocean-based recreation. While the project does not provide new recreational facilities, it contributes to protecting beaches and shoreline areas from pollution and overuse impacts. The PAA alternative requires additional oversight of chemical handling to ensure these recreational benefits are fully realized.

XI. Government Operations and Fiscal Management

Objective A. To promote increased efficiency, effectiveness, and responsiveness in the provision of government services by the City and County of Honolulu.			
1. Maintain and adequately fund City government services at the level necessary to be effective.	**X**		
2. Promote alignment and consolidation of State and City functions whenever more efficient and effective delivery of government programs and services may be achieved	**X**		
3. Ensure that government attitudes, actions, and services are sensitive to community needs and concerns, and held accountable to the public trust	**X**		
4. Sufficiently fund and staff the timely preparation, maintenance, and update of public policies and plans to guide and coordinate City programs and regulatory responsibilities.	**X**		
5. Expand the adoption of technology across all City agencies to achieve greater transparency, efficiency, and accountability to the general public throughout government operations.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support Objective A of Section XI of the CCH General Plan related to government operations and fiscal management. Both the Proposed Action/Proposed Alternative supports this objective by advancing investment in wastewater treatment infrastructure that protects public health and environmental quality while improving the efficiency and effectiveness of CCH services. The projects align CCH, State, and federal regulatory efforts, strengthen accountability to the community, and are consistent with wastewater planning and funding priorities. The UV system demonstrates technology adoption with minimal operational risks, while the PAA alternative also supports this objective but requires additional planning, resources, and transparency to ensure chemical handling and supply are managed effectively and responsibly.			
Objective B. To ensure fiscal integrity, responsibility, and efficiency by the City and County government in carrying out its responsibilities.			
1. Provide for a balanced budget.	**X**		
2. Allocate fiscal resources of the City and County to efficiently implement the policies of the General Plan and Development Plans.	**X**		
3. Ensure accountability and transparency in government operations.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support Objective B of Section XI of the CCH General Plan related to government operations and fiscal management. Both the Proposed Action/Proposed Alternative supports this objective by demonstrating fiscal responsibility and aligning resource allocation with wastewater planning and environmental protection priorities. The UV system offers cost-effective long-term operations with fewer recurring expenses, while the PAA alternative requires careful budgeting for ongoing chemical procurement and safety management. Both systems uphold accountability and transparency, with UV representing a more streamlined approach and PAA necessitating added disclosure and oversight to ensure fiscal and operational integrity.			
Objective C. To achieve equitable outcomes for City programs, policies, and allocation of resources throughout the O'ahu community.			
1. Promote policies that actively address and eliminate disparate outcomes for historically underserved communities.			**X**
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.	**X**		
3. Promote adherence to processes that advance procedural, distributional, structural, intergenerational, and cultural equity within the City.			**X**
4. Provide resources for City employees to understand and actively advance equity solutions within all agencies of City government.			**X**
Discussion: The Proposed Action/Proposed Alternative will support Objective C of Section XI of the CCH General Plan related to government operations and fiscal management. Both the Proposed Action/Proposed Alternative supports this objective by ensuring equitable public health and environmental benefits across O'ahu communities. The proposed project represents fair investment in critical wastewater infrastructure and promote accountability through transparent planning and regulatory review. The UV system provides long-term sutainable benefits with fewer recurring burdens, while the PAA system supports the same objectives but requires added focus on chemical handling and disclosure to maintain equitable protections for vulnerable communities.			

4.2.2 'Ewa Development Plan (2020)

The Project Site is located within the 'Ewa Region area. It is one of eight community-based plans intended to help guide public policy, investment, and land use decision-making over the next 25 years. Each plan addresses one of eight regions of O'ahu, responding to specific conditions and community values of each region. The plans for 'Ewa and the Primary Urban Center, as the areas where the General plan says population growth and development activity is to be directed over the next 25 years, are designated as "Development Plans." The Proposed Project's conformance with the objectives and policies of the 'Ewa Development Plan is set forth in Table 4-7 below.

Table 4-7: 'Ewa Development Plan	S	NS	N/A
3. Land Use Policies and Guidelines			
3.1 Open Space Preservation and Development			
3.1.3.1 Mountain Areas			
(1) Acquire and maintain public campgrounds and support public access to hiking trails in the area *mauka* of the Community Growth Boundary on the slopes of the Wai'anae Range.			**X**
(2) Acquire and maintain public access, including vehicular access from Makakilo Drive, to trail heads and public campgrounds.			**X**
(3) Provide access to mountain trails in the Pālehua Ridge area via Pālehua Road as part of the Makaīwa Hills project.			**X**
(4) Maintain the forest at high elevations, in the State Conservation District. Plan utility corridors and other used disturbance to areas with high concentrations of native species.			**X**
(5) Identify endangered species habitats and other important ecological zones and protect them from threats such as fire, weeds, feral animals and human activity.	**X**		
(6) Identify and protect areas that are important to Native Hawaiian cultural practices.	**X**		
Discussion: The Proposed Action/Proposed Alternative will support the 'Ewa Development Plan guidelines for Open Space Preservation and Development, pertaining to mountain areas. Regarding avian faunal species, several native and special status species could potentially be affected by the construction and operation Proposed Action/Proposed Alternative. As discussed in Section 3.5 (Biological Resources), the endangered, Black-necked Stilt, the Hawaiian hoary bat, the Band-rumped storm-petrel, the Hawaiian petrel, and the Newell's shearwater are species that may overfly or utilize resources at the Project Site. Hence, overhead construction lighting would not be a concern or threat to avian potentially flying over the Project Site at night. Therefore, construction of the Proposed Action/Proposed Alternative would have minor adverse short-term impacts on these seabird species. It is recommended to protect seabirds that may overfly the Project Site, that all overhead lights installed be shielded downward to prevent casting light beams directly into the sky to mitigate long-term impacts that may result due to operation of the Proposed Project. Moreover, trees targeted for removal or trimming should be surveyed by a qualified biologist following the Federal Department of Fish and Wildlife protocol. As described in Sections 3.6 and 3.7, 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 Project would adversely impact resources currently located on the property or in adjacent areas. Should any unidentified resources be encountered during construction, all work will cease, and SHPO will be contacted for review and approval of mitigation measures.			
3.1.3.2 Natural Gulches and Drainageways			
(1) Preserve the major natural gulches on the slopes of the Wai'anae Range foothills within the Community Growth Boundary as part of the open space system.			**X**
(2) Integrate planned improvements to 'Ewa drainage systems into the regional open space network by emphasizing the use of retention basins and recreational access in the design approach.			**X**
(3) View drainageways and utility corridors as opportunities to link major open spaces with pedestrian and bike paths along open corridors in order to create the regiona open space network.			**X**
(4) Where practical, retain drainageways as natural or man-made vegetated channels rather than concrete channels.			**X**

Table 4-7: 'Ewa Development Plan	S	NS	N/A
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Open Space Preservation and Development, pertaining to natural gulches and drainageways. However, construction of the Proposed Project is anticipated to involve major land disturbing activities and applicable BMPs will be implemented to mitigate construction impacts. Applicable erosion control measures and BMPs will be implemented in order to mitigate any possible adverse effects relating to runoff are described in detail in Sections 3.3. Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the Proposed Action will not result in significant impacts with regard to surface and coastal waters. Soil disturbances in excess of one acre would require an NPDES Individual Permit for Storm Water Associated with Construction Activity, administered by the DOH, and will be required to control storm water discharges. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in HAR, Chapter 11-54 and 11-55 Water Pollution Control, DOH. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.			
3.1.3.3 Shoreline Areas			
(1) Provide public pedestrian access to the shoreline at intervals of approximately ¼ mile, except where access is restricted by the military for security reasons. To make this access usable by the public, provide adequate parking.			**X**
(2) Where a lateral public easement along the shoreline is available or planned, allow the distance between access points to be increased. However, the intervals should generally not exceed one mile and vehicular parking spaces and limited facilities for waste disposal and potable water supply should be available at the access points.			**X**
(3) Maintain and enhance near-shore wetlands and mangroves, where necessary, as wildlife habitats.			**X**
(4) Identify and protect areas that are important to Native Hawaiian cultural practices.	**X**		
(5) Coordinate private and public landowners' efforts to create continuous shoreline easements to ensure the maximum feasible degree of lateral public access.			**X**
(6) Provide lateral shoreline access along the Hoakalei coastline and a pathway providing continuous public access around the Hoakalei Marina.			**X**
(7) Provide, at minimum, a 60-foot setback along the shoreline, and, where possible, expand the setback to 150 feet where justified, based on historic or adopted projections of shoreline erosion rates.			**X**
(8) Analyze the possible impact of sea level rise for new public and private projects in shoreline areas and incorporate, where appropriate and feasible, measures to reduce risks and increase resiliency to impacts of sea level rise.			**X**
Discussion: The Proposed Action/Proposed Alternative will support the 'Ewa Development Plan guidelines for Open Space Preservation and Development, pertaining to shoreline areas. As described in Sections 3.6 and 3.7, 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 Project would adversely impact resources currently located on the property or in adjacent areas. Should any unidentified resources be encountered during construction, all work will cease, and SHPO will be contacted for review and approval of mitigation measures.			
3.1.3.4 Agricultural Areas			
(1) Permit facilities necessary to support intensive cultivation of arable agricultural lands.			**X**
(2) Permit facilities to support limited outdoor recreation use, such as camping, horseback riding and hiking, preferably in areas where agricultural use is not feasible.			**X**
(3) Permit residential use to the extent that it is accessory to the agricultural use. Where several dwellings are planned as part of an agricultural use, they should be sited and clustered to avoid the use of more productive agricultural lands and to reduce infrastructure costs.			**X**
(4) Design and locate buildings and other facilities that are accessory to an agricultural operation to minimize impacts on nearby urban areas, arterial roads, and major collector streets.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the objectives and policies outlined within the 'Ewa Development Plan guidelines for Open Space Preservation and Development, pertaining to agricultural areas.			
3.1.3.5 Parks			

Table 4-7: ʻEwa Development Plan	S	NS	N/A
(1) Develop a major regional park at Kalaeloa that provides beach-oriented recreation and support facilities near the shoreline and active recreation facilities in *mauka* areas, and preserves significant cultural resources areas and wildlife habitats such as wetlands and endangered plant colonies.			**X**
(2) Locate other beach and shoreline parks throughout the ʻEwa coastline. A beach park at the south end of the Ko Olina shoreline has been built, and it and a shoreline park at the Kahe end of Ko Olina are to be dedicated to the City at some point in the future. Oneʻula Beach Park will be expanded by 9.4 acres as part of the Ocean Pointe/Hoakalei project.			**X**
(3) Maintain prominent landforms at Puʻu O Kapolei and Puʻu Pālailais natural visual features and regional landmarks.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact on the ʻEwa Development Plan guidelines for Open Space Preservation and Development, pertaining to parks.			
3.1.3.6 Golf Courses			
(1) Locate and design golf courses to optimize their function as drainage retention areas and as buffers between developments.			**X**
(2) Consider the impact on existing and proposed regional trails, paths, and bike routes in designing new golf courses. Where necessary for these trails, paths and bike routes, provide safe corridors by or through the course.			**X**
(3) Design golf courses to provide view amenities for adjacent urban areas, including public rights-of-way.			**X**
(4) When screening is necessary for safety reasons, use landscape treatment, setbacks, and modifications to the course layout rather than fencing or solid barriers, where feasible.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the ʻEwa Development Plan guidelines for Open Space Preservation and Development, pertaining to golf courses.			
3.1.3.7 Wildland – Urban Fire Hazard Setbacks			
(1) As determined appropriate by the Honolulu Fire Department, require residential or commercial developments that are adjacent either to preservation areas within the Community Growth Boundary or to lands within the State Conservation District to provide a setback to reduce the risk of fire spreading from the "wildlands" to the developed area. Typically, such a setback would be 20 to 30 feet wide and landscaped with low growth, low-burn plantings.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the ʻEwa Development Plan guidelines for Open Space Preservation and Development, pertaining to wildland.			
3.1.3.8 Greenways and Open Space Corridors			
(1) Provide additional connectivity for bikers and pedestrians by developing the Pearl Harbor Historic Trail, which will extend for about 18.5 miles from Rainbow Marina near ʻAiea to Nānākuli. The Trail, running west on the OR&L right-of-way across the ʻEwa plain, will allow bikers and pedestrians to connect to the Trail from other access points including City parks, through the addition of scenic shared use paths in ʻEwa and Ko Olina to travel as far as Nānākuli to the west. Running east, the Trail will follow a greenbelt linking a network of shoreline parks stretching from West Loch to Rainbow Marina near Aloha Stadium. Establish the bikeway even in those sections where the railroad itself is not operational.			**X**
(2) Provide sufficient easement width for the major trunk lines and transmission and distribution lines for utility systems, when their alignment is not within a road right-of-way, to permit the growth of landscaping within and adjacent to the easement, consistent with all applicable operations, maintenance, and safety requirements.			**X**
(3) When overhead or underground transmission and distribution lines are located within or adjacent to a road right-of-way, provide sufficient width to permit the growth of landscaping adjacent to the transmission line, consistent with all applicable operations, maintenance, and safety requirements. The purpose of the landscaping is to divert attention from the overhead lines from the travel way and adjacent residential areas. Place new transmission lines underground where possible under criteria specified in State law.			**X**
(4) Permit the use of utility easements for pedestrian and bicycle routes, consistent with all applicable operations, maintenance, and safety requirements.			**X**
(5) Design the rights-of-way for major and minor arterials as landscaped parkways or greenways, complete with a landscaped median strip, landscaped sidewalks, and			**X**

Table 4-7: ‘Ewa Development Plan	S	NS	N/A
bikeways. Major arterials should have separate bike paths, and minor arterials should have bike lanes. Suggested width for major arterials, including right-of-way and planting strips, is 120 feet wide and for minor arterials is 100 feet wide.			
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Open Space Preservation and Development, pertaining to greenways and open-space corridors.			
3.2 Regional Parks and Recreation Complexes			
3.2.2.1 Appropriate Scale and Siting			
(1) Use architectural elements and siting to heighten the visibility of major recreation events areas as they are approached from principal travel corridors.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to appropriate scaling and siting.			
3.2.2.2 Environmental Compatibility			
(1) Locate and operate uses that generate high noise levels in a way that keeps noise to an acceptable level in existing and planned residential areas.			**X**
(2) To retain a sense of place, incorporate natural features of the site and use landscape materials that are indigenous to the area in the design of recreation areas where feasible.			**X**
(3) Use xeriscaping (the use of landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to environmental compatibility.			
3.2.2.3 Community Integration			
(1) Although the design of recreational attractions may have a distinct identity and entry, link these destinations with surrounding areas using connecting roadways, bikeways, walkways, landscape features or architectural design.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to community integration.			
3.2.2.4 Island-wide and Regional Parks			
(1) Develop a major park within Kalaeloa that provides beach-oriented recreation and support facilities near the shoreline, other active recreation facilities in *mauka* areas, and preserves for cultural and archaeological resources and for wildlife habitats such as wetlands and endangered plant colonies.			**X**
(2) Provide facilities for tent and cabin camping within the new park at Kalaeloa in the major recreational areas that includes a beach camping area.			**X**
(3) Develop additional beach and shoreline parks along the ‘Ewa coastline. Two existing beach parks at either end of the Ko Olina shoreline will be dedicated to the City. One‘ula Beach Park will be expanded as part of the Ocean Points/Hoakalei project.			**X**
(4) Maintain proper landforms at Pu‘u O Kapolei and Pu‘u Pālailais as natural visual features and regional landmarks.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to island-wide and regional parks.			
3.2.2.5 Sports and Recreation Complexes			
Definition of Use Areas			
(1) Separate uses that attract a high number of people for events as much as possible from residential areas and wildlife habitats.			**X**
(2) Provide amenities and service facilities to accommodate "tailgate" picnics, as well as nearby picnic tables and outdoor grills in parking areas for sporting events.			**X**
Discussion: The Proposed Project will not impact the ‘Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to sports and recreation complexes.			
Transportation Facilities			
(1) Locate bus loading areas, shelters, and bicycle parking facilities as close as possible to entry gates for special events areas.			**X**
(2) Locate bus stops at all principal activity areas.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to transportation facilities.			
Views			

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(1) Locate and design facilities for special events to be readily visible and identifiable from the principal transportation corridors that lead to them.			X
(2) Establish the visual identity of the complex through distinctive architecture, landscaping, or natural setting.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to views.			
Landscape Treatment			
(1) Minimize the visibility of perimeter fencing, parking lots and garages, and other utilitarian elements through plantings or other appropriate visual screens along roadway frontages.			X
(2) Plant canopy trees to provide shade in large parking lots. Use special paving or pavement markings to indicate pedestrian routes to destinations and differentiate sections of the parking area.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to landscape treatment.			
Natural Environment			
(1) Retain, protect, and incorporate wetland and other wildlife habitat areas as passive recreational resources.			X
Discussion: The Proposed Action/Proposed Alternative will support the 'Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to wildlife habitat areas.			
3.2.2.6 Siting			
(1) Island-wide and regional parks and golf courses are shown on the Open Space Map and the Public Facilities Maps.			X
(2) Change in location of an island-wide park or a golf course shall require a City review and approval process, such as the Plan Review Use process, which provides adequate public notice and input, completed technical analysis of the project, and approval by the City Council. Approval of changes in size and configuration may be done administratively.			X
(3) Regional sports and recreation complexes may be located in Kalaeloa, on the fringes of the City of Kapolei and in areas designated for commercial or park use, subject to a City review and approval process which provides public review and complete analysis.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Regional Parks and Recreation Complexes, pertaining to siting.			
3.3 Community-Based Parks			
3.3.2.1 Development of Community-Based Parks			
(1) Co-locate Neighborhood or Community Parks with elementary or intermediate schools and coordinate design of facilities when efficiencies in development and use of athletic, recreation, meeting, and parking facilities can be achieved, traffic impacts reduced, and pedestrian safety increased.			X
(2) Coordinate the development and use of athletic facilities such as swimming pools and gymnasiums with the State Department of Education (DOE) where such an arrangement would maximize use and reduce duplication of function.			X
(3) Where feasible, site Community and Neighborhood Parks near the center of neighborhoods, in order to maximize accessibility.			X
(4) Provide accessible pathways from surrounding streets to facilitate pedestrian and bicycle access to parks.			X
(5) Use xeriscaping (the use of landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources. Give preference to use of drought-resistant native Hawaiian plants where feasible and appropriate.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Community-Based Parks, pertaining to development of community-based parks.			
3.3.2.2 Access to Mountain Trails			
(1) Support continuation of controlled access to the Waiʻanae Range mountain trails via Pālehua Road for hiking organizations.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(2) Provide access to mountain trails in the Pālehua Ridge area via Pālehua Road as part of the Makaīwa Hills Project.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Community-Based Parks, pertaining to access to ravines and mountain trails.			
3.3.2.3 Siting			
(1) Conceptual locations for district parks are shown on the Open Space Map A. These locations may be revised without needing to amend the Development Plan as more detailed site information and planning analysis is available.			X
(2) Community and neighborhood parks are part of the open space system, but their location is determined more by community facility design considerations than by their relationship to the regional open space network. Siting of Community and Neighborhood Parks should be reviewed and decided at the time the Project Master Plan is submitted, prior to the granting of a zone change.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Community-Based Parks, pertaining to siting.			
3.4 Historic and Cultural Resources			
3.4.2.1 Sites under Review			
Adaptive Reuse			
(1) Allow historic sites to be converted from their original intended use to serve a new function if it can be done without destroying the historic value of the site, especially if its interpretative value is enhanced.			X
Accessibility			
(1) Public access to an historic site can take many forms, from direct physical contact and use to limited visual contact. Determine the degree of access based on what would best promote the preservation of the historic, cultural and educational value of the site, recognizing that economic use is sometimes the only feasible way to preserve a site. In some cases, however, it may be highly advisable to restrict access to protect the physical integrity or sacred value of the site.			X
(2) Protect the Honouliuli Internment Camp site from development until efforts to evaluate it for National Historic Register listing and for inclusion as a satellite site in the World War II Valor in the Pacific National Monument have established the value of the site and its appropriate treatment.	X		
(3) Protect the 'Ewa Marine Corps Air Field site in Kalaeloa from development while a study is done to establish the condition of the site and the appropriate treatment of historic resources at the site.			X
Discussion: The Proposed Action/Proposed Alternative will support the 'Ewa Development Plan guidelines for Historic and Cultural Resources, pertaining to sites under review. The Proposed Action/Proposed Alternative is entirely within HNWWTP and does not encroach upon or affect the Honouliuli Internment Camp site, thereby supporting its protection. Oversight of chemical handling of the Proposed Alternative (PAA) prevents indirect environmental impacts to the surrounding area.			
3.4.2.2 Impacts of Development on Historic and Cultural Resources			
Compatible Setting			
(1) The context of an historic site is usually a significant part of its value. Plan and design adjacent uses to avoid conflicts or abrupt contrasts that detract from or destroy the physical integrity and historic or cultural value of the site. The appropriate treatment should be determined by the particular qualities of the site and its relationship to its physical surroundings.	X		
Public Views			
(1) Design and site all structures, where feasible, to reflect the need to maintain and enhance available views of significant landmarks and vistas. Whenever possible, relocate or place underground overhead utility lines and poles that significantly obstruct public views, under the criteria specified in State law.	X		

Table 4-7: 'Ewa Development Plan	S	NS	N/A
Discussion: The Proposed Action/Proposed Alternative will support the 'Ewa Development Plan guidelines for Historic and Cultural Resources, pertaining to impacts of development. As discussed under Sections 3.6 (Historic and Archaeological Resources) and 3.7 (Cultural Resources and Practices) and the ALRA report prepared by Honua, no adverse impacts are anticipated to result from the Proposed Action/Proposed Alternative to historical or archaeological resources. In addition, construction of the Proposed Action/Proposed Alternative will not disturb traditional sacred sites or traditional cultural objects; will not result in the degradation of resources used by Native Hawaiians for subsistence or traditional cultural practices; will not obstruct culturally significant landforms or way-finding features; and will not result in loss of access to the shoreline or other areas customarily used by Native Hawaiians or others for resource gathering or traditional cultural practices. Should any unidentified archaeological 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. Although due to the lack of new subsurface activity, no such encounters are anticipated.			
3.4.2.3 OR&L Historic Railway			
Method of Preservation			
(1) Maintain or repair the existing track to the extent feasible in order to permit its use for historic and educational rides.			**X**
(2) Extend the route from 'Ewa villages to Nānākuli.			**X**
(3) To allow connectivity within the region, accommodate cross-traffic at appropriate intervals along the right-of-way, and at sufficient distances from one another to prevent impeding normal locomotive operations.			**X**
Adaptive Reuse			
(1) Encourage use of the railroad to promote the history and culture of the area.			**X**
(2) Develop a parallel paved pedestrian path/bikeway along the length of the rail route, either within or adjacent of the right-of-way as part of the Pearl Harbor Historic Trail, even those sections where the railroad itself is not operational. The pedestrian path/bikeway should be designed so as not to interfere with historic railway operations.			**X**
Adjacent Uses			
(1) Design structures and elements related to the Pearl Harbor Historic Trail to reflect the historic nature of the railway and its surroundings.			**X**
(2) Set back new development a minimum of 50 feet on either side of the OR&L right-of-way, unless it is either directly related to the operation of the railroad, or reconstruction of an historic use, or is consistent with the use of the right-of-way for open space and shared pedestrian path/bikeway purposes in stretches where railroad operation is not feasible, or is otherwise specified in existing land use approvals.			**X**
(3) Provide landscaping along the adjacent path, with occasional rest stops with seating and other amenities.			**X**
(4) Permit railroad station platforms, maintenance and equipment buildings, kiosks and other accessory structures with a historic architectural theme (late 19th Century – early 20th Century), as well as parking and loading areas in the railroad right-of-way and setback area.			**X**
(5) Roadway and transit facilities should be designed to have minimal impact on historic railway operations.			**X**
Public Access			
(1) Encourage public use by continuing and expanding the historic railway operations, providing a parallel shared pedestrian path/bikeway, and by providing greater connectivity by connecting the Trail to City parks and other access points through the addition of scenic shared use paths in 'Ewa and Ko Olina.			**X**
(2) Post interpretative signs along the route to explain the historic significance of the railroad and note points of interest.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for the OR&L Historic Railway.			
3.4.2.4 Lanikūhonua			
Methods of Preservation			
(1) Maintain the appearance of the house and grounds as closely as possible to its present condition.			**X**

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(2) Maintain the landscaped character of the grounds and their physical and visual relationship to the shoreline environment.			X
(3) Perpetuate the sense of place by using site for Hawaiian cultural events.			X
Adaptive Reuse			
(1) Focus use of the site on the landscaped grounds as a location for outdoor events, particularly those with a Hawaiian cultural theme.			X
(2) Limit commercial use of the site to be occasional rather than intensive, and events to low-key entertainment.			X
Architectural Character			
(1) Require modifications to the existing structures to respect the architectural style of the original dwelling and be limited to repairs, rehabilitation or minor expansions.			X
(2) Require coconut palms to be the dominant tree on the grounds, with other complementary coastal vegetation, preferably native species such as hala and 'ilima.			X
(3) Maintain the visual relationship between the grounds and the shoreline, particularly the natural cove.			X
Adjacent Uses			
(1) Maintain a dense growth of landscaping to visually separate Lanikūhonua from the surrounding Ko Olina resort to retain the quiet ambiance and appearance of a remote tropical retreat.			X
(2) Maintain the visual identity of Lanikūhonua as a unique site apart from Ko Olina by retaining the dense growth of tall palm trees.			X
(3) Provide public access along the shoreline fronting Lanikūhonua, but not in as formal a manner as Ko Olina.			X
Public Access			
(1) Maintain Lanikūhonua as a private facility with limited public access for scheduled community and cultural events and private parties.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Lanikūhonua.			
3.4.2.5 Native Hawaiian Cultural and Archaeological Sites			
Method of Preservation			
(1) Determine appropriate delineation of site boundaries and setbacks and restrictions for adjacent uses on a site-by-site basis in consultation with the State Historic Preservation Officer.			X
(2) Include the sight lines that are significant to the original purpose and value of the site as criteria for adjacent use restrictions.			X
Adjacent Uses			
(1) Encourage use of the railroad to promote the history and culture of the area.			X
(2) Develop a parallel paved pedestrian path/bikeway along the length of the rail route, either within or adjacent to the right-of-way as part of the Pearl Harbor Historic Trail, even in those sections where the railroad itself is not operational. (3) The pedestrian path/bikeway should be designated so as not to interfere with historic railway operations.			X
Public Access			
(1) Determine the appropriateness of public access on a site-by-site basis in consultation with the State Historic Preservation Officer, Hawaiian cultural organizations and the owner of the land on which the site is located.			X
Discussion: The Proposed Action/Proposed Alternative will not impact any Native Hawaiian cultural, historic, and archaeological sites.			
3.5 Natural Resources Protection			
Water Conservation			
(1) Conserve potable water.			X
Endangered Species			
(1) Protect valuable habitat for waterbirds and other endangered animals and plants.	X		
(2) Protect endangered fish and invertebrates in sinkholes.			X
(3) Clean up contaminated areas that pose hazards to soil and water quality, especially in Kalaeloa.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(4) Require surveys for proposed new development areas to identify endangered species habitat, and require appropriate mitigations for adverse impacts on endangered species due to new development.	X		
Light Pollution			
(1) Reduce light polution's adverse impact on wildlife and human health and its unnecessary consumption of energy by using, where sensible, fully shielded lighting fixtures using lower wattage.			X
Discussion: The Proposed Action/Proposed Alternative will support the 'Ewa Development Plan guidelines for Natural Resource Protection. As mentioned in Section 3.5 (Biological Resources), a Biological Survey Report was completed by AECOS Inc. No plant species that are listed or proposed for listing as endangered or threatened under federal of Hawai'i State endangered species laws (HDNLR, 1998; USFWS, nd-a) were observed during the survey. The survey area contains no sensitive vegetation, and in fact, no native plant species were recorded as present within the Project Area. Both the UV and PAA systems therefore support the 'Ewa Development Plan's endangered species protection policies by complying with survey requirements and avoiding direct impacts. In addition, effluent improvements from either system will enhance downstream marine and wetland habitats that support endangered waterbirds and other species. The UV system provides these benefits with minimal operational risks, while the PAA alternative requires ongoing residual monitoring to maintain environmental protections.			
3.6 City of Kapolei			
3.6.3.1 Urban Form			
(1) Keep block lengths relatively short (300 to 400 feet) in order to provide for flexible, interesting and reasonably direct pedestrian routes between workplaces, restaurants and shops. Short blocks will encourage people to walk for these trips.			X
(2) Permit heights for each of the City of Kapolei districts as specified in the City of Kapolei Urban Design Plan (2008) and shown in Table 3.3.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for the City of Kapolei.			
3.6.3.2 Natural Environment and Landscaping			
(1) Use non-potable water features and automated irrigation systems wherever possible.			X
(2) Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.			X
(3) Use landscaping consistent with the City of Kapolei's image as a green and shaded garden city to provide privacy, screening, shade, and comfort.			X
(4) Use landscaping to enhance the complement the City's urban form, provide continuity between various districts, and enhance and preserve view corridors wherever possible.			X
3.6.3.3 Public Access and Circulation			
(1) Design the City of Kapolei to provide safe, easy, and efficient access for pedestrian, bicycle, and vehicular movement between each of the districts, the open space areas, and recreational amenities.			X
(2) Establish a clear pattern of arterials and local streets to facilitate travel through the City of Kapolei, to and from individual properties. The streets should form a modified grid pattern, providing a variety of routes for circulation. Major streets include Kamokila Boulevard, Kapolei Parkway, Kama'ahaAvenue, and Wākea Street, with Fort Barrette Road and Kalaeloa Boulevard bounding the City of Kapolei on the east and west.			X
(3) Vary cross-section design and landscaping schemes with function and to establish distinctive urban images for each type of street.			X
(4) Provide for bus pullouts and shelters along major traffic arterials.			X
(5) Provide sufficient width in the median of Kapolei Parkway to accommodate a future elevated rail transit line.			X
(6) Permit on-street parking along all streets until traffic levels necessitate the use of the entire roadway for vehicular movement. Such parking will be convenient for shoppers, provide a buffer between traffic on the street and pedestrians on the sidewalk, and contribute to the activity level along the City of Kapolei's streets.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(7) Provide exclusive bike lanes along major roadways within the City of Kapolei which are connected to the region's bikeway system. Where automobiles and bicycles share the same roadway, lane widths should be generous to allow safe usage by both.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for the City of Kapolei.			
3.7 'Ewa Plantation Villages			
3.7.2. Guidelines			
Retention of Historic Buildings			
(1) Preserve and maintain existing buildings of historical, cultural and/or architectural significance through rehabilitation programs and adaptive reuse.			X
Urban Form			
(1) Develop vacant areas in a style that is characteristic of the historic core.			X
(2) Maintain the current grid development pattern in the existing villages and replicate it in new infill developments.			X
(3) Require lot sizes for new infill homes in the existing villages to be similar to the existing house lots.			X
(4) Rehabilitate existing structures to the extent possible, in a manner that will not change their exterior appearance.			X
(5) Design new structures on vacant lots in the existing villages to complement the exterior design of adjacent homes.			X
(6) Physically separate new infill "villages" from Tenny, Renton, and Varona Villages. The design, appearance, and placement of structures within them should reflect and complement the existing village's character. (See Exhibit 3.4.)			X
(7) Re-establish a neighborhood and commercial services core within the 'Ewa Plantation Villages in order to retain both a focal point of community activities promote village identity.			X
Discussion: The Proposed Action/Proposed Alternative is not located within and will not affect the 'Ewa Plantation Villages.			
Circulation			
(1) Prohibit establishment of standard subdivision street hierarchy within the village and maintain the existing grid pattern and extend it into new infill development.			X
(2) Locate any new required collector streets outside the existing villages.			X
(3) Maintain narrower than standard street widths without sidewalks (in the residential portions) of the existing villages, and establish similar widths within new villages, in order to minimize the impacts on existing yards and structures, and visually maintain a rural village character.			X
(4) In keeping with its Historic Register site designation, restrict traffic on Renton Road to two lanes of traffic in each direction during peak hours and one lane of traffic and one lane of restricted parking during non-peak hours.			X
Discussion: The Proposed Action/Proposed Alternative is not located within and will not affect the 'Ewa Plantation Villages.			
Open Space/Views			
(1) Where possible, provide open space buffers between the existing villages and new housing development in order to preserve and enhance the integrity and historic character.			X
(2) Preserve and expand existing village greens and open promenades, etc., where possible. Preserve and maintain existing landscaping within Renton, Tenney, and Varona Villages, especially existing stands of mature palm, mango, banyan, and monkey pod trees. Where trees have been removed, provide appropriate replacements.			X
(3) Provide appropriate canopy trees along all street frontages.			X
(4) Maintain principal entry roads to and through the villages as tree-lined boulevards. Highlight entries with additional landscape features.			X
(5) Landscape and maintain yards and other open spaces in a manner that preserves and enhances the open space appearance of the villages.			X
Discussion: The Proposed Action/Proposed Alternative is not located within and will not affect the 'Ewa Plantation Villages.			
3.8 Ocean Point/Hoakalei			
3.8.3 Guidelines			

