DEPARTMENT OF ENVIRONMENTAL SERVICES
KA 'OIHANA LAWELAWE KAIĀPUNI
CITY AND COUNTY OF HONOLULU

1000 ULU'ŌHI'A STREET, SUITE 308 • KAPOLEI, HAWAI'I 96707
PHONE: (808) 768-3486 • FAX: (808) 768-3487 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

ROGER BABCOCK, JR., Ph.D., P.E.
DIRECTOR
PO'O

DANIEL BRIECK, P.E.
DEPUTY DIRECTOR
HOPE PO'O

HENRY D. GABRIEL, JR.
ACTING SECOND DEPUTY DIRECTOR
KA LUA O KA HOPE PO'O

IN REPLY REFER TO:
RE 26-050

April 29, 2026

Ms. Mary Alice Evans, Director
Office of Planning and Sustainable Development
Environmental Review Program
State of Hawai'i
P.O. Box 2359
Honolulu, Hawai'i 96804-2359

Dear Ms. Evans:

SUBJECT: Waipahu Refuse Facility and Convenience Center
Final Environmental Assessment and Finding of No Significant Impact (DEA-FONSI)

The City and County of Honolulu Department of Environmental Services herewith transmits the subject Final Environmental Assessment (FEA) for which there is a Finding of No Significant Impact (FEA-FONSI). The FEA-FONSI has been prepared pursuant to Chapter 343, Hawaii Revised Statute, and Chapter 11-200.1, Hawaii Administrative Rules. Please publish notice of this FEA-FONSI in the upcoming issue of *The Environmental Notice*.

The FEA-AFONSI includes a Natural Resources Assessment, Literature Review and Field Inspection, a Traffic Impact Assessment Report, and copies of comments received during pre-assessment consultation and the draft environmental assessment along with the corresponding responses regarding the subject project.

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

cc: Refuse – Planning & Engineering
Michael Kaiser – HDR

Sincerely,

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

From: dbedt.opsd.erp@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Friday, May 15, 2026 9:50:12 PM

Action Name

Waipahu Refuse Facility and Convenience Center

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

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

Judicial district

ʻEwa, Oʻahu

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

[1] 9-3-002:009 (por.)

Action type

Agency

Other required permits and approvals

See FEA Chapter 4 Section 3

Proposing/determining agency

City and County of Honolulu Department of Environmental Services

Agency jurisdiction

City and County of Honolulu

Agency contact name

Rodolfo Borja

Agency contact email (for info about the action)

rborja@honolulu.gov

Email address for receiving comments

publiccomment@wilsonokamoto.com

Agency contact phone

(808) 768-3486

Agency address

1000 Ulu'ohia Street
Suite 308
Kapolei, HI 96707
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

ENV plans to relocate the Waipahu Convenience Center (WCC) from its current location at 94-9 Waipahu Depot Street to the former Waipahu Incinerator Facility (WIF) property further south along Waipahu Depot Street, adjacent to the Honolulu Police Academy / Training Facility. The WCC provides a convenient drop-off location for municipal solid waste, white goods, and other household materials as an alternative to the Waimānalo Gulch Sanitary Landfill or other solid waste facilities on O'ahu. The existing WCC, built in the 1970s, is undersized and no longer able to efficiently accommodate the number of residents using the facility. The new WCC is intended to reduce operational inefficiencies and improve traffic flow, safety, and overall user experience. In addition, ENV plans to develop a Refuse Rolloff Division Baseyard Facility east of the new WCC to support rolloff truck operations and related functions. Following publication of two DEAs, the updated design incorporates a revised single-story administration building, improved employee and visitor parking with solar canopies, a reconfigured rolloff truck parking area and wash bay with a new connector road, a 20,000-square-foot open-sided refuse cart storage structure, and modifications along Waipahu Depot Street, including turning-radius improvements and a new bypass lane to reduce congestion at the WCC entrance.

Reasons supporting determination

See FEA Chapter 6

Attached documents (signed agency letter & EA/EIS)

- Waipahu-Refuse-Facility-and-Convenience-Center-FEA1.pdf
- WRFCC-FEA-Transmittal-Letter-1.pdf
- WRFCC-FEA-Transmittal-Letter-2.pdf

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map

- Waipahu-RFCC-Project-Area1.zip

Compliance certification (HRS §368-1.5):

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

Authorized individual

Harlee Meyers

Authorized individual email

hmeyers@wilsonokamoto.com

Authorized individual phone

(808) 946-2277

Authorization

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

FINAL ENVIRONMENTAL ASSESSMENT

Waipahu Refuse Facility and Convenience Center

Waipahu, Oʻahu, HI

City and County of Honolulu
Department of Environmental Services

May 2026

Wilson Okamoto Corporation

FINAL ENVIRONMENTAL ASSESSMENT

Waipahu Refuse Facility and Convenience Center

Waipahu, Oʻahu, Hawaiʻi
[1] 9-3-002:009 (por.)

Prepared For:

The City and County of Honolulu
Department of Environmental Services (ENV)
Kapolei Civic Center: 1000 Ulu‘ohia Street, Suite 308
Kapolei, HI 96707

Prepared By:

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

WOC Job No. 10751-01

May 2026

PREFACE

This Final 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), administered by the State of Hawai‘i Department of Health.

The City and County of Honolulu (CCH) Department of Environmental Services (ENV) proposes to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to a new facility at the former Waipahu Incinerator Facility (WIF) property. The proposed site is located further south along Waipahu Depot Street and is adjacent to the southern boundary of the Honolulu Police Academy and Training Facility (Proposed Action).

This EA has been prepared because the Proposed Action constitutes an “agency action” involving the use of County lands and funds, pursuant to HRS §343-5(a)(1). The EA evaluates potential environmental, social, cultural, and economic impacts associated with implementation of the Proposed Action. In accordance with HRS §343-5(b), ENV will determine whether this Final EA supports the issuance of a Finding of No Significant Impact (FONSI).

A Second Draft EA was published on December 23, 2025, to document design refinements requested by ENV following publication of the initial Draft EA on May 23, 2024. These refinements included revisions to the site layout, incorporation of solar canopies, adjustments to parking and circulation, and the addition of a refuse cart storage structure. While these changes did not substantially alter the overall scope or anticipated impacts of the Proposed Action, they were disclosed to maintain transparency and ensure consistency with the evolving project design. The analyses presented in this Final EA reflect those refinements, as appropriate.

Supporting technical studies prepared for the Proposed Action include a Natural Resources Assessment (NRA), an Archaeological Literature Review and Field Inspection (LRFI), and a Traffic Impact Assessment Report (TIAR). These technical studies are provided as appendices to this EA.

This Final EA has been prepared in consideration of comments received in response to the Early Consultation Package mailed on July 20, 2023, to the agencies, organizations, and stakeholders identified in Chapter 7, as well as comments received on the Draft EA published on May 23, 2024, and the Second Draft EA published on December 23, 2025. Responses to substantive comments are included in this document.

If you experience any accessibility issues with this document or require the information in an alternative format consistent with the Americans with Disabilities Act (ADA), please contact Wilson Okamoto Corporation at publiccomment@wilsonokamoto.com for assistance.

(This page intentionally left blank)

TABLE OF CONTENTS

TABLE OF CONTENTS

Page

PREFACE P-1

SUMMARY S-1

1. INTRODUCTION 1-1
- 1.1 Project Location and Setting 1-1
- 1.2 Land Ownership 1-2
- 1.4 Permit History 1-2

2. PROJECT DESCRIPTION 2-1
- 2.1 Purpose and Need 2-1
- 2.2 Proposed Action 2-1
- 2.3 Hours of Operation 2-8
- 2.4 Development Schedule 2-8
- 2.5 Project Costs 2-8

3. DESCRIPTION OF EXISTING ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES 3-1
- 3.1 Climate and Climate Change 3-1
  - 3.1.1 Current Climate Conditions 3-1
  - 3.1.2 Observed Climate Change 3-1
- 3.2 Physiography 3-5
  - 3.2.1 Geology and Topography 3-5
  - 3.2.2 Soils 3-6
- 3.3 Hydrology 3-9
  - 3.3.1 Surface and Coastal Waters 3-9
  - 3.3.2 Groundwater 3-10
- 3.4 Natural Hazards 3-14
  - 3.4.1 Sea Level Rise 3-15
  - 3.4.2 Flood and Tsunami Hazard 3-16
  - 3.4.3 Hurricane and Wind Hazard 3-21
  - 3.4.4 Earthquake and Seismic Hazards 3-21
  - 3.4.5 Landslides and Rockfall Hazards 3-22
  - 3.4.6 Wildfire Hazards 3-22
- 3.5 Natural Environment 3-25
  - 3.5.1 Flora and Fauna 3-25
- 3.6 Historic and Archaeological Resources 3-28
- 3.7 Cultural Resources and Practices 3-35
- 3.8 Land Use 3-36
- 3.9 Air Quality 3-40
- 3.10 Noise 3-41
- 3.11 Hazardous Materials 3-42
- 3.12 Traffic 3-45
- 3.13 Visual Resources 3-50
- 3.14 Socio-Economic Characteristics 3-50

3.15 Public Services and Facilities 3-53
3.15.1 Police, Fire, and Medical Services 3-53
3.15.2 Education 3-54
3.15.3 Recreational Facilities 3-55
3.15.4 Solid Waste Collection and Disposal 3-56
3.16 Infrastructure and Utilities 3-56
3.16.1 Water System 3-56
3.16.2 Wastewater System 3-57
3.16.3 Drainage System 3-57
3.16.4 Electrical and Communications System 3-58

4. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS 4-1
4.1 State Land Use Plans and Policies 4-1
4.1.1 Hawai'i State Plan 4-1
4.1.2 State Functional Plans 4-28
4.1.3 State Land Use District 4-30
4.1.4 Hawai'i Coastal Zone Management Program 4-31
4.2 City and County of Honolulu Land Use Plans and Policies 4-38
4.2.1 City and County of Honolulu General Plan 4-38
4.2.2 Central O'ahu Sustainable Communities Plan 4-57
4.2.3 City and County of Honolulu Zoning 4-89
4.3 Permits and Approvals 4-89

5. ALTERNATIVES 5-1
5.1 No Action Alternative 5-1
5.2 Alternative Locations 5-2
5.3 Alternative Design Schemes 5-2

6. DETERMINATION OF FONSI 6-1

7. CONSULTATION 7-1
7.1 Early Consultation/Pre-Assessment Package 7-1
7.2 Draft Environmental Assessment 7-2
7.3 Second Draft Environmental Assessment 7-4

8. REFERENCES 8-1

LIST OF FIGURES

Page

Figure 1-1 Project Location Map 1-7
Figure 1-2 Existing Conditions Site Plan 1-8
Figure 2-1 Conceptual Layout Site Plan 2-2
Figure 3-1 City and County of Honolulu Green House Gas Emissions 3-4
Figure 3-2 Topographic Map 3-7
Figure 3-3 Soil Classifications Map 3-8
Figure 3-4 Surface and Coastal Waters 3-11
Figure 3-5 Groundwater Resources 3-13
Figure 3-6 Sea Level Exposure Area 3-17

Figure 3-7 Flood Insurance Rate Map 3-18
Figure 3-8 Tsunami Evacuation Zones 3-20
Figure 3-9 Wildfire Hazards Map 3-24
Figure 3-10 State Land Use Districts Map 3-38
Figure 3-11 Agricultural Lands of Importance to the State of Hawai‘i 3-39
Figure 4-1 Special Management Area Map 4-30
Figure 4-2 City and County of Honolulu Zoning Map 4-90

LIST OF TABLES

Page

Table 1-1 Project Site Permit Application and Approval History 1-2
Table 3-1 Previous Archeological Studies in the Vicinity of the Project Site 3-32
Table 3-2 Noise Standards 3-42
Table 3-3 Additional Peak Hour Trip Generation 3-47
Table 3-4 Existing and Projected Year 2024 (Without Project) LOS Traffic Operating Conditions 3-48
Table 3-5 Existing and Projected Year 2027 (Without and With Project) LOS Traffic Operating Conditions 3-49
Table 3-6 Waipahu CDP and O'ahu Demographic Characteristics 3-51
Table 4-1 The Hawai‘i State Plan 4-1
Table 4-2 Part III of the Hawai‘i State Plan 4-19
Table 4-3 Hawai'i State Functional Plans 4-27
Table 4-4 Hawai'i Coastal Zone Management Act 4-31
Table 4-5 City and County of Honolulu: General Plan – Objectives and Policies 4-37
Table 4-6 Central O‘ahu Sustainable Communities Plan 4-55

LIST OF APPENDICES

Appendix A Natural Resource Assessment – AECOS
Appendix B Literature Review and Field Inspection – Honua Consulting
Appendix C Traffic Impact Assessment Report – Wilson Okamoto Corporation
Appendix D Early Consultation Comments and Responses
Appendix E Draft Environmental Assessment Comments and Responses

(This page intentionally left blank)

SUMMARY

Type of Document:	Final Environmental Assessment (EA)
Proposing and Determining Agency:	City and County of Honolulu Department of Environmental Services (ENV)
Name of Action:	Waipahu Refuse Facility and Convenience Center
Location:	Waipahu, Oʻahu, Hawaiʻi
Tax Map Keys (TMKs):	[1] 9-3-002:009 (por.)
Recorded Fee Owner:	City and County of Honolulu
Lot Area:	Approximately 57.87 acres
Project Area:	Approximately 7.2 acres
State Land Use Classification:	Agricultural
City & County Development Plan:	Central Oʻahu
City & County Zoning Designation:	P-1 and P-2 Preservation (Project Area) Designations
SMA:	Located in SMA
Flood Zone:	Zone D, X and AE
Existing Use:	Historically, the Project Site was used for incineration of municipal solid waste (MSW) from approximately 1970 to 1984. The complex consisted of MSW-receiving areas, MSW-handling areas, two identical furnaces that had electrostatic precipitators (ESPs), two stacks, an administration office building, and ancillary outbuildings. Incineration activities at the Project Site terminated in 1984 and the ESPs and associated stacks were removed in 1999. A fenced-in concrete pad that housed a transformer (removed in June 2014) is present in the southern portion of the Project Site.
Proposed Action:	ENV plans to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to the former Waipahu Incinerator Facility (WIF) property located further south on Waipahu Depot Street and adjacent to the south side of the Honolulu Police Academy / Training Facility. The WCC provides a location for area residents to drop-off municipal solid waste (MSW), white goods (refrigerators, air conditioners, and other similar appliances), and

other household waste materials (e.g., tires, propane tanks, metal, and green waste) as an alternative to drop-off at the Waimānalo Gulch Sanitary Landfill or other solid waste management facility on O'ahu. The existing WCC was constructed in the 1970's and is no longer sized to operate efficiently and accommodate the number of residents utilizing the facility. The new WCC will include improvements to reduce operational inefficiencies experienced at the existing WCC. ENV also plans to develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) east of the new WCC.

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.

Determination: Finding of No Significant Impact (FONSI)

Parties Consulted During Early Consultation:

Federal Agencies
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
U.S. Department of Agriculture (USDA), Natural Resources Conservation Service
U.S. Department of the Interior, Fish and Wildlife Service

Federal Representatives
Senator Mazie Hirono
Senator Brian Schatz
Representative Jill Tokuda
Representative Ed Case

State Agencies
Department of Accounting and General Services
Department of Business, Economic Development and Tourism (DBEDT)
DBEDT, Hawai'i State Energy Office
DBEDT, Land Use Commission
DBEDT, Office of Planning and Sustainable Development (OPSD)
OPSD, Environmental Quality Control
Department of Defense
Department of Health (DOH)
DOH, Clean Water Branch
DOH, Environmental Management Division
DOH, Hazard Evaluation and Emergency Response Office
DOH, Wastewater Branch
DOH, Safe Drinking Water Branch
Department of Land and Natural Resources (DLNR)
DLNR, Office of Coastal and Conservation Lands

DLNR, Historic Preservation Division
Department of Hawaiian Home Lands
Department of Transportation (DOT)
DOT, Highways Division
DOT, Airports Division
Office of Hawaiian Affairs

State Representatives
Senator Michelle N. Kidani
Senator Henry Aquino
Representative Cory Chun
Representative Rachele Lamosao
Representative Elijah Pierick

City and County of Honolulu Agencies
Board of Water Supply
Department of Community Services
Department of Design and Construction
Department of Environmental Services
Department of Facility Maintenance
Department of Parks and Recreation
Department of Planning and Permitting
Department of Transportation Services
Honolulu Fire Department
Honolulu Police Department
Office of Climate Change, Sustainability, and Resiliency
Office of the Mayor

City Council
Councilmember Augie Tulba

Utility Companies
Hawai‘i Gas
Spectrum Hawai‘i
Hawaiian Telcom
Hawaiian Electric Company

Other Interested Parties and Individuals
Hawai‘i State Library
Waipahu Public Library
Waipahu Neighborhood Board No. 22

(This page intentionally left blank)

CHAPTER 1: INTRODUCTION

1. INTRODUCTION

This Final Environmental Assessment (EA) evaluates the potential environmental effects of the proposed Waipahu Refuse Facility and Convenience Center ("Proposed Action").

The Proposed Action involves the use of County lands and funds, and is therefore subject to environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). In accordance with Title 11, Chapter 200.1 of the Hawai'i Administrative Rules (HAR), administered by the Department of Health (DOH), the City and County of Honolulu (CCH) Department of Environmental Services (ENV) has determined that an EA is required.

This EA includes an analysis of primary, secondary, and cumulative impacts, consistent with the requirements of Chapter 343, HRS and HAR §11-200.1. It also considers a range of reasonable alternatives to the Proposed Action—including the required No Action alternative—and identifies feasible measures to avoid or minimize potentially significant adverse impacts. As described in the Preface, this EA is being prepared as an "agency action", with ENV serving as the proposing agency and the accepting authority responsible for determining whether the Final EA can be filed with a Finding of No Significant Impact (FONSI). This document will also help support land use entitlement processes described in Section 4.3.

This Final EA has been prepared to reflect design revisions made since the initial Draft EA was published on May 23, 2024. These changes—requested by ENV—include refinements to site layout, circulation, and building configurations, such as the inclusion of solar canopies, revised parking and access, and the addition of a refuse cart storage structure. While these changes do not introduce significantly different or greater environmental impacts, they are being documented in this updated draft to ensure transparency and consistency with the current project design.

- In summary, this EA serves as a public disclosure and informational document that outlines the anticipated environmental effects of implementing the Proposed Action and assesses their potential significance. ENV has prepared this EA to:
- Provide the general public, local community, Federal, State, and CCH agencies, and other stakeholders with the opportunity to review and comment on the Proposed Action, its potential impacts, mitigation measures, and reasonable alternatives;
- Allow ENV to fully consider the environmental consequences of moving forward with the Proposed Action;
- Support decision-making by other agencies responsible for reviewing or permitting aspects of the Proposed Action; and
- Fulfill the requirements of Chapter 343, HRS.

1.1 Project Location and Setting

The Project Site for the Proposed Action sits upon the Waipi'o Peninsula in Waipahu on the island of O'ahu. The Project Site encompasses an approximate 7.2-acre portion of the 57.87-acre Tax Map Key (TMK) parcel [1] 9-3-002:009 and is approximately 0.5 miles northeast of the West Loch of Pearl Harbor. The Project Site is bordered by the Honolulu Police Academy / Training Facility to the north, the Ted Makalena Golf Course to the east, the Waipi'o Peninsula Soccer

Complex/Park to the south, the former Waipahu Ash Landfill (WALF) to the southwest, and the Pouhala Marsh Wildlife Restoration Area to the west. The exisiting Waipahu Convenience Center (WCC) is located approximately 0.5 miles to the north of the Project Site (See Figure 1-1).

The Project Site is the location of the former Waipahu Incinerator Facility (WIF) which was historically used for the incineration of municipal solid waste (MSW) from approximately 1970 to 1984. The complex consisted of MSW-receiving areas, MSW-handling areas, two identical furnaces that had electrostatic precipitators (ESPs), two stacks, an administration office building, and ancillary outbuildings. Incineration activities at the Project Site terminated in 1984 and the ESPs and associated stacks were removed in 1999. A fenced-in concrete pad that housed a transformer (removed in June 2014) is present in the southern portion of the Project Site. Site features are depicted on the Existing Conditions Site Plan prepared by Wood Environment & Infrastructure Solutions, Inc. (Wood) in 2021 (See Figure 1-2 and Appendix A).

As depicted on the Figure 1-2, the perimeter of the Project Site is surrounded by a six-foot-high chain-link fence. The main access to the former WIF is through an entrance gate at Waipahu Depot Street and up a concrete access ramp structure to the remaining incinerator structure. A paved asphalt circular road is present around the facility, with access gates at the southern limits. Areas to the west, south and east of the former incinerator building are also paved with asphalt, with landscaped areas around the perimeter.

1.2 Land Ownership

The Project Site is owned by the CCH and operated by ENV.

1.3 Permit History

The 57.87 acre TMK parcel which hosts the Project Site has a long and extensive permit history dating back to 1976 which includes several Special Use Permits (SUPs), Special Management Area (SMA) Use Permits, and Zoning Waivers. To provide further context to evaluate the Proposed Action, Table 1-1 below provides a chronological history of permit applications and approvals for the subject parcel.

Table 1-1 Project Site Permit Application and Approval History

Permit Type	Permit No.	Description	Status	Date Created	Date Completed
Land Permit Applications	1976/SUP-3	Vocational School, Honolulu Police Training Academy	Approved	1-Sep-76	1-Sep-76

Permit Type	Permit No.	Description	Status	Date Created	Date Completed
Land Permit Applications	1994/SUP-2	Establish Base Yard in State Agricultural District ,HFD Store-Room & Vehicle Maint. Facilities & HPD vehicle Maint. Facility. Also see 76/SUP-3 (LUC No. SP76-248).	Approved (Subject to Conditions)	14-Jan-94	19-Oct-94
Land Permit Applications	1997/SMA-31	Install a 2,000-Gallon Aboveground Double Wall, Vaulted Tank and Associated Piping at the Waipahu WWPS ($75,000)	Approved	28-Apr-97	19-May-97
Land Permit Applications	1998/SMA-24	Police Training Academy Classrooms	Approved (Subject to Conditions)	23-Mar-98	14-Oct-98
Land Permit Applications	1998/SMA-45	Temporary Construction of the Pearl Harbor Bike Path Extension Phase II – Consisting of 0.8 Mile AC Pavement ($85,000)	Approved	23-Jun-98	26-Jun-98

Permit Type	Permit No.	Description	Status	Date Created	Date Completed
Special Management Area (Major SMP)	1999/SMA-7	Updating SMA permit applic. for Waipahu Wastewater Pump Station Modification Phase II. Enc. EA, summary describing changes and impacts described in EA; plans, & flood determination which provides an accurate description of the proposed action.	Approved	26-Jan-99	19-Mar-99
Conditional Use Permit Minor (ZAB)	1999/CUP1-21	CUP1 app w/maps & docs for Joint Development re: Wastewater Pump Improvements	Approved	7-Apr-99	23-Apr-99
Special Management Area (Major SMP)	2000/SMA-5	Pouhala Marsh Wildlife Sanctuary restoration project - West Loch (approved per Resolution No. 00-73, CD1)	Approved	1-Feb-00	04-Apr-00
Special Management Area (Minor SMP)	2000/SMA-69	Replacement of existing guard building & portable toilet facility with new pre-fabricated steel building; Waipahu Refuse Convenience Center ($45,576 estimated project value)	Approved	19-Sep-00	02-Oct-00

Permit Type	Permit No.	Description	Status	Date Created	Date Completed
Special Management Area (Minor SMP)	2003/SMA-20	New explosives magazine/ Department of Design and Construction/Police Training Academy - KeKula Maka'i ($80,000 estimated project value)	Approved	4-Mar-03	07-Apr-03
Shoreline Setback Variance	2004/SV-19	Construction of a cover system to close an existing municipal landfill/City Dept. of Environmental Services, Refuse Division/Waipahu Ash Landfill Closure (WALF) Project (approved per Resolution 04-391, 1/26/05)	Approved	22-Oct-04	01-Feb-05
Special Management Area (Major SMP)	2004/SMA-73	Waipahu Ash Landfill (WALF) Closure Project - Cover system by Dept. of Environmental Services, Refuse Division (approved per Resolution 04-391, 1/26/05)	Approved	22-Oct-04	10-Jan-05

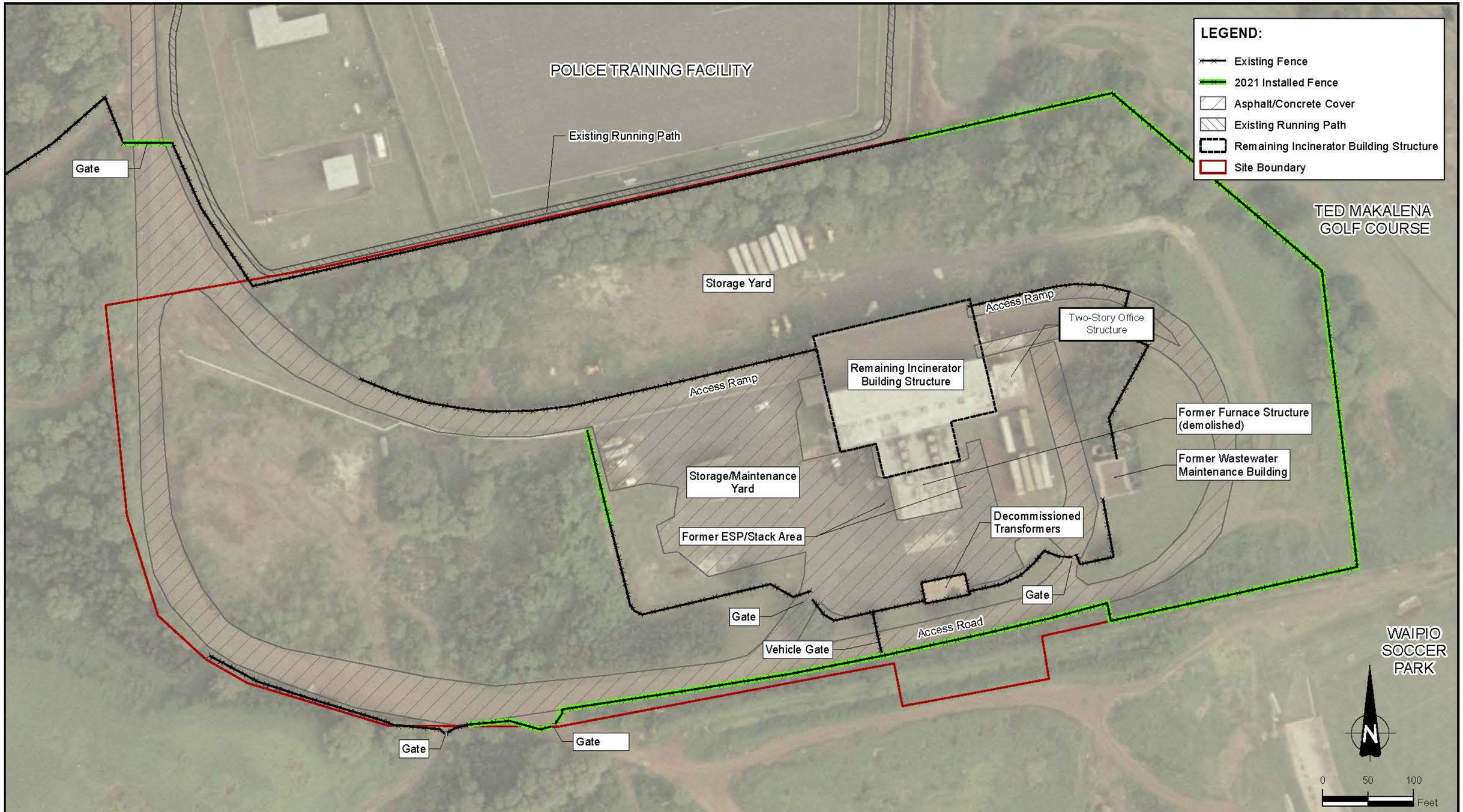
Permit Type	Permit No.	Description	Status	Date Created	Date Completed
Shoreline Setback Variance	2004/SV-19	Construction of a cover system to close an existing municipal landfill/City Dept. of Environmental Services, Refuse Division/Waipahu Ash Landfill Closure (WALF) Project (approved per Resolution 04-391, 1/26/05)	Approved	22-Oct-04	01-Feb-05
Special Management Area (Minor SMP)	2014/SMA-55	SMA Permit (Minor) Application - Honolulu Fire Department - Waipahu Maintenance Facility - Two Open Span Structures - Waipahu	Approved	26-Sep-14	01-Oct-14
Special Management Area (Minor SMP)	2017/SMA-34	SMA Minor permit for Waipahu Incinerator Facility approach ramp.	Approved	23-Aug-17	23-May-18
Special Management Area (Minor SMP)	2018/SMA-67	SMA Minor application to close Waipahu Incinerator at 93-145 WAIPAHU DEPOT STREET.	Approved	14-Dec-18	28-Dec-18

FIGURE 1-1 PROJECT LOCATION MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i





NOTES:
1. Fence/gate locations were approximated from aerial imagery and documented site conditions in January 2021.

CITY AND COUNTY OF HONOLULU

Wood Environment & Infrastructure Solutions, Inc.
98-1238 Kaahumanu Street, Suite 400
Pearl City, HI 96782

wood.

FORMER WAIPAHU INCINERATOR FACILITY CLOSURE REPORT

EXISTING CONDITIONS SITE PLAN

DATE: JANUARY 2021
SCALE: 1" = 100'
PROJECT NO.: 9471000017.13
FIGURE: 1-2

DRAWN BY: SD CHECKED BY: HZ

K:\WEC US OFFICES\Hawaii\9471000017_Waipahu_Incin\deg_Closure_Report\Figure 3 - Existing Conditions Site Plan.mxd - stephane.descombes - 1/5/2021 - 9:29:29 AM

(This page intentionally left blank)

CHAPTER 2: PROJECT DESCRIPTION

2. PROJECT DESCRIPTION

2.1 PURPOSE AND NEED

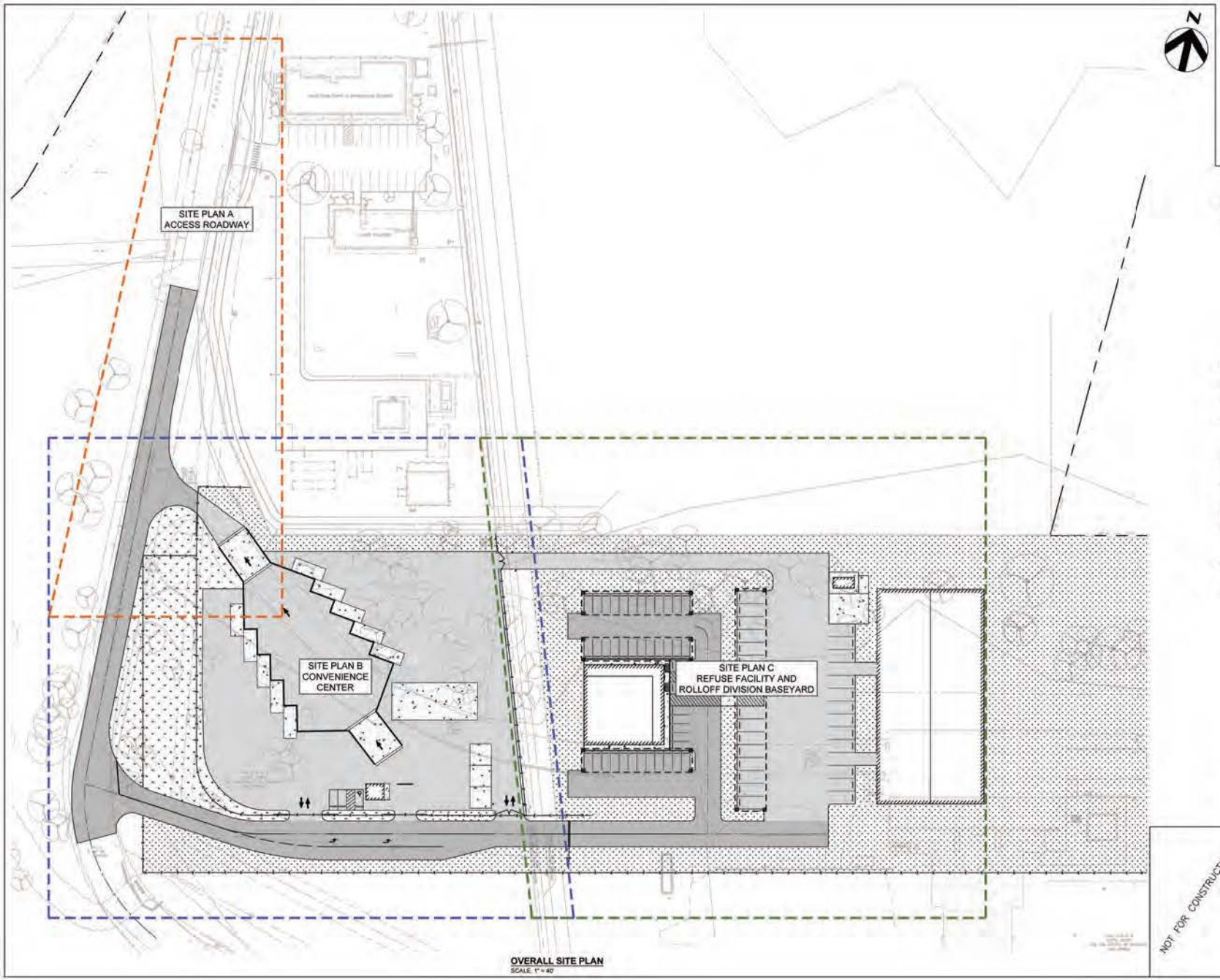
The Proposed Action will provide continued solid waste disposal services to the greater Leeward Oʻahu area while facilitating and streamlining improvements to ENV solid waste management operations in the region. The WCC and Refuse Roll-off Division serve as integral components of Oʻahu's solid waste management system and are vital for the responsible management of MSW generated on the island.

The existing WCC was constructed in the 1970's and is no longer appropriately scaled to operate efficiently and accommodate the number of residents that now utilize the facility. As such, the Proposed Action aims to address operational deficiencies identified at the existing WCC. Further, each component of the Proposed Action will complement one another to increase ENV's efficiency and management of waste, overall.

The Proposed Action will continue to provide the public with an alternative location to dispose of MSW and simultaneously relieve the public vehicle and MSW loadings at the neighboring convenience centers (i.e., ʻEwa Convenience Center and the new Leeward Convenience Center). The MSW collected at the Project Site will be sorted and hauled to the Honolulu Program of Waste Energy Recovery (H-POWER) facility for incineration. At H-POWER, non-hazardous waste, otherwise directed to the Waimānalo Gulch Sanitary Landfill (WGSL), is combusted and steam is generated for electricity generation. The electricity generated is sold to Hawaiian Electric Company (HECO) to power Oʻahu homes.

2.2 PROPOSED ACTION

ENV plans to relocate the WCC from its existing location at 94-9 Waipahu Depot Street to a new facility that will be constructed at the former WIF property located further south on Waipahu Depot Street and adjacent to the south side of the Honolulu Police Academy / Training Facility (see Figure 2-1). The existing WCC serves as a location for area residents to drop off municipal solid waste (MSW), white goods (refrigerators, air conditioners, and other similar appliances), and other household waste materials (e.g., tires, propane tanks, metal, and green waste) as an alternative to drop-off at the WGSL or other solid waste management facilities on Oʻahu. The existing WCC is located on approximately one-half acre of land. A horse-shoe shaped elevated offloading platform allows residents to offload waste into refuse rolloff containers staged at the perimeter of the elevated platform. Currently, approximately 12,800 tons per year (35 tons per day) of waste is managed at the facility, and the future quantity of waste is estimated to increase 0.35% per year (13,725 tons per year in 2040). As described in Section 2.1, the existing WCC is no longer appropriately scaled to manage the 300 residents that utilize the facility during a typical day. Residents are required to stage on Waipahu Depot Street because the facility can only accommodate two to three vehicles at any time due to the configuration and limited size of the facility. Queue lengths of seven or more vehicles are common on Waipahu Depot Street.



OVERALL SITE PLAN
SCALE: 1" = 40'

NOTES:

1. SEE DWG C-101 FOR EXISTING SITE CONDITIONS.

LEGEND:

- FENCE
- PROPERTY LINE
- PROJECT LIMIT
- EXISTING AC PAVEMENT
- AC PAVEMENT
- CONCRETE
- GRASS VEGETATION
- APPROXIMATE GEOTECHNICAL BORING LOCATION
- RETAINING WALL
- CONCRETE JERSEY BARRIER (K-RAIL)
- METAL GUARD RAIL

GRAPHIC SCALE:
40 0 40 80
SCALE: 1" = 40'

REVISION	DATE	BRIEF	MADE BY/APPROVED

NOT FOR CONSTRUCTION

REFUSE DIVISION
DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU

WAIPAHU REFUSE FACILITY
& CONVENIENCE CENTER
93-71 WAIPAHU DEPOT STREET, WAIPAHU, OAHU, HAWAII 96797
TMK: (1) 9-3-002:009 (POR.)

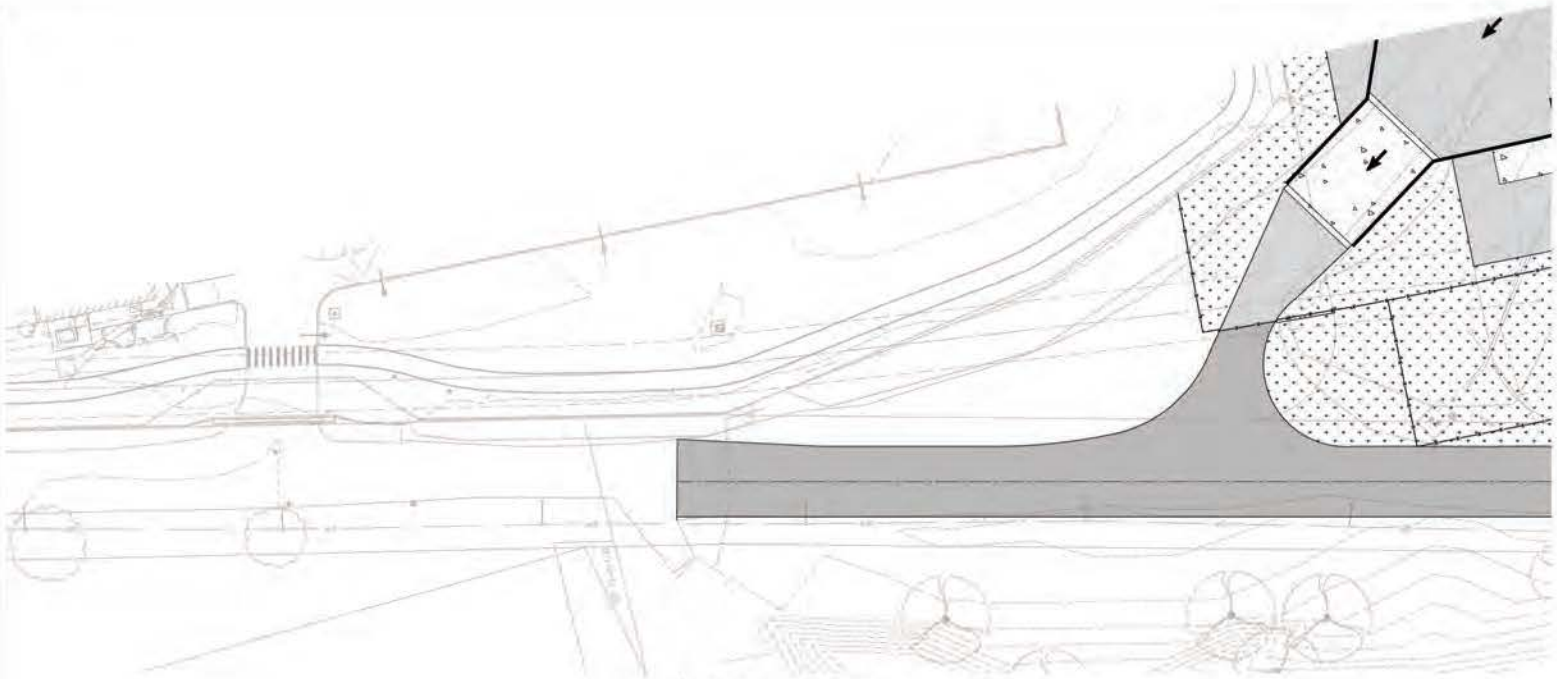
OVERALL SITE PLAN

DESIGNED BY: MK	CHECKED BY: TS	DRAWN BY: PS/SS	DATE: 03/12/2025

HDR — 1001 BISHOP STREET, SUITE 1000, HONOLULU, HAWAII 96813 — (808) 566-5400

DWG. NO. C-102
SHEET X OF ##

JOB NO. 10348825



SITE PLAN A - ACCESS ROADWAY
SCALE: 1" = 20'

NOTES:

1. SEE DWG C-101 FOR EXISTING SITE CONDITIONS.

LEGEND:

- FENCE
- PROPERTY LINE
- PROJECT LIMIT
- EXISTING AC PAVEMENT
- EXISTING GRANULAR SELECT BORROW
- AC PAVEMENT
- CONCRETE
- GRASS VEGETATION
- APPROXIMATE GEOTECHNICAL BORING LOCATION
- RETAINING WALL
- CONCRETE JERSEY BARRIER (K-RAIL)
- METAL GUARD RAIL

GRAPHIC SCALE:

20 0 20 40

SCALE: 1" = 20'

REVISION	DATE	BRIEF	MADE BY	APPROVED

NOT FOR CONSTRUCTION

REFUSE DIVISION
DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU

WAIPAHU REFUSE FACILITY
& CONVENIENCE CENTER
93-71 WAIPAHU DEPOT STREET, WAIPAHU, OAHU, HAWAII 96797
TMK: (1) 9-3-002:009 (POR.)