Table 4-7: 'Ewa Development Plan	S	NS	N/A
Appropriate Scale and Siting			
(1) Minimize the visibility of large building volumes and elements from waterfront and residential areas through building envelope restrictions, site planning and landscaping.			**X**
Environmental Compatibility			
(1) Do not develop residential and apartment units in areas that would expose residents to excessive aircraft noise.			**X**
(2) Since airport operations have continued at Kalaeloa, ensure land uses at Ocean Pointe/Hoakalei are compatible with airport operations and respect restrictions on development within airport approach and clear zones.			**X**
Discussion: The Proposed Action/Proposed Alternative will not have an impact on the guidelines for Ocean Point/Hoakalei.			
Community Integration			
(1) Although the design of Ocean Pointe/Hoakalei may have a distinct identity and entry, link Ocean Pointe/Hoakalei with surrounding areas, such as 'Ewa Beach and Kalaeloa by using connecting roadways, walkways, landscape and architectural design.			**X**
Urban Forms			
(1) Waterfront Light Industrial Mixed Use – Develop a light industrial mixed use support area adjacent to the basin providing facilities such as repair and strong. Building heights should generally not exceed 60 feet in this area.			**X**
(2) Waterfront Mixed Use – Develop a waterfront commercial center with associated visitor units adjacent to the waterfront, featuring a wide public promenade with retail attractions. Hotel and apartment buildings in this area should generally not exceed 90 feet and all other buildings should generally not exceed 60 feet. Buildings with frontage on the interior basin should be limited to 40 feet. Buildings taller than 40 feet should be set back from the basin frontage.			**X**
(3) Medium Density Residential Area – Develop a medium density residential area adjacent to the Waterfront Mixed Use area to provide a transition between the mixed uses of the Waterfront Mixed Use area and the Single Family and Low Density Residential area to the east. Building heights in this area should generally not exceed 60 feet. In order to minimize the visual impacts of the Medium Density Residential areas adjacent to One'ula Beach Park, the developer should: - Maximize mauka-makai and other view corridors in the area by orienting the narrow dimension of buildings parallel to the shoreline or predominant view; - Maximize open space by minimizing building bulk and using extensive landscaping to create a park-like setting; and - Provide greater setbacks and/or terraced building setback from the edge of the basin for buildings exceeding 25 feet in height.			**X**
(4) Single Family and Low Density Residential Area – Develop a residential community characterized by low-rise apartments and singlefamily homes in this area. Building heights should generally not exceed 30 feet. - There should be a minimum building setback of about 40 feet along the basin's edge to accommodate a public waterfront promenade. Lesser setbacks may be permitted upon design review and approval by the DPP.			**X**
(5) Allow a small portion of the setback area to be covered by low-rise buildings to allow for boat servicing, appropriate commercial uses, storage and clubhouses. The maximum building height at the setback line in these areas should be around 40 feet, rising one foot for each additional foot of setback to a maximum of around 60 feet in the Medium Density Residential area and around 90 feet in the Waterfront Mixed Use area.			**X**
(6) Set back all structures a minimum distance of 150 feet from the shoreline. Lesser setbacks may be permitted upon design review and approval by the DPP. The maximum building height at the setback line along the shoreline should be 40 feet, rising one foot for each additional foot of setback up to the appropriate height limit.			**X**
Discussion: The Proposed Action/Proposed Alternative will not have an impact on the open space and views guidelines for Ocean Point/Hoakalei.			
Natural Environment			

Table 4-7: ‘Ewa Development Plan	S	NS	N/A
(1) Retain, enhance, and protect wetlands and other wildlife habitats.			X
(2) Design the golf course to accommodate storm water runoff in a manner that maintains coastal water quality and avoids the use of concrete channels for diversion drainage. Design the waterway to accommodate the runoff of collected storm waters generated by a potential 100-year storm. Channel design should use the most effective means to provide natural flushing of its waters. Develop silting ponds mauka of the site to preserve water quality so that use of the near-shore waters for recreational purposes and aesthetic enjoyment is not limited in anyway.			X
(3) Avoid the use of breakwaters or jetties at the marina entrance, in order to preserve surf sites.			X
Public Access			
(1) Provide a continuous pedestrian pathway open to the public along the shoreline and along most of the basin, with the exception of sections where private residential lots directly front the basin.			X
(2) Provide access to the entire waterway and ocean shorelines to the public through the internal and peripheral pedestrian pathways.			X
(3) Provide public parking, restrooms, and shower facilities at regularintervals for all sandy beach areas.			X
Views and Vistas			
(1) Preserve and enhance views from public streets and thoroughfares to the mountains and sea wherever possible. In particular, distant views of the Wai‘anae Range and the south coast of O‘ahu toward Honolulu and Diamond Head from the public promenade near the marina entrance channel should be preserved.			X
(2) Orient hotel and apartment facilities in relationship to the waterfront so as to preserve and maximize both mauka and makai views.			X
Circulation			
(1) Design the street network to provide for a reasonably direct route through Kalaeloa to connect Ocean Pointe/Hoakalei to the City of Kapolei and Kualaka‘i Parkway.			X
(2) Design all major roadway corridors to provide for bus pullouts and bus shelters, bike paths, and sidewalks that are separated from the vehicular travel way by a landscape buffer.			X
Landscape Treatment			
(1) Provide generous landscaping and vegetation throughout thedevelopment to promote tropical beauty and provide visual relief and a feeling of spaciousness.			X
(2) Design landscaping to provide continuity between residential, resort, waterfront uses, commercial areas, the shoreline, golf course, and parks.			X
(3) Design landscaping to provide privacy, screening, shade, and temperature control.			X
Discussion: The Proposed Action/Proposed Alternative will not have an impact on the adjacent land uses guidelines for Ocean Point/ Hoakalei.			
3.9 Existing and Planned Residential Communities			
Residential			
Density			
(1) Develop at densities of 5 to 12 units per acre encouraging more compact, innovative, environmentally sensitive design and alternative layouts.			X
Building Height			
(1) In general, limit buildings to not exceed two stories, although the height may vary according to required flood elevation, slope, and roof form.			X
Site Design			
(1) Use features such as varied building setbacks and shared driveways to avoid monotonous rows of garages and driveways along neighborhood street frontages.			X
Building Form			
(1) Use varied roof forms, exterior colors and finishes, building orientation, floor plans, and architectural details to provide visual interest and individual identity.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Existing and Planned Residential Communities, pertaining to residential communities.			
Low-Density Apartment			
Density			

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(1) Develop at densities of 10 to 30 units per acre.			X
Height			
(1) In general, limit buildings to not exceed three stories above grade. Maximum building heights should allow for pitched roof form.			X
Building Form			
(1) Use building form, orientation, location of entries, and landscape screening to maintain a sense of residential scale and provide greater privacy and individual identity for housing units.			X
Compatibility			
(1) Ensure that building scale, roof form, and the quality of materials are compatible with those of adjacent low-density residential areas.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Existing and Planned Residential Communities, pertaining to low-density apartments.			
Medium-Density Apartment			
Location			
(1) In general, locate medium-density apartment buildings in large planned residential communities, adjacent to major collector streets, commercial or civic centers.			X
(2) Develop medium-density apartment as the predominant form of housing in and near the City of Kapolei and around transit nodes on the rail transit corridor between Waipahū and Kapolei.			X
Density			
(1) Allow building densities to accommodate 25 to 90 units per acre			X
Height			
(1) Limit building heights to not exceed 150 feet in the City of Kapolei and the Ko Olina Resort, up to 120 feet in transit nodes subject to Cityestablished transit-oriented development plans with the provision of community benefits, and 90 feet elsewhere. Taller building heights are intended to allow higher densities, create variation in the cityscape, give a visual sign of transit nodes, and identify the City of Kapolei's importance as a regional center.			X
Architectural Character			
(1) Allow building scale, roof form and the quality of materials to reflect an urban character.			X
Height Setbacks			
(1) Employ building height setbacks and landscaping to reduce the direct visibility of taller buildings from lower density residential areas and from the street front. Allow lower building elements to directly abut the street front.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Existing and Planned Residential Communities, pertaining to medium-density apartments.			
Circulation System			
Connectivity			
(1) Use the circulation plan to define the hierarchy of streets within the project and its relationship to the surrounding transportation network.			X
(2) Use a modified grid street pattern (modified as necessary to fit the topography or other limitations) with block lengths of 300 feet by 500 feet or any combination of two sides summing to 800 feet. (See Exhibit 4.2 Street Network Guidelines.)			X
(3) Provide pedestrian pass-throughs or mid-block cross walks where blocks exceed 500 feet on a side.			X
(4) Connect new residential development to adjacent subdivisions to allow creation of an east-west and mauka-makai roadway network at approximately 1/4 mile intervals.			X
Transit Routes and Facilities			
(1) Show existing and proposed bus routes and specific measures to accommodate efficient bus transit service for as many households as possible on the circulation plan.			X
(2) Design the rights-of-way along existing or potential bus transit routes to make provisions for bus shelters, bus pull-outs, and, if applicable, parkand-ride facilities and/or future rail transit stations in accordance with Department of Transportation Services (DTS) design standards.			X
(3) Require street patterns showing the alignment of proposed or potential bus transit routes to be submitted to the DTS as part of the subdivision roadway master plan review process.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(4) Design the circulation plan so that at least 85 percent of all residences will be within a five-minute (or 1/4 mile) walking distance of an existing or potential bus route or rail transit station, unless localized topographic conditions make such a requirement impractical.			X
(5) Design the circulation plan so that all commercial development with more than 1,000 square feet and all employment sites with more than ten employees are within 1/8 mile of an existing or potential bus stop or rail transit station.			X
(6) Design the circulation plan so that all development is within 1/2 mile of an existing or potential bus or rail transit station, unless localized topographic conditions make such a requirement impractical.			X
(7) Design the circulation plan so that potential bus transit routes have two different access points into the proposed development. The route alignment should seek to achieve optimal operational efficiency between the two access points.			X
(5) Allow roadway cross-sections within new residential developments to be reduced from current standards where higher capacity is provided by multiple routes.			X
Pedestrian and Bicycle Routes and Facilities			
(1) Design the circulation plan to indicate any principal pedestrian and bicycle paths that are physically separated from roadways.			X
(2) Design street intersections along these separated paths to have a narrow curb radius and include special signage, and paving to encourage safe and convenient pedestrian and bicycle crossings.			X
(3) Allow interior mid-block pedestrian/bicycle routes to be provided as an alternative to paved sidewalks along local streets.			X
Landscape Treatment			
(1) Include conceptual street tree plans in the circulation plan.			X
(2) Identify entries to the community with special landscape treatment.			X
(3) Design the rights-of-way for major and minor arterials as landscaped parkways, complete with a landscaped median strip, landscaped sidewalk, and bikeways. Major arterials should have separate bike paths, and minor arterials should have bike lanes. Suggested width for major arterials, including right-of-way and planting strips, is 120 feet wide and for minor arterials is 100 feet wide.			X
(4) Plant canopy trees to shade the sidewalk/bike path areas.			X
(5) Install landscape treatment along the edges of the project that is appropriate for the natural setting and designed to provide continuity and transition from adjacent developed areas.			X
(6) Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Existing and Planned Residential Communities, pertaining to circulation systems.			
3.10 Planned Commercial Retail Centers			
All Commercial Centers			
Orientation to "Main Street" or the Town/Village Center			
(1) Structures in the commercial center should be located and oriented to the street up to the "build to" line along the designated "Main Street" or Town/Village Center frontage.			X
(2) Most parking for commercial structures fronting "Main Street" or the Town/Village center should be located behind the structures in joint development parking lots or structures although some on-street parking can be provided on the Main Street or Town/Village Center frontage.			X
(3) The main entrance to commercial structures fronting the "Main Street" or Town/Village Center should be located on that street frontage with secondary entrances from parking areas.			X
(4) Sidewalks in front of retail uses fronting the "Main Street" or Town/Village Center should be wide enough (12 to 16 feet) to allow window shopping or outdoor dining.			X
Mix of Uses			
(1) Plan commercial centers primarily for retail uses and for office uses that provide services to the surrounding community. Residential uses may also be incorporated in such commercial centers.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
Appropriate Scale			
(1) Design the building mass of a commercial center to be in keeping with its urban and natural setting.			X
Compatible Style			
(1) Design the architectural character of commercial centers to respect the surrounding urban and natural features, particularly when located adjacent to a residential area or significant natural or historic feature. Neighborhood commercial centers should reflect a residential architectural character.			X
Accessibility			
(1) Incorporate site design and facilities to promote pedestrian, bicycle and transit access in commercial centers. Pedestrian and bicycle access is more important for smaller, neighborhood centers, while transit access is more significant for community centers. Apply these designs and facilities to the expansion or renovation of existing commercial centers, as well as to new centers.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Planned Commercial Retail Centers, pertaining to commercial centers.			
Neighborhood Commercial Centers			
Architectural Character			
(1) Design the project architecture to respect the character of adjacent residential uses.			X
(2) Use gable and hip-form roofs to create breaks in the roofline to reduce the apparent scale of large roof plates.			X
(3) Use exterior materials and colors that are typically found in neighborhood houses.			X
Building Siting			
(1) Orient buildings to the pedestrian.			X
(2) Orient storefronts to face the street, and, to the extent possible, be sited close to the sidewalk			X
(3) Place parking and service areas behind the buildings or otherwise visually screened from streets and residential areas.			X
Discussion: The Proposed Action/Proposed Alternative does not constitute the development of a commercial center.			
Buiding Height and Density			
(1) Design buildings at a residential scale.			X
(2) Allow building heights limits which allow for gable and hip-form roof elements.			X
(3) Limit total floor area for a lot or contiguous lots with common parking to no more than 100,000 sq. ft.			X
Vehicular Access			
(1) Provide access to the parking and loading areas from a collector street.			X
(2) Permit access to a local residential street only if it is for emergency or secondary access and if it would not encourage through traffic along the local street.			X
Pedestrian and Bicycle Facilities			
(1) Provide at least one pedestrian access from the public sidewalk or other off-site pedestrian pathway to the entrances of establishments in the commercial center that does not require crossing a traffic lane or parking lot aisle or driveway.			X
(2) Design and locate bicycle racks to provide security, convenience, and visibility from the street entry			X
(3) Provide appropriate signage to indicate the availability and location of bicycle racks.			X
Visual Screening, Lighting, and Signage			
(1) Screen parking and service areas from the street and adjacent residential lots by planting a landscape screen of trees and hedges along street frontages and property lines and planting shade trees throughout the parking lot.			X
(2) Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.			X
(3) Use only low level or indirect lighting in parking lots			X
(4) Require all signage to either be non-illuminated or indirectly illuminated.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Planned Commercial Retail Centers, pertaining to neighborhood commercial centers.			
Community Commercial Centers			
Architectural Character			
(1) Allow varied architectural character, depending on the context.			X
(2) Require commercial center buildings that are visible from adjacent residential areas to reflect a residential character while allowing other facades to have a character more typical of a commercial building.			X
(3) Avoid disruptive contrasts between facades and extended blank walls that are visible simultaneously from public areas.			X
Building Bulk and Massing			
(1) Provide a transition in scale from larger building elements of the commercial center to finer elements near the adjacent use when the building is adjacent to a residential area or a building of historic value.			X
(2) Avoid blank facades on portions of buildings visible from a street by using texture, articulation, color, and fenestration to create visual interest.			X
(3) Require facades that are close to the public right-of-way to be composed of display windows and pedestrian entrances.			X
Building Height and Density			
(1) Limit building heights to generally not exceed 45 feet.			X
(2) Limit total floor area to no more than 250,000 sq. ft. for a standard Community Commercial Center.			X
Pedestrian, Bicycle and Transit Facilities			
(1) Provide street frontage improvements for bus stops, including a bus shelter and a pull-out off a traffic lane, along all abutting streets which have bus routes.			X
(2) Provide a pedestrian pathway from the bus stop to the nearest entrance of the nearest building of the commercial center. The pathway should be clearly indicated with special paving or markings and covered to provide weather protection, if the commercial center building is not directly connected to the bus shelter.			X
(3) Design bicycle racks to provide security and be visible from the street entry to the commercial center.			X
(4) Provide appropriate signage to indicate the availability and location of bicycle racks.			X
Visual Screening			
(1) Minimize the visibility of parking and service areas from the street and adjacent residential lots through screening			X
(2) Plant a landscape screen, consisting of trees and hedges, along street fronting the parking lot or garage.			X
(3) Plant shade trees throughout all parking lots.			X
(4) Use xeriscaping (the use of landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources. Give preference to use of drought-resistant native Hawaiian plants where feasible and appropriate.			X
(5) Provide landscape planters along the façade of each parking level for parking garages close to and readily visible from a street.			X
(6) Visually screen service areas from public and residential areas.			X
Signage			
(1) Indirectly illuminate signage visible from residential areas.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Planned Commercial Retail Centers, pertaining to community commercial centers.			
3.11 Ko Olina Resort			
Urban Form			
Appropriate Scale			
(1) Minimize the visibility of large building volumes and elements from waterfront and residential areas through building envelope restrictions, site planning, and landscaping.			X

Table 4-7: ʻEwa Development Plan	S	NS	N/A
Marine Activity Center			
(1) Establish a higher density, centrally located hub adjacent to the marina to serve as the activity center for the community and as an attraction that enhances Ko Olina's role as a secondary resort destination area for Oʻahu.			X
(2) Permit commercial mixed use development in the area generally bounded by the park at the fourth lagoon, Waipahē Street, Aliʻinui Drive, Kekai Place and the marina. This area should consist of marina frontage with public promenade, commercial mall, and low and medium density apartment developments.			X
(3) Limit marina frontage generally to a height limit of 40 feet.			X
(4) Require buildings taller than 40 feet to be set back from the marina frontage.			X
(5) Allow variations in the amount of setback to add visual interest.			
(6) Limit medium density apartment buildings and commercial buildings in this area to generally not exceed 150 feet.			X
Medium Density Apartment Area			
(1) Two additional medium density apartment areas are located on Kekai Place and on Aliʻinui Drive. Limit building heights in these areas to generally not exceed 150 feet.			X
Resort Center			
(1) Allow development of a resort destination area containing at least 4,000 visitor units in the area designated for Resort use on Exhibit 3.6. Limit hotel and apartment buildings in this area to generally not exceed 150 feet.			X
(2) Limit building heights at Lanikūhonua and Paradise Cove to no more than 40 feet in height.			X
(3) Encourage compatibility of uses and design integration at the boundaries separating different use areas.			X
(4) Prohibit designation of land within 1/2 mile of the centers of petroleum and explosives terminals at the Kalaeloa Barbers Point Deep Draft Harbor for Resort, Apartment, Residential, or Commercial use.			X
Natural Environment			
(1) Locate and operate uses that generate high noise levels in a way that keeps noise to an acceptable level in existing and planned residential areas.			X
(2) To retain a sense of place, design the resort and recreation areas to incorporate natural features of the site and utilize landscape materials that are indigenous to the area where feasible.			X
(3) Set back all structures a minimum distance of 300 feet from the shoreline. Lesser (or greater) setbacks may be permitted upon design review and approval by the DPP.			X
(4) Protect the existing coastal environment against potential negative impacts associated with increased recreational use and public access to the shoreline.			X
(5) Discourage further modification to the shoreline, including the man-made lagoons, unless required either to meet the conditions of existing approvals or to address demonstrated deterioration to the quality of coastal resources.			X
Shoreline Access			
(1) Provide a continuous public walkway along the entire shoreline fronting the resort, anchored at either end by public beach parks. Public access should be provided along the shoreline fronting Lanikūhonua and Paradise Cove, but not in as formal a manner as that provided on the shoreline frontage of the adjacent hotel, apartment, and commercial Ko Olina resort sites.			X
(2) In addition to the public parks at each end of the resort, provide a series of privately-owned and maintained parks encompassing a minimum of 20 acres of land along the shoreline. These private parks should be open to use by the general public and accessible from the continuous shoreline public walkway.			X
(3) Provide a public access easement, parking lot, restrooms, and showers at each of the four swimming lagoons.			X
Views and Vistas			
(1) Although the design of Ko Olina may have a distinct identity and entry, link Ko Olina with surrounding areas through the use of connecting roadways, walkways, landscape, or architectural design.			X
(2) Preserve and enhance views from public streets and thoroughfares to the mountains and sea wherever possible.			X

Table 4-7: ʻEwa Development Plan	S	NS	N/A
(3) Orient hotel, commercial, and apartment buildings perpendicular to the shoreline to maximize mauka and makai views.			X
(4) Protect important views of landforms along the Waiʻanae Coast, the ridgeline of the Waiʻanae Range, and the ocean, including but not limited to the following: - Makai view from Farrington Highway at the entrance to Ko Olina, - Makai view from Ko Olina coastal roadways makai of Farrington Highway, - Views of the Waiʻanae Coast from the shoreline at Ko Olina, and - Mauka and lateral views of Ko Olina from the Small Boat Harbor and the Deep Draft Harbor.			X
(5) Allow variation in building heights near the shoreline and along the marina frontage, particularly to preserve long views and minimize the perception of building bulk from the shoreline, beach, and marina frontage.			X
Circulation System and Transportation Facilities			
(1) Establish an integrated bikeway and pedestrian circulation network throughout the resort, with bicycle lanes and routes and sidewalks along major roadways, lined with shade trees.			X
(2) Reserve the OR&L right-of-way for a bikeway and historic railroad train service for historic and educational rides between Nānākuli, KoOlina, ʻEwa Development Plan Land Use Policies 3-68 Kapolei, and ʻEwa Villages, and for a bikeway continuing on from ʻEwa Villages to Waipahū and ʻAiea as part of the Pear Harbor Historic Trail.			X
Landscape Treatment			
(1) Provide generous landscaped open spaces throughout the resort area to promote tropical beauty and provide visual relief and a feel of spaciousness.			X
(2) Use landscaping to provide continuity between residential, resort, marina, and commercial areas and the recreational areas at the shoreline, parks, and golf courses.			X
(3) Use landscaping to enhance and preserve view corridors and provide privacy, screening, shade, and comfort.			X
(4) Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the ʻEwa Development Plan guidelines for Koolina Resort.			
3.12 Industrial Centers			
All Industrial Areas			
Appropriate Scale			
(1) Minimize the visibility of large building volumes and tall building or machinery elements from resort areas, residential areas, commercial and civic districts, and parks through site planning and landscaping.			X
Environmental Compatibility			
(1) Locate industries and utilities that discharge air or water pollutants, even when treated, in areas where they would impose the least potential harm on the natural environment in case the treatment process fails to perform adequately.	X		
(2) Locate and operate uses that generate high noise levels in a way that will keep noise to an acceptable level in existing and planned residential areas.			X
(3) Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.			X
Barbers Point Industrial Area			
Coastal Environment			
(1) Set back all buildings a minimum of 60 feet from the shoreline and 150 feet where possible if justified based on historic and projected shoreline erosion data.			X
(2) Provide a lateral public access easement along the entire shoreline from the Kalaeloa/Barbers Point Deep Draft Harbor to Kalaeloa.			X
(3) Continue to provide the major entry point to the shoreline easement at the Barbers Point beach park and lighthouse area.			X
(4) Provide at least one additional minor access, similar to the one at Kenai Industrial Park, at the drainage channel next to Kalaeloa.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
(5) Provide access at other points where public parking on the street is available.			X
Building Height and Mass			
(1) Limit building heights generally not to exceed 60 feet when they consist of large mass.			X
(2) Allow taller, vertical structures when required as part of an industrial operation, but require a view plane study to be conducted for structures over 100 feet in height to determine if they can be sited or designed to minimize visibility from residential, resort and commercial areas, public rights-of-way, and the shoreline.			X
Use Allocation			
(1) Allow small lots to be provided within the Kapolei Business Park and Kapolei Harborside as sites for small business service uses.			X
Landscape Treatment			
(1) Require the planting of a landscape screen, consisting of trees and hedges, along street frontages to minimize the visibility of parking, storage, industrial equipment, and operations areas from the street.			X
(2) Require special landscape treatment for streets leading to the shoreline access points.			X
Honouliuli Industrial Area			
Building Height and Mass			
(1) Limit building heights to generally not exceed 60 feet, especially for buildings of large mass.	X		
(2) Allow taller, vertical structures when required as part of an industrial operation, but require a view plane study to be conducted for structures over 100 feet in height to determine if they can be sited or designed to minimize visibility from residential, resort and commercial areas, major public thoroughfares, and the shoreline.			X
Roadway Setbacks			
(1) Require wastewater treatment structures to be at least 300 feet from the proposed alignments of the Kapolei Parkway, and the Kualaka'i Parkway. Setbacks for other industrial uses should be as given in the zoning standards.	X		
Landscape Treatment			
(1) Require the planting of a landscape screen, consisting of trees and hedges, along street frontages to minimize the visibility of parking, storage, industrial equipment, and operations areas from the street.			X
Other Industrial Areas			
Building Height and Mass			
(1) Limit building heights to generally not exceed 60 feet, especially for buildings of large mass. Developments within transit nodes, subject to City-established transit-oriented development plans, may exceed the baseline FAR and/or building height up to the maximum bonus height with the provision of commensurate community benefits through CBBs.			X
(2) Allow taller, vertical structures when required as part of an industrial operation and when commensurate community benefits are provided, but require a view plane study to be conducted for structures over 100 feet in height to determine if they could be sited or designed to minimize visibility from residential areas, resort and commercial areas, major public thoroughfares, and the shoreline.			X
Separation of Use Areas			
(1) Allow small industrial lots (10,000 sq. ft. or less) for repair services and "incubator" businesses to be located near the commercial core of the City of Kapolei, but not on the principal commercial streets.			X
(2) Locate warehousing and other industrial uses requiring larger lots in industrial parks.			X
Landscape Treatment			
(1) Require use of privacy walls and buildings, with minimal use of landscaping to visually screen small-lot industrial areas, outdoor work and storage areas for vehicles, equipment and supplies from the street and adjacent lots.			X
(2) Require use primarily of landscaped setbacks and street trees to provide visual screening in large-lot industrial subdivisions.			X
Discussion: The Proposed Action/Proposed Alternative will not affect any industrial complexes or industrial centers other than HNWWTP. The Proposed Action will not change the overall management and aesthetic of the Honouliuli Industrial Complex. The planned facility will not significantly alter the view lines of the already existing buildings on the property.			

Table 4-7: ʻEwa Development Plan	S	NS	N/A
3.13 Kalaeloa			
Coastal Environment			
(1) Require a minimum building setback of 60 feet and a lateral public access easement along the entire shoreline, with the entry point at the former military beach recreation center. Where possible, the setback should be expanded to 150 feet where justified by historic or adopted projections of shoreline erosion rates.			**X**
(2) Connect the Kalaeloa shoreline access easement to shoreline access easements at the Barbers Point Industrial Area to the west and to public pedestrian pathways at Ocean Pointe/Hoakalei to the east.			**X**
Separation of Use Areas			
(1) Design the road pattern and use landscape buffers to separate and distinguish military support housing, airport/industrial facilities, and recreation/wildlife areas from one another.			**X**
Circulation System and Transportation Facilities			
(1) Design the circulation system to include major roadways connecting the City of Kapolei to the shoreline recreation center and Ocean Pointe/Hoakalei.			**X**
(2) Upgrade the road system to allow bus stop facilities to be provided at the airport, military housing area, and shoreline recreation area.			**X**
Landscape Treatment			
(1) The visibility of parking, storage, and airport/industrial operations from the street should be minimized through the planting of a landscape screen, consisting of trees and hedges, along street frontages.			**X**
(2) Require streets connecting the City of Kapolei to Ocean Pointe/Hoakalei and the shoreline recreation areas to receive special landscape treatment.			**X**
(3) Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.			**X**
3.14 Pearl Harbor Naval Base (West Loch)			
(1) Expand limited public access to the shoreline waters of West Loch beyond the West Loch Shoreline Park.			**X**
(2) Retain and enhance wetland wildlife habitat areas along the Pearl Harbor shoreline.			**X**
3.15 University of Hawaiʻi West Oʻahu			
(1) Develop the campus to be environmentally and culturally sensitive to the site and reflective of the Hawaiian culture and of the heritage of ʻEwa.			**X**
(2) Develop the campus in combination with an adjacent University Village to evoke a unique sense of place that distinguishes it as an important civic and cultural institution in ʻEwa.			**X**
(3) Provide direct vehicle access to the campus from both Farrington Highway and Kualakaʻi Parkway.			**X**
(4) Orient the campus to support pedestrian access to and transit usage from two rail transit stations, one located near the corner of Farrington Highway and Kualakaʻi Parkway, and a second located on the Kualakaʻi Parkway midway between Farrington and Kapolei Parkway.			**X**
(5) Design the campus to use open space areas for flood detention and retention as part of the Kaloʻi Gulch watershed master plan.			**X**
Place Making			
(1) Establish a clear identity and "sense of place" for the main campus through attentive design and careful integration with the adjacent mixeduse commercial area referred to as "University Village". Major campus buildings surrounding the Great Lawn should serve as one anchor for the University Village "main street" commercial/residential area anchored at the other end by a major transit station near the mauka entry from Kualakaʻi Parkway (in the vicinity of the Farrington/Kualakaʻi Parkway intersection).			**X**
Regional Integration			
(1) Design the campus and surrounding mixed-use/residential community to function as a fully integrated community within the context of the broader regional community. The campus and surrounding community should include housing, support services, community and business facilities, in addition to the required academic facilities.			**X**
Community Orientation and Service			