SITE PLAN A
ACCESS ROADWAY

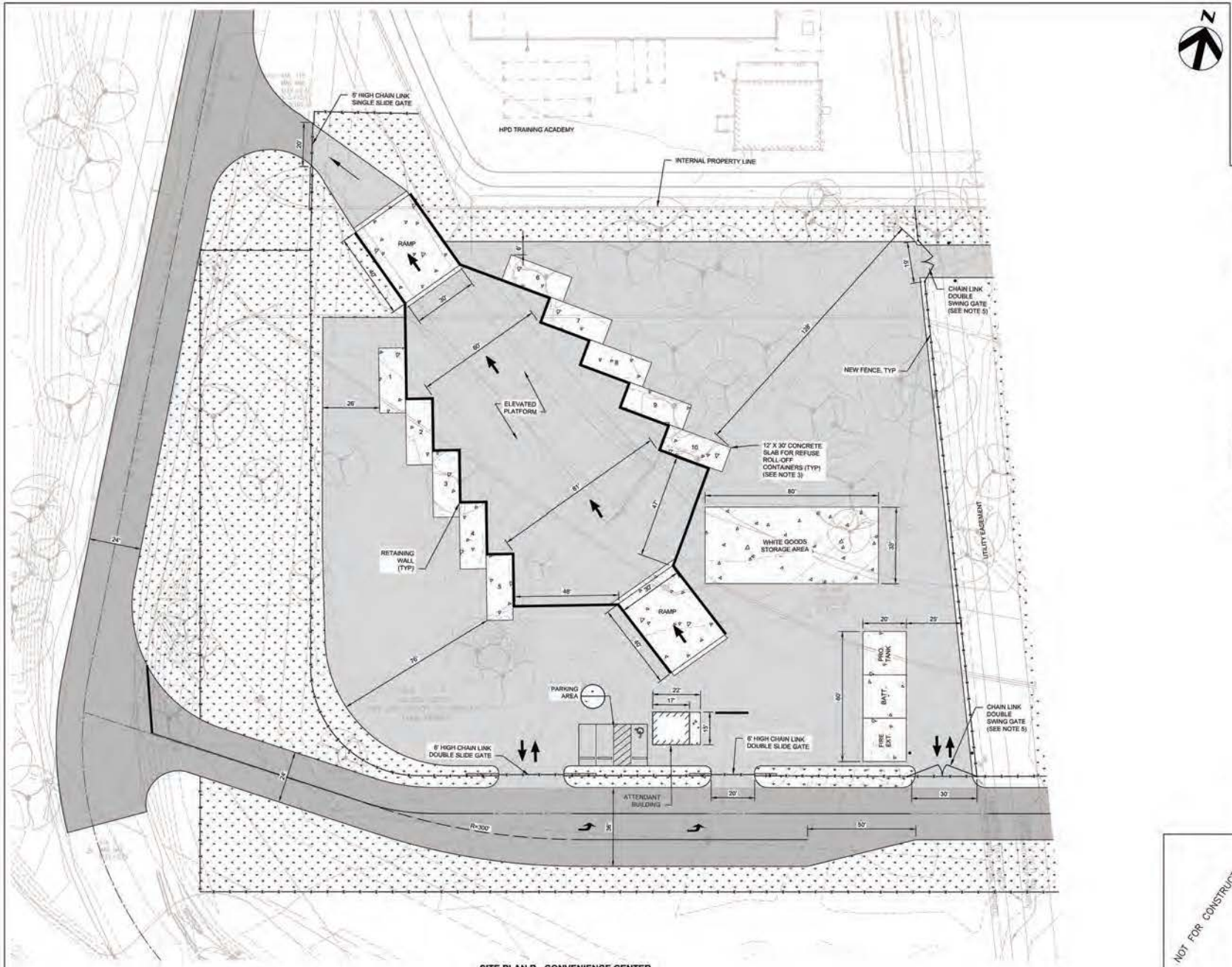
DESIGNED BY: MK	CHECKED BY: TS	DRAWN BY: PS/SS	DATE: 03/12/2025

HDR Engineering, Inc. — 1001 BISHOP STREET, SUITE 1000, HONOLULU, HAWAII 96813 — (808) [illegible]

DWG. NO. C-103

SHEET X OF ##

JOB NO. 10348825



SITE PLAN B - CONVENIENCE CENTER
SCALE: 1" = 20'

NOTES:

1. SEE DWG C-101 FOR EXISTING SITE CONDITIONS.
2. CONCRETE JERSEY BARRIERS (K-RAIL) SHALL BE MANUFACTURED BY JENSEN PRECAST (DWG NO BK10K), OR APPROVED SUBSTITUTE.
3. SEE STRUCTURAL DRAWINGS FOR DIMENSIONS AND DETAILS.
4. PROVIDE 28-FOOT WIDE DOUBLE SWING GATE PER CCH, STANDARD DETAIL R-21A. GATE POSTS SHALL BE 6-5/8" OD. GATE POST FOOTINGS SHALL BE MIN 18" DIAMETER AND 4'-0" DEPTH. SEE GATE HOLD BACK DETAIL X, DWG C-XXX.

LEGEND:

- FENCE
- AC PAVEMENT
- CONCRETE
- GRASS VEGETATION
- APPROXIMATE GEOTECHNICAL BORING LOCATION
- RETAINING WALL
- CONCRETE JERSEYBARRIER (K-RAIL)

GRAPHIC SCALE:
20 0 20 40
SCALE: 1" = 20'

REVISION	DATE	BRIEF	MADE BY/APPROVED

NOT FOR CONSTRUCTION

REFUSE DIVISION
DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU

WAIPAHU REFUSE FACILITY
& CONVENIENCE CENTER
83-71 WAIPAHU DEPOT STREET, WAIPAHU, OAHU, HAWAII 96797
TMK: (1) 9-3-002:008 (FOR.)

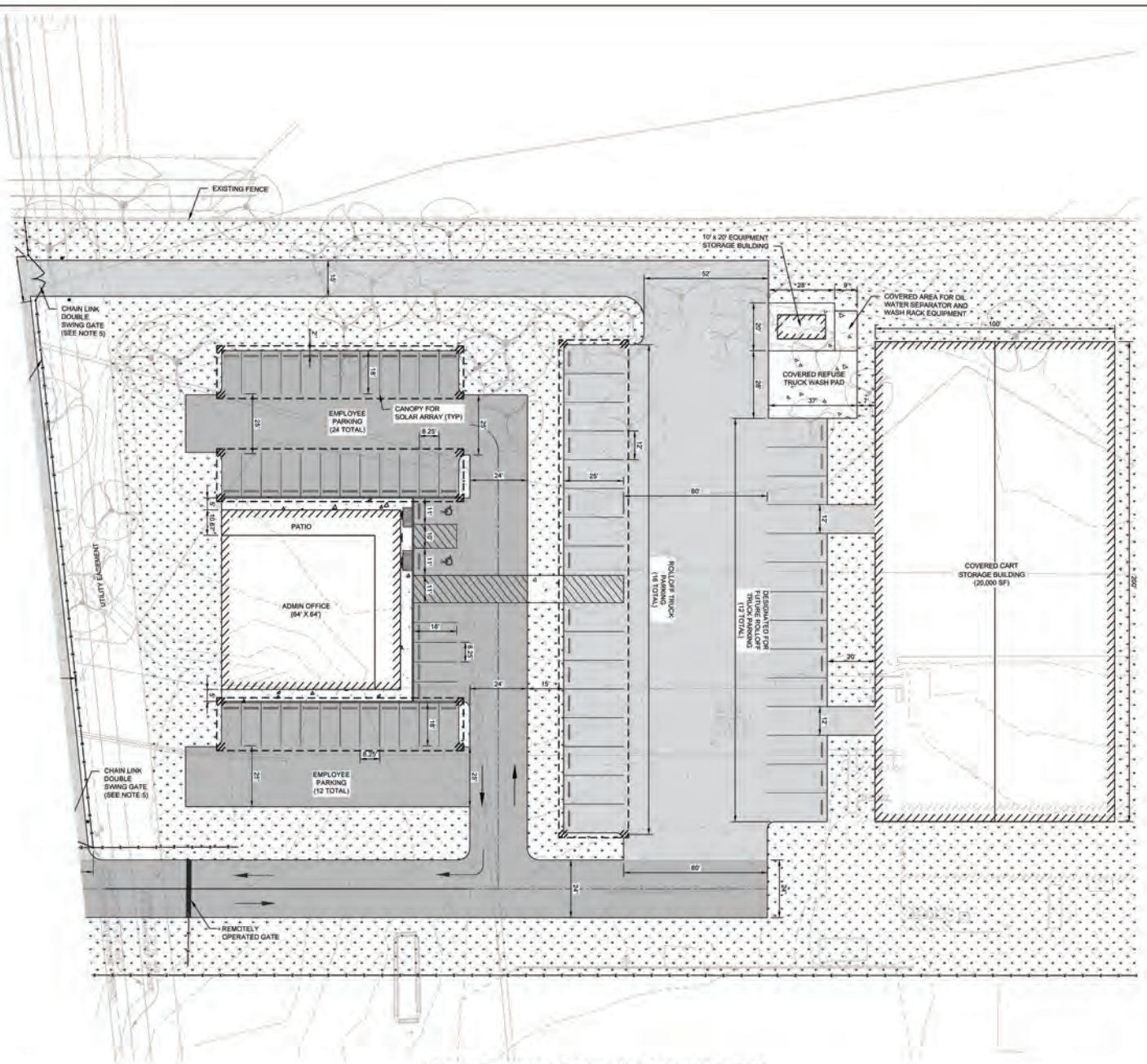
SITE PLAN B
CONVENIENCE CENTER

DESIGNED BY: MK	CHECKED BY: TS	DRAWN BY: PS/SS	DATE: 03/12/2025

HDR Engineering, Inc. — 1001 BISHOP STREET, SUITE 390, HONOLULU, HAWAII 96813 - 3402

DWG. NO. C-104
SHEET X OF XX

JOB NO. 10348825



SITE PLAN C - REFUSE FACILITY AND ROLLOFF DIVISION BASEYARD
SCALE: 1" = 20'

NOTES:

1. SEE DWG C-101 FOR EXISTING SITE CONDITIONS.

LEGEND:

- FENCE
- PROPERTY LINE
- PROJECT LIMIT
- EXISTING AC PAVEMENT
- EXISTING GRANULAR SELECT BORROW
- AC PAVEMENT
- CONCRETE
- GRASS VEGETATION
- APPROXIMATE GEOTECHNICAL BORING LOCATION
- RETAINING WALL
- CONCRETE JERSEY BARRIER (K-RAIL)
- METAL GUARD RAIL

GRAPHIC SCALE:

20 0 20 40

SCALE: 1" = 20'

REVISION	DATE	BRIEF	MADE BY/APPROVED

NOT FOR CONSTRUCTION

REFUSE DIVISION
DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU

WAIPAHU REFUSE FACILITY
& CONVENIENCE CENTER
93-71 WAIPAHU DEPOT STREET, WAIPAHU, OAHU, HAWAII 96797
TMK: (1) 9-3-002:009 (POR.)

SITE PLAN C
REFUSE FACILITY AND
ROLLOFF DIVISION BASEYARD

DESIGNED BY: MK	CHECKED BY: TS	DRAWN BY: PS/SS	DATE: 03/12/2025

HDR Engineering, Inc.
1001 BISHOP STREET, SUITE 400
HONOLULU, HAWAII 96813 – 3402

DWG. NO. C-105
SHEET X OF ##

JOB NO. 10348825

The new WCC will encompass the following key improvements intended to address current issues at the existing WCC:

- The WCC will encompass approximately 3.0 acres of the 7.2-acre project site. Increasing the size of the facility will improve on-site maneuverability and operational efficiency.

- Ten elevated waste offloading locations will allow multiple residents to offload simultaneously, reducing queueing at the facility entrance.

- The offloading platform will be elevated approximately four feet above surrounding grades, with concrete retaining walls providing necessary grade separation between the platform and refuse containers.

- Current ground surface elevations across the WCC site range from approximately 2.5 to 5.0 feet MSL. Final site grades will range from approximately 3.0 to 10.0 feet MSL to accommodate permitting requirements (e.g., solid waste and water quality regulations and SMA permitting), remediation of ash deposits, elevation needs at the offloading platform, and drainage requirements including sea level rise and flood zones.

- Ramps and asphalt roadways will provide access to the elevated platform.

- Refuse containers will be staged on concrete slabs at the platform perimeter, allowing collection trucks to access containers independently from residential traffic.

- A private two-lane road beginning at Waipahu Depot Street will extend along the east and south limits of the facility.

- A separate entrance and exit will enable one-way traffic flow and minimize conflicts at the Waipahu Depot Street intersection.

- White goods and other waste storage areas will be separated from MSW offloading areas to reduce traffic congestion.

- The facility attendant building will be strategically located to allow direct communication with incoming vehicles and oversight of site activities.

- Security fencing and gates, signage, and area lighting will be installed per operating permit requirements.

Since publication of the initial Draft EA on May 23, 2024, several significant design changes have been incorporated into the Proposed Action at the request of ENV. These changes include:

- Revision of the administration building from a two-story to a single-story layout based on a floor plan approved by the Refuse Division;

- Updates to the employee and visitor parking layout to improve access to the admin building, including the addition of solar canopy structures;

- Reconfiguration and addition of the rolloff truck parking area, wash bay, and connector road, also with a solar canopy over the truck parking area;

- Addition of a 20,000-square-foot refuse cart storage building, designed as an open-sided awning structure; and

- Modifications to the access road along Waipahu Depot Street, including geometric adjustments for turning radii and a new bypass/turnout lane to alleviate congestion at the Convenience Center entrance.

ENV also plans to develop the Refuse Facility east of the new WCC. The Refuse Division currently houses its Rolloff Division at the WIF, utilizing existing structures for parking and dispatch operations. The present Rolloff Division consists of eight drivers, nine trucks, and one supervisor. The remaining WIF structures will be demolished prior to construction of the new WCC and Refuse Facility. The Refuse Facility will consist of the following major components:

- Located east of the WCC, encompassing 4.2 acres of the project site;

- Extension of the access road developed for the WCC along the south limits of the Refuse Facility;

- An approximately 5,625-square-foot, 25-foot-tall single-story office building with a dispatch office, locker and break rooms for Rolloff Division employees (14–16 drivers and two supervisors), offices, and space for training and public education;

- Asphalt-paved parking areas for employees and rolloff trucks (estimated 16 existing and future trucks);

- A truck wash pad covered by a 27-foot-tall pre-engineered metal canopy;

- A single-story, 200-square-foot concrete masonry unit equipment storage building;

- A designated area for a future container repair shop and/or rolloff container storage yard;

- Site grades ranging from approximately 4.0 to 11.0 feet MSL, with final grades anticipated to remain within this range depending on permitting, ash remediation, and drainage needs;

- Security fencing and gates, signage, and area lighting to support facility operations.

A Draft Environmental Hazard Management Plan (EHMP) was previously prepared for the closure of the former Waipahu Incinerator Facility by Wood Environment & Infrastructure Solutions, Inc. in 2022. This Draft EHMP will serve as the basis for the environmental hazard management approach for the Proposed Action and will be updated and finalized to address site conditions associated with development of the new WCC and Refuse Facility. In addition, a Construction Environmental Hazard Management Plan (C-EHMP) will be prepared to outline requirements for managing contaminated soils and other potential hazards during construction in accordance with Hawai‘i Department of Health guidance. Following completion of the

project, a Final EHMP will be completed to incorporate additional information obtained through sampling in previously inaccessible areas (e.g., beneath existing slabs), and to document post-construction site conditions. Because some contamination will remain in place, environmental restrictive covenants will also be recorded, as applicable, to ensure long-term management measures and land-use conditions remain enforceable for the duration of site operations. If no additional redevelopment is planned for the remaining portions of the property in the near term, the EHMP would be finalized and an environmental covenant would be recorded in accordance with HRS Chapter 508C.

2.3 Hours of Operations

Hours of operation at the new WCC will be similar to the existing facility and other similar facilities on the island. The WCC will be open to the public daily from 7:00 a.m. to 6:00 p.m. (closed Christmas and New Year's day). The Refuse Facility will operate Monday through Saturday, 6:00 a.m. to 2:00 p.m. The WCC and Refuse Facility will be staffed by approximately 25 employees.

2.4 Development Schedule

Following design and permitting, construction of the WCC is anticipated to start in Q3 of 2027 and be completed in Q4 of 2028, and construction of the Refuse Facility to start in Q3 of 2028 and be completed in Q3 of 2030.

As described in Section 2.2, development of the WCC and Refuse Facility will require demolition of some of the remaining structures associated with the WIF. ENV is currently contracting services of a demolition contractor to complete demolition of all remaining structures at the WIF. Demolition activities are scheduled to be completed by Q4 of 2025.

The Project Site is located within the CCH's SMA. Development of the Proposed Action will be subject to SMA permitting requirements pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). It is assumed that the Proposed Action will exceed the $500,000.00 threshold for a minor SMA permit and will require approval of a major SMA Use Permit.

Furthermore, the Project Site is situated on land designated within the State's Agricultural land use district. Permissible uses within the agricultural district include public solid waste transfer stations, except for "offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures." (Section 205-4.5[a][7], HRS). The Convenience Center component of the Proposed Action falls under the classification of a public solid waste transfer station and thereby constitutes a permissible use within the agricultural district. However, the Refuse Facility will require the approval of either a Special Permit or State Land Use District Boundary Amendment (SLUDBA).

This EA will be used to support the requisite SMA process that would ensue once the EA process has concluded, as well as requisite Special Permit or SLUDBA processes that will follow the SMA process.

2.5 Project Costs

The construction cost for the Proposed Action, including planning, design, permitting, and construction, is estimated at approximately $28.5 million. The Proposed Action will be funded

through CCH Capital Improvement Program funds and by CCH tax revenues collected through the various waste processes administered by ENV and its associated CCH entities such as H-POWER. Cost estimates for other features of the Proposed Action are currently being formulated.

(This page intentionally left blank)

CHAPTER 3: DESCRIPTION OF EXISTING ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES

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

3.1 Climate and Climate Change

3.1.1 Current Climate Conditions

The climate of O‘ahu is relatively moderate throughout most of the year and is characterized as semi-tropical with two seasons. From May to September, the island experiences its summer season, which is generally marked by warm and dry conditions, along with prevailing northeast trade winds. In contrast, during the winter months, which span from October to April, O‘ahu encounters a slightly different climate. This period is characterized by relatively cooler temperatures and a higher chance of rainfall. The northeast trade winds often bring moisture from the ocean, contributing to more humid conditions. According to the National Weather Service Honolulu Office, average monthly temperatures run from 80 degrees Fahrenheit (°F) in January to 89 °F in August producing an annual average of 84 °F over a period of 30 years. Precipitation typically ranges from 0.44 inches in August to 3.8 inches in December. The annual average rainfall in Honolulu is 70 inches per year.

The Project Site is located on the Waipi‘o Peninsula which separates the Middle and West Lochs of Pearl Harbor. This region exhibits a climate typical of the leeward coastal lowlands of O‘ahu and is characterized by abundant sunshine, persistent trade winds, relatively constant temperatures, moderate humidity, and the infrequency of severe storms. Daytime temperatures are slightly higher, while nighttime temperatures are slightly lower than in windward locations. Dry weather is typical except for occasional light trade wind showers which drift over from the mountains to windward and for periods of severe storms. Northeasterly trade winds prevail throughout the year with varying frequency. The semi-permanent subtropical high-pressure ridge causes a stronger persistence of winds in the spring and summer months, while a lower persistence of winds is more prevalent in the fall and winter months due to the interruption of trade winds. Wind velocities typically range between 8 and 15 miles per hour.

Impacts and Mitigation Measures

No significant impacts to climate conditions at or in the vicintiy of the Project Site are anticipated to result from the development and operation of the Proposed Action. Proposed Action improvements will be appropriatley designed to take into consideration the context of the surrounding environment and are not anticipated to significantly influence or affect temperatures, wind, or rainfall levels.

3.1.2 Observed Climate Change

Acknowledgement that the State of Hawai‘i is being impacted by diverse climatic changes has become widely supported as rising sea levels, increasing ocean acidity, changing rainfall patterns, decreasing stream base flow, changing wind and wave patterns, and changing habitats and species distribution are becoming more evident. Research agrees that anthropogenic greenhouse gas emissions continue to be a key contributor to such unprecedented changes. There is an expectation of a rise in air and sea surface temperatures, a decrease in the prevailing northeasterly trade winds, a decline in average rainfall resulting in the continued decline in stream

base flow as well as groundwater levels, an increase in ocean acidity, extreme weather events, and sea level rise (SLR) that is projected to pose considerable challenges to Hawai‘i (Climate Change Commission, 2018).

The rate of warming air temperature in Hawai‘i has significantly increased over 0.3°F (0.17°C) per decade in the last 40 years, four times faster than half a century ago. Statewide, average air temperature has risen by 0.76°F (0.42°C) over the past 100 years with the most recent years being the warmest years on record (Climate Change Commission, 2018). This warming causes thermal stress for plants and animals, as well as heat-related illnesses in humans. Additionally, increased temperatures cause the range of pathogens and invasive species to surge. Risk of avian disease transmission will escalate and impact endemic bird species, such as the Hawaiian honeycreeper, causing a decline in population due to the warming of high-elevation forests where risk was previously low. Increasing temperatures could also lead to changing habitat ranges for various species of wildlife while also impeding precipitation at the highest elevations, the source of Hawai‘i’s freshwater. Four representative cases of the climate response to GHG emissions levels from socioeconomic scenarios referred to as Representative Concentration Pathways (RCPs) were provided by the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5). These RCPs estimate that global mean temperature will increase by at least 2.7°F (1.5°C) by the end of the century for intermediate to high future scenarios. The range of nightly low and daytime high temperatures, an important factor for many terrestrial species, is decreasing more rapidly in Hawai‘i than the global mean (Safeeq et al., 2012). Hawai‘i temperature is projected to increase, with a range of +4-5°F (2.2-2.8°C) for high emissions scenarios by the year 2085 (Keener et al., 2013).

The most severe ocean warming is projected to be felt in tropical and Northern Hemisphere subtropical regions, with increases up to 3.6°F (2.0°C) in the upper ocean levels above 650 ft. (200 m) by the end of the century. In the last 40 years, sea surface temperatures have warmed between 0.13°F and 0.41°F (0.07°C and 0.23°C) per decade in the Pacific. This trend is projected to accelerate, warming by 2.3°F to 4.9°F (1.3°C to 2.7°C) before the end of the century. As an island, O‘ahu has both a heavy economic and cultural dependency on the ocean. This warming can have an effect on ocean circulation and nutrient distribution having major impacts on ocean habitats such as coral reefs.

Coral reefs are vital to the global ecosystem by absorbing carbon dioxide and producing oxygen. However, as the water around Hawai‘i continues to warm, rising temperatures harm the symbiotic algae within coral that allow such capabilities. The algae are the main source of nutrients for the coral; therefore, a loss of algae weakens the coral causing eventual death and a major loss of surrounding biodiversity. This process is known as “Coral Bleaching” because the expelling of algae causes the coral to lose its color. Events of mass coral bleaching are increasing in frequency throughout Hawai‘i and the rise of sea temperatures has additionally been linked to coral disease outbreaks. In addition to the damaging effects of rising sea temperatures, increases in ocean acidity are another threat to coral reefs. As ocean acidity increases, corals and shellfish that depend on the minerals in the water weaken. Pacific Ocean acidity has increased by approximately 25 percent in the past three centuries and is likely to increase another 40 to 50 percent by 2100.

Rainfall in Hawai‘i significantly varies based on trade winds, topography, mid-latitude weather systems, storms and cyclones, El Niño-Southern Oscillation and Pacific Decadal Oscillation

phases, and more (Schroeder, 1993). Climate change, natural variability, complex topography, land uses, and other factors combine to present a challenge to the accurate projection of future rainfall and runoff patterns. While trends and projections vary from island to island, the overarching trend across the islands has shown a decrease in total rainfall over the past 30 years (Climate Change Commission, 2018). Declining rainfall has occurred in both the wet and dry seasons and has affected all the major islands. On O‘ahu, the largest declines have occurred in the northern Ko‘olau mountains. Future potential projections propose an increase in frequency of extreme rain events, which have implications for stormwater infrastructure, sustainable yield from aquifers, and runoff into coastal waters. The total annual average rainfall in Hawai‘i, represented by the Hawai‘i Rainfall Index, has decreased over the last century (Hawai‘i Climate Data Portal, 2023). Over the last century, streamflow records also show a decline in base flow by 20-70% depending on the watershed suggesting a decrease in groundwater levels. Rainfall intensity has decreased for the western islands (O‘ahu and Kaua‘i) over the last 60 years but increased for the island of Hawai‘i. High intensity rainfall can cause flash flooding, which has occasionally resulted in multimillion dollars of damage to infrastructure, due to the steep terrain and concrete stream channels. It can also impact nearshore ecosystems. Hawai‘i has experienced longer droughts in recent years, as all of the populated islands show an increasing trend in length of dry periods during 1980-2011, as compared with 1950-1970 (Chu et al., 2010). In Hawai‘i, prevailing northeasterly trade winds driving orographic precipitation on windward coasts have decreased in frequency since 1973 (Collins et al., 2010; Tokinaga et al., 2012; Garza et al., 2012).

There is disagreement regarding precipitation at the end of the century. Model projections range from small increases to increases of up to 30% in wet areas, and from small decreases to decreases of up to 60% in dry areas (Climate Change Commission, 2018). Timm et al., (2014) applied a statistical downscaling method described by Timm and Diaz (2009) in order to find a connection between the large-scale atmospheric circulation over the Pacific with the rainfall over Hawai‘i. It is concluded from this six-model analysis that by the late 21st century, the most likely scenario for Hawai‘i is a 5-10% reduction of precipitation during the winter season, and a 5% increase during the dry season, as a result of circulatory changes (Timm and Diaz, 2009). It is still uncertain how this data will reflect on the highly variable terrain in Hawai‘i. If drought events continue to increase, dry areas could see more fires and issues with decreased water supplies.

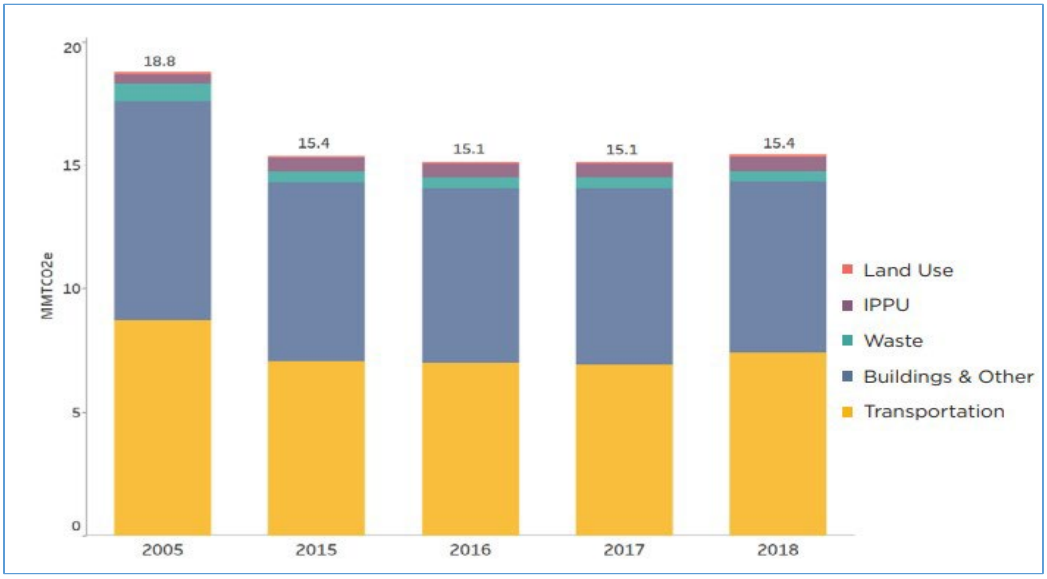
Research indicates that two centuries of unabated greenhouse gas (GHG) emissions, which includes carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and fluorinated gases, from anthropogenic sources are responsible for increases in global atmospheric temperatures and ocean warming over the past century. GHGs absorb and “trap” solar radiation instead of reflecting it back into space causing what many know as, the greenhouse gas effect. While a fraction of GHG emissions is released from natural sources, a majority result from human activity in the following economic sectors, in order from most emissions to least: electricity and heat production; agriculture, forestry and other land-use activities; industrial activity; transportation; other energy production processes; and buildings (IPCC, 2014). According to the U.S. Energy Information Administration, the United States was responsible for approximately 15% of global carbon dioxide emissions in 2019.

Planning for climate change is challenging as climate change is defined by constantly changing and largely undefined factors. The risks of climate change, as discussed earlier, include changes in rainfall intensity, SLR, temperature, groundwater levels, saltwater intrusion, and impacts from storm hazards. In response to the Paris Agreement, Hawai‘i is under the directive of the Hawai‘i Climate Change Mitigation and Adaptation Commission (Commission), which aims to reduce

ground transportation emissions and adapt to sea level rise, including disaster recovery preparedness on the statewide level. The CCH has taken action in order to plan for the effects of climate change as outlined in the CCH's Climate Change Commission's Climate Change Brief which establishes the impacts of climate change for the CCH. In July of 2018, the Mayor of CCH issued Directive 18-02, which requires each CCH department and agency to: Consider the need for both climate change mitigation and adaptation as pressing and urgent matters; Take a proactive approach in both reducing GHG and adapting to impacts caused by SLR; and Align programs whenever possible to help protect and prepare the infrastructure, assets, and citizens of the CCH for the physical and economic impacts of climate change.

In June 2021, the CCH City Council passed its first-ever Climate Action Plan (CAP). This CAP is a science-based, community-driven strategy for O'ahu to combat climate change and eliminate fossil fuel emissions. The CAP outlines that the CCH's GHG emissions have declined nearly 18% between 2005 and 2018. However, transportation-related GHG emissions caused an increase from 2017 to 2018 as illustrated by Figure 3-1 below. The figure represents the CCH's GHG emissions by sector, which includes Land-Use, Industrial Processes and Product Use (IPPU), Waste, Buildings & Other, and Transportation.

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



*The analysis and forecasting for the CAP was done before the availability of 2018 figures and is therefore based on 2005, 2015, 2016, and 2017 figures.
*Source: Climate Action Plan (CAP). June 2021.

Impacts and Mitigation Measures

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 Site. Annual and daily variations of climate are dependent on numerous factors including elevation, distance inland, and exposure to

trade winds. The Proposed Action will be appropriately designed to take into consideration the context of the surrounding environment and are not anticipated to significantly influence or affect temperatures, wind, or rainfall levels at the Project Site or within the greater region. Moreover, the Proposed Action will not exacerbate the impacts associated with climate change at the Project Site, greater region, or State from the development and operation of the Proposed Action.

In the short-term, it is anticipated that activities related to the construction of the Proposed Action may result in minimal GHG emissions. Construction related emissions include tailpipe emissions from construction equipment, delivery trucks, and workers commuting to and from the construction site. It is anticipated that the quantities of GHGs released from construction related activities will be negligible and usage of each piece 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.

It should be noted that the Proposed Action encompasses the relocation of the existing WCC into a new facility to be developed at the Project Site, which in part, calls for the conversion and replacement of an existing, decommissioned incinerator facility (which currently serves Refuse Rolloff Division Operations). Improvements to the existing Refuse Rolloff Division operations will simultaneously occur while existing structures on the Project Site are to be demolished. Nonetheless, no significant impacts to climate conditions are anticipated to result from Project related construction or operational activities.

However, it is acknowledged that the exact nature of how the climate will change in the coming years is unknown. On a broader policy level, new information will continually need to be incorporated into future assessments to identify where efforts should be focused when developing adaptation strategies to climatic changes. It is anticipated that the Proposed Action will flexibly conform with guidance set forth by best practices outlined by policies and research based on the actionable scientific data as climate change science, technology, and policies evolve over time.

3.2 Physiography

3.2.1 Geology and Topography

The island of Oʻahu is a volcanic doublet formed by the Waiʻanae Range to the west and the younger Koʻolau Range to the east. Both are remnants of shield volcanoes, but the term “range” indicates that they have lost most of their original shield outlines and are now long, narrow ridges shaped largely by erosion. Later post-erosional eruptions sent lava down the valleys and resulted in the formation of volcanic cones such as Diamond Head and Tantalus.

The Project Site is located on the Waipi'o Peninsula bordered by the West and Middle Loch of Pearl Harbor and the associated military base. The Project Site was once a flat, low elevated region with elevations averaging approximately 4 feet above sea level. The areas of this region located below sea level were frequently inundated due to the high water table, which lead to the subsequent filling and grading for construction of other facilities in the vicinity of the Project Site raising the ground elevation to an estimated 9 feet above sea level (See Figure 3-2). It is

anticipated that final developed grade elevations across the site will vary depending on final design parameters to address permitting requirements.

Impacts and Mitigation Measures

Construction activities associated with the implementation of the Proposed Action may result in soil erosion as a result of the clearing, grubbing, grading, excavation, and infilling of soil. Soil erosion will be minimized through compliance with the CCH's grading ordinance, and the applicable provisions of the DOH Water Quality Standards (HAR, Section 11-54) and Water Pollution Control requirements (HAR, Section 11-55). With the implementation of BMPs, potential impacts including the phasing of construction activities, replacing ground cover of the disturbed area, providing adequate water sources at the site, and the use of temporary silt fencing and screens will be mitigated.

3.2.2 Soils

The soil types or classifications for the Project site are based on soil surveys by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey. The NRCS system classifies soils by type, capability classification, and permeability. According to the USDA NRCS, soils underlying the Project Site are classified as (See Figure 3-3):

- *Coral outcrop (CR).* Excessively drained soil with low runoff found near beaches and toe slopes.
- *Fill Land (Fd).* Low lying areas filled with material from dredging and soil excavations.
- *Fill Land, mixed (FL).* Areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources.
- *Honouliuli clay (HxA).* Permeability is moderately slow. Runoff is slow, and the erosion hazard is no more than slight.
- *Keaau clay, 0 to 2% slopes (KmA).* Permeability is slow. Runoff is flow and the erosion hazard is no more than slight.

The subject parcel was utilized in the past to landfill ash and refuse residue from the CCH's Waipahu Incinerator that burned municipal solid waste from 1972 until the incinerator was closed in 1991. The landfill site encompassed approximately 54 acres on U.S. Navy, State of Hawai'i, and CCH property adjacent to the West Loch of Pearl Harbor (referring to FL soil types found in the Project Site and nearby lands). It should be noted that, while the Project Site itself was not utilized to landfill ash; there are ash deposits / contamination at the Project Site which will require remediation.

FIGURE 3-2 TOPOGRAPHIC MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i

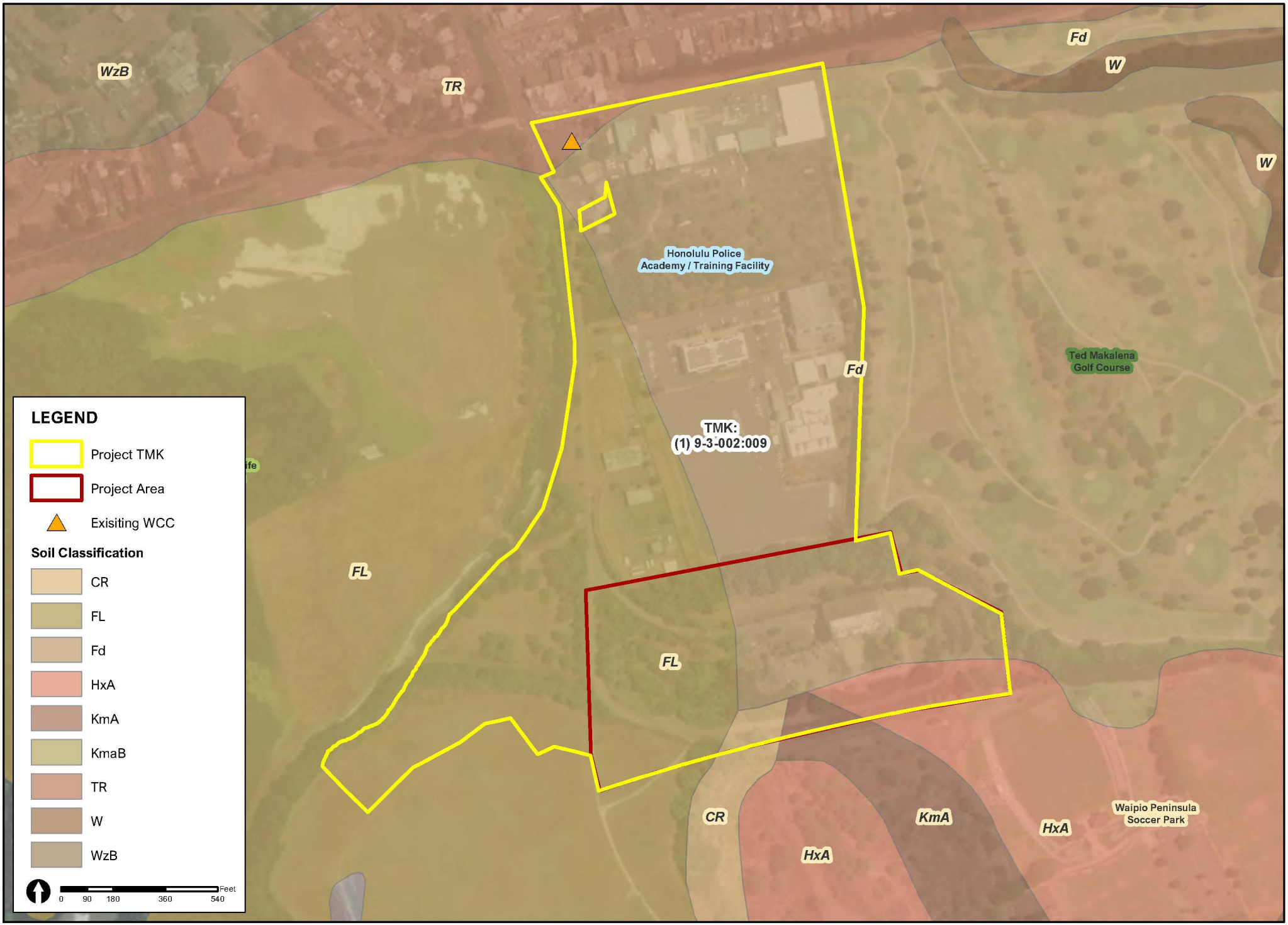


Source: State OP and ESRI

FIGURE 3-3 SOIL CLASSIFICATION MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

Impacts and Mitigation Measures

The Proposed Action is not anticipated to result in long-term, secondary, or cumulative adverse impacts to soils. In the short-term, minor grading activities may be undertaken in association with Project Construction. Grading activities will be limited to the Project Site and will not impact the surrounding area. All excavation and grading activities will be regulated by applicable provisions of the CCH's grading ordinances (Chapter 14, Articles 13-16, HAR). Due to low elevation, the design of the site will reflect groundwater level and the potential for its rise during the design phase. The Proposed Action's construction will not involve any major land disturbing activities involving mass grading or significant revisions to site contours. A National Pollutant Discharge Elimination System (NPDES) permit for stormwater runoff from construction activities would be required as individual and/or cumulative soil disturbances in a project area should it exceed one acre of land area.

As noted above, areas adjacent to the Project Area were previously utilized to landfill ash, causing ash deposits to settle within the Project Area. It is anticipated that the Project Site will be subject to ash remediation efforts to meet DOH Hazard Evaluation and Emergency Response (HEER) standards. As design efforts progress, the specific means and methods of ash remediation will be identified in order to minimize the potential discharge of pollutants.

As previously mentioned, a Draft Environmental Hazard Management Plan (EHMP) was developed for the Former Waipahu Incinerator Facility to establish requirements for the management and disposal of contaminated soils. Based on the Draft EHMP, both surface and subsurface soils within portions of the project area contain residual impacts associated with historic municipal solid waste incineration activities. The underlying soils consist primarily of alluvial and fill materials, with some areas containing ash deposits.

Environmental investigations summarized in the EHMP identified elevated concentrations of metals and other contaminants of potential concern in various locations. While the distribution and concentrations vary across the site, residual impacts remain in select surface and subsurface soil units. These conditions will require appropriate management during any ground-disturbing activities.

It is anticipated that the EHMP will be finalized to support the Proposed Action.A project-specific Construction Environmental Hazard Management Plan (C-EHMP) will be prepared prior to construction to ensure proper handling, stockpiling, testing, and disposal or reuse of soils in compliance with Hawai‘i Department of Health requirements.