Table 4-7: ‘Ewa Development Plan	S	NS	N/A
(1) Design the campus to be community-oriented and to serve the Kapolei area and West O‘ahu as an urban park and cultural center, providing community services, and cultural opportunities.			X
Functional and Accessible Design			
(1) Design the campus to reflect appropriate functional relationships, internal compactness, and accessibility between academic functions and supporting facilities, providing a pleasant and efficient study environment.			X
Drainage Impacts			
(1) Incorporate flood detention and retention capability in the campus open space system in order to reduce the downstream impact of major storm events. For example, sports playing fields could be designed to act as flood detention basins during major storm events.			X
(2) Design the drainage plans for the campus so as to not increase storm water flows or velocity above the design levels used in designing the water retention areas of the ‘Ewa Villages Golf Course and the drainage systems for earlier developments in the Kalo‘i Gulch watershed.			X
Architectural Forms			
(1) Site and design specific activity areas and structures to accommodate required internal academic or support relationships. This would include siting of buildings or facilities to promote academic continuity, provide spatial definition to public areas, and allow easy access to needed support areas (housing, business/food services, recreation, and parking).			X
(2) Design buildings and structures to reflect sensitivity to the local environmental conditions, as well as to Hawaiian regional styles.			X
(3) Avoid use of structures which visually dominate the site unless required to carry out the building's function. Rather, low-rise academic structures with more emphasis on regional architectural forms and human scale should prevail.			X
Landscape Forms			
(1) Use trees and other landscape materials throughout the campus to provide welcome shade and visual relief.			X
(2) Use street trees and accent plantings to feature gateways, define circulation corridors, or enhance special activity areas. The intensity or selection of landscape treatments should be used to further define, identify, or buffer various campus land uses.			X
(3) Use landscape materials which reflect climate conditions, limited water resources, and maintenance issues.			X
(4) Use native/indigenous species in landscape treatments to the greatest extent possible.			X
Circulation			
(1) Design circulation patterns to provide for easily accessed routes to, within, and around the campus. Minimize conflicts between cars, bikes, and pedestrians.			X
(2) Highlight the hierarchy of roadway, bikeway, and pedestrian circulation patterns by use of a distinctive design treatment for each element of the system or other appropriate method.			X
(3) Use appropriate site design and placement to minimize visual impacts from vehicle corridors and parking lots.			X
(4) Make provisions for public transportation with ties to the regional system and transit corridor an integral part of the campus plan.			X
Open Space/Views			
(1) Integrate and blend open space components throughout the campus in the form of passive landscape areas, courtyards, mall spaces, and multi-purpose recreation fields or community spaces.			X
(2) Link the internal campus open space system with the adjoining regional open space systems of the adjacent developments.			X
(3) Develop campus gateways and enhance internal view corridors as an integral part of the open space elements within the campus.			X
(4) Preserve and enhance mauka-makai views within major open spaces and through building siting.			X
(5) Use landscape treatments or building design to visually bufferbetween conflicting or unsightly functions.			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Joint Base Pearl Harbor-Hickam.			
4. Public Facilities and Infrastructure Policies and Guidelines			
4.1 Transportation Systems			
Reduction in Automobile Use			
(1) Reduce reliance on the private passenger vehicle by:			
a. Providing circulation systems with separated pedestrian and bicycle paths and convenient routes for public transit service;			**X**
b. Designing street systems in new development areas with layouts that reduce the length of dead-end streets and provide for smaller blocks in order to facilitate bus routes, encourage walking and biking, and provide better access for emergency and utility vehicles;			**X**
c. Providing supporting facilities and amenities for pedestrian, bicycle, and public transit use, including the provision of bicycle racks at commercial centers, bicycle storage facilities at employment centers, and bus shelters at bus stops; and			**X**
d. Supporting medium-density and high-traffic land uses along the Farrington Highway rail transit corridor, especially generally within a 1/4 mile of the Honolulu Rail transit stations in accordance with the adopted Waipahū Neighborhood TOD Plan.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Transportation Systems, pertaining to reduction in automobile use.			
Community-Level Street Standards			
(1) Revise standards for public streets within residential communities and commercial centers to support and improve pedestrian and bicycle travel and on-street parking. While average motor vehicle speed may be reduced, safety and enjoyability would be increased and greater efficiency in land use, reduced construction costs, and improved street function would likely be achieved.			**X**
(2) Design the street network to provide multiple options for reaching major amenities such as the Main Street/Village Center shops, schools, parks and community facilities, without having to access an arterial boulevard.			**X**
(3) Identify safe routes to schools and ensure that these are pedestrian and bicycle-friendly.			**X**
(4) Consider view corridors to the mountains, open space, and other local and regional landmarks in the arrangement of streets, commercial centers, and shared spaces within both residential and mixed-use districts			**X**
(5) Support for medium-density and high-traffic land uses along the Farrington Highway transit corridor, especially within a quarter mile of the transit nodes.			**X**
(6) Connect existing adjacent neighborhoods to new streets, bike ways, paths, and trails.			**X**
(7) Use traffic calming measures to slow traffic making short cuts through residential neighborhoods and to support a desirable living environment.			**X**
(8) Use multiple connecting streets within and between residential neighborhoods to knit neighborhoods together.			**X**
(9) Use streets, bikeways, and walkways to create a unifying circulation network that provides convenient routes throughout the community.			**X**
(10) Establish specific connectivity standards (minimum intersection frequency, maximum dead end length, number of dwellings or building on a cul-de-sac, and minimum street spacing) for each zoning district.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for Transportation Systems, pertaining to community-level street standards.			
4.2 Water Allocation and System Development			
Adequacy of Water Supply			
(1) Before zoning approval is given for new residential or commercial developments in Central O'ahu , the Board of Water Supply should either indicate that adequate potable and nonpotable water is available or recommend conditions that should be included as part of the zone change approval in order to assure adequacy.	**X**		

Table 4-7: ‘Ewa Development Plan	S	NS	N/A
(2) Confirm adequacy of existing capacity at the time of land subdivision or building permit applications for existing lots.			X
Discussion: The Proposed Action/Proposed Alternative will support the ‘Ewa Development Plan guidelines for Water Allocation and System Development, pertaining to adequacy of water supply. The Applicant is coordinating with the BWS to ensure there will not be disruptions to BWS operations during implementation of the Proposed Action/Proposed Alternative.			
Water Use Efficiency and Conservation			
(1) Require developments to conserve water resources by implementing water conservation measures, such as low flow plumbing fixtures, drought tolerant landscaping, sub-metering and efficient irrigation systems with soil moisture sensors. Such requirements shall be determined during review of building permit applications. Encourage owners of existing plumbing systems to conduct regular water audits and effect repairs to reduce water loss.			X
(2) Dual Water Lines - Require developments with large landscaped areas (such as golf courses, parks, or schools), roadway landscaping, and industrial processes to have dual water lines to allow conservation of potable water and use of nonpotable water for irrigation and other appropriate uses. Such requirements shall be determined during review of project water master plans for new developments and approval of zoning applications and construction plans.			X
(3) Development and Allocation of Potable and Nonpotable Water - The State Commission on Water Resource Management has authority in all matters regarding administration of the State Water Code. By City Charter, the Board of Water Supply has the authority to manage, control and operate the water systems of the City, and therefore should coordinate the development and allocation of potable and nonpotable water sources and systems intended for municipal use on O‘ahu as guided by the City's land use plans and the OWMP.	X		
Discussion: The Proposed Action/Proposed Alternative will support the ‘Ewa Development Plan guidelines for Water Allocation and System Development, pertaining to adequacy of water supply. Nonpotable water that is already used at HNWWTP would also be used for the Proposed Action/Proposed Alternative system. The Proposed Action/Proposed Alternative will not adversely impact the watershed protection. Construction of the Proposed Action/Proposed Alternative will occur within already disturbed portions of the HNWWTP site and is anticipated to involve major land-disturbing activities; applicable BMPs will be implemented to mitigate potential construction impacts. Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the Proposed Action/Proposed Alternative will not result in significant impacts with regard to surface and coastal waters. Soil disturbances in excess of one acre would require an NPDES Individual Permit for Storm Water Associated with Construction Activity, administered by the DOH, will be required to control storm water discharges. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in HAR Chapter 11-54 and 11-55 Water Pollution Control, DOH. Excavation and grading activities will be regulated by applicable provisions of the County’s grading ordinance.			
Use of Non-Potable Water			
(1) Develop an adequate supply of nonpotable water for irrigation and other suitable uses on the ‘Ewa Plain in order to conserve the supply of potable water and to take advantage of dual water systems constructed by ‘Ewa developers.			X
(2) The Pearl Harbor aquifer is the most cost effective and accessible water resource of potable quality on O‘ahu, and it is needed to support the existing and future domestic potable water uses described in the development plans.			X
(3) To minimize the risk of impacts to our precious potable water sources, the use of recycled water reclaimed from wastewater effluent and brackish waters as nonpotable irrigation sources in the coastal caprock area such as the ‘Ewa Plain should be given high priority.			X
(4) Significant demand exists for nonpotable water for golf courses, landscape irrigation, and industrial uses on the ‘Ewa Plain.			X
(5) In addition to the compatibility of the source to the demand in the area, the infrastructure to distribute the recycled water in that area is being planned and developed by the Board of Water Supply.			X

Table 4-7: ‘Ewa Development Plan	S	NS	N/A
(6) Recycled water from the Honouliuli Water Recycling Facility and brackish water should, therefore, be used to meet demand in the ‘Ewa Plain where there are no adverse consequences to the drinking water resources.			X
(7) Require nonpotable water used for irrigation above Pearl Harbor aquifer to be low in chlorides and total dissolved solids to protect the quality of drinking water withdrawn from wells located down-gradient of the application. Experiences with increasing chloride, nitrate, and pesticide contamination of groundwater indicate that activities on the surface of the land can have a detrimental effect on the quality of drinking water.			X
(8) Use of Wai‘ahole Ditch Water - Request that the State Commission on Water Resource Management consider all sources of water in making allocations. A sufficient amount of water is needed to meet the diversified agricultural needs for ‘Ewa and Central O‘ahu along with providing for high quality recharge of the Pearl Harbor aquifer. A number of potential sources are identified in Table 4.2, including: caprock, surface water, spring waters, Wai‘ahole Ditch Water, and recycled water recovered from wastewater effluent. The amount of water available and the potential use of each of these sources vary according to location.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the ‘Ewa Development Plan guidelines for Water Allocation and System Development, pertaining to use of non-potable water.			
Alternative Water Supplies			
(1) Where practical, develop alternative water supplies using new technologies in water reclamation, membrane and distillation desalination and deep ocean water applications to ensure adequate supply for planned uses.			X
(2) Encourage use of technologies conserving water and using renewable energy that could support alternative water supplies, such as seawater air conditioning, photovoltaics, efficient plumbing and lighting fixtures, wave energy, and bio-fuels.			X
4.3 Wastewater Treatment			
(1) Require all wastewater produced by new developments in ‘Ewa to be connected to a regional or municipal sewer service system.	X		
(2) Where feasible, use recycled water recovered from wastewater effluent for irrigation and other uses below the Underground Injection Control (UIC) line of the State Department of Health and the "No-Pass" Line of the Board of Water Supply.	X		
(3) Locate wastewater treatment plants in areas shown as planned for industrial use and away from residential areas shown on the UrbanLand Use Map in Appendix A. Existing treatment plants are shown on the Urban Land Use Map and the Public Facilities Map in Appendix A.	X		
(4) Use a City review and approval process, which provides adequate public notice and input, complete technical analysis of the project by the DPP, and approval by the City Council, for any major new private wastewater treatment plant. Other system elements, such as pump stations and mains, should not require such comprehensive review and policy approval.			X
Discussion: The Proposed Action/Proposed Alternative will support the ‘Ewa Development Plan guidelines for Wastewater Treatment. The Project Site will have access to existing infrastructure in regard to utilities such as water, wastewater, electrical, and communication systems. The Proposed Action/Proposed Alternative are consistent with these guidelines. The upgrades strengthen the Honouliuli WWTP’s ability to serve as the regional wastewater treatment facility for ‘Ewa and maintain the plant’s location within an industrial area away from residential neighborhoods. The UV system provides these benefits with minimal operational complexity, while the PAA alternative also supports these goals but requires continued chemical monitoring to ensure reclaimed water quality. The HNWWTP would continue to provide water to the Honouliuli Recycled Water Facility for further treatment for water reuse.			
4.4 Electrical Power Development			
(1) Analyze and approve major system improvements - such as development of a new power generating plant and/or major new transmission lines - based on island-wide studies and siting evaluations.			X
(2) Give strong consideration to placing any new transmission lines underground where possible under criteria specified in State law.			X
(3) Locate electrical power plants in areas shown as planned for industrial use and away from residential areas shown on the Urban Land Use Map in Appendix A. Existing			X

Table 4-7: 'Ewa Development Plan	S	NS	N/A
power plants are shown on the Urban Land Use Map and Public Facilities Map in Appendix A. Other system elements, such as sub-stations and transmission lines, are not shown on the map and should be reviewed and approved administratively.			
(4) Consider any proposed major new electrical power plant within a City review and approval process which provides public notification and opportunity to comment and public agency analysis of impacts and mitigations.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the Central O'ahu Sustainable Communities Plan guidelines for Electrical Power Development. However, the project has access to existing infrastructure in regard to utilities such as water, wastewater, electrical, and communication systems. Additionally, the Proposed Action/Proposed Alternative will seek necessary approvals and permits relating to electrical power.			
4.5 Solid Waste Handling and Disposal			
(1) Do not develop the Makaīwa Gulch area identified by the Mayor's Advisory Committee in December 2003 as a landfill. It is in an area planned for residential use and is adjacent to the Ko Olina Resort, which plays an important role in job creation for 'Ewa.			X
(2) Analyze and approve siting and/or expansion of sanitary landfills based on island-wide studies and siting evaluations.			X
(3) For master-planned communities, plan, in consultation with the Department of Environmental Services, for how solid waste will be handled, to include estimates of solid waste to be generated by the communities, provisions for collection of solid waste, and provisions for and encouragement of recycling.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the Central O'ahu Sustainable Communities Plan guidelines for Solid Waste Handling and Disposal.			
4.6 Drainage Systems			
(1) Design drainage systems to emphasize flood control, minimization of nonpoint source pollution, and the retention and/or detention of storm water on-site and in appropriate open space and wetland areas. .	X		
(2) Use storm water as a potential irregular source of water for recharge of the aquifer that should be retained for absorption rather than quickly moved to coastal waters.			X
(3) Use natural and man-made vegetated drainageways and retention basins as the preferred solution to drainage problems wherever they could promote water recharge, help control non-point source pollutants, and provide passive recreation benefits. However, concrete-lined channels can be permitted, despite their potential adverse environmental impacts, if there is no other reasonable alternative to meet specific design challenges.			X
Discussion: The Proposed Action/Proposed Alternative will support the Central O'ahu Sustainable Communities Plan guidelines, pertaining to drainage systems. Construction of the Proposed Action/Proposed Alternative is anticipated to involve major land disturbing activities. Facility design includes compliance with FEMA FIRM flood hazard requirements, minimizing nonpoint pollution and ensuring proper drainage. Applicable BMPs will be implemented to mitigate construction impacts. Applicable erosion control measures and BMPs will be implemented in order to mitigate any possible adverse effects relating to runoff. Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the Proposed Action/Proposed Alternative will not result in significant impacts with regard to surface and coastal waters. Soil disturbances in excess of one acre would require an NPDES Individual Permit for Storm Water Associated with Construction Activity, administered by the DOH, will be required to control storm water discharges. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in HAR Chapter 11-54 and 11-55 Water Pollution Control, DOH. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.			
4.7 School Facilities			
Project Review and Approval Assessment			
(1) As new residential developments are reviewed as part of the project application review and approval process, request that the DOE report to the DPP whether the DOE will be able to provide adequate school facilities, either at existing schools or at new school sites, so that needs from the proposed development can be met.			X
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for School Facilities, pertaining to project review and approval assessment.			

Table 4-7: 'Ewa Development Plan	S	NS	N/A
Fair Share Provisions			
(1) Require developers to comply with DOE school impact fee requirements and pay their fair share of all costs needed to provide adequate school facilities for the children living in their developments. .			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan guidelines for School Facilities, pertaining to fair share provisions.			
4.8 Public Safety Facilities			
(1) Provide adequate staffing and facilities to ensure public safety.	**X**		
(2) Approve new development only if staffing and facilities will be adequate to provide fire and police protection and emergency medical services when development is completed.	**X**		
(3) Survey and retrofit, as appropriate, DOE and other public buildings to make up the shortfall in hurricane resistant shelters.			**X**
(4) Require new City buildings which are "critical facilities used for public assembly and able to perform as shelters" to be designed and built to withstand a Category 3 hurricane.			**X**
(5) Provide incentives for private organizations to create hurricane resistant shelter areas in their facilities and for homes to include hurricane resistant "safe rooms."			**X**
Discussion: The Proposed Action/Proposed Alternative will support the 'Ewa Development Plan guidelines for Public Safety Facilities. Proper training and safety measures will be implemented to minimize the risks associated with waste handling and to respond effectively to any emergencies that may arise during the facility's operation. The development and operation of the Proposed Action/Proposed Alternative will include an appropriate number of staff members to manage waste offloading, oversee facility activities, and ensure smooth operations. Adequate staffing will be essential to maintain safety protocols, manage waste handling, and provide assistance to residents using the facility, thereby ensuring public safety within the facility's premises. As discussed under Section 3.16.1 (Police, Fire, and Medical Services), the Proposed Action/Proposed Alternative is not expected to have a significant impact on police, fire and emergency vehicles. During the construction period, the contractor shall ensure to keep the roadways clear and allow accessibility of police, fire, and emergency vehicles. The Proposed Action/Proposed Alternative will not increase the on-site population and will not create long-term demand for additional police protection services. As the Proposed Site is near existing structures on parcels already developed for use with existing fire connections and hydrants, the Proposed Action/Proposed Alternative is not anticipated to create an increased demand for existing fire protection services. Access for a fire apparatus, water supply, and building construction for the project will comply with existing codes and regulations. Furthermore, the Proposed Action/Proposed Alternative 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.			
4.9 Other Community Facilities			
Colleges and Hospitals			
(1) In most cases, locate colleges and hospitals in urban areas near transit nodes, commercial centers, or medium density residential areas.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan, in terms of colleges and hospitals.			
Correctional Facilities			
(1) In most cases, locate correctional facilities on industrial or agricultural lands. (However, a youth detention facility was appropriately located within the City of Kapolei as part of a relocated Family Court.) If such a facility is proposed for lands not planned for industrial or agricultural use, a City review and approval process that provides for public review, complete analysis, and policy approval should be used.			**X**
Discussion: The Proposed Action/Proposed Alternative will not impact the 'Ewa Development Plan, in terms of corectional facilities.			

4.2.3 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 orderly development in accordance with adopted land use policies, including the O'ahu 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.

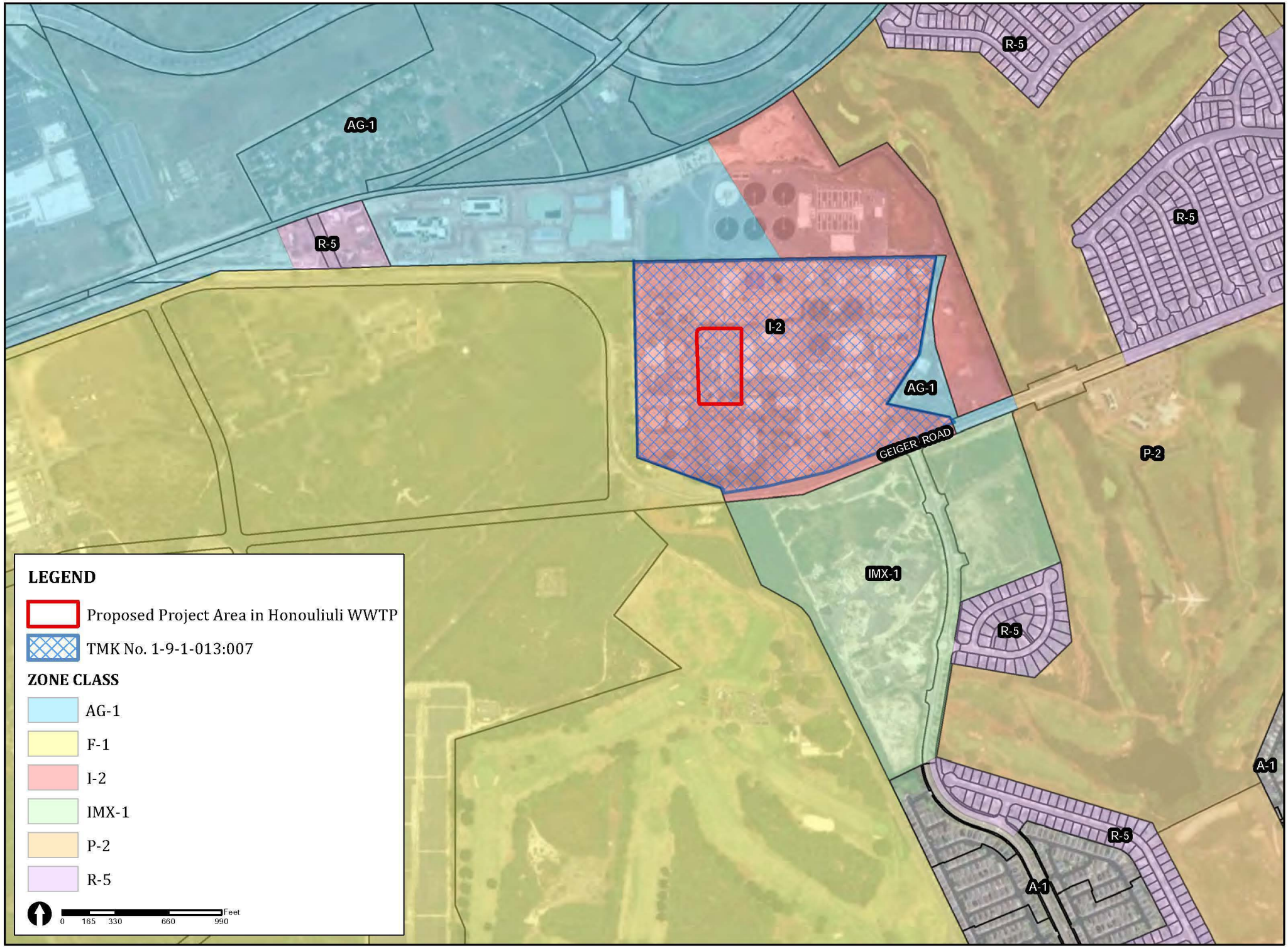
The LUO additionally provides reasonable development and design standards that are applicable to the location, height and size of structures, yard areas, off-street parking facilities, as well as open spaces, and the use of structures and land for agricultural, industrial, residential, and other uses (ROH, Chapter 21).

Discussion:

According to the CCH DPP, the Project Area lies within the Intensive Industrial District, I-2 (see Figure 4-2). The purpose of I-2 district is to allow public facility, and utility uses such as a wastewater treatment. Both the Proposed Action (UV) and Proposed Alternative (PAA) are consistent with the LUO because they involve infrastructure upgrades within an existing municipality facility and does not change the zoning designation or introduce incompatible land uses. Regardless of which alternative is implemented, the proposed project will comply with applicable LUO standards, ensuring orderly development and continued protection of public health, safety, and welfare. Pursuant to ROH §21-2.130(a)(1), it should be noted that the proposed upgrades to HNWWTP facility are classified under public and utility facilities, which is permitted within a zoning district and may qualify for a Waiver Permit. Thuse, the Proposed Action/Proposed Alternative is consistent with the CCH's LUO and will comply with the intent and use of the I-2 District.

Honouliuli WWTP Effluent Treatment & Outfall Improvements

FIGURE 4-2 CITY AND COUNTY OF HONOLULU ZONING MAP



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 Project.

Federal

- United States EPA
  - CWA Section 301(h) Review
- United States Army Corps of Engineers (USACE)
  - Department of the Army Permit (CWA Section 404; Rivers and Harbors Act Section 10)
- NHPA Section 106 Consultation
- FAA Form 7460-1 Notice of Proposed Construction or Alteration

State of Hawai'i

Department of Land and Natural Resources

- Chapter 6E, HRS, State Historic Preservation Law

Department of Health

- Air Pollution Control Permits (Covered Source Permit and/or Noncovered Source Permit)
- Construction Plan Review and Approval
- CWB Individual NPDES Form – Discharge of Municipal Wastewater from New and Existing Publicly Owned Treatment Works (modification)
- CWB Notice of Intent (NIO) Form – Coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities
- CWB BOI Form - Coverage under the NPDES General Permit for Discharges Associated with Construction Activity Dewatering (if required)
- Historic Preservation – Archaeological Monitoring Plan
- Pollution Control - Noise Permit

City and County of Honolulu

BWS

- Water and Water System Requirements
- Construction Plan Review and Approval

Department of Transportation

- Street Usage Permit for Construction

ENV

- EA Approval
- Permission to Discharge into Mamala Bay (required for CWB NPDES Permits)

DPP

- Building Permit
- Construction Plan Review and Approval
- Electrical Permit
- Grading and Erosion Control Plan Review
- Grading, Grubbing, and Stockpiling Permit
- Trenching Permit

Others

- Utility Companies
- Utility Service Requirements
- Permit Regarding Work on Utility Lines
- Traffic Control Plans

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CHAPTER 5 Alternatives

5. Alternatives

Pursuant to HAR §11-200.1-18, it is required that an EA identifies and provides an analysis of any alternatives considered in satisfying the purpose and need of the Proposed Action that it evaluates.

As discussed herein previously, the goals and objectives of the Proposed Action (UV disinfection system) are to address HNWWTP's need for improved wastewater treatment through a nonchemical disinfection process, demonstrate continued compliance with current NPDES requirements, and increase overall reliability and disinfection capacity in preparation for the future.

As mentioned in Chapter 1 (Introduction), at the request of the City, this EA also includes a PAA disinfection system as a potential supplement or substitute for the Proposed Action. This consideration arose after the distribution of the ECP on May 27, 2025. UV remains the preferred technology based on the 2022 Disinfection Alternatives Analysis, but evaluating PAA provides flexibility in decision-making and supports transparency in the planning process.

In observance of these goals, the Proposed Action has considered a range of alternatives. The alternatives considered include the following:

(1) No Action Alternative
(2) UV Disinfection System (Proposed Action)
(3) PAA Disinfection (Proposed Alternative)

In 2022, the CCH ENV completed a *Disinfection Alternatives Analysis* report, which evaluated a number of alternatives to determine the best, long-term disinfection strategy for HNWWTP. According to the report, disinfection alternatives were evaluated to determine viability for implementation at the WWTP. Viable alternatives must be capable of meeting current and potential future NPDES permit limits, while also satisfying the established evaluation criteria. The criteria considered included:

- Disinfection effectiveness and reliability.
- Toxicity and disinfection by-products.
- Post treatment requirements.
- Monitoring requirements.
- Ability to meet potential future permit requirements.
- Other non-monetary considerations.

5.1 No Action Alternative

Under the No Action alternative, improvements under the Proposed Action/Proposed Alternative would not be implemented, and the project site would remain in its current configuration. This alternative would preclude permit approvals and the incurrence of design and construction costs that would otherwise be required for the Proposed Action/Proposed Alternative. Moreover, the No Action alternative would avoid insignificant environmental impacts that arise from the Proposed

Action/Proposed Alternative along with the need to implement appropriate mitigation measures, as discussed in Chapter 3 of this EA.

The No Action alternative would involve maintaining the existing wastewater infrastructure without implementing the proposed UV or PAA disinfection system. Under this scenario, the current system would continue to operate within its existing parameters, without any significant upgrades or expansions. Currently the HNWWTP does not have effluent disinfection. The implications of the No Action alternative are as follows:

1. **Capacity Limitations:** As population growth and urban development continue, the existing system will need to be able to filter and upkeep current and future water quality standards for the community, coastal resources, and increasing population capacity.

2. **Regulatory Compliance:** The current system could struggle to meet regulatory requirements for wastewater management and environmental protection, risking non-compliance and the imposition of fines or mandates for system upgrades. The current treatment system may not be able to meet the NPDES compliance deadlines for pathogen limits.

3. **Environmental Impact:** Improper disinfection and cleaning of wastewater discharge will almost certainly lead to threats to both human and environmental health. Improperly disinfected discharge can have several impacts including but not limited to algal blooms, enterococci infections, and poisoning of coastal and marine life.

4. **Hindered Community Growth:** The limited capacity and inefficient disinfection rates of the existing system could stifle future development within the Secondary Urban Center, since clean water and noncontaminated discharge is essential to providing water resources to a growing community. Without improved infrastructure, there is decreased potential for limiting economic growth and expansion in the region.

5. **Public Health:** Improper disinfection of water that is contaminated with enterococci bacteria may lead to other threats to public health such as viruses or pathogens infection.

While the No Action alternative avoids the immediate environmental impacts and costs associated with large-scale construction, it could result in more severe long-term environmental, economic, and public health challenges. This alternative serves as a baseline for comparing the Proposed Action and other alternatives, allowing for a comprehensive evaluation of the potential benefits and impacts of the project.

5.2 Proposed Action: Ultraviolet Disinfection System

Under the Proposed Action, building and construction of a UV system would proceed. This EA would act as a guideline for the construction and implementation of best management practices designed

to protect the people and the environment near and being served by HNWWTP. Construction and implementation of the UV treatment system is summarized below, with more detailed description of the construction, impacts, and mitigation measures in Chapter 3 of this EA, with permit and plan analysis in Chapter 4.

UV treatment would provide a non-chemical-based alternative to disinfect secondary effluent. High intensity UV light is able to kill off viral, bacterial, and fungal organisms by disrupting DNA and RNA, chemical bonds, and inducing oxidative stress (Biology Insights, 2025). UV disinfection is an eco-friendlier alternative to chemical treatment as there are no direct byproducts, with the only sustainability concern being energy usage.

The project would first involve construction and grading for the new facility. Secondary effluent would be routed to the UV facility, and disinfected effluent would be discharged to the existing outfall. Operation of facility, channels, and lamps will be monitored regularly, and channel use rotated to ensure regular maintenance of the system.

The Proposed Action would be a significant improvement over current nonexistent disinfection at HNWWTP. Added disinfection would provide the leeward community with better water quality, decreased chances of infection, and protect the marine ecosystems around the coast.

5.3 Proposed Alternative : Peracetic-Acid Disinfection

CCH is considering the use of a PAA disinfection system as a potential supplement or substitute to meet NPDES requirements for enterococci reduction. This method of disinfection would require the mixing of PAA (CH_3CO_3H) with effluent. Under this alternative, CCH would construct a new PAA facility within HNWWTP property and within the same footprint as the Proposed Action. The system would consist of above-ground chemical storage tanks, metering pumps, secondary containment, and associated piping and controls to introduce the disinfectant into the effluent stream.

PAA is growing in popularity as an eco-friendlier alternative to traditional chlorine-based chemical disinfection. PAA is characterized by its clear, colorless appearance, and strong vinegar-like odor. The mixture is commonly synthesized through the combination of Acetic Acid (CH_3COOH) and Hydrogen Peroxide (H_2O_2). PAA is a very strong oxidizing agent with a pH ranging from 2.0-3.0; the chemical is extremely effective at denaturing proteins and disrupting cell wall permeability (Rutala et al., 2008). This disinfection method has been shown to be very effective in low concentrations and does not lose potency in the presence of organic matter, hence its effectiveness in wastewater treatment. PAA is highly reactive and has very limited shelf life. The byproducts are water, oxygen, and acetic acid. This chemical is currently used in a variety of industries, including medical equipment sterilization, food and beverage sterilization and wastewater disinfection for mills and textiles production.

According to the 2022 Alternatives Analysis Report, PAA disinfection occurs in two phases: an initial, nearly instantaneous oxidation step, followed by a longer period of gradual decay in PAA concentration. Most of the disinfection effectiveness occurs during the initial contact period (Kitis,

2004), while extended contact time provides little additional benefit. The relationship between PAA disinfection kinetics and contact time for monitoring and operational control is still being refined.

In the scenario that a UV system cannot be implemented, this would be an eco-friendlier alternative to chlorine-based chemical disinfection. Implementation of this alternative would be either manual addition or pumping of the chemical into effluent as tertiary treatment then prepped for release after some amount of time. While more cost-effective and efficient than chlorine-based treatment, the acid still has various concerns in its raw form. However, PAA is toxic in higher concentrations and would be dangerous to marine life if discharged in larger concentrations. Wastewater treatment plants that utilize PAA must follow EPA guidelines for discharge monitoring as well as permits for specifying allowable PAA levels added to effluent.

PAAs existence as not only a stronger acid but a strong oxidizer will require the proper training and handling of the chemical. Due to the safely concerns of PAAs, storage tanks and surrounding areas must be constructed with proper precautions, such as good ventilation, away from any heat sources and have an emergency response plan.

PAA and UV disinfection in combination have shown promising results in pilot studies at other wastewater treatment plants on the mainland, showing vastly improved rates of microbial inactivation, with UV treatment being more efficient in the presence of PAA-treated effluent (Garg, A. 2018). However, site-specific information and testing is needed to determine the safe level of PAA dosing to prevent toxicity and disinfection byproducts.

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CHAPTER 6 Anticipated Determination of FONSI

6. Anticipated Determination of Finding of No Significant Impact (FONSI)

Potential impacts of the Proposed Action/Proposed Alternative have been evaluated in accordance with the significance criteria of HAR §11-200.1-13. Discussion of the Proposed Project's conformance to the criteria is presented as follows:

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

No natural or cultural resources of significance were identified within the Project Area. Moreover, the Proposed Action/Proposed Alternative is set to take place in areas that have already been disturbed and developed. Hence, it is unlikely that any undiscovered cultural or historic sites, or human remains, will be affected by the Proposed Action and operational activities. Should any historic or archaeological resources be unexpectedly found, SHPD will be immediately informed to take appropriate action. Thus, if any significant plants or landscapes are impacted during the implementation of the Proposed Action/Proposed Alternative, the plants or landscapes would be returned to existing conditions to the extent feasible or enhanced.