3.3 Hydrology

3.3.1 Surface and Coastal Waters

The Project Site has one surface stream, Kapakahi Stream, in its vicinity which discharges into the West Loch through Pouhala Marsh Wildlife Sanctuary. Kapakahi Stream is spring-fed and originates from its headwaters at the Hawai'i Plantation Village. Kapakahi Stream and Pouhala Marsh Wildlife Sanctuary are located approximately 0.28 miles and 0.5 miles west of the Project Site, respectively.

The West Loch is one of the several sea inlets of Pearl Harbor, which discharge into Māmala Bay. Prior to entering Māmala Bay, the West Loch receives water from the Kapakahi and Waikele streams which flow through Pouhala Marsh Wildlife Sanctuary (See Figure 3-4).

Impacts and Mitigation Measures

No significant impacts on surface and coastal waters are anticipated to result from the construction and operation of the Proposed Action. The Proposed Site is approximately 0.4 miles away from the nearest coastal body of water and approximately 0.28 and 0.5 miles away from the nearest surface waters, respectively. The project area does not contain natural surface-water features, and stormwater within the former incinerator site generally infiltrates on-site due to the flat to gently sloping topography. The nearest surface-water feature is located within the Pouhala Marsh Wildlife Restoration Area, approximately 150 meters northwest of the site.

Erosion and sedimentation measures will be implemented where necessary during construction activities. Therefore, off-site surface waters near the Project Site are not anticipated to be impacted as a result of stormwater during construction activities.

The Proposed Action 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 Action. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping and stabilization measures will be done as soon as possible on completed areas to help control erosion and runoff that could potentially enter the stream and flow towards Māmala Bay in the long-term.

With the implementation of these BMPs, and given the absence of surface-water features within the project area, the Proposed Action is not anticipated to result in direct or indirect impacts to surface water resources

3.3.2 Groundwater

The State Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM) has established a groundwater hydrologic unit and coding system for groundwater resource management. The Project Site is located within the Pearl Harbor aquifer sector. Within this aquifer sector, there are three aquifer systems areas: the Waimalu, Waipahu-Waiawa, and ‘Ewa-Kunia. The Proposed Action is located within the Waipahu-Waiawa Aquifer Systems Area. The Proposed Action is also located below the Underground Injection Control Line (UIC) and the BWS‘s No Pass Zone Line, both of which demarcate areas where wastewater disposal facilities would potentially adversely affect potable water supplies in the underlying aquifers (See Figure 3-5). The Waipahu-Waiawa is the main water source for water for the surrounding areas (Dashiell, Oceanit, & Townscape, Inc. 2007).

FIGURE 3-4 SURFACE AND COASTAL WATERS MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

According to the Commission on Water Resource Management, the sustainable yield for the Waipahu-Waiawa Aquifer is 105 million gallons per day (mgd). The permitted use is about 83 mgd, which is the highest permitted use of the aquifers in Central O'ahu. The Board of Water Supply (BWS) withdraws the largest amount of groundwater from the aquifer followed by private and Federal/Military withdrawals (Dashiell, Oceanit, & Townscape, Inc. 2007).

Groundwater recharge occurs from precipitation and seepage from surface water bodies including irrigation systems. However, since the decline of the sugar industry, recharging of ground water from irrigation systems has decreased resulting in the reduction of sustainable yield and an increase in saltwater intrusion (Dashiell, Oceanit, & Townscape, Inc., 2007). The project site is also located within the Southern O'ahu Basal Aquifer, which is designated as a Sole Source Aquifer (EPA 2000). EPA review is required for federally funded projects within a Sole Source Aquifer to determine if there is potential for contamination. Groundwater moves downward until it encounters impermeable geological features and contributes to the freshwater (Ghyben-Herzberg) lens or emerges as springs.

Impacts and Mitigation Measures

No significant impacts on groundwater are anticipated to result from the construction and the Proposed Action would be a permitted use. Any activity occurring near groundwater would be conducted in accordance with applicable regulations. In addition, appropriate mitigation measures including silt fencing, proper storage, and movement of spoils, monitoring of groundwater, and careful site preparation will be utilized to minimize adverse impacts.

According to the Draft EHMP, groundwater beneath the site is shallow—ranging from approximately 1.5 to 19 feet below ground surface—and exhibits residual concentrations of metals associated with historic incinerator operations. The groundwater underlying the project area is not classified as a drinking water resource, and no complete exposure pathways to groundwater are anticipated under current commercial/industrial land use conditions.

In the short-term, construction activities are not likely to introduce to, nor release from the soils, any materials that could adversely affect the underlying groundwater. Any materials or wastes produced during the operation of the Proposed Action would be handled in compliance with the necessary CCH and State regulatory requirements.

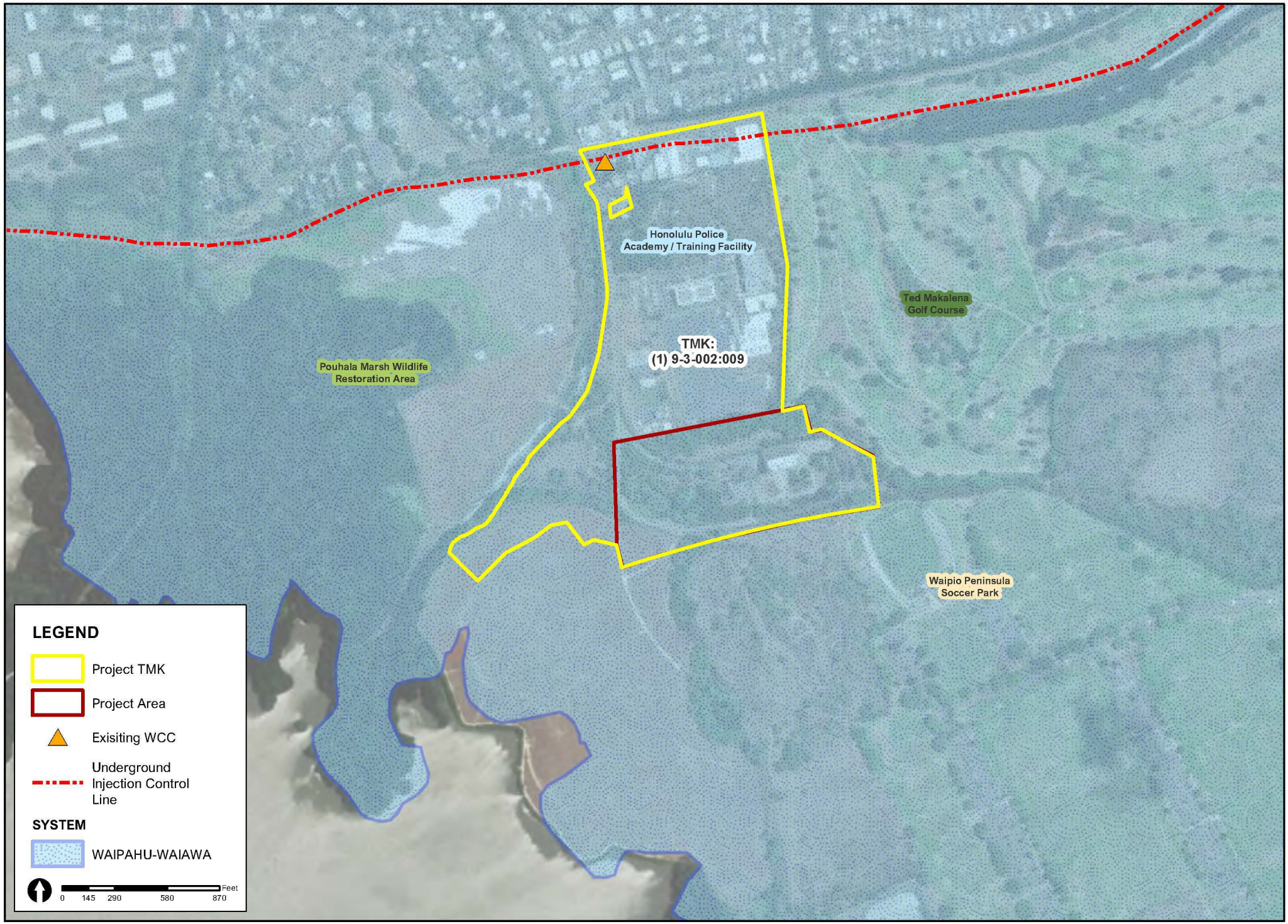
If excavation reaches depths where groundwater may be encountered, qualified environmental personnel will provide oversight consistent with the EHMP to ensure proper handling, containment, and characterization of any impacted groundwater.

If future construction activities at the Site require dewatering, impacted groundwater must not be discharged to storm drains, ditches, streams, or other surface water bodies; impacted groundwater must be appropriately managed and handled on-Site, or disposed at an appropriate facility.

FIGURE 3-5 GROUNDWATER RESOURCES MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

The Draft EHMP recommends on-site re-infiltration of groundwater as the preferred approach if dewatering is necessary. Preferred re-infiltration would be conducted within the same trench, or within a closely located trench. Where re-infiltration occurs within the same trench, a physical barrier or partition would be used to separate the dewatering section from the receiving section. The re-infiltration trench (or receiving portion of the trench) would be located and maintained to avoid preferential pathways (e.g., underground pipes or conduits, storm drains, or other utilities) that could allow groundwater migration to other portions of the site or off-site.

If re-infiltration on-site is not feasible, groundwater would be temporarily stored, sampled, and appropriately disposed. Dewatering activities will follow applicable Hawai‘i Department of Health (HDOH) requirements. If off-site discharge is proposed, a Notice of Intent (NOI) for National Pollutant Discharge Elimination System (NPDES) coverage would be submitted to HDOH and would include a dewatering plan. Prior to discharge to a storm sewer system or aquatic habitat, groundwater would be tested and treated, if necessary, to address potential impacts. Groundwater with contaminant concentrations exceeding HDOH Environmental Action Levels (EALs) for chronic aquatic toxicity would not be discharged off-site.

With implementation of these procedures and EHMP-directed management practices, the Proposed Action is not anticipated to result in adverse effects on groundwater resources.

3.4 Natural Hazards

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

Given Hawai‘i’s vulnerability to natural hazards and history of disasters, the State has maintained and implemented a comprehensive, multi-hazard mitigation strategy to reduce loss of life and property damage. This strategy is embodied in the *2018 State Multi-Hazard Mitigation Plan*. The 2018 State Hazard Mitigation Plan identifies the major natural hazards that affect the State, assesses the risk that each hazard poses, analyzes the vulnerability of the State’s population, property and infrastructure to the specific hazard, and recommends actions that can be taken to reduce the risk and vulnerability to the hazard. The State Hazard Mitigation Plan also contains a description of programs, policy, statues and regulations applicable to hazard mitigation. It should be noted that the 2023 update to this plan has begun and is expected to be released at the end of 2023.

The CCH also maintains a Local Hazard Mitigation Plan, that the State of Hawai‘i Emergency Management Agency reviews in accordance with The Disaster Mitigation Act of 2000 (FEMA, 2000), 44 Code of Federal Regulations and coordinates with the CCH to ensure compliance with the federal regulations.

The identified major natural hazards that could affect the State, as well as the CCH are Climate Change Effects (including SLR/coastal erosion), floods, tsunamis, strong windstorms/hurricanes, earthquakes, landslides/rockfalls, and wildfires**.**

3.4.1 Sea Level Rise

Climate change and its impacts are discussed in detail in Section 3.1.2 above. This section will focus on SLR and coastal erosion impacts. The island of Oʻahu is susceptible to flooding and SLR as it is home to the State's most populous city, Honolulu, which also serves as the State's capital. With approximately one million residents, Oʻahu accounts for approximately 70% of the State's entire population. Thus, Oʻahu also possesses many of the State's critical resources, infrastructure, and services. A major impact from SLR on Oʻahu could reverberate and result in major economic and social impacts for the islands and communities throughout the State.

Elevated water levels in the spring and summer of 2017 provided a glimpse of the near future when coastal flooding events are expected to occur more frequently and severely with continued SLR. Findings by the UH Sea level Center showed that the 2017 anomalously high-water levels resulted from an unprecedented combination of Pacific wide climate and ocean variability. The water levels in 2017 presented record highs. The rise in sea level caused localized flooding and coastal erosion throughout the State during the spring and summer of 2017.

Although coastal erosion is a naturally occurring event, as sea level continues to rise, the rate at which coastal erosion occurs is increasing which will have more severe impacts. Over the next 30 to 70 years, as sea level rises, homes and businesses located on or near the shoreline throughout the State will become exposed to chronic flooding.

Sea level is rising at increasing rates due to global warming of the atmosphere and oceans and melting of the glaciers and ice sheets. Rising sea level and projections of stronger and more frequent El Niño events and tropical cyclones in water surrounding Hawaiʻi indicate a growing vulnerability to coastal flooding and erosion. The Hawaiʻi Sea Level Rise Vulnerability and Adaptation Report (2017) modeled exposure to chronic coastal flooding and erosion using projections from the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report (IPCC, 2014) where the high-end scenario was up to 3.2-ft of sea level rise by the end of the century (Courtney et al., 2020). For Oʻahu, the exposure area (SLR-XA) with 3.2 ft. of SLR is based on modeling passive inundation, coastal erosion, and annual high wave runup. According to a recent National Oceanic and Atmospheric Administration (NOAA) report, global SLR in the range of 6.4 ft. (2.0 m) to 8.8 ft (2.7 m) is "physically plausible" by the end of this century (Sweet et. al, 2017). The CCH Climate Commission issued SLR guidance for the County to use for areas exposed to 3.2 ft. of SLR as a planning benchmark for most developments, with consideration of 6 ft. of SLR as a planning benchmark for critical infrastructure with long expected lifespans and low risk tolerance (Climate Change Commission, 2018).

It is noted that northwest portion of the Project Site is located within the 3.2 ft. and 6- ft. SLR exposure areas (See Figure 3-6). Long-term planning will need to be addressed in this region by the Commission and adjacent landowners.

Impacts and Mitigation Measures

The Convenience Center is located within an area vulnerable to sea-level rise (SLR) ranging from 3.2 to 6 feet. Severe storms may lead to flooding of roadways, affecting

access to the site, especially at Waipahu Depot Street and the southern gate of the HPD Training Academy. Historical flooding during heavy rains has been observed at these locations.

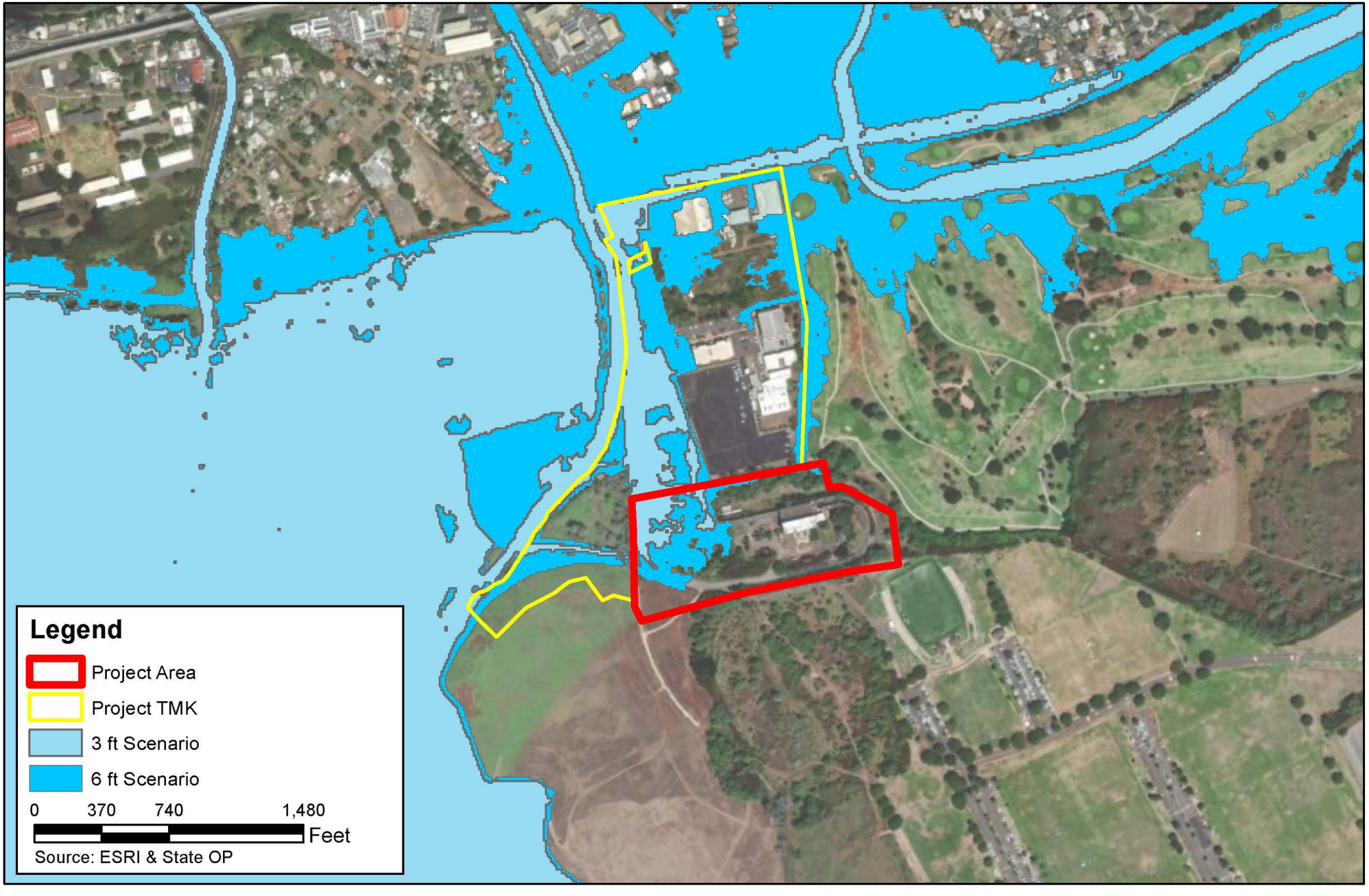
Various mitigation measures to address potential impacts to the Project Area due to SLR include elevated infrastructure, road and drainage improvements, alternative access routes, and on-going adaptation pursuant to refined SLR research and policies. Offloading platforms at the Convenience Center will be raised approximately 4 feet above the surrounding grades to reduce flooding risk. During the design phase, road elevations at critical access points will be assessed and potentially increased to the extent feasible to manage stormwater runoff more effectively. Swales and detention basins will be incorporated both on-site and at the HPD Training Academy to direct and manage runoff Other areas of the Project Site will incorporate fills (elevated) as necessary to direct stormwater runoff to onsite treatment swales and detention basins. Future plans may consider alternative access routes to ensure site access during severe weather conditions.

Lastly, future assessments will continuously incorporate new climate data and best practices to refine adaptation strategies in response to evolving climate change science and policies.

3.4.2 Flood and Tsunami Hazard

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. The CCH is vulnerable to flooding from storms, storm surge, high surf, and on rarer occasions, tsunamis. Flooding causes millions of dollars of damage every year, and from about 1915 to 2018, floods caused by rainstorms, tsunamis, and hurricanes have claimed more than 140 lives and inflicted more than $200 million dollars of direct and indirect damage in the CCH (DEM, 2020). The *2018 State of Hawai'i Multi-Hazard Mitigation Plan* determines that flood control and floodplain management is to include the reduction of repetitive loss properties.

Flood Insurance Rate Maps (FIRM) for the area, prepared by the Federal Emergency Management Agency (FEMA), designate the majority of Project Site within Flood Zone D, where flood hazards are undetermined, but possible. The northwest portion of the Project Site is designated within Flood Zone X and AE (See Figure 3-7). Flood Zone X is described as an area of minimal flood hazard that is determined to be outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance (or 500-year) flood. Flood Zone AE is described as areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Flood Zone AE is also considered a Special Flood Hazard Area (SFHA) on which the rules and regulations of the National Flood Insurance Program (NFIP) are enforced. Additionally, the Project Site is within 2,000 feet of the coastline areas which are susceptible to coastal flood and wave action.



WILSON OKAMOTO CORPORATION

FIGURE 3-6

Sea Level Rise Exposure Area Map

Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

FIGURE 3-7 FLOOD INSURANCE RATE MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

Tsunamis are generated by earthquakes, landslides, or volcanism, and can reach speeds of up to 600 mph. Since the early 1800's, approximately 50 tsunamis have inundated the State of Hawai'i. The most current tsunami was reported in 2011 and caused extensive damage estimated worth $8.275 million today. Generated by a M9.0 earthquake off the coast of Honshu, Japan, peak heights between 7 and 11 feet were reported in the counties of Honolulu, Maui, and Hawaii. Additional tsunamis to impact O'ahu shores occurred in 1952, 1957, 1960, and 1964.

The western portion Project Site is located within the Extreme Tsunami Evacuation Zone and Tsunami Evacuation Zone, according to the Tsunami Evacuation Zone maps for O'ahu. The eastern portion of the Project Site is located within the Safe Zone (See Figure 3-8). In the event of a tsunami, evacuation inland toward a Safe Zone is recommended, in accordance with guidance from the CCH Department of Emergency Management and International Tsunami Information Center.