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

The Proposed Action/Proposed Alternative will not curtail the range of beneficial uses of the environment. As previously mentioned, the Project Area is situated in a disturbed urban environment within an existing wastewater treatment plant. The operations and uses associated with the Proposed Action/Proposed Alternative are generally consistent with the character of the surrounding region and are anticipated to seamlessly be integrated.

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

The Proposed Action/Proposed Alternative will not conflict with the long-term environmental policies, goals, and guidelines of HRS Chapter 344, as noted throughout Chapter 4 of the EA. The State's environmental policies enumerated by HRS Chapter 344 promote the conservation of natural resources and an enhanced quality of life for all citizens.

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

The Proposed Action/Proposed Alternative 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/Proposed Alternative will, instead, provide benefits to the local economy in the short-term through construction expenditures, construction support jobs and purchase of materials from local suppliers. In the long term, the Proposed Action/Proposed Alternative will contribute to protecting public health and the environment, supporting future growth and development.

The Proposed Action/Proposed Alternative will not have an effect on cultural resources or practices at the Project Site as none exist as discussed in Section 3.6 and Section 3.7 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/Proposed Alternative. 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 CCH regulations as discussed in Chapter 3 of the EA.

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

The Proposed Action/Proposed Alternative will provide significant benefits by improving the region's wastewater discharge quality and health. This infrastructure upgrade aims to substantially decrease the amount of active bacteria in HNWWTP's effluent.

7) Involve a substantial degradation of environmental quality;

The Proposed Action/Proposed Alternative 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 are anticipated, but will be temporary and comply with State and CCH regulations as discussed in Chapter 3 of the EA. The Proposed Action/Proposed Alternative will provide benefits for the water and marine ecosystems around the Project Site in the form of cleaner discharge.

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

The Proposed Action/Proposed Alternative is not anticipated to have considerable effect upon the environment as discussed in Chapter 3 of the EA. There are no commitments for further action beyond the scope presented within this EA.

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

As mentioned in Section 3.5 of the EA, no known rare, threatened, or endangered plant or animal species inhabit the area. Therefore, the Proposed Action/Proposed Alternative is not expected to negatively affect these species or critical habitats. However, construction activities that disturb the soil may inadvertently expose soil or plant material that could contain invasive fungal pathogens, pests, or invasive plant species. In general, to reduce potential impacts, the mitigation measures presented in Section 3.5 are recommended.

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 Site are anticipated as a result of the construction and operation of the Proposed Action/Proposed Alternative. The Proposed Action/Proposed Alternative will, however, have long-term beneficial impacts in regard to wastewater quality. The Proposed Project will contribute to improving the overall quality of the effluent that is discharged from HNWWTP.

Construction and operation of the Proposed Action/Proposed Alternative will be performed in accordance with Federal, State and CCH regulations, thereby minimizing potential impacts to air and water quality.

In the short term, noise from construction activities such as demolition, clearing and paving will be unavoidable. The increase in noise level will vary according to the phase of construction. Noise may also increase as a result of operating power equipment during the construction period. Construction noise impacts will be mitigated by compliance with provisions of the 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. 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. In the long- term, some vehicular emissions related to operations at the Project are expected, however, due to the generally prevailing trade winds, the emissions would be 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;

The Project Area is located in southwestern Oʻahu and serves the West Mamala Region, which stretches from Hālawa to Makakilo, and includes Barbers Point, ʻEwa, Kapolei, and Mililani. According to the FIRM, the Project Area is designated within Flood Zones D and X. In the short-term, applicable best management practices would be implemented including, but not limited to, temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks so that impacts of flooding are not exacerbated from construction. In

the long-term, the Proposed Action/Proposed Alternative will incorporate applicable drainage improvements and appropriate building codes related to flooding impacts.

(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/Proposed Alternative will not result in significant adverse impacts to view planes identified in CCH or State plans or studies. Moreover, the Proposed Project/Proposed Alternative is not expected to adversely affect scenic and visual resources in the area as noted in Section 3.14 of the EA. The Proposed Action/Proposed Alternative 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 utilize existing HNWWTP power supply. UV dosage would be optimized to prevent over dosing and over usage of electricity.

The PAA alternative would require continuous chemical production, delivery, and monitoring, shifting energy and emissions considerations to the broader supply chain. Both systems reflect the City's intent to balance efficiency, conservation, and sustainability in wastewater infrastructure for the State.

Implementation of the Proposed Action/Proposed Alternative will result in the short-term irrevocable release of GHGs from construction activities, which 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 should be included in regular construction work practices. Moreover, the contractors for the construction of the applicable projects will be required to prepare a dust control plan compliant with the provisions of Chapter 11-60.1, HAR, Air Pollution Control.

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CHAPTER 7 Consultation

7. Consultation

7.1 Early Consultation

This Draft EA process incorporates the efforts from the completed ECP process, as well as comments and input received from agencies, accepting authorities, and interested organizations. The Early Consultation/ Pre-Assessment Package for the Proposed Action was mailed out on May 28th, 2025 to the agencies, organizations, and stakeholders listed below in preparation of the EA process. Consultation was conducted to solicit comments regarding potential concerns and requirements for refining the scope of the EA documentation. Please note that the Proposed Alternative (PAA) was considered after the distribution of the ECP. Parties that formally replied during the Early Consultation process are indicated by a "✓" below. All written comments are reproduced in Appendix C.

Federal Agencies

☐ U.S. Army Corps of Engineers
☐ U.S. Environmental Protection Agency, Region 9 – Pacific Islands Office
✓ 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
☐ Congresswoman Jill Tokuda
☐ Congressman Ed Case

State Agencies

☐ Department of Agriculture
✓ Department of Accounting and General Services
✓ Department of Education
☐ Department of Business, Economic Development and Tourism
☐ DBEDT Business Development and Support Division
☐ DBEDT Hawaii State Energy Office
☐ DBEDT Hawaii Housing Finance and Development Corporation
☐ DBEDT Land Use Commission
✓ Office of Planning and Sustainable Development, Environmental Review Program
☐ Department of Defense
☐ Department of Health
☐ DOH - Environmental Management Division
☐ DOH - Hazard Evaluation and Emergency Response Office
☐ DOH - Wastewater Branch
☐ DOH - Clean Water Branch
☐ DOH - Safe Drinking Water Branch
✓ Department of Land and Natural Resources – Land Division

☐ DLNR Division of Aquatic Resources
☐DLNR - Commission on Water Resource Management
✓DLNR - Engineering Division
☐ DLNR - Division of Boating and Recreation
☐ DLNR - Office of Coastal and Conservation Lands
☐ DLNR - State Historic Preservation Division
☐ Department of Hawaiian Home Lands
☐ Office of Hawaiian Affairs
✓ Department of Transportation
☐ DOT - Harbors Division
✓ DOT - Highways Division
☐ DOT - Airports Division
☐ Department of Defense - Hawaii Army National Guard
☐ Department of Human Services - Hawaii Public Housing Authority

State Representatives
☐ Senator Mike Gabbard
☐ Senator Kurt Favella
☐ Representative Elijah Pierick
☐ Representative Julie Reyes Oda
☐ Representative David Alcos III
☐ Representative Diamond Garcia

City and County of Honolulu
☐ Board of Water Supply
✓ Department of Community Services
✓ Department of Design and Construction
☐ Department of Environmental Services
☐ Department of Facility Maintenance
☐ 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
☐ Department of Enterprise Services
☐ Department of Land Management
☐ Office of the Mayor

City Council
☐ Councilmember Andria Tupola
☐ Councilmember Augie Tulba

Utility Companies

☐ Hawaii Telcom
✓ Hawaii Gas
☐ Hawaiian Electric Company
✓ Spectrum Hawaii

Other Interested Parties and Individuals

✓ Hawai'i State Library
☐ Ewa Beach Public and School Library
☐ Neighborhood Board No. 23 - 'Ewa

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APPENDIX A

Flora and Fauna Assessment for the

Honouliuli WWTP UV Project

‘Ewa Beach, O’ahu

AECOS No. 1877

Flora and fauna assessment for the Honouliuli WWTP UV Project, ʻEwa Beach, Oʻahu

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May 29, 2025

Flora and fauna assessment for the Honouliuli WWTP UV Project, ‘Ewa Beach, O‘ahu

May 29, 2025 *AECOS* No. 1877

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Introduction

The City and County of Honolulu proposes the installation of a UV analyzer system within the existing Honouliuli Wastewater Treatment Plant (“Project”). *AECOS*, Inc. was contracted by Wilson Okamoto Corporation (WOC) to conduct a biological survey of flora and fauna within the approximately 2.4-ac (0.97-ha) Project site. This report details findings of that survey.[1]

Site Description

Located in southwestern O‘ahu, the Honouliuli Wastewater Treatment Plant is situated off Geiger Road in Tax Map Key (TMK): 9-1-013:007 (Figure 1). It is adjacent to Coral Creek Golf Course and extends across properties to the north and east. The Project site is a little west of center on the Project parcel. Modular offices and large garbage containers presently line the northeast portion of the survey area. Primary and secondary digester tanks lie adjacent on the east, outside of the survey area (cover photo; Figure 2). The Project site is mostly paved, although includes a gravel parking area.

Methods

Botanical Survey

AECOS biologists A. Lee and K. Yoneshige conducted a botanical survey on March 18, 2025, by walking throughout the Project area and vicinity. Plant species were identified as they were encountered. Any plant not immediately recognized during the survey was photographed and/or a representative feature (fruit, flower, leaf, branch) was collected for later identification at the laboratory. Species names follow *Manual of the Flowering plants of Hawai‘i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental and agricultural plants. More recent name changes for naturalized plant species follow Imada (2019).

[1] This report was prepared for Wilson Okamoto Corporation (WOC) and is intended to become part of the public record by inclusion within an entitlements document..

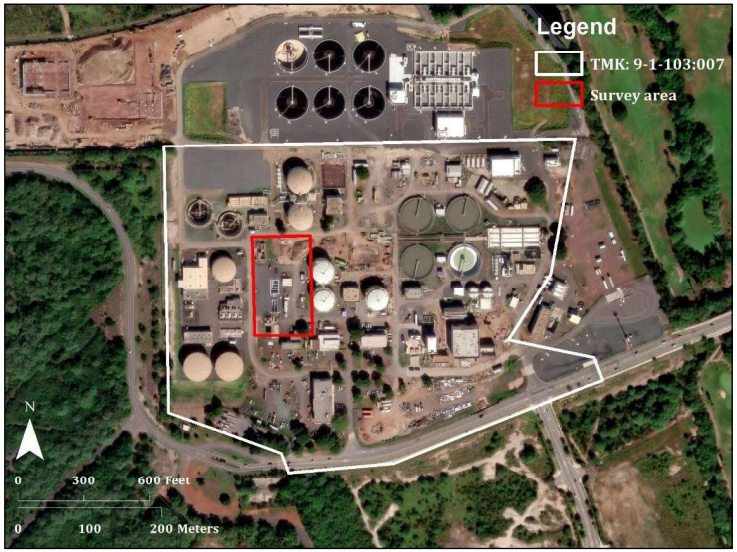

Figure 1. Map of the survey area (outlined in red) in ‘Ewa Beach, O’ahu.

Avian Survey

AECOS biologists conducted an avian survey of the Project area on March 18, 2025, during the late morning hours. Birds were identified to species by visual observation, aided by Leica 8 X 42 binoculars, and by listening for vocalizations.

Figure 2. Overview of the Project area including digestor tanks.

Weather conditions were ideal for avian observations, with unlimited visibility, no precipitation and light wind. 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 65th supplement to the checklist (Chesser et al., 2024).

Mammalian Survey

AECOS biologists compiled a list of terrestrial mammal species observed in the Project area. Visual observations of tracks, scat, and other sign indicating mammals using the area were recorded. Mammalian scientific names follow *Mammal Species of the World* (Wilson and Reeder, 2005).

Results

Flora

A listing of all plant taxa encountered in the survey is presented in Table 1. 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 relative abundance within the survey area**.** "Status" reflects the state-wide distribution of the species. In total, we recorded 32 species of vascular plants, all angiosperms (flowering plants). No native plants (indigenous or endemic) were observed.

Table 1. Listing of plants for Honouliuli WWTP, O'ahu.

Species listed by family	Common name	Status	Abundance	Notes
	FLOWERING PLANTS			
	MONOCOTYLEDONES			
POACEAE				
Bothriochloa pertusa (L.) A. Camus	pitted beardgrass	Nat	R	
Cenchrus ciliaris L.	buffelgrass	Nat	C	
Cenchrus echinatus L.	common sandbur	Nat	O	
Chloris barbata Sw.	swollen fingergrass	Nat	U	
Cynodon dactylon (L.) Pers.	Bermuda grass	Nat	R	
Eragrostis pectinacea Nees var. pectinacea	Carolina lovegrass	Nat	C	
Melinis repens (Willd.) Zizka	Natal redtop	Nat	A	
	EUDICOTYLEDONES			
ACANTHACEAE				
Asystasia gangetica (L.) T. Anderson	Chinese violet	Nat	U	
AMARANTHACEAE				
Alternanthera pungens Kunth	khaki weed	Nat	A	
Amaranthus graecizans L.	---	Nat	R	
Amaranthus spinosus L.	spiny amaranth	Nat	C	
ASTERACEAE				
Bidens alba (L.) DC. var. *radiata* (Sch. Bip. Ballard ex Melchert	beggartick	Nat	C	
Calyptocarpus vialis Less.	---	Nat	R	
Emilia fosbergii Nicolson	*pualele*	Nat	U	
Sonchus oleraceus L.	sow thistle	Nat	R	
Tridax procumbens L.	coat buttons	Nat	O	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
BORAGINACEAE				
Heliotropium procumbens Mil.	---	Nat	R	
CONVOLVULACEAE				
Ipomoea obscura (L.) Ker Gawl.	---	Nat	R	
EUPHORBIACEAE				
Euphorbia hypericifolia L.	graceful spurge	Nat	U	
Ricinus communis L.	castor bean	Nat	R	
FABACEAE				
Albizia saman F. Muell	monkeypod	Nat	R	
Macroptilium atropurpureum (DC.) Urb.	cow pea	Nat	U	
Pithecellobium dulce (Roxb.) Benth.	*'opiuma*	Nat	U	
MALVACEAE				
Malvastrum coromandelianum (L.) Garcke	false mallow	Nat	R	
Malva parviflora L.	cheeseweed	Nat	C	
Sida ciliaris L.	---	Nat	A	
NYCTAGINACEAE				
Boerhavia coccinea Mill.	false *alena*	Nat	U	
SOLANACEAE				
Solanum lycopersicum L. var. *cerasiforme* (Dunal) D.M. Spooner, G. J. Anderson & R.K. Jansen	cherry tomato	Nat	U	
PASSIFLORACEAE				
Passiflora foetida L.	love-in-a-mist	Nat	O	
VERBENACEAE				
Stachytarpheta jamaicensis L.	---	Nat	O	
ZYGOPHYLLACEAE				
Tribulus terrestris L.	puncture vine	Nat	U	

Legend to Table 1

STATUS = distributional status for the Hawaiian Islands:
Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook in 1778.

ABUNDANCE:
R – Rare — seen in only one or perhaps two or three times.
U – Uncommon — seen at most in several locations.
O – Occasional — seen with some regularity.
C – Common — observed numerous times during the survey.
A – Abundant — found in large numbers; may be locally dominant.

Avian Fauna

A total of 7 bird species, representing 5 separate families, were encountered across the survey area (Table 2). All species observed are non-native species naturalized in the Hawaiian Islands.

Table 2. Listing of birds observed within the Project area.

Common Name	ORDER FAMILY *Species*	Status
	COLUMBIFORMES	
	COLUMBIDAE	
Spotted Dove	*Streptopelia chinensis*	NN
Zebra Dove	*Geopelia striata*	NN
Mourning Dove	*Zenaida macroura*	NN
	PASSERIFORMES	
	STURNIDAE	
Common Myna	*Acridotheres tristis*	NN
	FRINGILLIDAE	
House Finch	*Haemorhous mexicanus*	NN
	THRAUPIDAE	
Saffron Finch	*Sicalis flaveola*	NN
	PELECANIFORMES	
	ARDEIDAE	
Western Cattle-Egret	*Ardea ibis*	NN

Legend to Table 2.

Status = distributional status for the Hawaiian Islands:
NN = Non-native; naturalized, introduced to the Hawaiian Islands.

Mammals

No mammals were encountered in the survey area.

Discussion and Recommendations

Recommendations presented here 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 the environment and listed species to the maximum extent practicable.

Floral Resources

No plant species proposed for listing or listed as endangered or threatened under either federal or state of Hawai'i endangered species statutes (HDLNR, 1998; USFWS, nd-a) were recorded during the course of our survey. No sensitive vegetation is present in the survey area, and indeed no native plants were recorded as present in the Project area.

Avian Resources

No bird species proposed for listing or listed as endangered or threatened under either federal or state of Hawai'i endangered species statutes (HDLNR, 1998; USFWS, nd-a) were recorded during the course of our survey. No native birds were recorded as present in the Project area.

Seabirds

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

- If Project design or building schedule requires night-time lighting, then risk of incidentally downing nocturnally-flying seabirds will increase. To avoid and minimize potential impacts to seabirds, the following are recommended: fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary; install automatic motion sensor switches and timer controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area; and avoid night-time construction during the seabird fledging period from

September 15 through December 15. All external lighting structures should be fully "dark sky compliant" (HDLNR-DOFAW, 2016).

White Tern (*Gygis alba*) or *manu o Kū*, is an indigenous seabird listed as threatened under State of Hawai'i endangered species statute, HRS 195D (HDLNR, 2015). In the main Hawaiian Islands, the majority of the White Tern population is restricted to central urban and suburban Honolulu, with a known nesting and breeding range extending from Aloha Tower to Niu Valley (VanderWerf & Downs, 2018). The Project area in 'Ewa is outside this range and has but a single suitable tree for nesting (a monkeypod). Thus, White Tern nesting is unlikely within the Project area; however, if cutting the single monkeypod (or branches thereof) is required., the tree will need to be inspected for nesting White tern before any branch is removed.

Mammalian Resources

It is probable that the small Indian mongoose (*Herpestes javanicus*), and one or more of the four Muridae (rats and mice) currently established on the Island of O'ahu utilize this area to some extent. These mammalian species are introduced and deleterious to native ecosystems and native fauna.

Hawaiian Hoary Bat

It is possible that the endangered Hawaiian hoary bat (*Lasiurus semotus;* Pinzari, 2020) uses resources in the area. This bat species is solitary and rare but has a widespread distribution in Hawai'i.

- Cutting branches or the entire monkey pod can avoid adverse impact to Hawaiian hoary bat if done outside of the puping 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).

Other Resources of Potential Concern

Critical Habitat

Federally delineated Critical Habitat is not present in the Project area (USFWS, 2022). No equivalent designation exists under state law.

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APPENDIX B

Archaeological Literature Review and Assessment

Honouliuli WWTP Effluent Disinfection Project

Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island, Hawai‘i

TMK (1) 9-1-013:007 (por.)

Archaeological Literature Review and Assessment
Honouliuli WWTP Effluent Disinfection Project
Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island, Hawai‘i
TMK (1) 9-1-013:007 (por.)

Prepared for
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June 2025

Management Summary

This archaeological literature review and assessment (ALRA) report was completed for Wilson Okamoto Corporation in support of the Honouliuli WWTP Effluent Disinfection Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu, TMK (1) 9-1-013:007 (portion). The physical address of the project area is 91-1000 Geiger Road, ‘Ewa Beach, O‘ahu. The proposed project is designed to satisfy requirements for a National Pollutant Discharge Elimination System (NPDES) permit (#HI 0020877). The proposed project will add a new ultraviolet (UV) disinfection system for bacterial (*Enterococci* sp.) reduction. The Area of Potential Effects (APE) / project area is a rectangular portion of an existing water treatment facility measuring approximately 2.24 acres (0.91 hectares). The landowner is the City and County of Honolulu. The proposed project is described in the Introduction (see p.1).

The objectives of this study include: (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 potential above-ground historic properties or component features; and (3) providing information relevant to the likelihood of encountering historically significant cultural deposits in subsurface context during construction. This ALRA is not an archaeological inventory survey (AIS) and did not include a field inspection. The document may be used, however, to consult with the State Historic Preservation Division (SHPD) in compliance with Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and Hawai‘i Administrative Rules (HAR) Chapter 13-275; to satisfy environmental review under HRS Chapter 343; and for review under Section 106 of the National Historic Preservation Act (NHPA).

Results of this ALRA include the following: (1) The project area is adjacent to, but was never part of, the actively planted fields of part of the Ewa Plantation Co., a once-extensive commercial sugar cane operation that lasted about a century (see Figures 11, 13 and 15); (2) The project area is adjacent to, but just east (and not part) of the extensive (decommissioned) Naval Air Station-Barbers Point (NAS-BP), and the National Register of Historic Places (NRHP) listed ‘Ewa Plain Battlefield (SIHP # 50-80-12-05127, NR #16000273); (3) A previous AIS that included the current APE/project area (Yucha et al. 2015) did not identify any historic properties; (4) The APE/project area is part of a larger parcel owned and managed by the City and County of Honolulu for wastewater treatment; these facilities were originally completed in 1978 following extensive land clearance and mechanical alteration of the ground surface (see Figure 16); (5) There are no above-ground historic properties in the APE/project area, which was completely cleared circa 1977-78. Because the installation of wastewater treatment facility infrastructures and appurtenances has also disturbed the subsurface deposits, it is unlikely that any intact historic properties or component features will be encountered in subsurface excavation during the proposed undertaking/project; (6) For these reasons, Honua believes the proposed undertaking/project will have no effect on historic properties.

Honua recommends consultation with the SHPD-Archaeology Branch to obtain its concurrence with item #6 above, and to determine if any specific identification or mitigation measures are needed for the proposed project (e.g., archaeological inventory survey (AIS) or archaeological monitoring).

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Section 1 Introduction

1.1 Project Background

This archaeological literature review and assessment (ALRA) report was completed for Wilson Okamoto Corporation in support of the Honouliuli WWTP Effluent Disinfection Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu, TMK (1) 9-1-013:007 (portion) (Figure 1 to Figure 3). The physical address of the project area is 91-1000 Geiger Road, ‘Ewa Beach, O‘ahu. The project area is adjacent to, and immediately northeast of, the boundary of the former Naval Air Station, Barbers Point (NAS-BP) military (WW II-era) facility. The shoreline at Ocean Pointe, west of ‘Ewa Beach, is 1.75 miles to the south. The commercial center of Kapolei is approximately 2.5 miles to the west.

The proposed project is designed to satisfy requirements for a National Pollutant Discharge Elimination System (NPDES) permit (#HI 0020877). The proposed project will add a new ultraviolet (UV) disinfection system for bacterial (*Enterococci* sp.) reduction. The Area of Potential Effects (APE) / project area is a rectangular portion of an existing water treatment facility measuring approximately 2.24 acres (0.91 hectares).[1] The landowner is the City and County of Honolulu.

The scope of work for this project is as follows:

> The Honouliuli WWTP Effluent Disinfection Project will add a new ultraviolet (UV) disinfection system to meet NPDES Permit No. HI 0020877 requirements for enterococci reduction. This upgrade aligns with Consent Decree milestones and addresses future plant flows up to 101 mgd by 2056. The UV facility will be located downstream of secondary treatment and will connect to two existing 60-inch secondary effluent lines. A new magnetic flow meter vault is also included upstream for monitoring UV influent flow, but may be removed from final design. After construction, the UV channels will provide continuous disinfection of secondary effluent. Each channel contains two UV lamp banks operating at lower power during normal conditions to extend lamp life. When one bank is offline for maintenance, the other can maintain disinfection. Major implementation steps include site excavation, tie-ins to existing secondary effluent lines, installation of the new flow meter vault, and start-up testing. The system relies on automated cleaning and controls to maintain lamp performance.

The new UV Facility will be placed between Digester No. 2 and the effluent connection box.

1.1.1 Regulatory Context and Document Purpose

The objectives of this study include: (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 potential above-ground historic properties or component features; and (3) providing information relevant to the likelihood of encountering historically-significant cultural deposits in subsurface context during construction.

This ALRA is not an archaeological inventory survey (AIS) and did not include a field inspection. The document may be used, however, to consult with the State Historic Preservation Division (SHPD) in compliance with Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and Hawai‘i Administrative Rules (HAR) Chapter 13-275; to satisfy environmental review under HRS Chapter 343; and for review under Section 106 of the National Historic Preservation Act (NHPA).

[1] Since this project involves a federal permit and may be subject to Section 106 (National Historic Preservation Act) review, the terms APE (federal) and project area (state) are used interchangeably.

1.2 Environmental Setting

1.2.1 Natural Environment

This section describes the environmental and physiographic conditions in the APE/project area. Information in this section is derived from well-known sources including Foote et al. (1972), Macdonald et al. (1983), Juvik and Juvik (1998), Giambelluca et al. (2013) and Sherrod et al. (2021), as well as our direct observations and experience completing numerous other projects in the vicinity.

According to data compiled by Sherrod et al. (2021), the hard-rock geology in and around the APE/project area consists of older alluvium (Qao) formed by streams draining the uplands to the north. This alluvium, which is generally shallow, sits atop either lava flows from the Ko‘olau Mountains (QTkl) or limestone (lithified coral shelf) (Qcrs). Elevation in the APE/project area is approximately 35 feet (10.7 meters) above mean sea level. U.S. Department of Agriculture (USDA-NRCS n.d.) soil survey data shows that sediments in the APE/project area consist exclusively of Mamala stony clay loam 0 to 12 percent slopes (MnC) (see also Foote et al. 1972) (Figure 4). This soil is described as “not prime farmland.” Previous archaeological excavation in Kalaeloa has shown that Mamala stony clay loam, when present, typically occurs as a very thin layer directly over coral outcrop, which outcrops to the southwest. Data from USDA-NRCS (n.d.) shows that bedrock under Mamala stony clay loam is reached at 8-19 inches below ground surface.

Regarding limestone (coral shelf) that may be present beneath the APE/project area, when exposed and not covered by historic or modern deposits, the surface of such coral outcrop, which are Pleistocene deposits, is typically characterized by numerous small dissolution “pit caves,” also known colloquially as “sinkholes.” Referring specifically to these natural features in the region where Parcel 18 is located, Ziegler (2002:97) writes:

> On the ‘Ewa Plain, rainwater has gradually dissolved sinkholes in more soluble portions of the exposed fossil reef. Typically, these sinkholes are bell-shaped in profile; the surface opening often is about 1 m (3.3. feet) or so in diameter, with the interior usually increasing to perhaps two or three times that. . .
>
> Originally, there were tens of thousands of these sinkholes exposed on O‘ahu; . . . At least 99 percent of these, however, have been filled or covered in the last century or so by agricultural and developmental projects, but attempts continue to permanently preserve at least a small area of the few remaining sinkholes. These cavities have been found to contain innumerable bones of endemic Hawaiian

birds (many of the species prehistorically extinct) as well as many other scientifically and educationally important animal and plant remains.

The project area/direct APE is in one of the driest regions of O‘ahu; mean annual rainfall is less than 20 inches (508 millimeters) (Juvik and Juvik 1998:56; Giambelluca et al. 2013). Prior to the historic period, vegetation in and around the APE/project area would have consisted of lowland coastal dry shrub and grassland. Today, however, due to historic and modern human alteration of the landscape, the APE/project area flora is dominated by invasive grasses, weeds, and shrubs. It is nearly completely devoid of any ground that has not been previously either built upon or covered with asphalt and concrete.

1.2.2 Built Environment

The APE/project area is in an existing wastewater treatment facility, which has previously transformed the landscape using mechanical earth-moving equipment and subsurface excavation. The Honouliuli Wastewater Treatment Plan was completed in 1978. Since a 2010 Consent Decree between the City and County of Honolulu, the U.S. Environmental Protection Agency and the State of Hawai‘i, upgrades and improvements have been being made to the facility over the past several years.

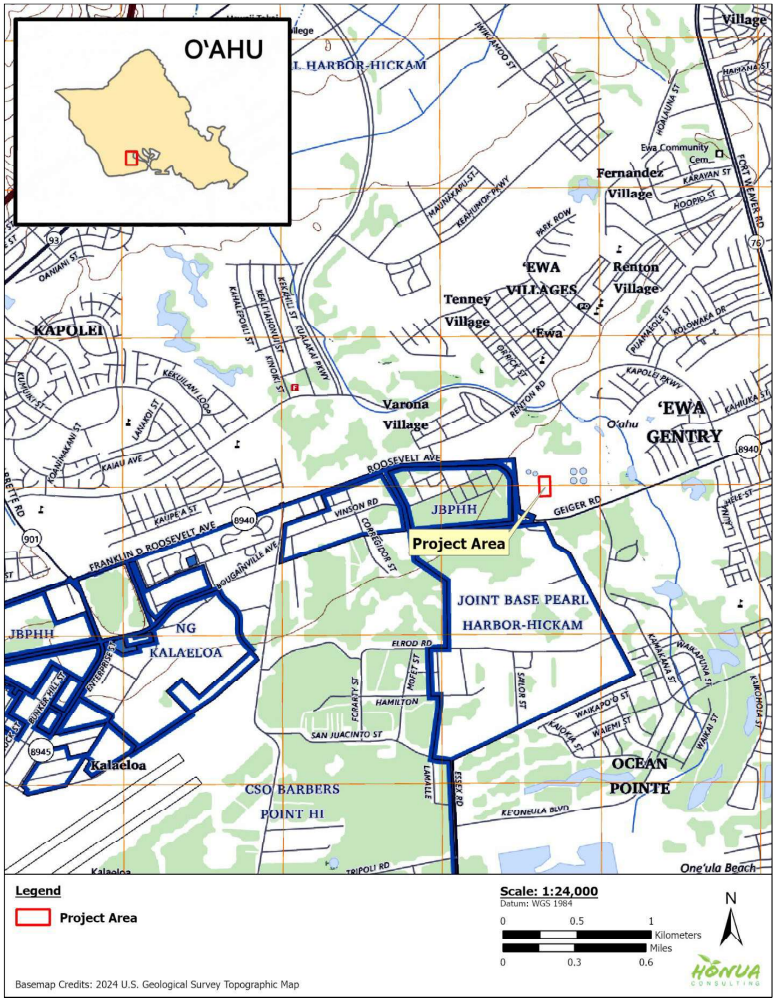

Figure 1. Portion of 2024 USGS topographic map with project area (base map source: ESRI’s ArcMap 10.8.2)

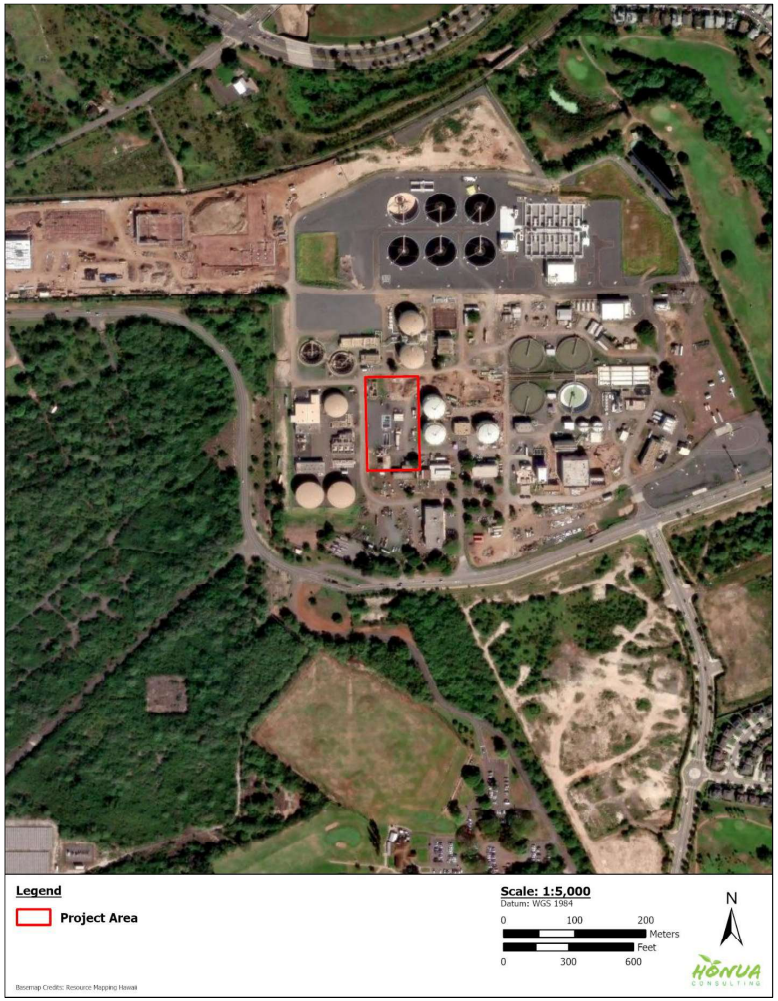

Figure 2. Aerial image showing location of project area (base image source: ESRI's ArcMap 10.8.2)

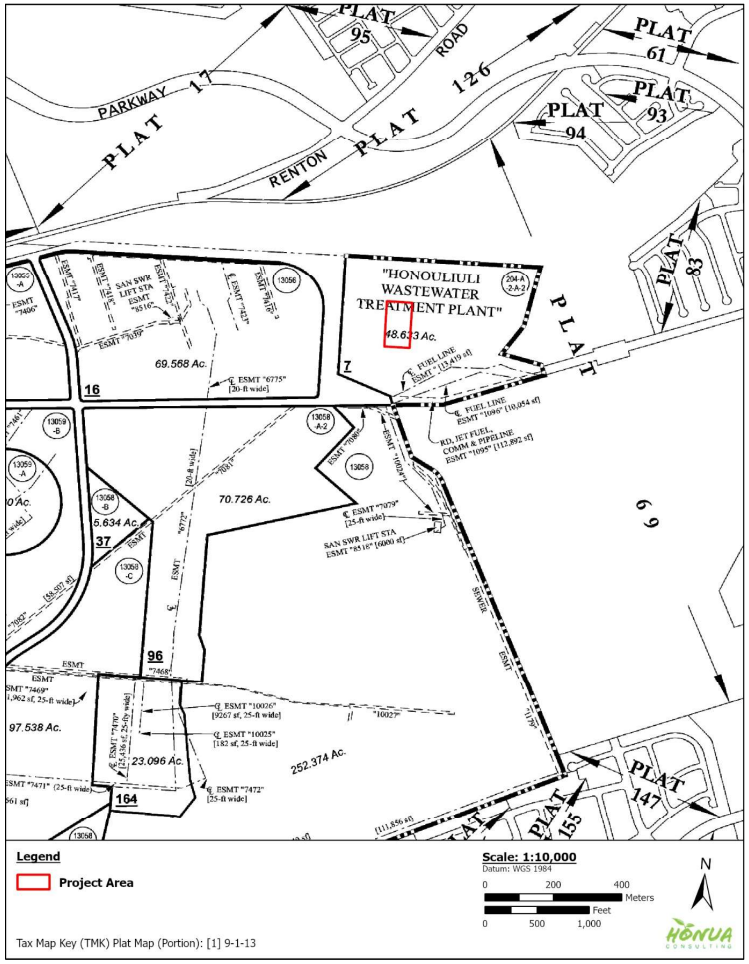

Figure 3. Portion of Tax Map Key (TMK) (1) 9-1-013 showing project area location (base image source: City & County of Honolulu n.d.)