Impacts and Mitigation Measures

No significant impacts on flood hazards at the Project Site are anticipated to result from the construction or operation of the Proposed Action. The majority of Project Site within Flood Zone D, where flood hazards are undetermined, but possible. The northwest portion of the Project Site is designated within Flood Zone X and AE. Flood Zone X is described as an area of minimal flood hazard that is determined to be outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance (or 500-year) flood. Flood Zone AE is described as areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Flood Zone AE is also considered a Special Flood Hazard Area (SFHA) on which the rules and regulations of the National Flood Insurance Program (NFIP) are enforced.

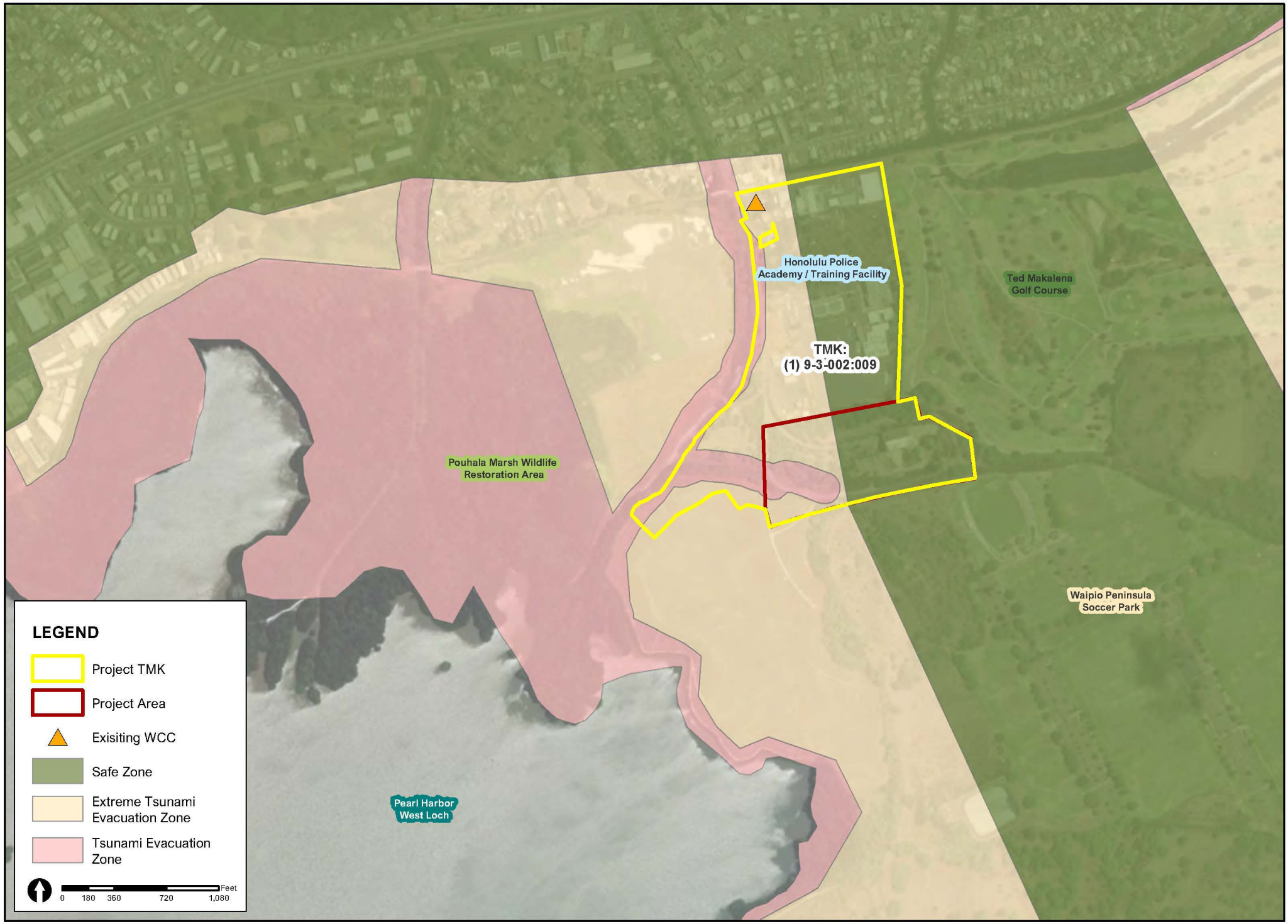
As flood hazards are possible within the Project Site, best management practices (BMPs) are recommended to minimize any potential impacts. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks so that impacts of flooding are not exacerbated from construction. While natural hazards cannot be avoided during the construction phase, the impacts would be less than significant and reduced to the degree possible with the incorporation of the actions and practices recommended. Further, potential impact due to flood hazards shall be minimized by elevating infrastructure as well as incorporating road and drainage improvements. Offloading platforms at the Convenience Center will be raised approximately 4 feet above the surrounding grades to reduce flooding risk. During the design phase, road elevations at critical access points will be assessed and potentially increased to the extent feasible to manage stormwater runoff more effectively. Swales and detention basins will be incorporated both on-site and at the HPD Training Academy to direct and manage runoff Other areas of the Project Site will incorporate fills (elevated) as necessary to direct stormwater runoff to onsite treatment swales and detention basins.

As it relates to tsunami impacts, the Project Site is approximately 0.4 miles away from the nearest shoreline; however, it is located within the Extreme Tsunami Evacuation Zone, which recommends evacuation to a Safe Zone in the event of a tsunami.

FIGURE 3-8 TSUNAMI EVACUATION AREA

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

3.4.3 Hurricane and Wind Hazard

While being considered relatively rare events, the Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The State has been affected once by the significant hurricanes (rated Category 3 and higher) Iniki in 1992. Not all identified hurricane and strong wind storm threats make landfall in Hawai‘i, and actual hurricane strikes in Hawai‘i are relatively rare in modern record. More commonly, near misses that generate large swell and moderately high winds causing varying degrees of damage are the hallmark of hurricanes passing close to the islands.

During hurricanes and storm events, high winds can cause strong uplift forces on structures, particularly on roofs. Wind-driven materials and debris can attain high velocity and cause devastating property damage and harm to life and limb. Along the coastline, a surge of water, topped by battering waves, can move ashore into low lying coastal areas. Due to differences in atmospheric pressure, tidal stage, coastal topography, and location relative to the eye of the hurricane. It is difficult to predict how hurricane-induced storm surge may impact a specific location. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. The Project Site is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

Impacts and Mitigation Measures

The potential for hurricanes, while relatively rare, is present across the State of Hawai‘i. Construction activities from the Proposed Action could potentially exacerbate the effect of hurricanes if loose materials are not secured prior to the event of a storm and become flying debris. To minimize this hazard, construction materials and equipment would be stored properly when not in use, consistent with construction BMPs. To safeguard against hurricane damage, the Proposed Action’s improvements will be designed in compliance with American Society of Civil Engineers and International Building Code standards for wind exposure.

3.4.4 Earthquake and Seismic Hazards

Seismic hazards are those associated with ground shaking, which includes: landslides, ground cracks, rock falls and tsunamis. With the island of Hawai‘i being an exception, the Hawaiian Islands are not situated in a high seismic area subject to frequent earthquakes (Macdonald et al. 1983). Thousands of earthquakes occur every year in the State of Hawai‘i, therefore while difficult to predict, an earthquake of sufficient magnitude causing structural damage is likely to occur in the future. Earthquakes in the Hawaiian Islands are associated with volcanic eruptions or tectonic movements. Most of these earthquakes are closely related to volcanic processes and are so small they can only be detected by seismometers. On May 4, 2018, a magnitude-6.9 earthquake on the south flank of Kīlauea Volcano struck the Island of Hawai’i becoming the largest earthquake in Hawai’i in 43 years. The earthquake had minor impacts on the island of O‘ahu.

Engineers and other professionals have implemented a system of classifying seismic hazards based on their expected strength of ground shaking and the probability of shaking to occur within a specified time. The International Building Code (IBC) seismic provisions classify the likelihood of seismic activity into zones ranging from 0 to 4. Seismic Zone 0 represents no chance of severe ground shaking and Seismic Zone 4 represents a 10 percent chance of severe shaking in a 50-year interval. The Project Site lies within the region of O‘ahu classified as Seismic Zone 2A under the Uniform Building Code designed by the U.S. National Seismic Hazard Model for Hawai’i.

Strong shaking is associated with earthquakes in this zone which may result in negligible damage to buildings in good design and construction, slight to moderate damage in well-built ordinary structures, and considerable damage in poorly built structures. The Project Site is assessed to have low vulnerability to earthquakes.

Volcanic hazards on Oʻahu are considered minimal due to the former volcanoes being extinct; however, the effects of earthquakes occurring on the islands of Hawaiʻi and Maui may be felt on the island of Oʻahu.

Impacts and Mitigation Measures

Oʻahu has not experienced significant seismic events in the modern era. The development of the Project Site, as pursued under the Proposed Action would be subject to adherence to strict design requirements, to ensure that all development of the Proposed Action would comply with geotechnical recommendations for seismic hazards and meet prevailing building codes by incorporating specifications to reduce vulnerability to earthquakes at that time.

3.4.5 Landslides and Rockfall Hazards

A landslide occurs when gravity forces land downward, often due to precipitation, runoff, or ground saturation. Debris flows, sometimes referred to as mudslides, mudflows, lahars, or debris avalanches, are common types of fast-moving landslides and occur in a wide variety of environments. Flows are characterized by shear strains distributed throughout the mass of material. Flows are distinguished from slides by high water content and the distribution of velocities resembles that of viscous fluids. These flows are a form of rapid mass movement in which loose soils, rocks, and organized matter, combined with air and water, form a slurry that flows downslope. These flows generally occur during periods of intense rainfall (3 inches in a peak 6-hour period) (DEM, 2020). Several features on land may be noticeable prior to a landslide, including but not limited to: springs, seeps, or saturated ground appears in areas usually not wet; new cracks or unusual bulges in the ground, street pavements, or sidewalks; and soil moves away from foundations.

The Project Site is in a relatively flat region of Waipahu where there are not any drastic changes in topography. Thus, the Project Site is assessed to have a low vulnerability to landslides and rockfall hazards.

Impacts and Mitigation Measures

The Proposed Action is not anticipated to have impacts that could result in landslide or rockfall events. Moreover, the Proposed Action's construction will not involve any major land disturbing activities involving mass grading or significant revisions to site contours.

3.4.6 Wildfire Hazards

Wildfires can threaten life and property, but they can also harm the environment and threaten important natural resources such as endangered species. While sometimes caused by lightning, nine out of ten wildfires are human-caused. Put simply, "wildfire" is the term applied to any

unwanted and unplanned fire burning in forest, shrub or grass regardless of whether it is naturally or human induced (DEM, 2020).

On a global basis, the number of wildfires has significantly increased in the last decades. Such increase can be explained by four key factors:

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

All of the Hawaiian Islands are susceptible to wildfires, especially during prolonged drought and high winds. In recent years, the average annual cost to suppress wildfires in Hawai'i is about $1,100,000 - making it a Statewide risk (DEM, 2020). The greatest danger of fire is where wildlands borders urban areas. Through August, 2018, wildfires in Hawai'i have burned 30,000 acres (about double the annual average). Historically, the majority of these fires have been directly caused by humans, either directly or by negligence. The Project Site is not located in an at-risk area for wildfires; however, the community to the north of the Project Site is noted as a High Risk area for wildwire which may potentially impact the Project Site in the event of a wildfire (See Figure 3-9). 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.

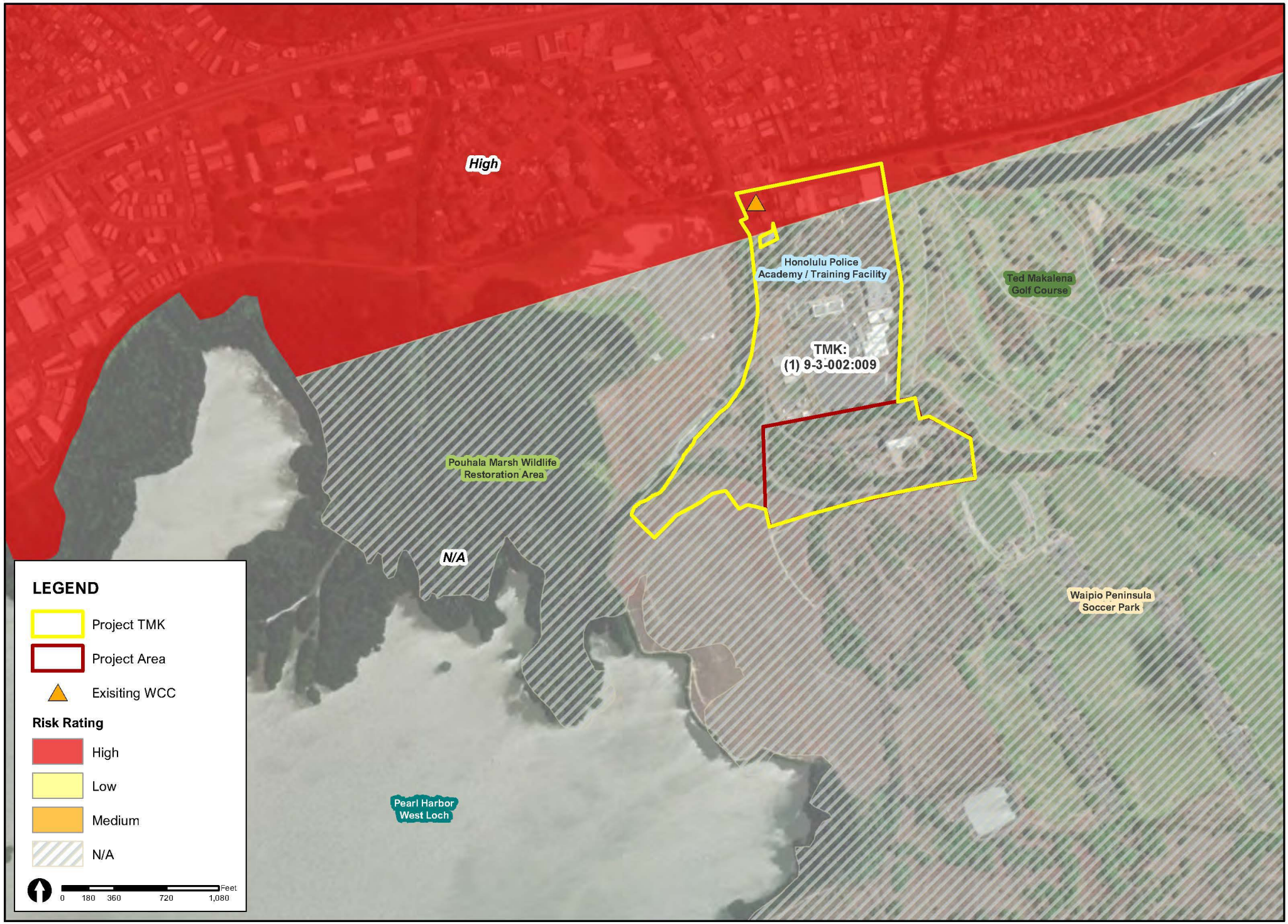
Impacts and Mitigation Measures

The Proposed Action is not anticipated to have impacts that could result in wildfire events as the Project Site is relatively well irrigated and is considered to be within an area that is not at risk for wildfires. However, the Waikele region to the North of the Project Site is considered to be a high-risk wildfire area, which could impact the Proposed Action if not properly contained. The State Department of Land and Natural Resources-Division of Forestry and Wildlife (DLNR-DOFAW) has adopted a Fire Management Handbook, which specifies its standards for prevention, pre-suppression, and suppression. The document provides a structured approach in providing for public/firefighter safety and minimizing damage to Hawai'i's environment. Funding for the fire management program is provided by the State's general fund and federal cost share programs through the U.S. Forest Service. These programs include the Rural Community Fire Protection and Rural Fire Protection and Control programs. Additionally, the DLNR-DOFAW is a key agency within the State who can trigger provisions of the Stafford Act (Fire Suppression Assistance), which provides for FEMA funding assistance in situations where forest and grass fires on public or private lands threaten a major disaster to communities and economies.

FIGURE 3-9 FIRE RISK AREA MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

3.5 Natural Environment

3.5.1 Flora and Fauna

A Natural Resources Assessment for the Proposed Action was prepared by AECOS in March 2023 (See Appendix A). The findings of the report are discussed below:

On November 22, 2022, AECOS surveyed the Project Site, as well as the existing Waipahu Convenience Center to the north of the Project Site, collecting floral identification data through pedestrian transects aided by a hand-held GNSS unit. Being that the Project Site is fully developed, vegetation is generally limited to the narrow perimeter around the Project Site. The majority of the vegetation consists of weeds and planted ornamentals. The western portion of the Project Site is characterized by a forest of kiawe trees while the eastern portion is disturbed open ground with existing roads and structures from the previous use of the Project Site. The south side of the incinerator building is a fenced, mostly paved yard, but with extensive ornamental plantings, including fruit trees.

The survey identified 117 species total, 103 of which are located at the Project Site, including seven common indigenous plant species, and another six are thought to be early Polynesian introductions. No endemic plant species were observed at the Project Site. The indigenous species are: moa (Psilotum nudum), kou (Cordia subcordata), kīpūkai (Heliotropum procumbens), koali‘ai (Ipomoea cairica), pa‘uohi‘iaka (Jacquemontia ovalifolia), milo (Thespesia populnea), and ‘uhaloa (Waltheria indica). Species considered early Polynesian introductions (so-called “canoe plants”) are: niu or coconut (Cocos nucifera), kī (Cordyline fruticosa), kukui (Aleurites moluccana), ‘ulu or breadfruit (Artocarpus altilis), and mai‘a or banana (Musa sp.). No endemic species were recorded, and all of these “native” plants are common throughout the Hawaiian Islands.

The most common plants recorded on the former incinerator site are: Guinea grass (Megathyrsus maximus), pluchea (Pluchea xfosbergi and P. indica), and kiawe. Koa haole (Leucaena leucocephala), ‘uhaloa (Waltheria indica), Sida ciliaris, comb hyptis (Mesosphaerum pectinatum), and (Heliotropum procumbens), Chinese violet (Asystasia gangetica), Bermuda grass (Cynodon dactylon), and buffelgrass (Cenchrus ciliaris) are common scattered across the property or particularly abundant in localized areas. A listing of plants recorded during the AECOS survey is included in the appended report.

AECOS also conducted an avian survey identifying birds through visual observations aided by binoculars and listening for vocalizations. A total of 206 individual birds of 20 species were recorded from four counting stations at the Project Site. An additional waterbird count was made at Kapakahi Stream which is approximately 450 feet to the west of the Project Site.

The three most abundant species included the Common Waxbill (*Estrilda astrild*), Common Mynah (*Acridotheres tristis*), and Warbling White-eye (*Zosterops japonicus*) which accounted for 48% of all birds observed during the station counts. The waterbird count recorded three of four Hawaiian bird species known to occur on O‘ahu at the Project Site: the Hawaiian Coot or ‘alae ke‘oke‘o (*Fulica alai*), Black-necked Stilt or ae‘o (*Himantopus mexicanus knudseni*), and Black-crowned Night-Heron or ‘auku‘u (*Nycticorax nycticorax*). Another survey conducted by AECOS at Kapakahi Stream and Pouhala Marsh (2022) in proximity to the Project Site observed all four species, which included the Hawaiian subspecies of Common Gallinule or ʻalaeʻula (*Gallinula galeata sandvicensis*). One additional waterbird species—non-native Hawaiian Duck x Mallard

Duck hybrid (A. wyvilliana x A. platyrhynchos)—was recorded from the 30-minute waterbird count and is included in the waterbird count observations utilizing habitat beyond the Project Site.

One additional indigenous migratory species, Pacific Golden Plover (Pluvialis fulva), was recorded at the Project sites outside of the timed count and is included in survey as an incidental observation. Of the 23 species recorded by the survey, one species is endemic, two species are indigenous, and one species is an indigenous migrant. The remaining 19 avian species observed are non-native (alien) species naturalized in the Hawaiian Islands. A list of all the species recorded during the avian fauna survey at the Project Site is provided in the appended report.

The mammalian survey results included species indicated through visual, auditory, or observation of animal signs. Two mammalian species were recorded during the mammalian survey which included the domestic dog (*Canis lupic familiaris)* and the small Indian mongoose (*Herpestes javanicus*). No other mammals were observed, although, it is likely that the Project Site is also frequented by the domestic cat (*Felis catus*), wild boar (*Sus scrofa*), and four alien Muridae (rats and mice) currently established on O'ahu. It is possible that the native Hawaiian hoary bat or ʻōpeʻapeʻa (*Lasiurus cinereus semotus*) may utilize resources within the Project vicinity.

Impacts and Mitigation Measures

No significant impacts on flora and faunal resources are anticipated to result from the construction and operation of the Proposed Action. No critical habitats under Federal jurisdiction for any species occurs within the Project Site or area (USFWS, nd-b). The State of Hawai'i has no equivalent designation under endangered species statuses.

Floral Resources

Regarding flora, no plants including naturalized, native, or Polynesian introduced, are of concern from a statutory (DLNR, 1998; USFWS, nd-a) or other conservation interest. Currently, the Project Site is fully developed with vegetation generally limited to the narrow perimeter around the Project Site. The incorporation of certain landscaping elements into the Project Site Plan, as feasible, could be used to meet the goals of the CCH Resolution 18-55 which focuses on creating opportunities to expand the urban tree canopy on CCH properties in order to increase the City's urban tree canopy to at least 35 percent by the year 2035.

Avian Resources

In the short-term, construction activities may temporarily disrupt the behavior of common faunal species that are known to occur or frequent the Project Site, but will not result in permanent displacement, or adversely affect the regional distribution. Based on the flora and fauna survey conducted by AECOS, the Project Site offers no habitat for Hawaiian waterbird species, however, due to its proximity to waterbird habitats to the west, there is the potential for construction activity to attract and/or impact protected Hawaiian waterbirds. The endangered Black-necked Stilt was observed to overfly the Project site. Stilt forage and nest in a wide range of habitats and may be attracted to standing water or disturbed ground. Nesting habitat for endangered Hawaiian Coot and Common Gallinule is present in wetland vegetation at Kapakahi Stream and Pouhala Marsh adjacent to the

Project site. Construction-related noise could disturb a nesting bird and passing construction vehicles could harm a young chick. The following BMPs are recommended to minimize or avoid impacts to Hawaiian waterbird species:

- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site or nearby.

- If an endangered waterbird enters an active construction area, cease all construction activity. Work may resume after the individual leaves the area on its own volition.

- Avoid creating surface water features (puddles, etc.) after grading and grubbing. Surface water should be removed to avoid creating a nuisance attractant.

- A qualified biologist should conduct a preconstruction survey for endangered waterbird nests immediately prior to construction activity near water features. If a nest is found, contact USFWS immediately. Establish and maintain a 100-ft buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.

Protected night-flying seabirds include Hawaiian Petrel (Pterodroma sandwichensis), Wedge-tailed Shearwater (Ardenna pacifica), Newell's Shearwater (Puffinus newelli), and Band-rumped Storm-petrel (Hydrobates castro). Hawaiian Petrel, Newell's Shearwater, and Band-rumped Storm-petrel nest in high-elevation mountainous habitat, and Hawaiian Petrel and Newell's Shearwater have recently been detected on the Island of Oʻahu (Young et al. 2019). In the summer and fall, nocturnally flying seabirds (especially fledglings) transiting to the sea from inland locations can become disoriented by exterior lighting. When disoriented, seabirds can collide with man-made structures or the ground. If not killed outright, dazed or injured birds are easy targets of opportunity for feral mammals (Podolsky et al., 1998; Ainley et al., 2001; Day et al., 2003). The primary cause of mortality in both Hawaiian Petrel and Newell's Shearwater is predation by alien mammalian species at the nesting colonies (Ainley et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality of these seabirds in Hawaiʻi. Deleterious impacts to transiting seabirds can be avoided if construction occurs during daylight hours and all outdoor lighting installed for the Project or construction activities is 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 Hawaiʻi endangered species statute on the Island of Oʻahu (HDLNR, 2015). White Tern was not observed during our survey. In the main Hawaiian Islands, the majority of the White Tern population is found in central urban and suburban Honolulu, with a known nesting range extending from Niu Valley to Aloha Tower (isolated pairs occur at Hickam Air Force Base; VanderWerf and Downs, 2018). White Tern nesting in the Project Site is possible, although the Project is outside of the known nesting range for the species. Examine all trees slated to be cut to determine if there are White Terns nesting in them, especially during the White Tern breeding season (January thru June). Do not trim branches or remove trees with nesting White Terns present.

The Hawaiian endemic sub-species of Short-eared Owl or pueo (Asio flammeus sandwichensis) is state-listed as endangered on Oʻahu (HDLNR, 2015). Short-eared Owl is a ground-nesting species susceptible to mammalian predation. The species is not habitat-restricted but is increasingly scarce on Oʻahu. No evidence of Short-eared Owl was found at the Project site from this survey, and the species optimal nesting habitat is not present at the Project site. However, Short-eared Owl have been observed around East Loch and other Pearl Harbor areas (Cotin and Price, 2018; R. David, pers. comm.).

Mammalian Resources

Domestic dog (Canis lupis familiaris) and small Indian mongoose (Herpestes javanicus) were observed during this survey. It is likely that the site is also used by domestic cat (Felis catus), wild boar (Sus scrofa), and any of the four alien Muridae (rats and mice) currently established on the Island of Oʻahu. With the exception of the endangered Hawaiian hoary bat, all terrestrial mammals currently found on the Island of Oʻahu are alien species; most are ubiquitous.

It is possible that the native Hawaiian hoary bat or ʻōpeʻapeʻa (Lasiurus cinereus semotus) uses resources within the Project vicinity. The species is solitary and rare but with a potentially widespread distribution on Oʻahu. The principal potential impact of the Project to bats would occur when site vegetation is cleared and grubbed. This species of bat uses multiple roosts within a home territory (Bonaccorso, 2015), so the disturbance associated with removal of any particular tree would be minimal. However, an exception would be during the pupping season, when a female bat carrying a pup may be unable to rapidly vacate a roost tree that is being felled; or, an unattended pup is unable to flee a tree that is being felled. Potential adverse impacts to Hawaiian hoary bat can be avoided or minimized by not clearing woody vegetation taller than 15 ft (4.6 m) between June 1 and September 15, the bat pupping season.

Other Resources of Potential Concern

No federally designated Critical Habitat for any species occurs within the Project Site (USFWS, nd-b). No equivalent designation exists under State of Hawaiʻi endangered species statutes.

3.6 Historic and Archaeological Resources

Honua Consulting (Honua) prepared an Archaeological Literature Review and Field Inspection (LRFI) report in April 2023 to evaluate the presence of historic and archaeological resources at the Project Site (See Appendix B). The LRFI was designed to determine the likelihood that any potential historic and archaeological resources could be affected by the Proposed Action and based on findings, consider suggest mitigation recommendations. The LRFI is intended to facilitate the Proposed Action's planning and support the environmental review required for the Proposed Action.

The LRFI provides an analysis of the natural and built environment at the Project Site, a comprehensive revies of traditional and historic background information in the region, a review of previous archaeological reports and findings in the vicinity, and a field inspection of the Project

Site. The inspection sought to identify any sensitive areas that may require further investigation or mitigation before the project proceeds. Documentation of the field inspection includes descriptions and photographs of the Project Site. The field inspection consisted of pedestrian survey of exterior portions. Since most of the Project Site consists of existing buildings, Honua did not walk or record survey transects ("track log"), which would typically be documented using a hand-held Trimble GeoXT (or other GPS) device. No archaeological historic properties, or potential historic properties, were observed at the Project Site during the field inspection.

The following is a brief discussion and summary of the LRFI and the archaeology-focused research within the context of the traditional background and history of the Project Site.

In 1894, Benjamin F. Dillingham proposed the idea of a 10,000 acre sugar company on Oʻahu. The biggest challenge confronting this ambition was the lack of water available on the Leeward side of Oʻahu. In order to ensure the area had adequate water, testing was conducted and it was determined that the sugar company would be located in the area traditionally known as Aualiʻi, (Oahu Sugar Company n.d.). Oahu Sugar Company (OSC) was established in 1897 and began harvesting sugar cane two years later, in 1899. The company grew from there, quickly taking over 20 square miles in the area. Most of the land was leased from existing large landowners, including ʻĪʻi Estate (lands formerly owned by famed Hawaiian historian John Papa ʻĪʻi), Oʻahu Railway and Land Co. (OR&L), Bishop Estates, Robinson Estates, and Campbell Estates. Many of the landowners, like the Robinson Estates (now known as the Robinson Trust), continue to own lands in modern-day Waipahu. Any lands not leased by OSC were owned by OSC fee simple (Oahu Sugar Company n.d.) While the name Waipahu already existed as a place name and stream name west of Aualiʻi, after Oʻahu Sugar Company began drilling in the area, the name Waipahu, meaning gushing water, grew in usage for the area.

The area was a thriving center of plantation life for thousands of workers and families. This era continued until OSC was purchased by AmFac, Inc in 1961. AmFac was originally incorporated in Hawaii in 1918 as American Factors, Ltd. as the successor company to H. Hackfield & Company, Ltd., which had been first established in 1849. OSC would continue to operate even after the purchase by AmFac. From the year of its establishment until 1967, when Henry A. Walker Jr. would take control of the company, AmFac primarily engaged in Hawaii's sugar plantations. Walker sought to change the company to one that operated a diverse number of businesses, most of them having little to do with Hawaii or the plantation industry (Lehman Brothers Collection n.d.). Oahu Sugar Company would be shut down after the 1995 harvest.

U.S. use of Pearl Harbor for shipping and economic purposes began in 1875 with passage of the Reciprocity Treaty. In the early 1900s, Pearl Harbor was used by the U.S. as a coaling station for ships traveling across the Pacific (Hinnershitz 2021). In 1908, Congress approved the construction of a dry dock to establish Naval Station Pearl Harbor and to straighten the channel. By 1919, Pearl Harbor was a fully functioning naval base. Military operations on Waipiʻo Peninsula have been integral to the success of war efforts in the Pacific. The naval base and Hickam Air Force Base (initially dedicated as Hickam Field in 1938), were realigned to form Joint Base Pearl Harbor Hickam (JBPHH) in 2010.

Several archaeological studies have been conducted in the general vicinity of the Project Site, including one within the current Project Site. The conducted study (Hammatt and Chiogioji 2000b) was an archaeological and cultural assessment of a parcel located on Waipiʻo Peninsula owned by the CCH. The study recorded the presence of an existing land fill and modern building activities. No historic properties were recorded.

While no archaeological sites have been documented within the Project Site, documented sites throughout the near vicinity include former heiau (traditional places of worship), the Waipahu Spring, petroglyphs, human burials, a subsurface cultural layer and loʻi (irrigated terrace) deposit as well as historic plantation infrastructure including the Oahu Sugar Mill, plantation camps, an irrigation ditch and water control box, and agricultural experiment substation. The closest sites to the current Project Site include several Loko (fishponds) and subsurface loʻi, which one would expect, given the topographically low position of the near coastal property.

Table 3-1 provides a summary of archaeological studies and their results in the vicinity of the Project Site.

Methodology

Fieldwork for this project was conducted on November 21, 2022, by Nathan DiVito, B.A. under the general supervision of Rosanna Thurman, M.A. (principal investigator), who has a Master's Degree in Applied Archaeology and over 15 years of experience in archaeological field inventories, historic property assessments, and site evaluations in Hawaiʻi. The investigation required approximately 8 hours to complete and was performed under the archaeological permit number 22-26, issued to Honua Consulting by the SHPD/DLNR in accordance with HAR Chapter 13-282.

The archaeological field inspection consisted of a 100% pedestrian survey of the Project Site. It included a visual inspection for any constructed surface architecture and observation of the ground surface and soil exposures for artifacts and/or exposed cultural deposits. The pedestrian survey of the Project Site consisted of the traversal of numerous northwest-southeast trending transects across the property, performed by four individuals spaced at approximately 5 meter intervals.

Survey Results

The Project Site is located at the end of Waipahu Depot Road on the Waipiʻo Peninsula. The facility on the property was formerly known as the Waipahu Incinerator Facility (WIF). A plaque at the facility indicates it was built by the CCH by the Fasi administration in 1970. The facility burned trash up until 1990 when the H-POWER Plant was constructed in Kapolei to burn the islands trash and convert it into energy. Since that time the facility has operated as the CCH Refuse Maintenance Division.

The property is bound on the north by the Honolulu Police Department Training Facility, on the east by the Ted Makalena Golf Course, on the west by undeveloped lands, and on the south by fenced land containing the ash pile from the incinerator facility, undeveloped land with roads, and a portion of the grounds of the Waipiʻo Soccer Complex.

The layout of the facility consists of a paved loop roadway with the incinerator facility in the middle. Garbage trucks would enter from Waipahu Depot Road and follow the loop around to the south and east. The roadway becomes raised with concreted supports on the northeast side and splits at the top with a weigh station on each side. After the trucks were weighed they continued past the weigh station office and into a covered parking area at the incinerator building where they would back up to dump the trash. The garbage was then dumped into a

large two-story tall concrete trough. Two rail cranes are present on each side that would have picked up the trash and dropped it into the incinerator chamber on the south side of the building.

The lack of artifacts and historic properties documented during the survey can be attributed to clearing and grading of the area for construction of the WIF in the late 1960s, evidence of which is present in the form of rock push piles on the periphery of the north side of the property. It is also possible the Project Site was modified during military use of Waipi‘o Peninsula during and immediately following World War II.

Table 3-1 Previous Archeological Studies in the Vicinity of the Project Site			
Author(s)	Type of Study	Location	Findings (SIHP #50-80)
McAllister 1933	Island-Wide Survey	O‘ahu	4 sites in vicinity, Kalanamaihiki fishing shrine (Site 139), Laulaunui Fishpond (Site 140), Kaihuopalaai, Ewa (West Loch, Pearl Harbor) (Site 141) and the Ewa Plains (Site 146)
Dicks et al. 1987	Archaeological Reconnaissance Survey	West Loch Estates - Golf Course and Parks	Recorded a surface scatter of 19th century historic artifacts (SIHP #50-80-13-3318), a habitation deposit and possible cemetery recorded as SIHP #50-80-13-3319, two habitation deposits recorded as SIHP #50-80-13-3320 and SIHP #50-80-13-3321, a buried fishpond recorded as SIHP #50-80-13-3322, a historic fishpond recorded as SIHP #50-80-13-3323, and a buried pond field system recorded as SIHP #50-80-13-3324
Rosendahl 1987	Archaeological Reconnaissance Survey	Mililani Town Station	No sites recorded
Folk 1990	Archaeological Reconnaissance	Waipahu Street Widening Project (from Amokili Street to August Athens School)	No sites recorded
Kawachi and Griffin 1990	Inadvertent burial discovery	94-1049 Kahuailani, TMK: [1] 9-4-026: 078	Identified one early post-contact human burial (SIHP #50-80-09-4245)
Hammatt and Shideler 1991	Archaeological Inventory Survey (AIS)	St. Francis Medical Center West, TMK: [1] 9-1-017:056	No sites recorded
Spear 1993	Archaeological Reconnaissance	Waikele Industrial Subdivision, TMK: [1] 9-4-002: various	Identified remains of an abandoned plantation camp, no SIHP number assigned
Cleghorn 1996	AIS	TMK: [1] 9-4-002: por. 004	Identified remains of Oahu Sugar Mill, no SIHP number assigned

Table 3-1 Previous Archeological Studies in the Vicinity of the Project Site			
Author(s)	Type of Study	Location	Findings (SIHP #50-80)
Jensen and Head 1997	Archaeological Reconnaissance Survey	NAVMAG – West Loch	Recorded 281 historic properties, 11 of which are in the vicinity of the project area, they include a concrete slab, (SIHP # 13-5136); a concrete slab and concrete wall recorded as (SIHP # 13-5137); a concrete slab, (SIHP # 13-5138); a concrete slab and gun emplacement, (SIHP # 13-5139); a concrete slab, (SIHP # 13-5140); a concrete basement (SIHP # 13-5141); a metal structure ,(SIHP # 13-5142); a utility, (SIHP # 13-5143); a metal barge/landing, (SIHP # 13-5144); a wall, (SIHP # 13-5145), and a site complex consisting of concrete paving, a concrete slab, a concrete step, and 2 walls, (SIHP # 13-5146)
Hammatt and Shideler 1999	Archaeological Assessment	St. Francis Medical Center West, TMK: [1] 9-1-017:017 & 060	No sites recorded
Athens et al. 2000	Paleoenvironmental Coring	Fishponds of Pearl Harbor	Identified fishpond sediments for 8 of the 21 fishponds tested, dating and chronology of fishponds were inconclusive, provides recommendations for future studies
Hammatt and Chiogioji 2000a	Archaeological Assessment	2,600-foot-long portion of Farrington Highway (from Anini Place to Waipahu Depot Rd)	No sites recorded
Hammatt and Chiogioji 2000b	Archaeological and Cultural Assessment	TMK: [1] 9-3-002:009 *Within Current Project Site*	No sites recorded
Table 3-1 Previous Archeological Studies in the Vicinity of the Project Site			
Author(s)	Type of Study	Location	Findings (SIHP #50-80)
Hammatt et al. 2000	AIS	40-acre parcel along Manager's Drive, TMK: [1] 9-	Two historic properties identified: pre-contact

		4-002: 005	petroglyphs (SIHP #50-80-09-530), and remnants of Oahu Sugar Company plantation camp (SIHP # -4660)
Ostroff et al. 2001	Inadvertent burial discovery	Filipino Community Center, TMK: [1] 9-4-161:001	One pre-contact human burial (SIHP #50-80-09-5582)
Hammatt et al. 2004	Archaeological and Cultural Assessment	Waipahu Drainage Improvements, TMK: 9-4-09 and 9-4-59:72, 73, 74	No sites recorded
Perzinski et al. 2004	AIS	Queen Emma Foundation Parcel, TMK: [1] 9-4-038:083 & [1] 9-4-050:059	Three historic properties identified: historic remnants of the Brown Estate (SIHP # -6671), pre- and post-contact cultural layer (SIHP # -6672), and two associated pre-contact burials (SIHP # -6673)
O'Hare et al. 2006	Archaeological Inventory Survey	East Kapolei Project, TMK: [1] 9-1-010:002, 9-1-017:004, 059, 072; 9-1-018:001 & 004; 9-2-001:001	Documented and mapped previously recorded SIHP #s 12–4344 Features A-C (three pipes), 12-4345 (railroad berm), -12-4346 (northern pumping station), 12-4347 (central pumping station), -12-4348 (southern pumping station); Recorded four additional features, Features D through G, of SIHP # 12-4344
Rasmussen and Tuggle 2006	Archaeological Reconnaissance Survey	'Ewa Junction Drum Filling and Fuel Storage Area, various TMK	No sites recorded
Tulchin et al. 2009	AIS	574 acres located between Kīpapa Gulch and the H-2 Freeway TMK: [1] 9-4-002:024, 9-4-005: por. 074, 9-4-006: por. 005, 9-4-007, 011, 013, 014, 015, 017, 020, 026, 160, & 9-4-096:149	Irrigation ditch and water control box (SIHP # 50-80-09-6959) found to the northeast of the research extent of this project

Table 3-1 Previous Archeological Studies in the Vicinity of the Project Site

Author(s)	Type of Study	Location	Findings (SIHP #50-80)
Hammatt	AIS	Construction Phase I for the	Subsurface lo'i (SIHP # 50-

2010		Honolulu High Capacity Transit Corridor Project TMK: [1] 9-1, 9-4, 9-6, 9-7 (Various Plats and Parcels)	08-09-7751) recorded
O'Hare 2011	Literature Review and Field Inspection (LRFI)	Honouliuli/Waipahu/Pearl City Wastewater Facilities; TMKs: [1] 9-1, 9-4, 9-6, 9-7, 9-8, 9-9 (various plats and parcels)	No sites recorded
Sroat et al. 2012	AIS	Phase 2 and western portion of Phase 3 of HHCTCP, Waiawa to Hālawa Ahupua'a	Subsurface lo'i deposit (SIHP # 50-80-09-7150) recorded
Gotyay and Rechtman 2018 and 2019	Cultural Impact Assessment, AIS	Waipahu High School, TMK: [1] 9-4-008:020 and 025 (por.)	HSPA Waipio Experiment Substation (SIHP # 50-80-09-8778)
LaChance et al. 2022-draft	LRFI	HPD Training Academy, TMK [1] 9-3-002:009	Berm remnant (Honua 01) recorded

Impacts and Mitigation Measures

No adverse impacts are anticipated to result from the Proposed Action to historical or archaeological resources. The archaeological field inspection conducted for the current project included a 100% pedestrian survey. Buildings and infrastructure associated with the late-twentieth century Waipahu Incinerator Facility (WIF) were observed and photographed. Additionally, several inscriptions made in a concrete jacket were photographed and described, but were not determined to be a historic property. No other archaeological materials were observed.

The WIF building, completed in 1970, will need to be assessed by the Architectural Division of the SHPD. Due to the presence of the historic incinerator facility, it is likely SHPD will determine the project effect as "effect, with agreed upon mitigation commitments".