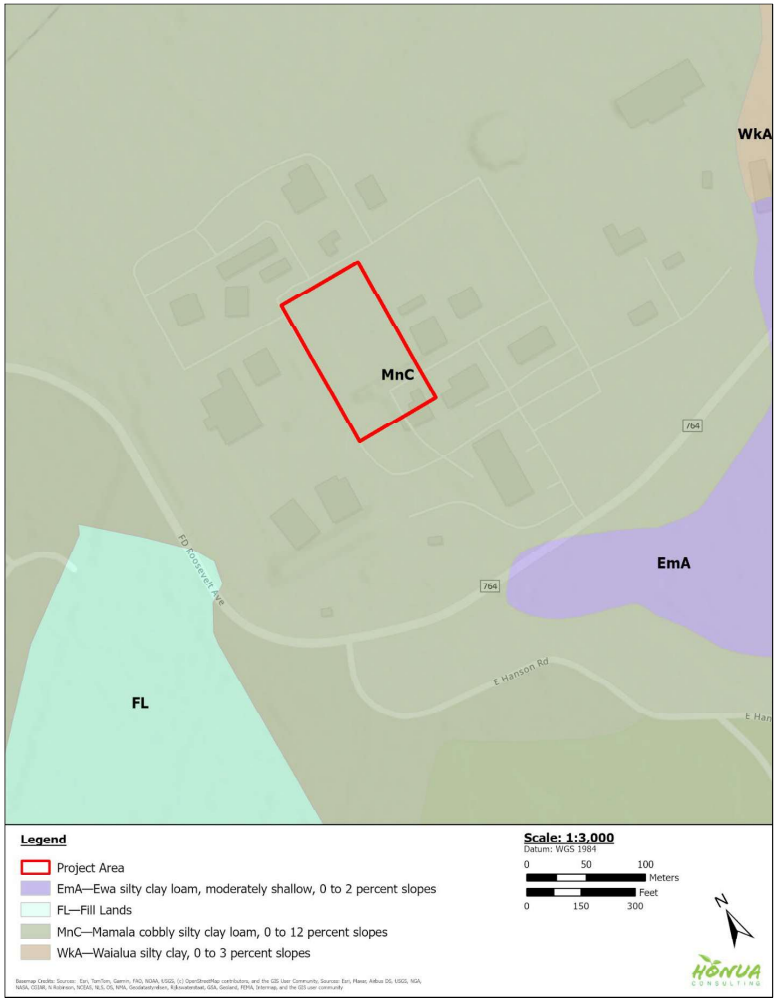

Figure 4. Soil series overlay showing soils in the project area (see text) (data source: Foote et al. 1972)

Section 2 Cultural and Historical Context

This section includes a synthesis of relevant cultural and historical information about the land use in and around the APE/project area from pre-Contact times into the historic period and modern times. The main objective, primarily through the analysis of archaeological literature, other historical documents, maps and aerial images, is to provide a project area-specific picture of land use and modification over time. If additional archaeological work is needed for this project, such as an archaeological inventory survey (AIS) or archaeological monitoring, this section may be expanded.

In addition to referencing previous studies from the areas of Kalaeloa, Kapolei and ʻEwa, we also conducted a records search at the SHPD's library in Kapolei, as well as the on-line database (State of Hawaiʻi n.d.) of the Environmental Review Program, 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 Hawaiʻi-Mānoa's digital maps (http://magis.manoa.hawaii.edu/maps/index.html)
- DAGS' State Land Survey (http://ags.hawaii.gov/survey/map-search/)
- Waihona ʻAina website (www.waihona.com)
- Digital newspaper archive "Chronicling America, Historic American Newspapers" (http://chroniclingamerica.loc.gov/lccn/sn82014681/)
- Hawaiʻi 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

Before focusing on Honouliuli Ahupuaʻa, within which the APE/project area is located, it is first instructive to summarize some relevant observations about ʻEwa Moku (District) from a traditional Hawaiian perspective. Some of the quoted material below was written and/or compiled by the lead author (Monahan) for a comprehensive study of the cultural, historical and archaeological resources of ʻEwa (Uyeoka et al. 2018), a publicly available document produced for Kamehameha Schools.[2]

Numerous well-known sources (e.g., Beckwith 1940; ʻIʻī 1959; Handy and Handy 1972; Kamakau 1992; Cordy 1996) have described ʻEwa as one of Oʻahu's traditional political centers associated with famous, high-ranking aliʻi (chiefs). Uyekoa et al. (2018:17) explain:

[2] Available on-line at https://www.ksbe.edu/assets/site/special_section/regions/ewa/Halau_o_Puuloa_Full-Ewa-Aina-Inventory_Binder.pdf (see Uyeoka et al. 2018 in References Cited)

> According to Hawaiian traditions, the moku, or district, of ʻEwa—encompassing most of southwestern Oʻahu and all of the ahupuaʻa that include some shoreline of Puʻuloa (Pearl Harbor)—was once ruled by chiefs of the Maweke-Kumuhonua lineage . . .[3] Several centuries ago, ʻEwa Moku was the political center of Oʻahu, and both Līhuʻe in the uplands of Honouliuli as well as the Waipiʻo peninsula were once royal seats of power. Waipiʻo, in particular, was known as an "aliʻi stronghold" (Handy and Handy 1972:470), and home of the famous Hawaiian John Papa ʻĪʻī.
>
> From the 1500s to 1700s, there were several political power shifts on Oʻahu, including the defeat of the ruling ʻEwa chief by Peleioholani, a son of Kualiʻi, around A.D. 1740. In 1778, Kahahana, who was from the ʻEwa line of chiefs but who was raised in Kahekili's Maui court, took control of Oʻahu and ʻEwa, until Kamehameha I unified (conquered) the islands around A.D. 1810. Following Kamehameha's conquering of Oʻahu, at least two of his chiefs lived in Puʻuloa, and later, Liholiho (Kamehameha II) built a house in Puʻuloa (Kamakau 1992:255).

Regarding traditional meanings of the place name ʻEwa, Handy and Handy (1972:469) suggest:

> ʻEwa's formal, more traditional, name was once Ke-ʻĀpana-o-ʻEwa. There are several variant interpretations of the name ʻEwa, including "crooked," referring to moʻolelo about Kāne and Kanaloa's marking of the district's boundaries by throwing a stone that was lost and later found at Pili o Kahe (Pukui et al. 1974:28). Another interpretation of the meaning of ʻEwa, based on this same legend, is "strayed" (as recorded by Bishop Museum staff in the 1950s from ʻEwa native, Simeon Nawaa). According to an 1883 newspaper series in the *Saturday Press* (published in Honolulu), another possible meaning of ʻEwa is "unequal."

From a Hawaiian cultural landscape perspective, it is not hyperbole to claim that ʻEwa Moku's greatest and most famous resource—which would have been known and respected throughout the archipelago by aliʻi and makaʻāinana (commoners) alike—was its extensive access to Puʻuloa and its numerous loko iʻa (fishponds):

> In Hawaiian traditions, Puʻuloa consists of three distinct awalau, or lochs, including Kaihuopalaʻai (West Loch), Waiawa (Middle Loch) and Komoawa (East Loch). In addition to being known for producing high-quality awa (milkfish or mullet), ʻEwa's fishponds were also famed for deep-sea fish such as akule (scad varieties), as attested to by the name of one its fishponds (Ka-pa-akule, or "the-akule-enclosure") in Honouliuli. (Uyeoka et al. 2018:17)

Expanding on the cultural and natural significance of Puʻuloa to Hawaiians practicing a traditional lifestyle, Handy and Handy (1972:469) wrote that:

> . . . The Hawaiian name for Pearl Harbor was Ke-awa-lau-o-Puʻuloa, The-many (*lau*)-harbors (*awa*)-of-Puʻuloa. Puʻuloa was the rounded area projecting into the sea at the long narrow entrance of the harbor [referring to Waipiʻo peninsula].

[3] The moku of Waiʻanae and Waialua were also once ruled by these chiefs.

> Another and more poetic name was Awawa-lei, Garland (*lei*)-of-harbors. The English name "Pearl" was given to it because of the prevalence of pearl oysters (*pipi*) in the deep harbor waters.
>
> These bays offered the most favorable locality in all of the Hawaiian Islands for the building of fishponds and fish traps into which deep-sea fish came on the inflow of tidal waters. (brackets added)

There are many moʻolelo (oral-historical accounts) about the gods' creation of the fishponds of Puʻuloa and its abundant and diverse resources (i.e., fish, shellfish and other invertebrates such as varieties of ʻōpae [shrimp]) and Puʻuloa's kiaʻi (guardians) and ʻaumakua (family or personal deities) such as supernatural manō (sharks) that protected its resources that are beyond the scope of this report (see Uyeoka et al. 2018:19-24 for examples).

As the largest ahupuaʻa on the island of Oʻahu (at approximately 43,000 acres), Honouliuli (literally "dark bay," Pukui et al. 1974) includes approximately 12 miles of marine coastline from Keahi Point in the east to Pili o Kahe in the west at the boundary with Nānākuli (and the district, or moku, of Waiʻanae) (Figure 5).

In addition to its marine shoreline, Honouliuli also has several miles of shoreline along the western margins of Ke-awa-lau-o-Puʻuloa (Pearl Harbor), the crown jewel of harbors in the Hawaiian Islands. Several loko (fishponds) and fish traps are located along the Puʻuloa (Pearl Harbor) coastline in Honouliuli, and these waters are famous for their pipi, or pearl oysters, and a wide variety of fish including deep-ocean species (Handy and Handy 1972:469).

The expansive plain immediately inland of the marine coast consists of karstic (limestone) lithified reef with a thin soil covering and innumerable pit caves (or sinkholes), some of contained brackish water that Hawaiians used for various purposes. As described by the Bishop Museum's archaeologist McAllister in the 1930s (cited in Handy 1940:82), although appearing barren:

> It is probable that the holes and pits in the coral were formerly used by Hawaiians. Frequently the soil on the floor of the larger pits was used for cultivation, and even today one comes upon bananas and Hawaiian sugar cane still growing in them.

Moving inland from these limestone flats, soil conditions improve and alluvium deposited from the uplands via a series of gulches—the most prominent being Honouliuli proper—created planting areas for Hawaiian subsistence farmers. The current APE/project area is in such a setting, with thin soil on top of limestone and/or basaltic bedrock.

The main traditional loʻi kalo (irrigated taro) and settlement area was once focused around the mouth of Honouliuli Gulch, several miles north-northeast of the project area/direct APE, where it empties into Puʻuloa. Prior to the historic period and drilling for artesian wells, many fresh-water springs were located where the uplands meet the lower flats. In this piedmont zone, dryland (non-irrigated) gardening areas would have been scattered all over the lower uplands above the current H-1 highway.

Because of its large size, Honouliuli had a vast upland forest that extended 10–12 miles back from the seashore. This mauka (inland) region was a reliable source of native, endemic, and Polynesian-introduced plants including kukui, koa, ʻōhia, ʻiliahi (sandalwood), hau, kī (ti leaf), bananas, and many others. These resources provided not only food but also medicinal plants,

wa‘a (canoe) trees, and other needed items (e.g., for religious practices, hula, and so on). A network of trails crossed these uplands and connected them with the lower makai areas. One major trail once passed closely by (just west of) the APE/project area (Figure 6; and see Figure 5). Many named pu‘u (hills and peaks), some with associated heiau (temples), are found throughout the mauka region of Honouliuli.

2.1.1 Mo‘olelo (Oral-historical Accounts)

Kepā Maly (n.d.), master of the Hawaiian language and chronicler of Hawaiian cultural resources, provided a new translation of the epic saga of the travels of Hi‘iaka-i-ka-poli-o-Pele (Hi‘iaka), the youngest sister of Pele, to and from Kaua‘i. His translation (Maly n.d.) of “He Moolelo Kaao no Hiiaka-i-ka-poli-o-Pele” (A Traditional Tale of Hi‘iaka who is Held in the Bosom of Pele) was originally published in the Hawaiian language newspaper *Ka Hoku o Hawaii* from 1924 to 1928. The following excerpts of his work include descriptions of place names and wahi pana of Honouliuli as well as mele (songs) and ‘oli (chants) with direct relevance to this place. In the excerpt below, references to Honouliuli are in bold.

He Mo‘olelo Ka‘ao no Hi‘iaka-i-ka-poli-o-Pele

The goddess Hi‘iaka journeyed from the island of Hawai‘i to Kaua‘i, stopping on Maui, Moloka‘i, and O‘ahu, as she went to fetch the chief Lohi‘au-ipo (Lohi’au) from Hā‘ena and return with him to Pele’s domain at Kīlauea, Hawai‘i. The following narratives come from the portion of the legend that describes the return journey to Hawai‘i.

...Aloha ka hau o Ka‘ala	Beloved is the dew of Ka‘ala
‘Oia hau halihali ‘a‘ala mau‘u nēnē	That dew which bears the fragrance of the nēnē grasses
Honi ai ke kupa o **Pu‘uloa**	[fragrant dew which] Kissed the natives of **Pu‘uloa**
He loa ka imina e ke aloha e…	One searches far for love... [January 18, 1927]

Preparing to depart from the village of the chiefess, Makua, Hi‘iaka elected to travel overland through Wai‘anae, to the heights of **Pōhākea**, and across the plain of **Honouliuli**. Hi‘iaka made preparations for Lohi‘au and Wahine‘ōma‘o to travel by canoe from Pōka‘i to the landing at Kou (Honolulu). Before letting them depart, Hi‘iaka instructed her two companions...

> . . . As you travel, you will arrive at a place where a point juts out into the sea. That will be **Laeloa** [Barbers Point]; do not land there. Continue your journey forward. As you continue your journey, you will see a place where the ocean lies calmly within the land. That will be **‘Ewa**; do not land there. As you continue your journey, you will reach a place where the mouth [of the land] opens to the sea (hāmama ana ka waha i ke kai). That is **Pu‘uloa**, do not land there either. That is the entry way to **‘Ewa**... [January 25, 1927].
>
> From the heights of **Pōhākea**, Hi‘iaka looked to the shores of **‘Ewa**, where she saw a group of women making their way to the sea. The women were going down to gather pāpa‘i [crabs] and limu [seaweeds], and to gather the mahamoe, ‘ōkupe [both edible bivalves], and such things as could be obtained along the shore.

> Now, the famous fish of ‘Ewa in those days when the wind blew because of conversations was the pipi [pearl oyster – It was believed that talking would cause a breeze to blow that would, in turn, frighten the pipi. (cf. Pukui and Elbert 1971)]. Only when it was very calm could one go to catch the pipi. If anyone spoke while going to get the pipi, the breeze would cause rippling on the water’s surface and the pipi would be hidden from sight. In this way, Hi‘iaka had instructed Wahine‘ōma‘o and Lohi‘au to be quiet like the women of ‘Ewa who were going fishing. If one spoke, the angry winds would blow and bring misfortune... [February 8, 1927]
>
> . . . Turning her gaze towards the island of Hawai‘i, she could see the flames of Pele in the lehua forest of Hōpoe, and she chanted out:
>
> | | |
> |---|---|
> | Nani **Pālailai**, he anaina kapu na ka wahine | Beautiful is **Pālailai**, sacred assembly of the woman |
> | Ke kūkulu nei wau i ka pahu kapu ka leo | I set up the drum of the sacred voice |
> | O ka leo o ke kai ka‘u e ho‘olono e lono aku la ke kupa | The voice of the ocean is what I hear Ua The natives hear it[4] |
> | Ua inu iho la nā manu i ke koena wai noni | The birds drink the water caught in the noni leaves[5] |
> | Kūnewanewa a‘e la nā ‘ōpua i | The billowy clouds pass in the calm ka mālie |
> | Pua o mai ke ahi o Hawai‘i ia‘u... | The fires of Hawai‘i rise above me... |
> | . . . | |
>
> Hi‘iaka then offered a chant to the women who had strung their garlands upon the plain which is burned by the sun.
>
> | | |
> |---|---|
> | E lei ana ke kula o Keahumoa i ka ma‘o | The plain of Keahumoa wears the ma‘o blossoms as its lei |
> | ‘Ohu‘ohu wale nā wahine kui lei kanahele | Adorning the women who string o ke garlands in the wild |
> | Ua like no a like me ka lehua o Hōpoe | It is like the lehua blossoms of Hōpoe |
> | Me he pua koili lehua ala i ka lā | Lehua blossoms upon which the sun beats down |
> | Ka oni pua koai‘a i ka pali | On the nodding koai‘a flowers of the cliff |
> | I nā kaupoku hale o **‘Āpuku** | On the rooftops of the houses at **‘Āpuku** |
> | Ke ku no i ke alo o ka pali o **Pu‘uku‘ua** | Rising in the presence of the cliff of **Pu‘uku‘ua** |
> | He ali‘i no na‘e ka ‘āina | The land is indeed a chief |
> | He kauwā no na‘e ke kanaka | Man is indeed a slave |
> | I kauwā no na‘e wau i ke aloha | I am indeed a slave to aloha—love |
> | Na ke aloha no na‘e i kono e haele no māua | It is love which invites us two—come |
> | E hele no wau a– | I come– |

[4] The stormy ocean of Waialua could reportedly be heard in ‘Ewa.
[5] Traditionally, after storms, forest birds could be seen in the lowlands drinking water in this manner.

Descending to the flat lands of Honouliuli, Hi‘iaka then turned and looked at Pu‘uokapolei and Nāwahineokama‘oma‘o who dwelt there in the shelter of the growth of the ‘ōhai [Sesbania tomentosa], upon the hill, and where they were comfortably refreshed by the blowing breezes. Hi‘iaka then said, “Pu‘uokapolei and Nāwahineokama‘oma‘o, do not forget me, lest you two go and talk behind my back and without my knowing, so here is my chant of greeting to you:”

Aloha ‘olua e Pu‘uokapolei mā	Greetings to you two **Pu‘uokapolei** and companion
E Nāwahineokama‘oma‘o	O **Nāwahineokama‘oma‘o**
E nonoho mai la i noho wale la	Set there, and dwelling
I ka malu o ka ‘ōhai	In the shade of the ‘ōhai
I ke kui lei kukui i ka lā	Stringing garlands of kukui in the day,
Lei aku la i ka pua o ka ma‘oma‘o	Adorning yourselves in the garlands of the ma‘oma‘o
Lei kauno‘a i ke kaha o Ka‘ōlino	Kauno‘a [Cuscuta sandwichiana] is the lei of the shores of **Ka‘ōlino**
He ‘olina hele e	There is joy in traveling

Other Mo‘olelo Related to the APE/Project Area Environs

The level plains of Honouliuli are thought to be the legendary “kula o Kaupe‘a” (plain of Kaupe‘a), the realm of the ao kuewa or ao ‘auwana (homeless or wandering souls). Kaupe‘a was the wandering place of those who died having no rightful place to go; the souls wandered “in the wiliwili grove” (Sterling and Summers 1978:36). According to the nineteenth century Hawaiian historian Samuel Kamakau (1992:47, 49), the spirits who wandered “on the plain of Kaupe‘a beside Pu’uloa...could go to catch pulelehua (moths or butterflies) and nanana (spiders)” in the hope of finding helpful ‘aumakua (family deities) who could save them.

The prolific Hawaiian language master, Mary Pukui, shared her personal experience with the ghosts on the plain of Kaupe‘a around 1910:

> A wide plain lies back of Keahi and Pu‘uloa where the homeless, friendless ghosts were said to wander about. These were the ghosts of people who were not found by their family ‘aumakua or gods and taken home with them, or had not found the leaping places where they could leap into the nether world. Here [on the plain of Honouliuli] they wandered, living on the moths and spiders they caught. They were often very hungry for it was not easy to find moths or to catch them when found.
>
> Perhaps I would never have been told of the plain of homeless ghosts if my cousin’s dog had not fainted there one day. My cousin, my aunt and I were walking to Kalae-loa, Barber’s Point, from Pu‘uloa accompanied by Teto, the dog. She was a native dog, not the so-called poi dog of today, with upright ears and body and size of a fox terrier. For no accountable reason, Teto fell into a faint and lay still. My aunt exclaimed and sent me to fetch sea water at once which she sprinkled over the dog saying, “Mai hana ino wale ‘oukou i ka holoholona a ke kaikamahine. Uoki ko ‘oukou makemake ‘ilio.” “Do not harm the girl’s dog. Stop your desire to have it.” Then with a prayer to her ‘aumakua for help she rubbed the dog. It revived quickly and, after being carried a short way, was as frisky and lively as ever.
>
> Then it was that my aunt told me of the homeless ghosts and declared that some of them must have wanted Teto that day because she was a real native dog, the kind that were roasted and eaten long before foreigners ever came to our shores (Pukui 1943:60-61).

Along the coast, just in front of the current Kalaeloa Airport, there is a place called Kualaka‘i (see Figure 5), and there used to be a pūnāwai (fresh water spring) there called Hoakalei. According to Maly (n.d.:15), additional information about this spring and environs is found in the legendary series titled “Nā Wahi Pana o ‘Ewa” (The Famous Places of ‘Ewa), which ran in the Hawaiian language newspaper *Ka Loea Kālai ‘Āina* (c. 1900). It described two “strange” women who lived on the plain called Puukaua, beyond Pu‘ukapolei, toward Wai‘anae. Once, after going down to Kualaka‘i on the coast to gather ‘a‘ama crabs, pipipi (a type of univalve marine shell), and limu (seaweed), they failed to return home before morning light and were turned into a single pillar of stone (Sterling and Summers 1978:39).

There are many mo‘olelo about one of Honouliuli’s most famous near-shore (rather than upland or mauka) places, Pu‘u o Kapolei (also spelled Pu‘uokapolei with other variations), which is more than two miles west of the APE/project area that are beyond the scope of this report (see Yucha et al. 2015:13-17 for examples).

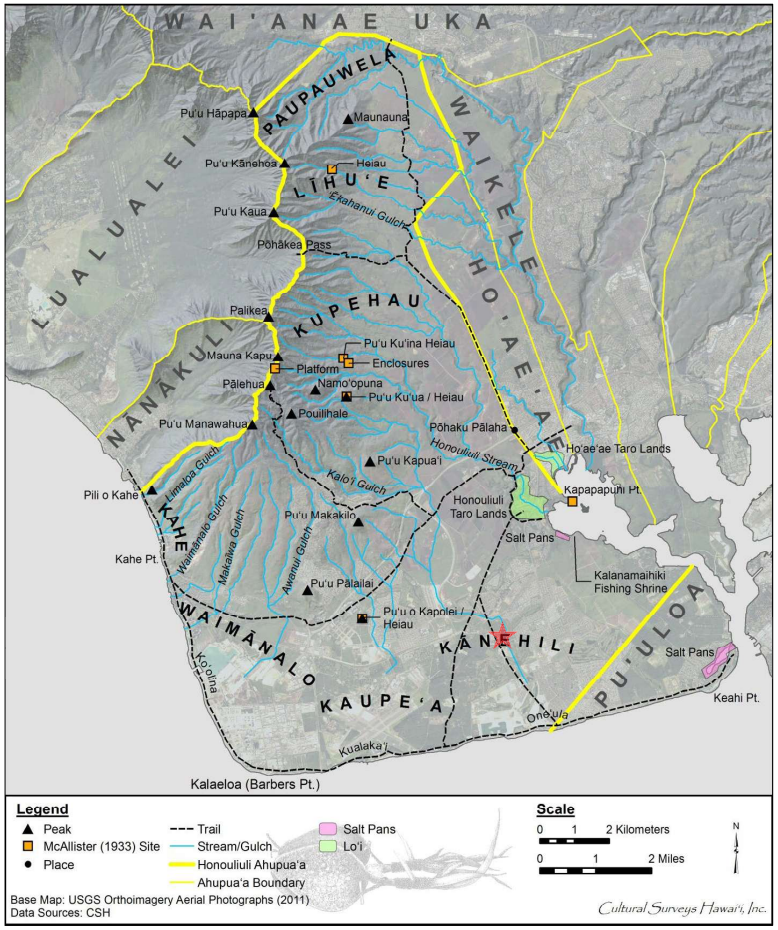

Figure 5. Honouliuli place names, traditional trails, prominent archaeological sites (orange squares) including heiau (temples) and wahi pana (legendary places); current project area is red star; base map courtesy of Cultural Surveys Hawai'i, GIS Department

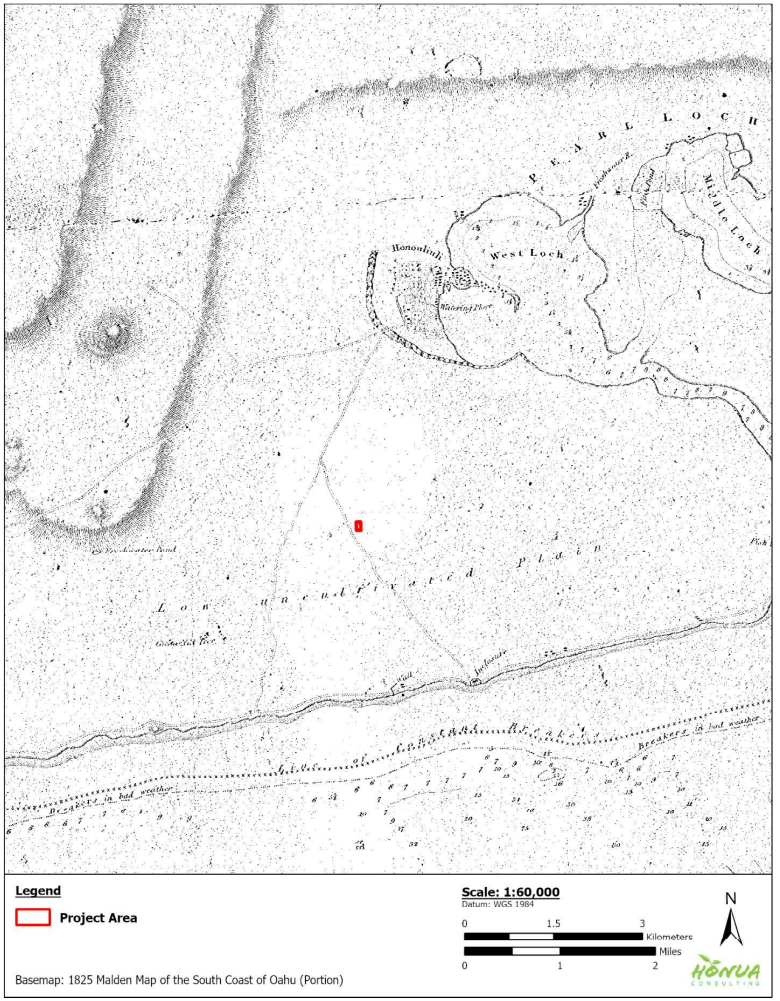

Figure 6. Project area location projected on portion of 1825 Maden map (see text above for discussion) (base map source: Fitzpatrick 1986:62–3)

2.2 Historical Period

2.2.1 Proto-Historical Period

In the middle to late 1700s, on the cusp of Hawai‘i’s entry into the “world system” economy following Captain James Cook’s (1778) exploits, the warrior-chiefs of O‘ahu vied for power both internally and with competitors from the so-called windward islands of Maui (Kahekili mā) and, later, Hawai‘i (Kamehameha mā).[6] The story of the overthrow of O‘ahu’s last home-grown paramount chief, Kahahana, who was the son of a high chief from ‘Ewa (Elani), by Kahekili has been recounted many times. This famous story, which culminated in the death of Kahahana (1783) and conquering of O‘ahu by Maui forces (1785), also involves Kahahana’s kahuna nui (high priest), Ka‘ōpulupulu. At some point, Ka‘ōpulupulu grew tired of Kahahana’s cruelty as a leader and left him to return to his (Ka‘ōpulupulu) home in Waimea, O‘ahu. Kahahana famously summoned Ka‘ōpulupulu and his son to Wai‘anae for punishment. Eventually, Kahekili got wind of Kahahana’s misdeeds and sent some warriors to O‘ahu to depose Kahahana, who fled with his wife and retainers to various places in ‘Ewa, eventually seeking the protection of the locals at Pō‘ohilo, Honouliuli, and ultimately meeting his fate on the plains of neighboring Hō‘ae‘ae (see Yucha et al. 2015:22-24 for a more detailed summary).

The earliest sea captains to visit the archipelago—James Cook, Nathaniel Portlock and George Vancouver—recorded some observations around Pu‘uloa, ‘Ewa and Kalaeloa, over to Barbers Point dating to the last couple decades of the eighteenth century. In general, they noted that, while the locals talked of fertile and productive lands just inland from Pu‘uloa and the ocean, what they saw looked quite barren, arid and unattractive.

2.2.2 Overview of Historical Period

In general, starting around the turn of the eighteenth to nineteenth century, and continuing throughout the nineteenth century, life on O‘ahu was drastically changed with the arrival and increasing influence of foreign political, economic and ideological systems. As a result, traditional Hawaiian settlement patterns, subsistence and religious institutions were largely abandoned or at least substantially degraded. By the late 1800s, nearly the entire ahupua‘a of Honouliuli had been purchased by a few large landowners and developed into cattle ranches, sugarcane fields, sisal farms and other agricultural concerns (Tuggle and Tomonari-Tuggle 1997; Gosser et al. 2011). Military development of the region began in the late 1800s with the construction of the Barbers Point Lighthouse and accelerated significantly in the early 1900s with the creation of several large bases including Naval Air Station Barbers Point (NAS-BP), Hickam Field and Pearl Harbor. Since the closing of NAS-BP in the 1990s, small industry and other commercial, government, and residential development have replaced military infrastructure (Gosser et al. 2011). Areas just outside of the NAS-BP—including the current APE/project area—also changed dramatically with extensive residential communities and related infrastructure replacing commercial agricultural land.

[6] In the Hawaiian language, Kahekili mā means something close to “Kahekili’s people,” referring to his family, retainers and others that served and were allied with him.

2.2.3 Early 1800s

Hawai‘i’s introduction to the “world system” economy starting around the time of Kamehameha (i.e., late 1700s to early 1800s) began with the archipelago being used by maritime travelers as a provisioning stop on the way to other places and then for the extraction of ‘iliahi (sandalwood, *Santalum* sp.) to trade in eastern Asia. This latter development in the first couple decades of the nineteenth century had a devastating impact on the maka‘āinana (commoners) and environment of the islands. As well, the introduction of communicable diseases for which Hawaiians had no immunity represented as existential threat to indigenous life. These economic changes, in the context of the end of the traditional kapu system of ancient religious protocols and beliefs in 1819 and the arrival of Christianity in 1820, have been recounted many times in numerous resources.

John Papa ‘Ī‘ī’s well-known description and mapping of the old, traditional Hawaiian trails of leeward O‘ahu (‘Ī‘ī 1959:96-98) shows a major trail passing by the APE/project area just to the west. This mauka-to-makai oriented trail once connected the primary traditional settlement area around the mouth of Honouliuli Stream to the shoreline south of the APE/project area. Malden’s 1825 map (see Figure 6) shows this and other nearby trails. These trails data, and other information such as the location and distribution of prime lo‘i kalo (irrigated taro) lands (several miles to the northeast of the current APE/project area), and the location of early Christian missions (closer to Pu‘uloa, or Pearl Harbor), suggest the APE/project area vicinity—which lacked potable water and was extremely arid—was not a prime location for Hawaiian settlement or activity (Hammatt and Shideler 2012:22–3). This is not to say the area was abandoned or lacked human occupation, because there is ample evidence west and north of the APE/project area—as well as along the coastline to the south—that Hawaiians were using this area in traditional times (ibid.).

With the arrival of foreigners in the area, the landscape of Honouliuli, the ‘Ewa plains, and other adjacent areas (e.g., the Wai‘anae Mountain slopes) was largely denuded by the removal of sandalwood trees (for the Chinese market) and other trees (for construction in Honolulu), and by the introduction of large domesticated ungulates (e.g., goats, sheep and cattle) that destroyed native vegetation, replacing it with exotic, pest species such as haole koa (*Leucaena leucocephala*), guava (*Psidium guajava*), lantana (*Lantana camara*), and many invasive and aggressive grasses (ibid.).

Population estimates for ‘Ewa during this critical time in Hawaiian history have been calculated by various researchers over the years. Yucha et al. (2015:24-25) summarize some relevant data:

> The reports left by Artemas Bishop of the Ewa Protestant Station in Waiawa shed light on the massive impact disease was having on the Hawaiian people in the ‘Ewa district. The 1831-1832 census of O‘ahu recorded a population of 4,015 within the ‘Ewa district. Four years later in 1836, the ‘Ewa population had dropped to 3,423, “a decrease of 592 in 4 years” . . .
>
> The population stabilized in the 1830s and early 1840s. In January 1849, the population was 2,386 people but the population dropped with a measles epidemic in October 1849. Although Bishop made an attempt to vaccinate as many individuals as possible, the smallpox epidemic of 1853-1854 killed upwards of 400 people in the ‘Ewa District.

> Sereno Bishop, recollecting his life at the mission station in ʻEwa in the mid-eighteenth century, commented on the population decline: "Throughout the district of Ewa the common people were generally well fed. Owing to the decay of population great breadths of taro marsh had fallen into disuse, and there was a surplus of soil and water for raising food" . . .

Referring specifically to Honouliuli,

> In 1832, a missionary census of Honouliuli recorded the population as 1,026. Within four years, the population was down to 870 . . . In 1835, there were eight to ten deaths for every birth . . . Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. (Yucha et al. 2015:26)

2.2.4 Middle 1800s – Māhele ʻĀina

Beginning in the 1840s, private property was introduced via formation of the Board of Commissioners to Quiet Land Titles, and the adoption of the Māhele (i.e., the division of Hawaiian lands). In 1845, King Kamehameha III waived his right to full authority over all lands; he portioned out some for his personal use (crown lands), and divided the rest into government land, land for the aliʻi (chiefs) and konohiki (land overseers), and land for commoners (kuleana land) (Alexander 1891; Board of Commissioners 1929; Moffat and Fitzpatrick 1995). After this time, Land Commission Awards (LCAs) were granted to commoners as kuleana parcels for fee ownership. LCAs record who resided on the land and how the land was used.

There are no kuleana (commoner) parcels (LCAs), nor claims, in or near the project area. About 100 individual LCA claims were made in the ahupuaʻa of Honouliuli, but these were all located several miles from the project area/direct APE (near the mouth of Honouliuli Stream and other locations along the shore of Puʻuloa [Pearl Harbor]). The project area/direct APE was part of Aliʻi Nui (highly-ranked elite) Land Commission Award 11216:8 (Royal Patent 6071) to Kekauʻōnohi (great granddaughter of Kekaulike, King of Maui, and a close relative of Kamehameha I), which means there are no records or surveys of middle 19th century land use in or near the project area/direct APE (because such documentation was not required of Aliʻi Nui awards). Kekauʻōnohi's deed to all unclaimed land within the ahupuaʻa was for a total of 43,250 acres (Indices of Awards 1929).

When Kekauʻōnohi died in 1851, her holdings passed on to her husband (Haʻalelea) and his family. Upon her death on June 2, 1851, all her property was passed on to her husband and his heirs. When Haʻalelea died, the property went to his surviving wife (Anadelia Amoe), who then leased it to James Dowsett and John Meek in 1871 for ranching operations (Hammatt and Shideler 2012).

In 1877, James Campbell purchased most of the Honouliuli Ahupuaʻa. He soon began drilling for potable water in Honouliuli, and, within about a decade, was supplying water to Honolulu. By 1881, Campbell also ran a successful cattle ranching operation in Honouliuli (ibid.).

> He then drove off 32,347 head of cattle belonging to Dowsett, Meek, and James Robinson, and constructed a fence around the outer boundary of his property . . . He let the land rest for one year and then began to restock the ranch, so that he had 5,500 head after a few years (Dillingham 1885 in Frierson 1972:14). (Yucha et al. 2015:27)

In 1889, Campbell leased his property to Benjamin Dillingham, who founded the Oʻahu Railway & Land Co. (O.R. & L.) in 1890. Dillingham then subleased all land below 200 feet elevation to William Castle, who started the ʻEwa Plantation Co. for sugar cane cultivation. Other of Dillingham's lands at higher elevation was used by another sugar cane operation, Oʻahu Sugar Co. (ibid.). ʻEwa Plantation Co. was incorporated in 1890 and continued in full operation up into modern times. The plantation grew quickly with the abundant artesian water. The ʻEwa Plantation Co.'s farming practices caused soil erosion from the uplands onto the coral plain (ibid.).

Starting at the very end of the nineteenth century, around the time that Hawaiʻi was annexed by the United States, another commercial agricultural enterprise—growing of sisal whose fibers were used for twine/rope and other materials—was introduced in the vicinity of the APE/project area. Yucha et al. (2015:31) provide some details:

> Some sisal was planted before 1898 and production continued until the 1920s . . . This was grown mainly on the coastal plain of Honouliuli in Kānehili, just *mauka* of Kualakaʻi Beach (now Nimitz Beach).

Yucha et al. (2015:31) include a portion of an article from the *Paradise of the Pacific* in 1902:

> The venture was made and a tract of land containing a large percentage of disintegrated coral, in the neighborhood of Ewa Plantation, where nothing else would grow, was chosen for the planting. . . . The Hawaiian Fiber Co., which Mr. Turner organized, and of which he is now manager, has 755 acres under fence, two and a half miles of which is stone wall with good gates at convenient places. . . . In a large field containing 130 acres, mauka of the Oahu Railway & Land Co. track, the first harvest is to be gathered in a few months. . . . Out of this section of 130 acres the company has figured on securing 50 tons of clean fiber, for which it is offered eight cents per pound in Honolulu or nine cents per pound in San Francisco. . .

The sisal industry eventually declines (in the early 1900s) due to the far greater profitability of sugar cane (Yucha et al. 2015:31).

2.2.5 Ewa Plantation Company

The Ewa Plantation Company was in operation from 1890-1970 (Kaukali and Subica 2010) and included the current project area. Artesian wells were built to tap underground water supplies and to generate more soil deposition. To create more arable land in the lowlands, ditches were installed from the lower slopes of the mountain ranges to the lowlands (Frierson 1972).

In the early 1900s, the Ewa Plantation Company grew to encompass most of the eastern half of Honouliuli Ahupuaʻa, including the current project area. The Ewa Plantation Company was noted for its output per cultivated acre. The plantation used a Lahaina variety of cane until the early 1900s, when manager and pioneer cane planter, George F. Renton, developed the H-109 variety which increased yields (Kaukali and Subica 2010:50). The Renton family, including George Renton Jr. and James Lewis Renton, managed the mill through the early 1900s.

Growth of the sugar industry introduced more demand for residential development to house the increasing numbers of immigrant workers in the fields. Between the 1890s and 1940s, more than 1,200 residences in eight distinct villages were built to house workers of the Ewa Sugar Plantation. "In the 1890s the plantation built 72 dwellings; in 1910s, 536; in the teens 132; in the 1920s, 285; in the 1930s, 168; and in the 1940s only 35. Today, 275 houses remain" (Moy 1995:5). Only four villages remain, Renton, Tenney, Varona, and Fernandez. "Each village had its own architectural and landscaping character with physical separation formerly by cane field, now open fields" (ibid). Assigning of housing was described as follows:

> For the best workmen, and for those that had the record of the longest residence on the property, Ewa supplied a house with a front veranda, two bedrooms, living room, back screened porch with connected lanai to a detached kitchen and dining room. Each was supplied with a separate washhouse, toilet and bath. As a general rule these houses were given to laborers who had been on the property for over ten years. (Kaukali and Subica 2010:50)

Sugar plantations were commonplace in Hawai'i at this time. However, Ewa Plantation Company was known as the Pride of Hawai'i.

> Sugar plantations had a pivotal role in Hawai'i's history. They were the main economic engines that fueled Hawaii's change from subsistence agriculture to a commodity-based system. Sugar plantations 'were the ruling force behind Hawaii's economy for over 110 years.' They altered the landscapes with large areas of sugar can plantings, and by the construction of the mills to process this crop and of the villages to house the workers. The importation of labor for sugar plantations is the main reason for the multi-ethnic make-up of Hawaii's current population. Ewa Plantation Company's significance was due to its large size, long period of operation, high number of intact structures, and role as a model plantation in terms of living conditions and benefits to workers. The contrast with the plantations in the southern United States, which evolved from a history of slavery, was emphasized because 'of the notable strides Ewa Plantation made towards fair and just treatment of its workers.' The Industrial Center of the Ewa Plantation Company grew around the nucleus of the sugar mill building. Today, even though the mill building is gone, the complex is often called the Ewa Sugar Mill…The history of the buildings in the mill area is complex. The term and the plan for the 'Industrial Center' date from 1938. Before that, the arrangement of industrial structures around the mill was decided on a building-by-building basis (ibid.)

Buildings of the Ewa Plantation Company mill site were constructed from 1889 through 1995. Initial construction ranged from 1889-1902 with subsequent work in 1956, 1985 and 1995 (ibid.). The Ewa Plantation Company was incorporated into the Oahu Sugar Company in 1970 and remained in operation until the 1990s.

In 1995, Tenney Village, Varona Village and Renton Village were placed on the Hawai'i Register of Historic Places (HRHP) as the 'Ewa Sugar Plantation Villages Historic District or Ewa Villages (State Inventory of Historic Places [SIHP] # 50-80-12-09786). It should be noted that although Fernandez Village is currently existing, it was renovated in the 1970s without guidance and lost much of its integrity, becoming ineligible for the historic (State or National)

registers (Moy 1995). Contributing sites of the 'Ewa Sugar Plantation Villages Historic District includes mill buildings constructed between the 1890s-1950s, the plantation management office (1935), the 'Ewa Shopping Basket (1935) or plantation store, the plantation manager's house (1925), three additional managers' houses (1923), single men's quarters (1924), Renton Village (1907-1924) also referred to as "Haole Camp," Tenney Village (1923-26, expanded in late 1930s) also referred to as "Japanese Camp," Varona Village (1933, expanded 1957) also called "Filipino Camp," a Japanese Clubhouse referred to as "J" Club (1935, renovations 1991-1992), the 'Ewa Plantation Cemetery, an Artesian Well Marker (commemorates the first well site established in 1879) and the OR&L right-of-way (ROW) (1889). Additional sites found to contribute to the historic district, but not owned by the City and County of Honolulu, include the 'Ewa Immaculate Conception Catholic Church, Parish Hall & Priest's Home (circa 1926), the 'Ewa Community Church (1937, addition 1956) and the 'Ewa Sotoshuji Church and Social Hall (1949) (Moy 1995).

The 'Ewa Sugar Plantation Villages was determined eligible under Criteria a (associated with events that have made a significant contribution to the broad patterns of Hawai'i's history) and c (embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction) (Moy 1995:3).

2.2.6 Oahu Railway and Land Company (OR&L)

The OR&L railway was pioneered by Benjamin Franklin Dillingham. Beginning in 1889, the OR&L laid rail throughout the west side of O'ahu, stretching from Honolulu through the 'Ewa Plains any beyond. The railroad reached the Ewa Sugar Plantation in 1892, the Waianae Plantation in 1895, the Waialua Mill in 1898, the mill in Kahuku by 1899 and Wahiawa by 1906 (Rewick 2012). A total of 175 miles of track was laid for the railroad, with a tremendous effect on the economic development of O'ahu and Hawai'i (Cummins 1974a; Knaus 1983). A portion of the OR&L railroad is just north of the current APE/project area.

From 1890 to 1892, the Ranch Department of the OR&L constructed plantation flumes and cultivated sisal (*Agave sisalana*). The Hawaiian Fiber Company was established in 1898 and extended within the limits of NAS-BP, just west of the current APE/project area. To attract more business, Dillingham leased all of his property below 200 feet in elevation to the Oahu Sugar Company and William Castle who, in turn, sublet it to the Ewa Plantation Company for sugar cane cultivation (Frierson 1972:15).

The railroad was initially designed for use as a passenger train and to cart agricultural goods to Honolulu (Hungerford 1963; Treiber 2005). It was constructed adjacent to sugar mills and military bases. During WWII, the U.S. military took control of the OR&L tracks to transport materials and personnel throughout the island.

Oahu Railway's finest hour began the minute bombs were dropped on Pearl Harbor. At once it was an important agency in prosecution of the war and operations went on a day-and-night basis. For months, locomotives ran without lights, then with blackout headlights visible as warnings but given no light for engine crews. Troop trains, workers' trains, supply trains and ammunition trains shuttled constantly. In the year before the outbreak of WWII, passenger totals were under a million; in 1942, it exploded to 2,365,601 and in 1943 rose to 2,642,516 (Hungerford 1963:33).

In 1943, the OR&L included 26 locomotives, 52 passenger coaches, six combination coaches, one parlor car, three mail cars, two gasoline motor cars and 1,359 freight cars (Hungerford 1963:34). Following the war, there was a decline in passenger use with the popularity of automobiles on the rise and a tidal wave (in 1946) that destroyed the tracks along the west coast of O'ahu. OR&L passenger service ended in 1947, and much of the track was dismantled. However, a large section of the OR&L track and ROW was sold to the U.S. Navy, extending 30 miles from the west limits of Pearl Harbor Reservation to a Lualualei ammunition depot (Hungerford 1963). The track was used to transport munitions until 1968 (Trieber 2005).

The OR&L ROW was listed on the State and National Registers in 1975 (SIHP # 50-80-12-09714, NR #75000621) (Cummins 1974a). The OR&L ROW includes the longest stretch of narrow-gauge railroad track in Hawai'i, extending 15 miles from West Loch in Honouliuli to the west side of O'ahu in Nanakuli (Cummins 1974a:2; Rewick 2012:3). The ROW is 40 feet wide consisting of a raised roadbed of mixed materials in good condition.

The OR&L ROW and Hawaiian Railway Society's (HRS) 'Ewa Railroad Yard (OR&L Railroad Baseyard), located west of the current APE/project area, was nominated to the State Register in 2012 and is designated at SIHP # 50-80-12-07387 (Rewick 2012). The HRS 'Ewa Rail Yard contains collections and is a location for research, preservation, conservation, restoration, and maintenance of OR&L engines, boxcars, flatcars, coaches, cane cars, a hand-operated track inspection car, artifacts, and memorabilia. The facility also serves as an operating depot for public train rides. The HRS moved to this location in 1974, the site is not an original location for the OR&L baseyard. The 'Ewa Railroad Yard is makai of the OR&L ROW and contains "five narrow gauge siding tracks and one bypass track connected by railroad switches to the ROW. It is the replacement facility for the original railroad support facility (including roundhouse) that was located in Iwilei in Honolulu but which was demolished and then subdivided in the late 1950s-early 1960s" (Rewick 2012:3).

The Railroad Yard includes several train cars that are listed on the State and National Registers, including locomotives #6 ("Kailua", built 1889) and #12 (built 1912) and the #64 Dillingham parlor car (built 1924) (Railway Rolling Stock, SIHP #50-80-08-09761), and the Waialua Agricultural Company locomotive #6 ("WaCo 6", SIHP # 50-80-08-09708, NR #74000719). WaCo 6 is the only locomotive designed and built in Hawai'i and the only fully operational and restored Hawaiian sugar plantation locomotive in the world (Cummins 1974b; HHF 2016).

The OR&L ROW (SIHP # 09714, NR #75000621), HRS 'Ewa Railroad Yard (SIHP # 07387), the Railway Rolling Stock (SIHP # 09761) and the Waialua Agricultural Company locomotive #6 (SIHP # 09708, NR #74000719) were all assessed as eligible for the State and National Registers under Criteria A (associated with events that have made a significant contribution to the broad patterns of Hawai'i's history) (Cohn 1992:3; Cummins 1974b; Rewick 2012:12). According to the National Register nomination form for the Waialua Agricultural Company locomotive #6, it was also recommended eligible under Criteria C (embodies distinctive characteristics of a type, period, method of construction, or work of a master).

2.2.7 1900s to Modern Times

As depicted on a 1913 map (see next section for map), the APE/project, shown as devoid of any structures or cultural resources at this time, was just east of a large sisal-growing plantation

(i.e., the Hawaiian Fiber Co.). A fence line is depicted separating the sisal plantation from the APE/project area. The main line of the O.R. & L. railroad, sugar mill and plantation (workers) camps are just to the north. A 1919 map ("War Department Fire Control map, Barbers Point quadrangle," not reproduced here) shows the same basic picture as the 1913 map. On the 1919 map, a U.S. Coast & Geodetic Survey (USC & GS) magnetic observatory station is depicted a little over a mile southwest of the APE/project area.

Maps from 1927 and 1933-1936 (see below) show unimproved roads and fence lines near the APE/project area but no specific features within it; most of the fence lines around the perimeter of the sisal-growing area to the west appear to have been formalized into rocks walls by this time. A "mooring mast" appears by 1927 to the southwest. An online World War II database[7] provides some historical context for this mooring mast:

> In 1925, the United States Navy leased 150 acres with the intention of developing a base for airships. A 2,000-foot circle was cleared and a 100-foot mooring mast was erected capable of mooring the USS Shenandoah, but the airship was destroyed over Ohio, United States before she could make any flights to Hawaii. The mast remained, however, becoming something of a local landmark. In 1932 the mast was shortened to 50-feet, the height required for the airships USS Akron and USS Macon but they never made the trip either. A 1,500-foot emergency landing strip was smoothed out within the circle surrounding the mast. This strip became known as the Ewa Mooring Mast Field and Navy aircraft from Ford Island made infrequent visits.

A 1939 map of the Ewa (sugarcane) plantation company's fields (see below) shows the APE/project area adjacent to (just east of) a large, commercial sisal-growing operation.

Commercial sugar cane agriculture had, by far, the most long-lasting impact in the vicinity of the APE/project area well into the twentieth century. Yucha et al. (2015:37), citing the authoritative Dorrance and Morgan (2000), neatly summarize its eventual decline and demise in 'Ewa and Honouliuli:

> During the twentieth century, the Ewa Plantation continued to grow and by the 1930s, encompassed much of the eastern half of Honouliuli Ahupua'a, including the current project area. [note, this includes the current APE/project area] This growth impelled the creation of plantation villages to house the growing immigrant labor force working the fields. After the outbreak of World War II, which siphoned off much of the plantation's manpower, along with the changeover to almost complete reliance on mechanical harvesting in 1938, the plantation no longer supported the large multi-racial (Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, European) labor force that had characterized most of the early history of the plantation. The Oahu Sugar Company took control over the Ewa Plantation lands in 1970 and continued operations until 1995, when they decided to shut down sugar cane production in the combined plantation areas (Dorrance and Morgan 2000:45, 50). (brackets added)

[7] https://ww2db.com/facility/Ewa_Marine_Corps_Air_Station/

Prior to the modern era of residential, light industrial and other commercial development of the APE/project area environs, other than sugar cane agriculture, military development was the most impactful to the surrounding landscape and its modification. The current APE/project area is located just outside (to the east) of the boundary of the former (now closed) military installation of Naval Air Station, Barbers Point (NAS-BP). Other details of the military presence in the vicinity of the current APE/project area are beyond the scope of this report (interested readers can refer to Yucha et al. 2015:37-39 for highlights).

2.3 Other Selected Historical Maps and Aerial Images

Figure 7, a portion of 1880 Hawaiian Kingdom map, shows undeveloped APE/project area and environs with a major mauka-to-makai trail connecting the main settlement in this part of Honouliuli, around the mouth of its main stream on Puʻuloa. One of the trails also connects with the famous wahi pana of Puuokapolei. It is important to note that the absence of evidence of structures at or near the APE/project area does not mean there were none; rather, it implies a lack a major, structural development of interest to commercially-minded nineteenth century people.

Figure 8, a portion of 1902 Hawaiian Territory map, shows major agricultural and other commercial operations, such as the OR&L railroad lines, Ewa Plantation roads and mill, immediately adjacent to the current project area. This map also depicts the U.S. Coast & Geodetic Survey (USC & GS) magnetic observatory station to the southwest in Kalaeloa. The project area is south of Ewa Mill building complex.

Figure 9, a portion of 1913 topographic map, shows many site-features and details on the landscape in and around the current project area; it seems like the project area was not within either the sisal fields to the west or sugar cane fields to the north, east and south. No specific features are depicted within the project area at this time.

Figure 10, a portion of 1927 topographic map, possibly shows an old (long removed) fence line traversing the project area in a roughly north-to-south orientation. A “mooring mast” used briefly to dock dirigibles (“air ships”) before this mode of travel went out of favor after the Hindenburg disaster in 1937.

Figure 11, a 1927 aerial photograph, shows the project area in an undeveloped and unfarmed state. The vegetation in the project area of trees and shrubs contrasts with the cultivated fields to the southeast and east. The mooring mast site to the west is surrounded by a square area presumably consisting of managed vegetation growth.

Figure 12, a portion of 1936 topographic map, shows a similar level of development and features as the 1927 map (above).

Figure 13 is a portion of 1939 map of the Ewa (sugar cane) Plantation Company’s fields and other development. This map clearly shows that the project area was not planted in sugar cane but was close to it.

Figure 14, a 1943 topographic map, shows extensive military development to the west and south within the boundary of NAS-BP. The project area is still depicted as completely lacking any development or structures.

Figure 15, a 1962 aerial photograph, shows the adjacent airfield with the boundary of NAS-BP had one complete runway and another in a state of near-completion. The project area is still depicted as completely lacking any development or structures.

Figure 16, a 1977 aerial photograph, shows the original wastewater treatment facility in a state of ongoing construction. It was completed in 1978.

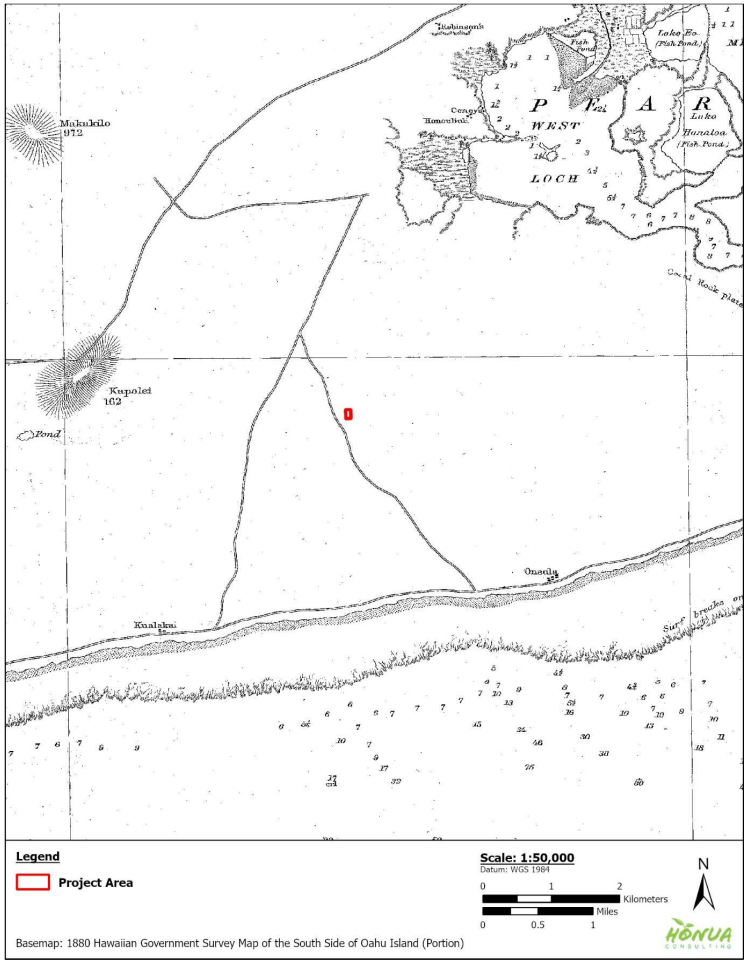

Figure 7. Portion of 1880 map showing project-area location (base map source: DAGS Land Survey Map Search, http://ags.hawaii.gov/survey/ map-search/)

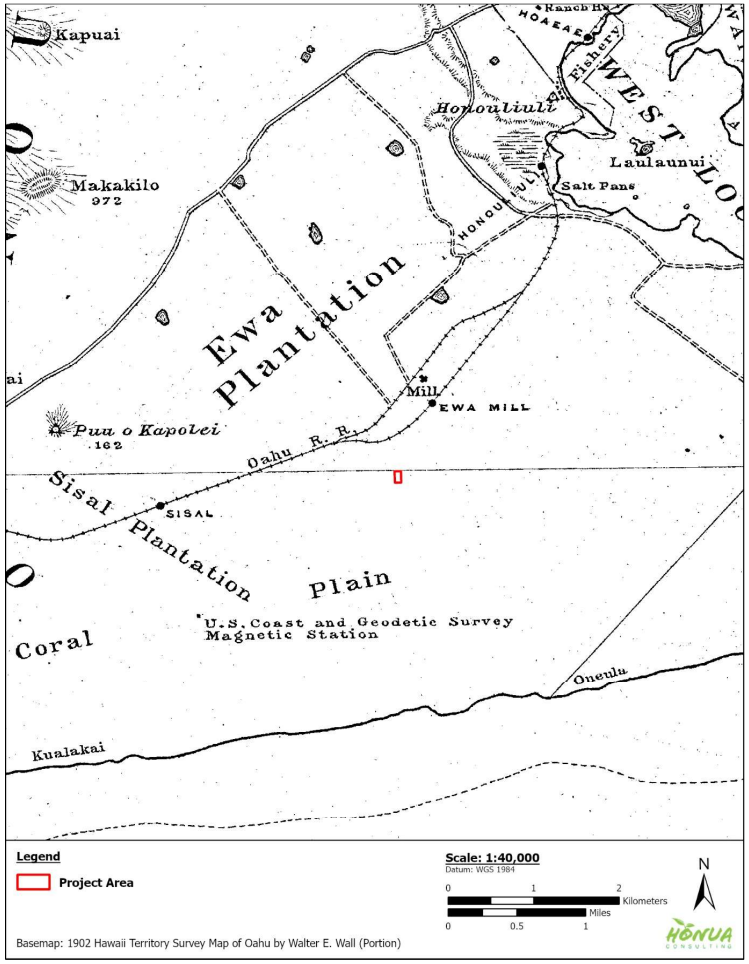

Figure 8. Portion of 1902 map showing project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/ index.html)

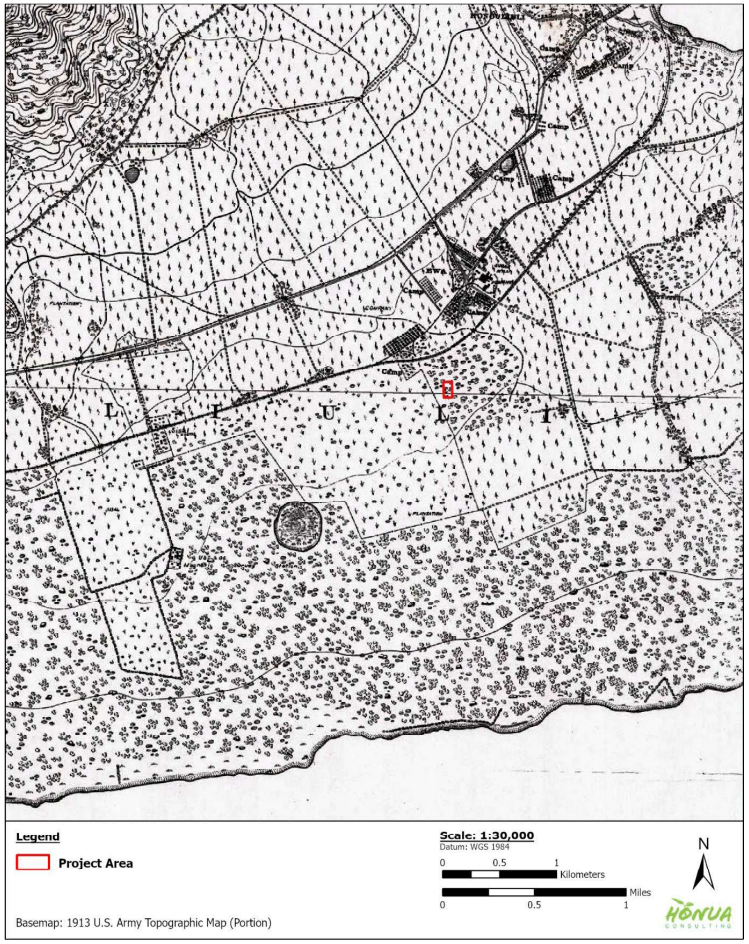

Figure 9. Portion of 1913 topographic map with project area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)

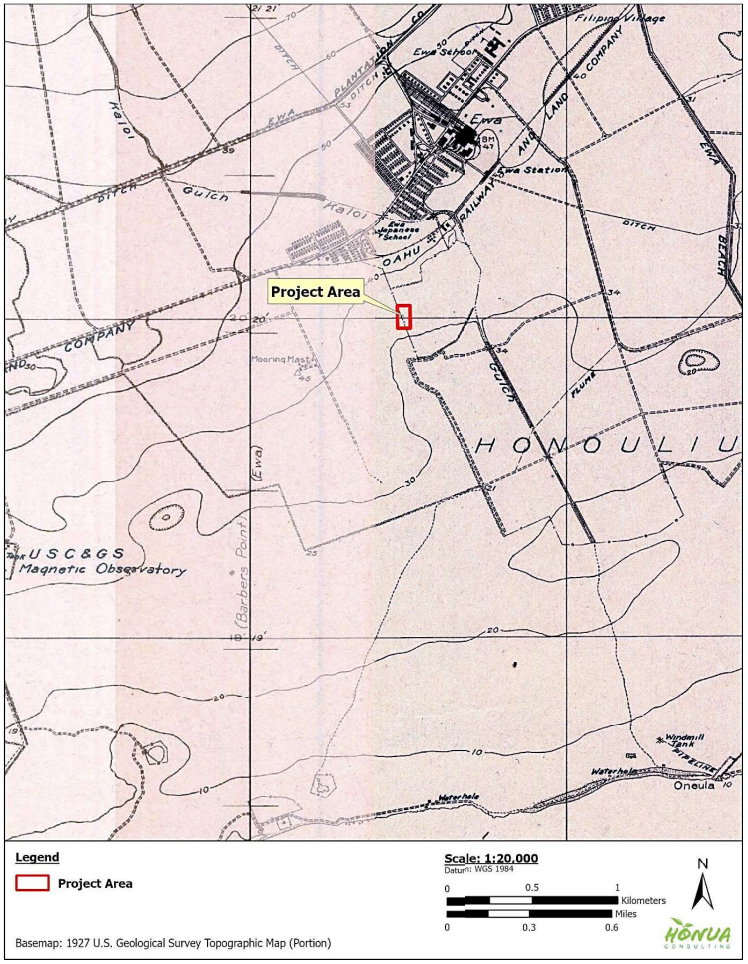

Figure 10. Portion of 1927 topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)

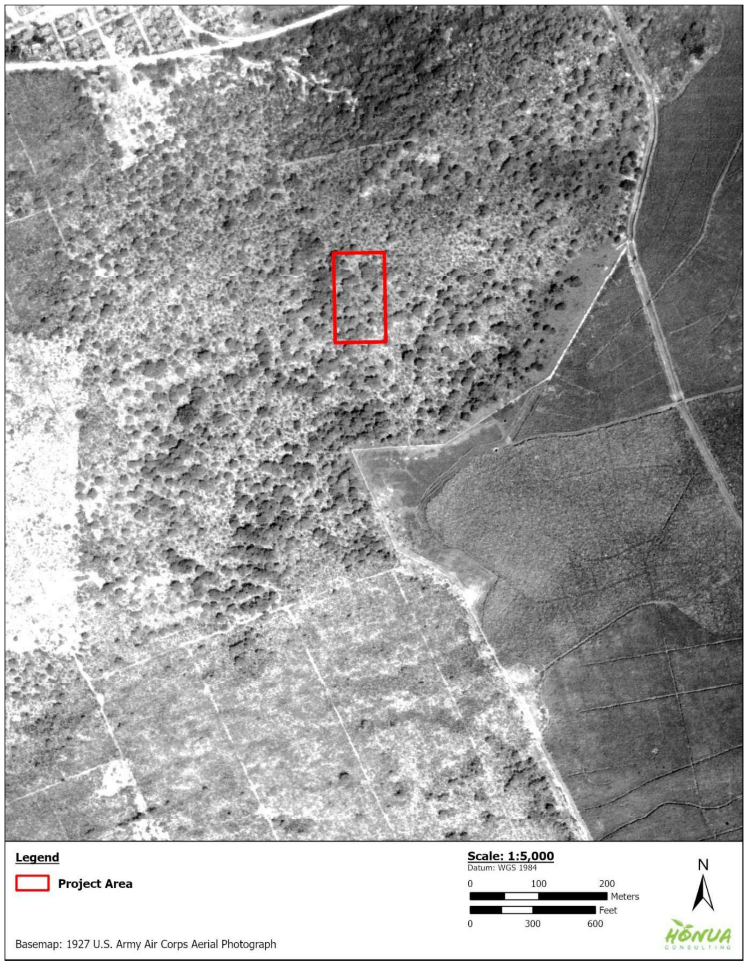

Figure 11. Portion of 1927/8 aerial photograph showing project-area location (base image source: University of Hawai'i-Mānoa's digital maps, http://magis.manoa.hawaii.edu/maps/ index.html)

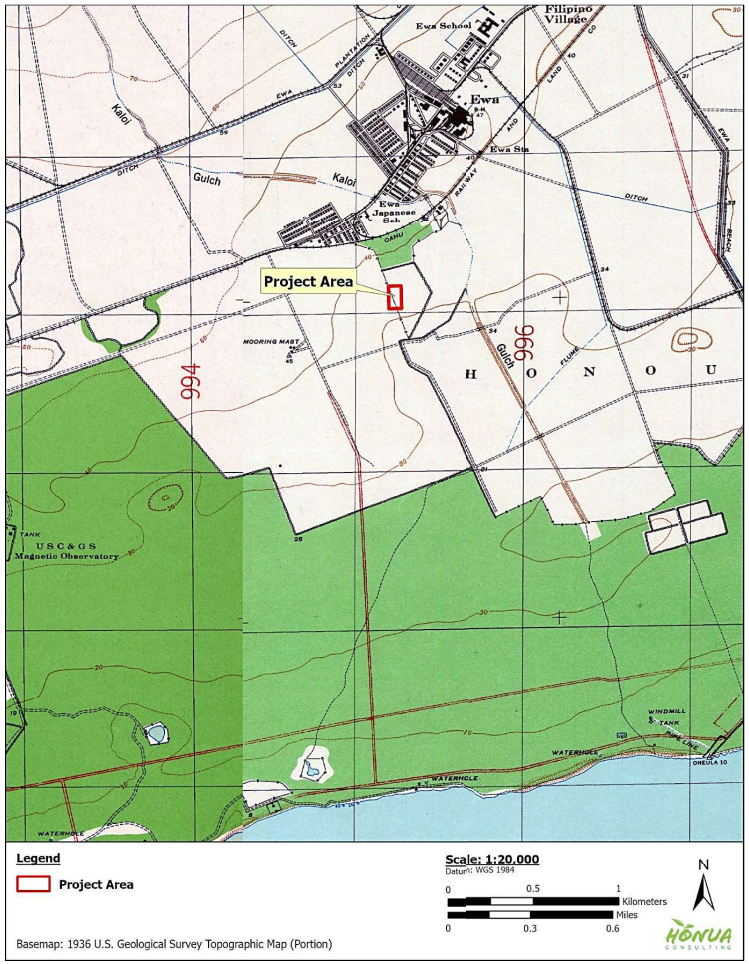

Figure 12. Portion of 1936 topographic map with project-area location (base map source: University of Hawai'i-Mānoa's digital maps, http://magis.manoa.hawaii.edu/maps/ index.html)

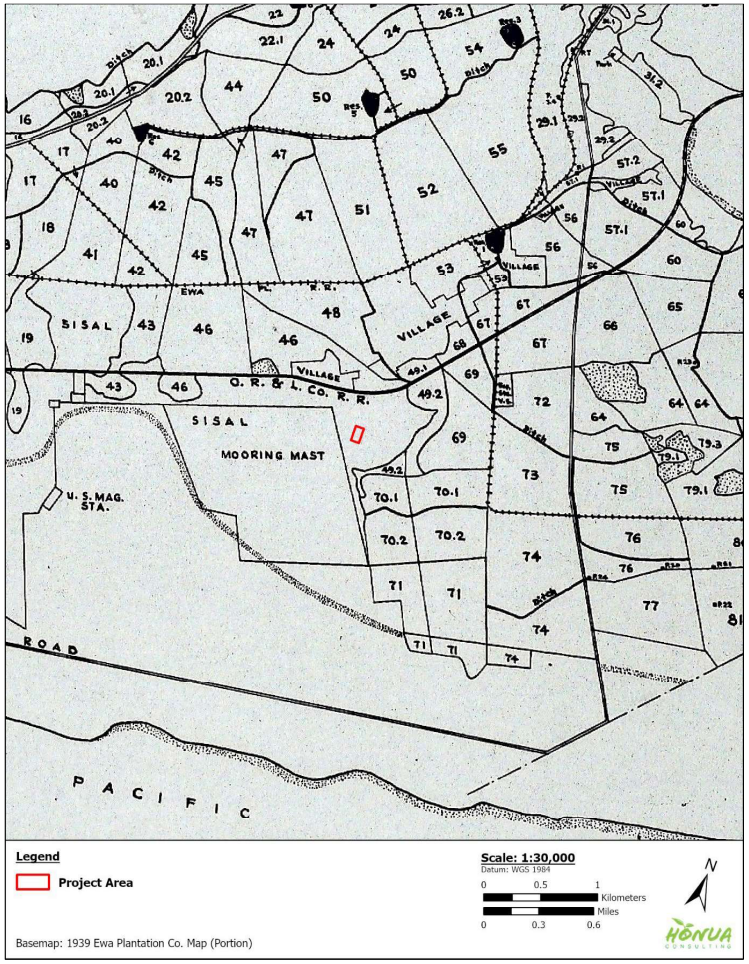

Figure 13. Portion of 1939 Ewa Plantation map showing project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)

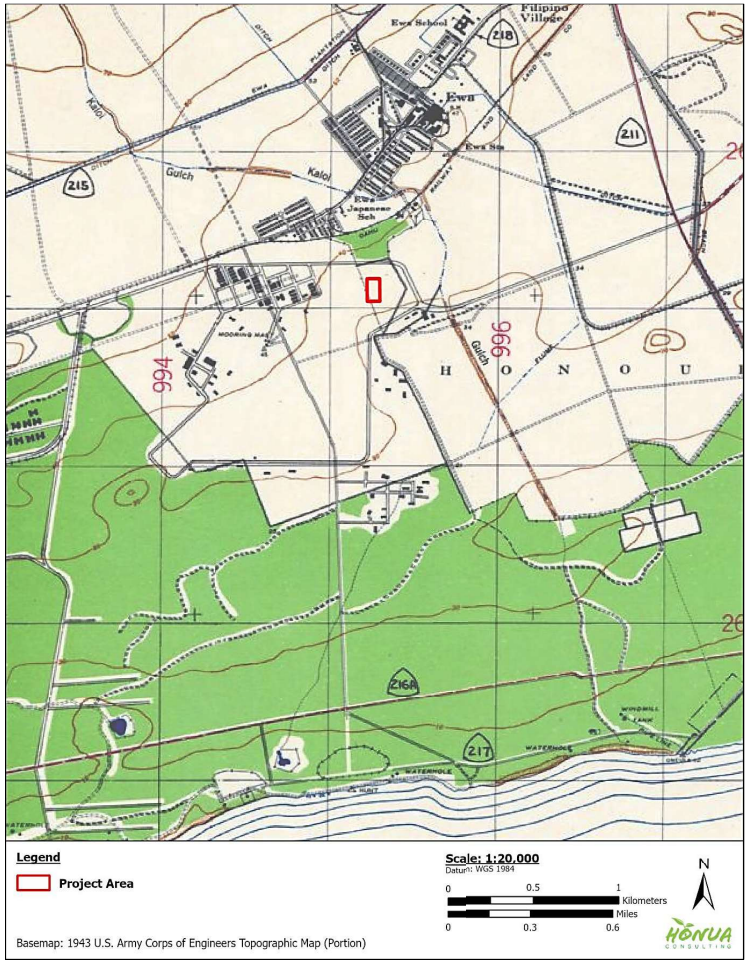

Figure 14. Portion of 1943 topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)

Figure 15. Portion of 1962 aerial photograph showing project-area location (base image source: University of Hawai'i-Mānoa's digital maps, http://magis.manoa.hawaii.edu/maps/index.html)

Figure 16. Portion of 1977 USGS topographic map with project-area location (base map source: University of Hawai'i-Mānoa's digital maps, http://magis.manoa.hawaii.edu/maps/index.html)

Section 3 Previous Archaeological Studies

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

Table 1, Figure 17 and Figure 18 summarize and depict previous archaeological and other cultural-resource management studies in and near the project area.

3.1 Previous Studies in and near Current Project Area

Prior to the advent of modern, professional archaeological research on O‘ahu, early studies that included compilations and surveys of heiau (traditional Hawaiian temples) and other prominent structures such as fishponds and settlement/cultivation areas were completed (e.g., McAllister 1933; Thrum 1938). Starting in the 1970s, with the advent of Federal and State historic preservation laws, updated island-wide survey and compilation projects (e.g., Sterling and Summers 1978) were also completed. These studies, which focused on above-ground sites, identified one discrete site, Pu‘u o Kapolei (also spelled Pu‘uokapolei with other variations), which is more than two miles west of the APE/project area (McAllister site 138),[8] and one general area southeast of the APE/project area designated the “Ewa Coral Plains” (McAllister site 146), which was described as:

> Ewa coral plains, throughout which are remains of many sites. The great extent of old stone walls, particularly near the Puuloa Salts Works, belongs to the ranching period of about 75 years ago. It is probable that the holes and its in the coral were formerly used by the Hawaiians . . . They [holes and pits] afford shelter and protection . . . (brackets added)

Other, more recent studies are summarized below.

3.1.1 Welch 1987, Jones 1993, Kaneshiro 1994, Tuggle & Tomonari-Tuggle 1997

In 1987, International Archaeological Research Institute, Inc. (IARII) (Welch 1987) conducted an archaeological reconnaissance at the former Ewa Marine Corps Air Station for a proposed light anti-aircraft missile battalion. Fieldwork included pedestrian survey of the 100-acre project area. Two archaeological sites were recorded, SIHP #s 50-80-121-03721 and 50-80-12-03722. SIHP # 03721 consists of a complex of five traditional Hawaiian features including walls and C-shape shelters. SIHP # 03722 consists of a coral wall related to early historic ranching and farming. Both sites were determined eligible for inclusion in the National Register and mitigation in the form of intensive survey and data recovery was recommended.

[8] So-called McAllister sites, since they were the first on O‘ahu to be catalogued by a professional archaeologist, can also be formally written as State Inventory of Historic Places (SIHP) # 50-80-12-00138 (e.g., for Pu‘uokapolei).

In 1993, IARII conducted a Phase I archaeological inventory survey of proposed Barbers Point family housing (Jones 1993). A 100% pedestrian survey was conducted of the area. This survey was supplemented with targeted excavations of archaeological features. In total, 274 archaeological features were recorded, with five sites previously recorded by the Bishop Museum confirmed. Of the 247 sites recorded, only seven were recommended as not eligible for the National Register and no further work was recommended.

In 1997, IARII conducted a cultural resource inventory for the Naval Station at Barbers Point (Tuggle and Tomonari-Tuggle 1997). The report is part of a larger inventory of archaeological, paleontological, and paleoenvironmental studies of the area. As a result of the survey, 101 archaeological sites and 107 historic buildings were recommended eligible for the National Register and all were recommended for further work.

3.1.2 Davis 1988, Kennedy 1988

A survey of the ground surface (Kennedy 1988) and subsequent subsurface testing (Davis 1988) within the approximately 1,016-acre ‘Ewa Gentry project area yielded no significant historic properties. The ubiquitous OR&L railroad bed/ROW (SIHP # 09714) represented a portion of these previous studies’ mauka boundary. According to historic maps, a Filipino Camp for sugar cane workers once existed near the intersection of the OR&L railroad bed and an old cane-haul road near Fort Weaver Road; however, Kennedy (1988) did not find any above-ground remains of this camp. Davis’ (1988) subsurface testing included 18 backhoe trenches but yielded no evidence of intact cultural features or materials. Davis (1988:4) concluded that the soil was only about 1 meter [m] (3 feet [ft.]) deep over a coral substrate.

3.1.3 Hammatt & Shideler 1989

In 1989, Cultural Surveys Hawai‘i (CSH) conducted archaeological reconnaissance survey of the ‘Ewa Marina parcels; no historic properties were identified.

3.1.4 Hammatt et al. 1990

In 1990, CSH completed an archaeological reconnaissance survey of the Ewa Villages. Due to over a century of sugarcane cultivation and its related infrastructure, no traditional (pre-Contact) Hawaiian site-features were observed. The report, however, discussed the possibility of encountering historic-period archaeological material, including in subsurface context, at Renton, Tenney, and Varona villages; and archaeological monitoring was recommended for any future development of the area. The plantation-era Ewa Villages was designated State Inventory of Historic Places (SIHP # 50-80-12-09786). Hammatt et al. (1990) identified a number of above-ground sites at Ewa Villages (Figure 19), including the Ewa Plantation cemetery and reservoir, the demolished Korean Village, the demolished Mill Village, the demolished “C” Village, the Ewa Depot and the possibility of archaeology in Renton Village and mill, Tenney Village and Varona Village.

3.1.5 Moy 1995

In 1995, the Ewa Sugar Plantation Villages (SIHP # 09786) were nominated for the National Register of Historic Places (NRHP) by architectural historian Moy (1995) (who, at the time, worked for the SHPD). A historic district was designated consisting of 287 contributing

resources, including 285 domestic and agricultural buildings, one processing site and one commercial complex utilized by plantation workers from 1890 to 1957. Contributing sites of the Ewa Sugar Plantation Villages Historic District includes mill buildings, the plantation management office (1935), the Ewa Shopping Basket (1935) or plantation store, the plantation manager's house (1925), three additional managers' houses (1923), single men's quarters (1924), Renton Village (1907-1924) also referred to as "Haole Camp," Tenney Village (1923-26, expanded in late 1930s) also referred to as "Japanese Camp", Varona Village (1933, expanded 1957) also called "Filipino Camp", a Japanese Clubhouse referred to as "J" Club (1935, renovations 1991-1992), the Ewa Plantation Cemetery, an Artesian Well Marker (commemorates the first well site established in 1879), and the OR&L ROW (1889). Additional sites found to contribute to the historic district, but not owned by the City and County of Honolulu, include the Ewa Immaculate Conception Catholic Church, Parish Hall & Priest's Home (c. 1926), the Ewa Community Church (1937, addition 1956) and the Ewa Sotoshuji Church and Social Hall (1949).

3.1.6 Hammatt & Chiogioji 1997

In 1997, CSH conducted an archaeological reconnaissance survey over a 14,730-foot long corridor that would connect the makai (seaward) portion of 'Ewa to the H-1 Freeway (North-South Road) (Hammatt and Chiogioji 1997). The entire project area was previously used for sugar cultivation and there were no significant archaeological finds. CSH recommended no further archaeological investigation; however, SHPD did request archaeological monitoring during construction of the North-South Road.

3.1.7 McIntosh & Cleghorn 2002

In 2002, Pacific Legacy conducted an AIS of the southern extension of the (then) proposed 'Ewa Gentry development; no historic properties were identified.

3.1.8 O'Hare et al. 2007

In 2007, CSH conducted an archaeological assessment of the (then) proposed Ewa Industrial Park (O'Hare et al. 2007). The approximately 48.2-acre project area was bounded to the north by the OR&L tracks and ROW. The western portion of the project area (and a portion of the eastern section) was open, with livestock pastures and paddocks, houses and out-buildings. The central section had been extensively cleared of all vegetation and large rocks; extensive evidence of prior ground disturbance was observed throughout the parcel. No traditional Hawaiian sites or features were observed on the ground surface. No sinkholes were found. There was also little evidence of historic-period use by the Ewa Plantation, the OR&L Company or the military.

3.1.9 O'Hare et al. 2011

In 2011, CSH conducted an archaeological literature review and field inspection (ALRFI) for various long-term improvements to the wastewater collection and disposal systems for the Honouliuli Wastewater Treatment Plant (O'Hare et al. 2011). The project included multiple, discrete project areas in different ahupua'a, including Honouliuli, Hō'ae'ae, Waikele, Waiawa, Manana, Waimalu and Hālawa. For the project area closest to the current project area, O'Hare et al. (2011) recommended on-call (i.e., intermittent) monitoring. It is noted that the area is of relatively low archaeological concern and has been extensively disturbed by prior infrastructure construction (ibid.).

3.1.10 Hammatt & Shideler 2012

In 2012, CSH conducted an ALRFI for the Kalaeloa Life Safety Improvements project (Hammatt and Shideler 2012). Several different locations were included in the ALRFI: the intersection of Coral Sea Road and Roosevelt Avenue, the intersection of Coral Sea Road and San Jacinto Street, the intersection of Coral Sea Road and Tripoli Street, the intersection of Coral Sea Road and Eisenhower Road and the intersection of Roosevelt Avenue and Philippine Sea Road (approximately 1 km east of the intersection of Coral Sea Road and Roosevelt Avenue). These study areas are located on the eastern side of the former Barbers Point Naval Air Station. No archaeological sites were recorded during the course of the survey.

3.1.11 Mooney & Cleghorn 2012, 2017

In 2012, Pacific Legacy completed an AIS of Varona Village, southwest of the current project area (Mooney and Cleghorn 2012). The 22-acre project area is within the 'Ewa Sugar Plantations Historic District (SIHP # 09786). Five newly-identified structures in Varona Village were documented: two historic plantation houses (SIHP #s 50-80-12-07129 and 50-80-12-07130), two house foundations (SIHP #s 50-80-12-07131 and 50-80-12-07132) and a historic streetlight (SIHP # 50-80-12-07133).

In 2017, Pacific Legacy conducted archaeological monitoring for sewage system upgrades at Varona Village (Mooney and Cleghorn 2017). Twenty-eight septic systems were installed requiring subsurface excavation of up to 2-3 m (6.6-9.8 ft.) deep. Documented stratigraphy generally consisted of silt loam, clay loam and coral fill layers over natural clay soils and the lithified coral shelf. Based on provided stratigraphic profiles and descriptions, the upper limit of documented natural clay soils appears to have ranged from 5-48 cm below the surface (cmbs) (0.16-1.6 ft). Several historic artifacts such as glass bottles and bottle fragments, rusted-metal machine or automotive parts and residential building materials were observed within disturbed contexts or fill sediments. A few sinkholes were also observed but no traditional Hawaiian features or artifacts were encountered within them. Various historic and modern faunal remains were also observed.

3.1.12 Rewick 2012

In 2012, the OR&L ROW and Hawaiian Railway Society's 'Ewa Railroad Yard (OR&L Railroad Baseyard), located adjacent to the south side of the current project area, was nominated to the Hawai'i Register of Historic Places (HRHP) (SIHP # 50-80-12-07387) (Rewick 2012). The Hawaiian Railway Society's 'Ewa Rail Yard contains archival collections and is used for research, preservation, conservation, restoration and maintenance of OR&L engines, boxcars, flatcars, coaches, cane cars, a hand-operated track inspection car, artifacts and memorabilia. The facility, which also serves as an operating depot for public train rides, was moved to its current location in 1974; it was not the original location of the OR&L baseyard.

The Railroad Yard includes several train cars that are listed on the HRHP and/or NRHP, including locomotives #6 ("Kailua," built in 1889), #12 (built in 1912) and the #64 Dillingham parlor car (built in 1924) (Railway Rolling Stock, SIHP # 50-80-08-09761 [HRHP]) as well as the Waialua Agricultural Company locomotive #6 ("WaCo 6," SIHP # 50-80-08-09708, NR #74000719). WaCo 6, the only locomotive designed and built in Hawai'i, is also the only fully

operational and restored Hawaiian sugar plantation locomotive in the world (Cummins 1974b; HHF 2016).

3.1.13 Frye & Resnick 2013, Johnson 2013

In 2013, a reconnaissance and geophysical survey at the Marine Corps Air Station (ʻEwa Field) was conducted (Johnson 2013). Ground penetrating radar, magnetometry, and metal detection were utilized to identify features at the airfield which were present during the Japanese attack of WWII on December 7, 1941. The study investigated the ʻEwa Plain Battlefield (SIHP # 50-80-12-05127, NR #16000273) finding foundations of an armory, officers barracks, a storage building, over 500 ft of charred but intact OR&L railway ties without rails, a swimming pool and adjacent pavement, a subsurface fuel tank, and a subsurface latrine. Several additional features were searched for but not found including evidence of enlisted barracks, a flagpole, water lines, a dispensary, the end of an original coral runway, the mooring mast, a compass rose, a magazine, and an ammunitions dump. The ʻEwa Plain Battlefield was nominated to the State and National Register in 2013 (Frye and Resnick 2013).

3.1.14 Yucha et al. 2015

Incorporating previous work by O'Hare et al. (2007, 2011) on portions of their project area, CSH (Yucha et al. 2015) conducted an AIS with negative findings (that was written up as an archaeological assessment) of the approximately 100-acre Honouliuli Wastewater Treatment Plant Secondary Treatment and Facilities Project (TMK: [1] 9-1-013:007). The OR&L tracks and ROW bounds the project area on its north side. Only modern wastewater infrastructure and modern agricultural structures were observed. No historic properties were identified within the project area and no further archeological work was recommended.

3.1.15 Thurman et al. 2019

Honua Consulting completed an ALRFI for a waterline project along a portion of Renton Road extending up adjacent to the current project area (Thurman et al. 2019). The study reiterated archival information about the ʻEwa Sugar Plantation Villages Historic District (SIHP # 09786) and includes a historic streetlight (SIHP # 07133) in Varona Village on the north side of Renton Road. This study also reiterated archival information about the OR&L ROW (SIHP # 09714) and OR&L Railroad Baseyard (SIHP # 07387) and the ʻEwa Plain Battlefield (SIHP # 05127) located to the south of their project area. Pedestrian survey did not identify any new historic properties and no significant cultural materials were identified. Thurman et al. (2019) concluded that it was unlikely that traditional Hawaiian surface or subsurface materials or cultural deposits would have survived the wholesale modification of their project area in the historic period. The study recommended that the proposed waterline project proceed under an archaeological monitoring program to record historic-period materials in subsurface context.

Table 1. Summary of Previous Archaeological and other Historic-Preservation Studies in and near APE/Project A

Previous Study	Formal Type	Location	Results & Co
Thrum 1938 McAllister 1933 Sterling & Summers 1978	Early surveys/compilations of surveys of archaeological sites & wahi pana (legendary places)	Island of O'ahu	Recorded the ʻEwa Coral Plain as Puuokapolei (Puʻu o Kapolei), Mā current APE/project area
Welch 1987	ARS	Ewa Marine Corps Air Station at Barbers Point Naval Air Station	Identified 2 sites more than 0.5 m APE/project area: SIHP # 50-80-1 traditional Hawaiian habitation cc 03722 is a sisal-plantation rock w
Davis 1988	Subsurface testing	Proposed Ewa Gentry development	No historic properties identified a recommended – project area was cane agriculture for approximatel
Kennedy 1988	ARS		
Hammatt & Shideler 1989	ARS	ʻEwa Marina	No cultural features recorded; rec archaeological survey for Phase I
Hammatt et al. 1990	ARS	ʻEwa Village	No additional sites documented, ʻ District confirmed and recommen Register
Jones 1993	ARS	Naval Air Station – Barbers Point	Recorded 274 sites, nearly all rec investigation
Kaneshiro 1994	AIS	Barbers Point Naval Air Station	No historic properties identified in project area
Tuggle & Tomonari-Tuggle 1997	CRI		Recorded 101 sites and 107 build eligible for National Register
Moy 1995	NRHP nomination form	Ewa Sugar Plantation Villages TMK [1] 9-1-017:038, 069, 080, 081, portions of 046 & 067	Historic district of 287 contributin 285 domestic and agricultural bui and 1 commercial complex; the C bungalows were used by immigra 1957 and represent a significant p
Hammatt & Chiogioji 1997	ARS	Linear corridor of Kapolei Parkway	No new historic properties identifi recommended for Ewa Village Hi 80-12-09786) and OR&L ROW (
McIntosh & Cleghorn 2002	AIS	Southern extension of proposed ʻEwa Gentry development	No above-ground historic propert

Previous Study	Formal Type	Location	Results & Comments
O'Hare et al. 2007	ARS	'Ewa Industrial Park project area (48.2 acres) TMK [1] 9-1-069:003	No historic properties identified in vicinity of current project area
O'Hare et al. 2011	ALRFI		
Hammatt & Shideler 2012	Hammatt & Shideler 2012	ALRFI	Coral Sea Rd. intersections and Roosevelt Ave. at Philippine Sea Rd.
Mooney & Cleghorn 2012	AIS	Varona Village TMK: [1] 9-1-017:069	5 newly-identified structures of 'Ewa Sugar Plantation Villages Historic District (SIHP # 50-80-12-09786) including historic plantation houses (SIHP #s 50-80-12-07129 and 07130), house foundations (SIHP #s 50-80-12-07131 and 07132), and a historic streetlight (SIHP # 50-80-12-07133)
Mooney & Cleghorn 2017	AM		Several historic artifacts were observed; however, no traditional Hawaiian features or materials were observed
Rewick 2012	NRHP nomination form	Hawaiian Railway Society	Included section of OR&L ROW and Hawaiian Railway Society's Ewa Railroad Yard (OR&L Railroad Baseyard) (SIHP # 50-80-12-07387)
Frye & Resnick 2013	ARS	Marine Corps Air Station ('Ewa Field)	'Ewa Plain Battlefield (SIHP # 50-80-12-05127, NR #16000273) recorded the foundation of an armory, officers barracks, and storage building, over 500 ft of charred but intact OR&L railway ties without rails, a swimming pool and adjacent pavement, a subsurface fuel tank, and a subsurface latrine
Johnson 2013	NRHP / HRHP nomination forms		
Yucha et al. 2015	AA (AIS)	Honouliuli Wastewater Treatment Plant TMK (1) 9-1-013:007 (101 acres total)	No historic properties identified
Thurman et al. 2019	ALRFI	Ewa Villages R-1 Water Main	Two previously documented sites, 'Ewa Sugar Plantation Villages Historic District (SIHP # 50-80-12-09786) and a historic streetlight (SIHP # 50-80-12-07133) within Varona Village along north side of Renton Road

Abbreviations: AIS = archaeological inventory survey, AA (AIS) = archaeological inventory survey with no significant findings written up as an "archaeological assessment," ALRFI = archaeological literature review and field inspection, AM = archaeological monitoring, ARS = archaeological reconnaissance survey, CRI = cultural resources inventory, HRHP = Hawai'i Register of Historic Places, NRHP = National Register of Historic Places, SIHP = State Inventory of Historic Places.

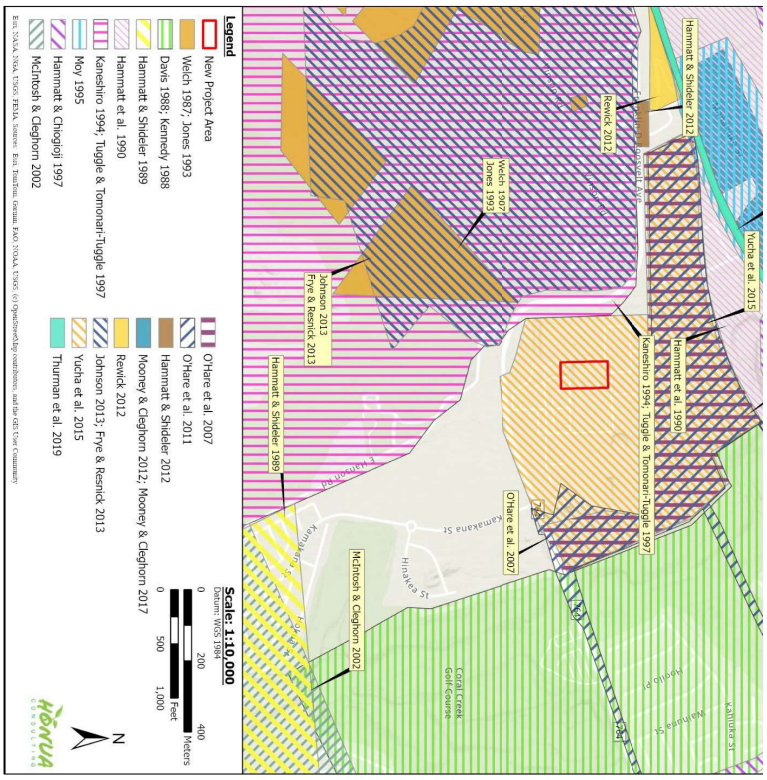

Figure 17. Previous archaeological studies in and near the project area (see table and text above for details)

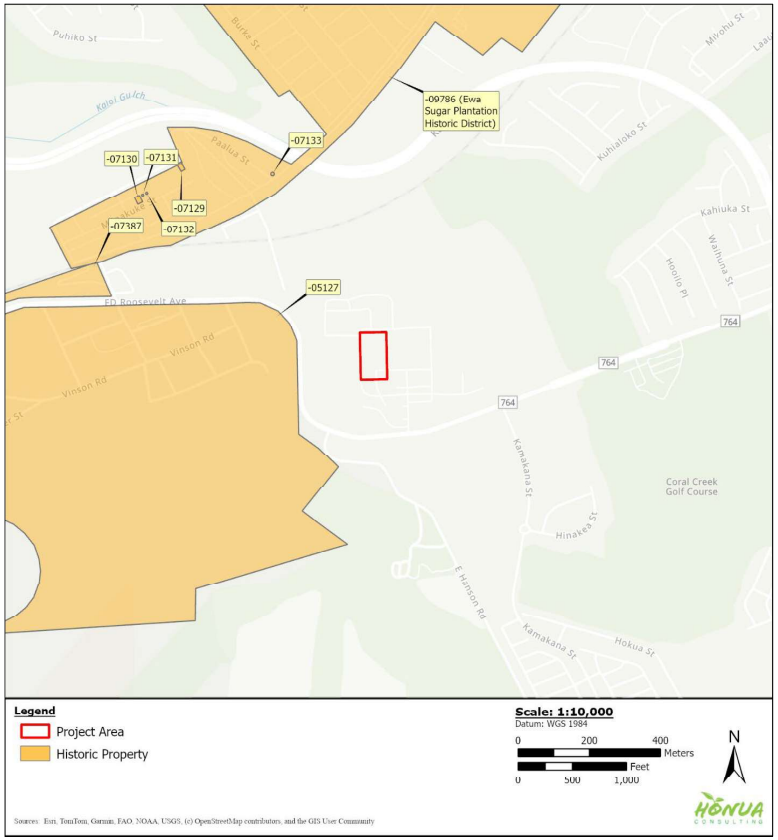

Figure 18. Previous historic properties documented in and near the project area (see table and text above for details

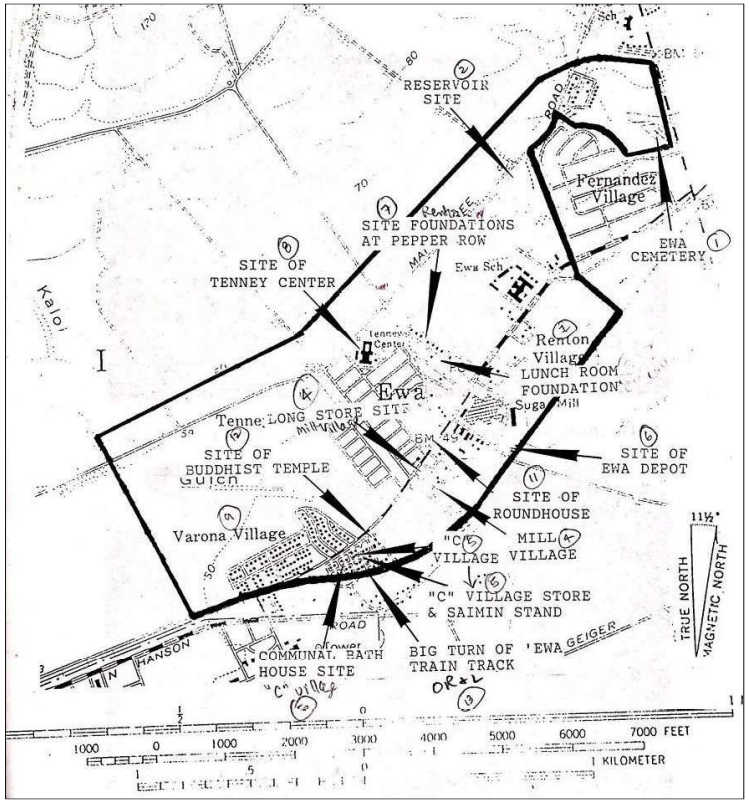

Figure 19. Map by Hammatt et al. (1990:19) showing significant features of their study within Ewa Villages

Section 4 Conclusion

This archaeological literature review and assessment (ALRA) report was completed for Wilson Okamoto Corporation in support of the Honouliuli WWTP Effluent Disinfection Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu, TMK (1) 9-1-013:007 (portion). The physical address of the project area is 91-1000 Geiger Road, ‘Ewa Beach, O‘ahu.

The proposed project is designed to satisfy requirements for a National Pollutant Discharge Elimination System (NPDES) permit (#HI 0020877). The proposed project will add a new ultraviolet (UV) disinfection system for bacterial (*Enterococci* sp.) reduction. The Area of Potential Effects (APE) / project area is a rectangular portion of an existing water treatment facility measuring approximately 2.24 acres (0.91 hectares). The landowner is the City and County of Honolulu.

The proposed project is described in the Introduction (see p.1).

The objectives of this study include: (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 potential above-ground historic properties or component features; and (3) providing information relevant to the likelihood of encountering historically-significant cultural deposits in subsurface context during construction.

This ALRA is not an archaeological inventory survey (AIS) and did not include a field inspection. The document may be used, however, to consult with the State Historic Preservation Division (SHPD) in compliance with Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and Hawai‘i Administrative Rules (HAR) Chapter 13-275; to satisfy environmental review under HRS Chapter 343; and for review under Section 106 of the National Historic Preservation Act (NHPA).

Results of this ALRA include the following:

1. The project area is adjacent to, but was never part of, the actively planted fields of part of the Ewa Plantation Co., a once-extensive commercial sugar cane operation that lasted about a century (see Figures 11, 13 and 15);
2. The project area is adjacent to, but just east (and not part) of the extensive (decommissioned) Naval Air Station-Barbers Point (NAS-BP), and the National Register of Historic Places (NRHP) listed ‘Ewa Plain Battlefield (SIHP # 50-80-12-05127, NR #16000273);
3. A previous AIS that included the current APE/project area (Yucha et al. 2015) did not identify any historic properties;
4. The APE/project area is part of a larger parcel owned and managed by the City and County of Honolulu for wastewater treatment; these facilities were originally completed in 1978 following extensive land clearance and mechanical alteration of the ground surface (see Figure 16);
5. There are no above-ground historic properties in the APE/project area, which was completely cleared circa 1977-78. Because the installation of wastewater treatment facility infrastructures and appurtenances has also disturbed the subsurface deposits, it is unlikely that any intact historic properties or component features will be encountered in subsurface excavation during the proposed undertaking/project;

6. For these reasons, Honua believes the proposed undertaking/project will have no effect on historic properties.

4.1 Recommendations

Honua recommends consultation with the SHPD-Archaeology Branch to obtain its concurrence with item #6 above, and to determine if any specific identification or mitigation measures are needed for the proposed project (e.g., archaeological inventory survey (AIS) or archaeological monitoring).

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APPENDIX C

EA Early Consultation Package

Comment and Response Letters

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DEPARTMENT OF COMMUNITY SERVICES
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AEDWARD LOS BANOS
DEPUTY DIRECTOR
HOPE PO'O

June 3, 2025

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826
Attention: Mr. Keola Cheng

Dear Mr. Cheng:

SUBJECT: Pre-Consultation: DRAFT Environmental Assessment
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvements
91-1000 Geiger Road, 'Ewa Beach, Hawai'i 96706
Tax Map Key (1) 9-1-013: 007 (por.)

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 approximately one mile from numerous properties owned or administered by the City, including parts of 'Ewa Villages and at least four properties under the jurisdiction of the Department of Community Services:

1) 91-1295 Renton Road (D.E. Thompson Village)
2) 91-1251 Renton Road
3) 91-1255 Renton Road
4) 91-1259 Renton Road

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

10859-01
December 23, 2025

Mr. Anton C. Krucky
Department of Community Services
925 Dillingham Boulevard, Suite 200
Honolulu, HI 96817

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
ʻEwa Beach, Oʻahu, Hawaiʻi

Dear Mr. Krucky,

Thank you for your letter dated June 3, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement 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. Please note that best management practices are being taken into consideration to consider the health, safety, accessibility and long-term wellbeing of area residents. 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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

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

June 19, 2025

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Honouliuli WWTP Effluent Treatment & Outfall Improvements
'Ewa Beach, O'ahu, Hawai'i

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any questions, please contact me at (808) 768-8480.

Sincerely,

Haku Milles, P.E., LEED AP
Director

HM:krn (940601)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Mr. Haku Milles
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Subject: Early Consultation Package for the
Honouliuli WWTP Effluent Treatment & Outfall Improvements
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Mr. Milles,

Thank you for your letter dated June 19, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli WWTP Effluent Treatment & Outfall Improvements Project on the island of O‘ahu.

We acknowledge your no comment in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawai‘i Administrative Rules, Title 11, Chapter 200.1, Section 18. A record of your comment letter, 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

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

June 16, 2025

2025/ELOG-1008 (DC)

Mr. Keola Cheng
Wilson Okamoto Coporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaiʻi 96826

Dear Mr. Cheng:

SUBJECT: Pre-Assessment Consultation
Draft Environmental Assessment (EA)
Honouliuli Wastewater Treatment Plant
91-1000 Geiger Road – ʻEwa Beach
Tax Map Key 9-1-013: 007

This is in response to your letter, received April 10, 2025, requesting the Department of Planning and Permitting (DPP) provide comments on the upcoming Draft EA, as required under Chapter 343, Hawaiʻi Revised Statutes for the proposed improvements at the Honouliuli Wastewater Treatment Plant at the above-mentioned property. The subject parcel is 48.633 acres and zoned I-2 Intensive Industrial District (I-2 District) and in the State Land Use Urban District. The proposed work includes constructing four ultra violet disinfection channels, eight lamp banks, and associated support equipment (Project). The DPP has the following comments that should be included in the Draft EA:

1. Consistency with Long-Range Plans: The EA should address the proposed Project's consistency with the Oʻahu General Plan and ʻEwa Development Plan. The Draft EA should address how the proposed Project is consistent, inconsistent, or implements each of the relevent statements from the respective plans.

2. Compliance with the Land Use Ordinance (LUO): The Draft EA should ensure compliance with Revised Ordinances of Honolulu (ROH) Chapter 21, the LUO:

www.honolulu.gov/dpp/resources/ordinances.html

The Draft EA should identify the Project's consistency with the development standards of the I-2 District and other applicable LUO regulations, including but not limited to the following:

- Maximum allowable heights and building area;
- Required yard and height setbacks;
- Parking, loading, and vehicular circulation and maneuvering areas;
- Impervious surface coverage; and
- Landscape screening.

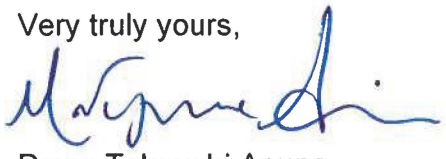
The Honouliuli Wastewater Treatment Plant is considered a public use and structure. The Project qualifies for a Zoning Waiver under ROH Section 21-2.130. In the case that any of the above-mentioned development standards are not met, a Zoning Waiver may be required. The Draft EA should state whether the Project will likely require a Zoning Waiver Permit.

3. Flood Zone: The Draft EA should identify the subject property's Zone as mapped by the Federal Emergency Management Agency and evaluate the proposed Project's compliance with the City's Flood Hazard Areas Ordinance (ROH Chapter 21A).

4. Alternatives: The Draft EA must include potential development alternatives and provide reasons why the proposed action is the most practical approach.

Thank you for the opportunity to comment. We may have comments regarding the Draft EA when more detailed plans are provided. Should you have any other questions, please contact David Cholak, of the Zoning Regulations and Permits Branch, at (808) 768-8026 or via email at david.cholak@honolulu.gov.

Very truly yours,



FOR Dawn Takeuchi Apuna
Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Ms. Dawn Takeuchi Apuna
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Ms. Takeuchi Apuna,

Thank you for your letter dated June 16, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement Project on the island of O‘ahu.

We acknowledge your comments, and they have been considered and included in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawai‘i Administrative Rules, Title 11, Chapter 200.1, Section 18. The Draft EA will address the Proposed Project’s consistency with the O‘ahu General Plan and ‘Ewa Development Plan. The Draft EA will also ensure compliance with Revised Ordinances of Honolulu (ROH) Chapter 21, the LUO.

The Proposed Project Flood Zone will be mapped by the Federal Emergency Management Agency, and the Project will be evaluated based on its compliance with the City’s Flood Hazard Areas Ordinance (ROH Chapter 21A). Potential development alternatives and their respective reasoning will also be descripted within the Draft EA. 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

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)25.083

JUN 23 2025

Keola Cheng, Director-Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Keola Cheng:

Subject: Environmental Assessment Early Consultation
Honouliuli WWTP Effluent Treatment & Outfall Improvements
Ewa Beach, Oahu, Hawaii
T.M.K. No. (1) 9-1-013-007

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Dora Choy-Johnson of the Planning Branch at (808) 586-0488.

Sincerely,

GORDON S. WOOD
Public Works Administrator

DC:vca

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Mr. Gordon S. Wood
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810-0119

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
ʻEwa Beach, Oʻahu, Hawaiʻi

Dear Mr. Wood,

Thank you for your letter dated June 23, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli WWTP Effluent Treatment & Outfall Improvement Project on the island of Oʻahu.

We acknowledge your no comments in the preparation of the Draft Environmental Assessment (EA) regarding 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 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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

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 6, 2025

Mr. Keola Cheng, Planning Director
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Honouliuli Waste Water Treatment Plant
Effluent Treatment and Outfall Improvements
'Ewa Beach, O'ahu, Hawai'i

In response to your letter dated May 27, 2025, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied with on any land in the jurisdiction of the City and County of Honolulu:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; 2021 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1, as amended.).

   A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2021 Edition, Section 18.2.3.2.1.).

2. Fire department access roads shall be in accordance with NFPA 1, 2021 Edition, Section 18.2.3.

3. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1, 2021 Edition, Sections 18.3 and 18.4.

4. Civil drawings submitted to your department shall be routed to the HFD for review and approval.

The abovementioned provisions are required by the HFD and may necessitate that additional requirements be met as determined by other agencies.

Should you have questions, please contact Battalion Chief Pao-Chi Hwang of our Fire Prevention Bureau at 808-723-7151 or hfdfpb1@honolulu.gov.

Sincerely,

KEVIN MOKULEHUA
Assistant Chief

KM/DA:sk

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Mr. Kevin Mokulehua
Honolulu Fire Department
636 South Street
Honolulu, HI 96813

Subject: Early Consultation Package for the
Honouliuli Waste Water Treatment Plant Effluent Treatment & Outfall
Improvement Project
ʻEwa Beach, Oʻahu, Hawaiʻi

Dear Mr. Mokulehua,

Thank you for your letter dated June 6, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement 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. We acknowledge that the Fire department requires access to roads in accordance with NFPA 1, 2021 Edition, Section 18.2.3, and the Proposed Project will be designed to meet Fire department access standards. Approved water supply capable of supplying the required fire flow for fire protection will be provided on the premises of the Proposed Project. Civil drawings will also be submitted and routed to the HFD 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 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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

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

June 9, 2025

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

This is in response to your letter dated May 27, 2025, requesting input for the Draft Environmental Assessment for the proposed City and County of Honolulu, Department of Environmental Services, Honouliuli WWTP Effluent Treatment and Outfall Improvements Project in 'Ewa Beach.

The Honolulu Police Department has reviewed the information provided and does not have any concerns at this time.

If there are any questions, please call Major Gail Beckley of District 8 (Kapolei, Wai'anae) at (808) 723-8400.

Sincerely,

GLENN HAYASHI
Assistant Chief of Police
Support Services Bureau

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Mr. Glenn Hayashi
Honolulu Police Department
801 South Beretania Street
Honolulu, HI 96813

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment &
Outfall Improvement Project
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Mr. Hayashi,

Thank you for your letter dated June 9, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement Project on the island of O‘ahu.

We acknowledge that you have no comments or concerns at this time in the preparation of the Draft Environmental Assessment (EA) regarding meeting content requirements prescribed in Hawai‘i Administrative Rules, Title 11, Chapter 200.1, Section 18. A record of this response has 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

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

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 4, 2025

MEMORANDUM

FROM: ~~TO:~~ **DLNR Agencies:**

_X_ Div. of Aquatic Resources (kendall.l.tucker@hawaii.gov)
__ Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
__ Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
__ Office of Conservation & Coastal Lands
_X_ Land Division – O'ahu District (barry.w.cheung@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: ~~FROM:~~ Ian Hirokawa, Acting Land Administrator

SUBJECT: **Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall Improvements Early Consultation of the Draft Environmental Assessment**

LOCATION: 91-1000 Geiger Road, Ewa Beach, O'ahu, Hawai'i, **TMK: (1) 9-1-013:007**

APPLICANT: Wilson Okamoto Corporation on behalf of The City and County of Honolulu (CCH) Department of Environmental Services (ENV)

Transmitted for your review and comment is information on the above-referenced subject matter.

Please submit comments by **June 26, 2025.** If no response is received by this date, we will assume your agency has no comments. Should you have any questions about this request, please contact Dayna Vierra at dayna.k.vierra@hawaii.gov. Thank you.

BRIEF COMMENTS:

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

Signed:
Print Name: Dina U. Lau, Acting Chief Engineer
Division: Engineering Division
Date: Jun 24, 2025

Attachment(s)

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Ian C. Hirokawa

Ref: Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall Improvements Early Consultation of the Draft Environmental Assessment
Location: 91-1000 Geiger Road, Ewa Beach, O'ahu, Hawai'i
TMK(s): (1) 9-1-013:007
Applicant: Wilson Okamoto Corporation on behalf of The City and County of Honolulu (CCH) Department of Environmental Services (ENV)

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible for researching the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (fhat.hawaii.gov) could also be used to research flood hazard information.

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

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed: _____
DINA U. LAU, ACTING CHIEF ENGINEER

Date: Jun 24, 2025

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01

December 23, 2025

Ms. Dina U. Lau
DLNR, Engineering Division
P.O. Box 621
Honolulu, HI 96809

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall
Improvement Project
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Ms. Lau,

Thank you for your letter dated June 4, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall Improvement Project on the island of O‘ahu.

We acknowledge your distribution of the subject matter to the respective Department of Land and Natural Resources Divisions. Their comments have been reviewed and considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawai‘i 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 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 30, 2025

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826
Attention: Keola Cheng *via email: publiccomment@wilsonokamoto.com*

SUBJECT: Early Consultation Request for Draft Environmental Assessment for the Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall Improvements – Ewa Beach, Oʻahu; TMK: (1) 9-1-013:007

Dear Mr. Cheng:

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comment.

Please find enclosed comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to contact Dayna Vierra at (808) 587-0423 or email: dayna.k.vierra@hawaii.gov.

Sincerely,

Ian Hirokawa
Acting Land Administrator

Enclosure(s)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Ms. Dayna Vierra
DLNR, Land Division
P.O. Box 621
Honolulu, HI 96809

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall
Improvement Project
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Ms. Vierra,

Thank you for your email dated June 30, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall Improvement Project on the island of O‘ahu.

We acknowledge your comments, and they have been reviewed and considered in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawai‘i Administrative Rules, Title 11, Chapter 200.1, Section 18. The respective Flood Hazard Zone designation for the project and respective NFIP requirements identified on FEMA’s Flood Insurance Rate Maps (FIRM) will be researched and addressed in the Draft EA and accounted for in the design of the Proposed Project.

A record of your response has 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

JOSH GREEN, M.D.
GOVERNOR
KE KIAʻĀINA

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HOʻOKELE

Deputy Directors
Nā Hope Luna Hoʻokele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF TRANSPORTATION | KA ʻOIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO

DIR0001964
STP 8.3936

June 13, 2025

VIA EMAIL: publiccomment@wilsonokamoto.com

Keola Cheng, Director – Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Cheng:

Subject: Early Consultation for Environmental Assessment
Honouliuli Wastewater Treatment Plant (WWTP)
Effluent Treatment and Outfall Improvements
Ewa Beach, Oahu, Hawaii
Tax Map Keys: (1) 9-1-013: 007

Thank you for your letter, dated May 27, 2025, requesting the Hawaii Department of Transportation's (HDOT) review and comments on the subject project. HDOT understands that the City and County of Honolulu, Department of Environmental Services, is proposing to design and construct a new ultraviolet disinfection system at the Honouliuli WWTP facility.

The HDOT has the following comments:

1. The proposed project area is approximately 1.29 miles from Kalaeloa Airport (JRF). 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: http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports_08-01-2016.pdf.

2. The proposed project area is approximately 9,293 feet from the end of Runway 22R at JRF. 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, shall be included in the submittal. The form and criteria for submittal can be found at the following website: https://oeaaa.faa.gov/oeaaa/external/portal.jsp. Please provide a copy of the FAA response to the Part 77 analysis to the HDOT Airport Planning Section.

3. Due to the proximity to JRF, the applicant should be aware of potential noise from aircraft operations. There is also a potential for fumes, smoke, vibrations, odors, etc., resulting from

occasional aircraft flight operations over or near the project location. These impacts may increase or decrease over time and are dependent on airport operations.

4. Standing water has the potential to become a wildlife hazard. The HDOT recommends that the developer incorporate measures to minimize hazardous wildlife attractants in compliance with the FAA Advisory Circular 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.

5. If a solar energy photovoltaic (PV) system is going to be installed, be aware that PV systems located in or near the approach path of aircrafts can create a hazardous condition for pilots due to possible glint and glare reflected from the PV panel array. If glint or glare from the PV array creates a hazardous condition for pilots, the owner of the PV system shall be prepared to immediately mitigate the hazard upon notification by the HDOT and/or FAA.

   The FAA requires a glint and glare analysis for all solar energy PV systems near airports. The http://www.sandia.gov/glare website has information and guidance with the preparation of a glint and glare analysis. A separate FAA Form 7460-1 will be necessary for the solar energy PV system. After the FAA determination of the Form 7460-1 glint and glare analysis, a copy shall be provided to the HDOT Airport Planning Section by the owner of the solar energy PV system.

   Solar energy PV systems have also been known to emit radio frequency interference (RFI) to aviation-dedicated radio signals, thereby disrupting the reliability of air-to-ground communications. Again, the owner of the solar energy PV system shall be prepared to immediately mitigate the RFI hazard upon notification by the HDOT and/or FAA.

6. The HDOT encourages strategies to reduce carbon emissions from the project whenever possible. Suggestions include:

   a. Incorporate elements that encourage and enhance the use of multiple types of transportation to reduce carbon emissions.

   b. Implement energy-efficient technologies and practices, such as light-emitting diode lighting.

   c. Use sustainable, recycled, or low-emission materials in construction and manufacturing.

Please submit any subsequent 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

10859-01
December 23, 2025

Mr. Edwin H. Sniffen
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
ʻEwa Beach, Oʻahu, Hawaiʻi

Dear Mr. Sniffen,

Thank you for your email dated June 13, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement 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. In the preparation of the Draft EA, the Technical Assistance Memorandum (TAM) will be referenced for guidance with development of the Proposed Project due to its 1.29-mile proximity to the Kalaeloa Airport (JRF). The Proposed Project will comply with HDOT's TAM to ensure that construction activities do not create glare, smoke, dust, lighting, or wildlife attractants that could affect aviation operations.

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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

June 18, 2025

Mr. Keola Cheng
Director - Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Honouliuli WWTP Effluent Treatment & Outfall Improvements
Ewa Beach, Oahu, Hawaii
Plan Review and Comment

In response to your letter dated May 27, 2025, please be advised that Hawaii Gas maintains an underground 4" distribution line in the project vicinity. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area.

Thank you for the opportunity to comment on the Environmental Assessment for Honouliuli WWTP Effluent Treatment and Outfall Improvements project. Should there be any questions, or if additional information is desired, please call Christian Feria at (808) 596-1269.

Sincerely,

Hawaii Gas

Keith K. Yamamoto
Manager, Engineering

KKY:krs

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Mr. Keith K. Yamamoto
Hawai‘i Gas
P.O. Box 300
Honolulu, HI 96802

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Mr. Yamamoto,

Thank you for your letter dated June 18, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement Project on the island of O‘ahu.

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 Hawai‘i Administrative Rules, Title 11, Chapter 200.1, Section 18. We have also made note of the 4” underground distribution line in the project vicinity. 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
KA 'OIHANA HO'ONA'AUAO
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF FACILITIES AND OPERATIONS

June 18, 2025

Mr. Keola Cheng
Director – Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

Re: Environmental Assessment Early Consultation, Honouliuli WWTP Effluent Treatment & Outfall Improvements, Ewa Beach, Oahu, Hawaii

Dear Mr. Cheng:

Thank you for your letter dated May 27, 2025. The Hawaii State Department of Education has reviewed the information provided and determined that the proposed project will not have an impact on the operations of any of its nearby campuses.

Should you have any questions, please contact Cori China, Professional Worker of the Facilities Development Branch, Planning Section, at (808) 784-5080 or via email at cori.china@k12.hi.us.

We appreciate the opportunity to comment.

Sincerely,

Roy Ikeda
Acting Public Works Manager
Planning Section

RI:ctc
c: Facilities Development Branch

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Mr. Roy Ikeda
Department of Education
P.O. Box 2360
Honolulu, HI 96804

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
ʻEwa Beach, Oʻahu, Hawaiʻi

Dear Mr. Ikeda,

Thank you for your letter dated June 18, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement 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 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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

STATE OF HAWAIʻI
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT

235 South Beretania Street, 6th Floor, Honolulu, Hawaiʻi 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaiʻi 96804

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
DIRECTOR

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 202505301255NA
Transmitted via email

June 24, 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
Honouliluli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement
91-1000 Geiger Road
Ewa Beach, Hawaii
TMK: 1-9-1-013:007

The Office of Planning and Sustainable Development (OPSD) received the Environmental Assessment Early Consultation letter requesting comments for the preparation of a Draft Environmental Assessment (EA) for the Honouliuli Wastewater Treatment Plant Effluent Treatment and Outfall Improvement, identified as the Proposed Project.

OPSD appreciates the opportunity to review the project background, proposed action, and project timeline.

OPSD anticipates that the Draft EA will discuss the Proposed Action with respect to the policies and objectives in Hawaiʻi Revised Statues (HRS) Chapters 205A and 226, the Coastal Zone Management and Hawaiʻi State Planning Acts, respectively. As the 2050 Sustainability Plan was prepared to guide the attainment of sustainability and resilience goals and objectives for the State contained in HRS Chapter 226, OPSD recommends the Draft EA generally discusses the technologies, best practices and other mitigation measures for the Proposed Action that would advance implementation of the Recommended Actions in the 2021-2030 Focus Areas on pages 100-107 of the *Hawaiʻi 2050 Sustainability Plan*.

OPSD is the State's lead agency for statewide transit-oriented development (TOD) planning and a partner with the City and County of Honolulu (City) in TOD along the Skyline rail corridor. As such, OPSD is particularly concerned that the

Draft EA and plans for the Proposed Action adequately address the significant increase in State, City, and private housing and mixed-use development that is envisioned and likely to occur over the next 50 years in the City's TOD Plan areas.

We look forward to reviewing the future environmental assessment for the project. If you have any questions regarding this comment letter, please contact Seiji Ogawa, Land Use Division, Seiji.ogawa@hawaii.gov, (808) 587-2898.

Mahalo,

Mary Alice Evans

Mary Alice Evans
Director

c: Cindy Matsuoka, Department of Environmental Services
Mr. Preston Merrill, Carollo Engineers

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23,2025

Ms. Mary Alice Evans
Office of Planning & Sustainable Development
P.O. Box 2359
Honolulu, HI 96804

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
ʻEwa Beach, Oʻahu, Hawaiʻi

Dear Ms. Evans,

Thank you for your email dated June 24, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement 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 policies and objectives outlined in the Hawaiʻi Revised Statues (HRS) Chapters 205A and 226, the Coastal Zone Management and Hawaiʻi State Planning Acts, respectively. 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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

Rachel Lavatai

From: ohsdoc <ohsdoc@librarieshawaii.org>
Sent: Thursday, June 5, 2025 6:33 PM
To: Public Comment
Subject: Early Consultation/Honouliuli WWTP Effluent Treatment and Outfall Improvements Project

Dear Keola Cheng/Wilson Okamoto Corporation,

Thank you for including the Hawaii State Library as part of the Environmental Assessment Early Consultation process for the proposed Honouliuli WWTP Effluent Treatment and Outfall Improvements Project.

As you are preparing a Draft Environmental Assessment for this project, I just wanted to take this opportunity to make a comment in regard to the depository requirements outlined in Hawaii Administrative Rules (HAR) §11-200.1-5 (Filing Requirements for Publication and Withdrawal).

It has been my experience that many applicants and consultants are unaware that the HAR directs that a paper copy of the Draft Environmental Assessment be deposited with both the library nearest the project location and the Hawaii Documents Center, concurrent with filing the document with the Office of Environmental Quality Control for publication in The Environmental Notice.

A list of library locations can be found at the Hawaii State Public Library System website: https://www.librarieshawaii.org/visit/branches/all-branches

When the project progresses to the preparation of Final Environmental Assessment, one paper copy of the FEA should then be deposited with the Hawaii Documents Center.

The mailing/delivery address for the Hawaii Documents Center: 478 S. King Street, Honolulu, HI 96813.

Thank you for the opportunity to send a reminder about this requirement. Please feel free to contact the Hawaii Documents Center if you have any questions regarding the depository requirements.

Best regards,
Kristin Laitila
Library Technician

Hawai'i Documents Center
Hawai'i State Public Library System
478 South King Street Honolulu, HI 96813
808-586-3545
Email: ohsdoc@librarieshawaii.org
Web: librarieshawaii.org

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Ms. Kristin Laitila
Hawai‘i State Public Library System
478 South King Street
Honolulu, HI 96813

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent
Treatment & Outfall Improvement Project
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Ms. Laitila,

Thank you for your email dated June 5, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement Project on the island of O‘ahu.

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 Hawai‘i Administrative Rules, Title 11, Chapter 200.1, Section 18. Per your reminder, as the project progresses, a paper copy of the FEA will be deposited with both the nearest library to the proposed project, as well as with the Hawai‘i Documents Center. 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

Charter
COMMUNICATIONS

June 26th, 2025

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826
(808) 946-2277

Attn: Mr. Keola Cheng

Subject: Environmental Assessment Early Consultation
Honouliuli WWTP Effluent Treatment & Outfall Improvements
Ewa Beach, O'ahu, Hawai'i

Dear Mr. Cheng,

Thank you for the including Spectrum Oceanic, LLC at this stage of the Environmental Assessment process. Currently, Spectrum Oceanic, has no comments for this stage of the process. We would like to express our continued interest in the design and planning of this project should its construction impact existing or future service connections to the Honouliuli WWTP campus.

Should you have any questions or concerns, please feel free to contact me at (808) 625-9734, or email me at kerick.fujimura@charter.com.

Sincerely,

Kerick Fujimura
OSP Engineer / Construction Coordinator III

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10859-01
December 23, 2025

Mr. Kerick Fujimura
Spectrum Oceanic
200 Akamainui Street
Mililani, HI 96789-3912

Subject: Early Consultation Package for the
Honouliuli WWTP Effluent Treatment & Outfall Improvements
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Mr. Fujimura,

Thank you for your letter dated June 26, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli WWTP Effluent Treatment & Outfall Improvements Project on the island of O‘ahu.

We acknowledge your no comments in the preparation of the Draft Environmental Assessment (EA) with regard to meeting content requirements prescribed in Hawai‘i Administrative Rules, Title 11, Chapter 200.1, Section 18. A record of your response, has been reproduced and 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental Services
Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers

Rachel Lavatai

From: Browning, Joy <joy_browning@fws.gov>
Sent: Tuesday, June 3, 2025 8:52 AM
To: Public Comment
Subject: Comments for Environmental Assessment Early Consultation for Honouliuli WWTP

Aloha Mr. Cheng,

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

10859-01
December 08,2025

Ms. Joy Browning
United States Fish and Wildlife Service,
Pacific Island Fish & Wildlife
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

Subject: Early Consultation Package for the
Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall
Improvement Project
‘Ewa Beach, O‘ahu, Hawai‘i

Dear Ms. Browning,

Thank you for your email dated June 3, 2025, regarding the Environmental Assessment- Early Consultation Package for the Honouliuli Wastewater Treatment Plant Effluent Treatment & Outfall Improvement Project on the island of O‘ahu.

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 Hawai‘i 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 Hawai‘i’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. Cindy Masuoka, Department of Environmental
Services Mr. Preston Merrell, Carollo Engineers
Ms. Adrienne Fung, Carollo Engineers