As proposed ground disturbance is currently unknown and traditional use of the property is documented through LCA located within the Project Site, it is currently recommended that the project proceed under an archaeological monitoring program, in accordance with HAR 13-279 (Rules for Archaeological Monitoring Studies and Reports).

3.7 Cultural Resources and Practices

As noted in Section 3.7, an LRFI was prepared for the Proposed Action assessing its potential impact on historic and cultural resources and practices.[1] Cultural resources are defined for the

[1] Information and discussions presented in Section 3.7 was not repeated in this section and discussion to avoid repetition.

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.

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 Actions for their potential impacts to cultural properties, practices, and beliefs.

This process was clarified by the 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 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 LRFI included a review of previous archaeological studies which found that a single previous study was conducted within the Project Site (Hammatt and Chiogioji 2000b). The study was an archaeological and cultural assessment of a parcel located on Waipi'o Peninsula owned by the CCH. The study recorded the presence of an existing land fill and modern building activities. No historic properties were recorded. No other archaeological studies had been conducted and no sites were previously recorded within the Project Site.

Impacts and Mitigation Measures

Based on the above, potential adverse impacts to traditional and cultural practices in the vicinity of the Project Site are not anticipated.

Construction of the Proposed Action 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. 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 Land Use

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 (SLUD). 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. While the subject parcel is split-designated with portions falling within the Agricultural and Conservation Districts, the Proposed Action is situated entirely within the Agricultural District (See Figure 3-10).

In general, the Agricultural District includes lands for the cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture-support activities (i.e., mills, employee quarters, etc.) and land with significant potential for agriculture uses.

In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawaii (ALISH). The classification system is based primarily, but not exclusively, on the soil classification of the land. The three classes of ALISH lands are: "prime", "Unique", and "Other Important" agricultural lands, with the remainding non-classified lands termed "Unclassified".

When utilized with modern farming methods, "Prime" agricultural lands have soil quality , growing season, and moisture supply needed to produce sustained crops yields economically; while "Unique" agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of a specific crop. "Other Important" agricultrual lands include those that have not been rated as "Prime" or "Unique" that are also of statewide or local importance for agricultural use.

As reflected by the ALISH map for the region, the southeast portion of the Project Site is classified as Prime agricultural lands (See Figure 3-11). The area currently includes an asphalt roadway surrounded for landscaped areas and is not utilized for agricultural purposes.

Impacts and Mitigtion Measures

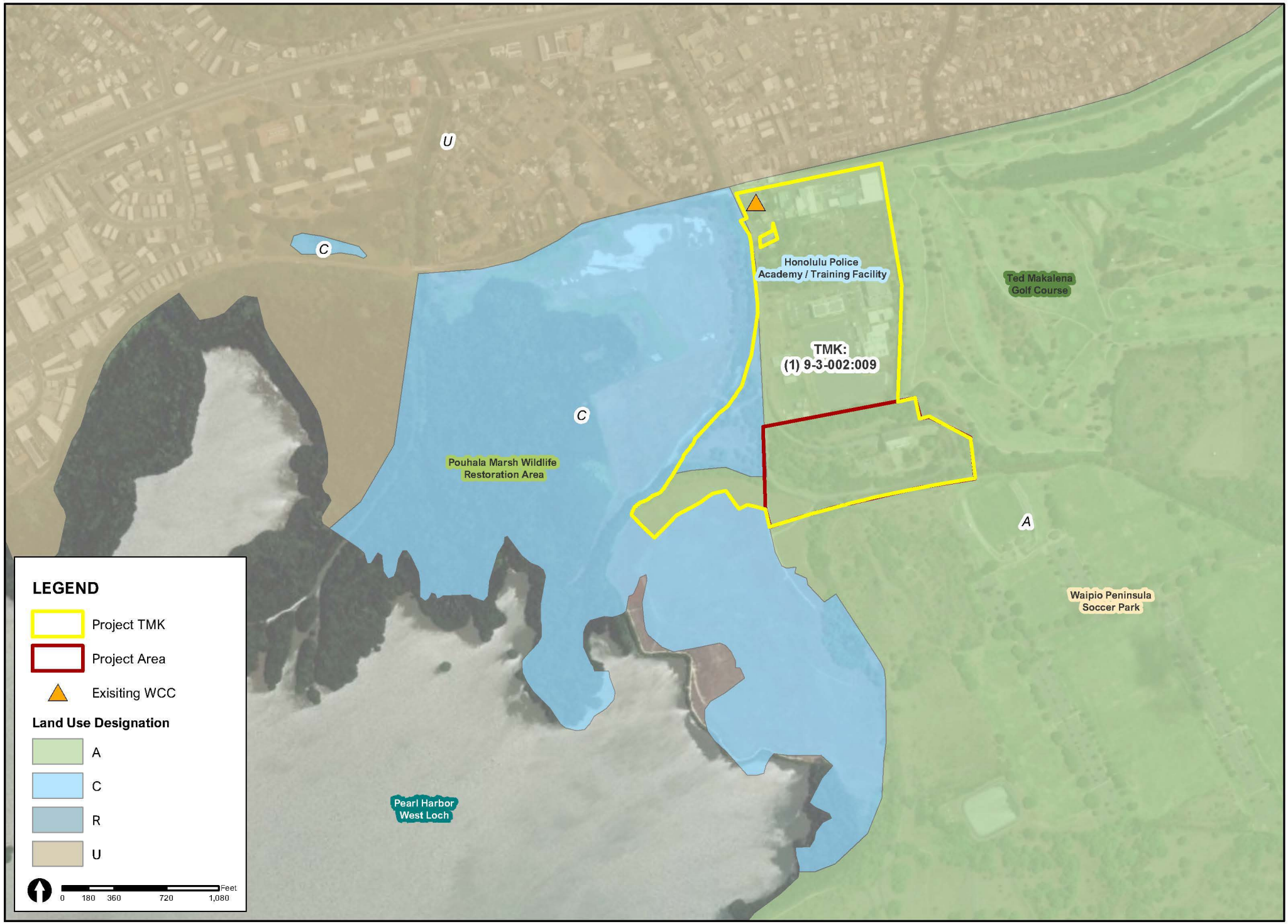
No significants impacts on agricultural lands are anticipated to result from the construction and operation of the Proposed Action. The Project Site is the location of the former WIF which terminated its activities in 1984. A gate at Waipahu Depot Street leads to a concrete access ramp structure up to the remaining incinerator structure. A paved asphalt circular road is present around the facility, with access gates at the southern limits. Areas to the west, south and east of the former incinerator building are also paved with asphalt, with landscaped areas around the perimeter.

As stated above, the Agricultural SLUD, generally includes lands for crop cultivation, aquaculture, livestock, wind energy facility, timber cultivation, agriculture-support activities and land with significant potential for agriculture uses. While no such uses currently exist at the Project Site, solid waste transfer stations are a permissible use within the Agricultural SLUD, pursuant to HRS Chapter 205-4.5(a)(7). Furthermore, the Proposed Action will restore land uses previously associated with the former WIF. Therefore, no adverse effects on agricultural lands are anicipated as a result of the Proposed Action.

FIGURE 3-10 STATE LAND USE DISTRICT

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

FIGURE 3-11 AGRICULTURAL LANDS OF IMPORTANCE TO THE STATE OF HAWAII MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

The Proposed Action will adhere to best management practices (BMPs) during construction and operation to preserve surface water resources, which will ensure that nearby conservation lands are not impacted from the Proposed Action. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping and stabilization measures will be done as soon as possible on completed areas to help control erosion and runoff that could potentially enter the stream and flow towards Māmala Bay in the long-term.

It is understood that the CCH Department of Design and Construction (DDC) will prepare and process a petition for a District Boundary Amendment (DBA) for the existing and proposed uses within the project parcel, which includes the Proposed Action. the HPD Training Academy, and the HFD maintenance facility. The DDC will prepare and process a petition for a DBA following the conclusion of the EAs for the Proposed Action and for the HPD Training Academy. The State Land Use Commission will be consulted at an appropriate time in the project process to determine the requirements and necessary steps in filing a petition for a DBA.

3.9 Air Quality

The DOH Clean Air Branch (CAB) monitors the ambient air quality in the State for various gaseous and particulate air pollutants. Ambient air quality is characterized in terms of whether it complies with National Ambient Air Quality Standards (NAAQS) and State Ambient Air Quality Standards (SAAQS). The Clean Air Act requires the U.S. Environmental Protection Agency to set national ambient air quality standards (NAAQS) for seven criteria pollutants that are considered harmful to public health and the environment. The seven criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), ozone (O_3), and particulate matter (PM_{10} and PM_2). Additionally, Hawai‘i has established a state ambient air standard for hydrogen sulfide (H_2S) related to volcanic activity on Hawai‘i Island. The primary purpose of the statewide monitoring network is to measure ambient air concentrations of such pollutants to ensure that the air quality standards are met. Areas where concentrations of criteria pollutants are below the NAAQS are designated by the EPA as being in “attainment”, whereas areas where concentrations of criteria pollutants exceed the NAAQS are designated as being in “nonattainment.” Based on air monitoring data, Hawai‘i is currently classified as in “attainment” for all Federal and State standards.

Air pollution in Hawai‘i is caused by a variety of anthropogenic and natural sources. There are industrial sources of pollution, such as power plants and petroleum refineries; mobile sources fed by motor vehicles; agricultural sources, such as crop burning, and natural sources, such as windblown dust and volcanic activity. The DOH CAB regulates and monitors pollution sources to ensure that the levels of criteria pollutants remain well below the State and Federal ambient air quality standards. At the State level, air quality standards (“HIAQS”) are defined in Section 11-59, HAR, Ambient Air Quality Standards.

The DOH CAB maintains and operates three air quality monitoring sites on the island of O‘ahu: Honolulu, Pearl City, and Kapolei. The DOH Air Monitoring Station closest to Waikīkī is located on the roof top of the DOH main building at 1250 Punchbowl Street. The monitoring sites measure

ground-level concentrations of criteria pollutants where most commercial, industrial and transportation activities and their associated air quality effects occur. Natural sources of air pollution emissions that may affect the Project Site include the ocean (sea spray), plants (aero-allergens), wind-blown dust, or distant volcanoes on Hawai'i Island. A downtown power plant owned by Hawaiian Electric Company is the primary stationary source, while vehicular traffic represents the principal mobile contributor. Emissions from the power plant are in compliance with State and Federal air pollution control regulations.

Impacts and Mitigation Measures

No significant short- and long-term impacts on air quality are anticipated to result from the construction and operation of the Proposed Action. In the short-term, air pollution emissions from demolition and construction phases may include fugitive dust from demolition, soil excavation, aggregate processing and vehicle movement or exhaust emissions from on-site construction equipment. It is anticipated that the quantities of GHGs released from construction related activities will be negligible and usage of each piece of equipment would be sporadic and not simultaneous. The disruption of traffic on nearby roadways from slow moving construction equipment and temporary increase in local traffic due to commuting construction workers may also impact air quality in the vicinity of the Proposed Action. 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.

In the long-term, impacts on air quality from motor vehicle exhausts can potentially occur at or near locations that attract large volumes of motor vehicle traffic. The Proposed Action is not expected to have a significant impact on traffic operation, therefore no significant impacts on air quality due to an increase in greenhouse gases is anticipated. Due to the minimal impact of the Proposed Action, further mitigation of any potential long-term impacts is not anticipated to be required.

3.10 Noise

The noise descriptor currently used by federal agencies (such as the Federal Housing Administration (FHA) or the US Department of Housing and Urban Design (HUD) to assess environmental noise is the Day-Night Average Sound Level (DNL). This descriptor incorporates a 24-hour average of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. By definition, the minimum averaging period for the DNL descriptor is 24 hours. Additionally, sound levels which occur during the nighttime hours of 10:00 PM to 7:00 AM are increased by 10 decibels (dB) prior to computing the 24-hour average by the DNL descriptor.

Table 3-2, below, presents land use compatibility guidelines for various levels of environmental noise as measured by the DNL descriptor system pursuant to DOH limits on the level of noise allowed in different zoning districts.

As a general rule, noise levels of 55 DNL or less occur in rural areas, or in areas which are removed from high volume roadways. In urbanized areas which are shielded from high volume streets, DNL levels generally range from 55 to 65 DNL, and are usually controlled by motor vehicle traffic noise.

Table 3-2: Noise Standards			
Zoning District	Zoning Equivalent	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Class A	Residential, Conservation, Preservation, Public Space, Open Space, or Similar Type	55	45
Class B	Multi-family Dwellings, Apartment, Business, Commercial, Hotel, Resort, or Similar Type	60	50
Class C	Agriculture, Country, Industrial, or Similar Type	70	70
Source: HAR Title 11, DOH, Chapter 46 Community Noise Control			

Impacts and Mitigation Measures

In the short-term, noise generated by construction activities such as excavation, grading, cutting, and paving will be unavoidable. Relative increases in noise levels will vary according to the particular phase of construction, and activities associated with construction efforts at each phase. Noise may also increase as a result of operation of heavy vehicles and other power equipment during the construction period. Nighttime construction is not currently anticipated, but if nighttime construction is performed, a noise variance will be required from the DOH.

Construction noise impacts will be mitigated by compliance with 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 HAR. 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 Action is not anticipated to result in adverse noise impacts.

Noise generated from any stationary mechanical equipment on the project site will comply with the DOH property line noise regulations. Noise mitigation for stationary mechanical equipment will be considered during the design of the project.

3.11 Hazardous Materials

Any item or agent (physical, chemical, or biological) which has the potential to cause harm to humans, animals, or the environment, either independently or through interaction with other

factors is generally considered a hazardous material. Hazardous wastes are characterized by their ignitability, corrosiveness, reactivity, and toxicity. Toxic materials are distinguishable by their mode of hazard through ingestion or absorption being potentially fatal or harmful to a person. The impacts that hazardous materials and waste may have on human health and the environment are largely dependent upon their types, quantities, toxicities, and management practices.

Any combination of wastes that poses a substantial present or potential hazard to human health or the environment in which it has been discarded or abandoned is a hazardous waste. Hazardous wastes can take the form of a solid, liquid, contained gas, or semi-solid.

The EPA has developed alternative regulations that identify specific substances known to be hazardous and provide criteria for exclusions and exemptions for certain types of waste. EPA and Hawai'i universal waste regulations streamline hazardous waste management standards for commonly generated "universal wastes," which include: batteries, pesticides and mercury-containing materials. While still considered hazardous, universal wastes are subject to less restrictive waste disposal regulations than the standard hazardous wastes.

Hazardous wastes such as used oils, antifreeze and solvents associated with construction are handled and disposed of by licensed contractors.

Construction activities associated with the implementation of the Proposed Action improvements may involve the use of materials and processes involving chemical agents or materials typical to construction that could be potentially hazardous. Such 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. Hazardous wastes will require the handling, removal, and/or disposal of hazardous material to be carried out by qualified personnel and in accordance with all applicable federal, state and local laws and regulations.

Impacts and Mitigation Measures

It is expected that hazardous materials will be encountered during construction, demolition, and renovation of the various facilities under the Proposed Action within the Project Site. 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.

Based on the Draft EHMP, residual contaminants of potential concern—including metals, PCBs, and dioxins/furans—remain in certain surface and subsurface soil units and in groundwater as a result of historic incinerator operations. These conditions require that any ground-disturbing activity be conducted in accordance with EHMP-specified procedures for soil handling, stockpiling, dust control, exclusion zones, worker protection, and environmental oversight.

No secondary or cumulative impacts related to soils or hazardous waste are expected from the implementation of the Proposed Action. After construction, landscaping and drainage improvements will provide permanent post-construction pollution control

measures and minimize the potential for soil erosion. No long-term impacts on soils are anticipated during the operation of the Proposed Action. During construction and development of the Proposed Action, there may be the potential of petroleum spillage associated with construction vehicles and equipment. In order to minimize the possibility for spills of hazardous materials, the following is recommended if and when the various projects under the Proposed Action are 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 storm water runoff. Areas used for storage of toxic materials would be designed with full enclosure in mind.
- The Asbestos Abatement Office will be contacted in the event that work associated with the Proposed Action would require the removal of asbestos materials. These remediation activities would comply with all established regulations and procedural guidelines.

In addition, if excavation reaches areas where residual contaminated soil or ash may be encountered, the contractor will be required to follow EHMP protocols—including segregation of contaminated and uncontaminated soils, stockpile covering and containment, multi-increment sampling for characterization, and disposal at approved facilities.

Prior to demolition, renovation, or removal of a structure under the Proposed Action, a survey should be conducted to determine if hazardous material is present. Any fibrous or suspected asbestos-containing material (ACM) should be sampled and analyzed at a U.S Department of Commerce - National Voluntary laboratory Accreditation Program (USNVLAP) accredited microscopic laboratory. The removal of Regulated Asbestos Containing Building Material (RACM) is required for all RACM that exceeds the threshold limits as defined in the regulations promulgated as the National Emissions Standards for Hazardous Air Pollutants (NESHAPS). All RACM must be removed prior to routine demolition and renovation activities that will disturb the material. Removal of the RACM must be performed by a specialty licensed contractor (C-19) adhering to contract specification developed based on the results of the inspection and assessment, and EPA, OSHA and DOH regulations. Additionally, all ACM disturbed during the course of demolition or renovation should be sampled and analyzed in accordance with the EPA and DOH regulation by a State certified inspector.

For any materials encountered during construction that exhibit characteristics consistent with contaminated soil, ash, or groundwater identified in the EHMP, work will be halted and the appropriate EHMP procedures will be followed, including notification to HDOH and evaluation by qualified environmental professionals.

Any hazardous materials that may be identified prior to or during construction of the Proposed Action will be disposed properly. Design features specific to the reduction of the potential effects of hazardous spills will be implemented, where appropriate.

Overall, through the implementation of EHMP-based procedures, standard hazardous materials regulations, and construction BMPs, no long-term impacts related to hazardous materials are anticipated during or following the Proposed Action. Following construction, a Final EHMP will be completed to document post-construction conditions and incorporate additional sampling results, and environmental restrictive covenants will be recorded as applicable (including pursuant to HRS Chapter 508C, if appropriate) to ensure long-term management measures remain enforceable.

3.12 Traffic

A Traffic Impact Assessment Report (TIAR) was prepared by Wilson Okamoto Corporation in August 2023 to identify and assess traffic impacts anticipated to result from the Proposed Action (See Appendix C).

Existing Roadway Network

In the vicinity of the Project Site, Farrington Highway is a predominanly four-lane, two-way divided State of Hawai‘i roadway generally oriented in the east-west direction serving as a major thoroughfare through the Leeward region. North of the Project Site, Farrington Highway intersects with Waipahu Depot Street. At this signalized intersection, both approaches of Farrington Highway have an exclusive left-turn lane, one through lane, and a shared through and right-turn lane. Waipahu Depot Street is a predominatly two-lane, two-way City and County of Honolulu roadway generally oriented in the north-south direction that starts at Waipahu Street and continues southward until its termines near the Waipi‘o Peninsula Soccer Park. At the intersection with the highway, both approaches have a shared left-turn and through lane, and an exclusive right-turn lane.

Multimodal Facilities

The Proposed Action is located adjacent to Waipahu Depot Street where the surrounding uses are predominatly industrial uses and thereby influences the overal pedestrian environment. There are no sidewalks in the immediate vicinity of the Project Site except for a small segment on the east side of the Waipahu Depot Street along the Servco Auto Waipahu frontage. Bike facilities in the vicinity of the Project Site are also generally liited with the exception of a shared-use path referred to as the “Pearl Harbor Bike Path” north of the Project Site. The nearest transit facility is located along Farrington Highway more than half a mile north of the Project Site. Transit service in the project vicinity is provided by “TheBus” which is operated by the Oahu Transit Services (OTS) for the City and County of Honolulu Department of Transportation Services (DTS).

Existing Traffic Conditions

The highway capacity analysis performed in this study is based upon procedures presented in the “Highway Capacity Manual”, Transportation Research Board, 2016, and the “Synchro” software, developed by Trafficware. The analysis is based on the concept of Level of Service (LOS) to identify traffic impacts associated with traffic demands during the peak periods of traffic.

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS “A” through “F”; LOS “A” representing ideal or free-flow traffic operating conditions and LOS “F” unacceptable or potentially congested traffic operating conditions.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity.

Field investigations were conducted in April 2023 and consisted of manual turning movement count surveys during the morning peak hour between 6:30 AM and 8:30 AM, and the afternoon peak hours bewteen 3:30 PM and 5:30 PM.

Additional queueing observations were also conducted in the vicinity of the existing WCC on Saturday, October 15, 2022, between 10:30 Am and 2:30 PM with supplemental observations conduted via the CCH Opala program camera livestream over multiple days to observe distribution of traffic along Waipahu Depot Street throughout the day.

At the intersection with Waipahu Depot Street, Farrington Highway carries 1,435 vehicles eastbound and 1,015 vehicles westbound during the AM peak hour of traffic. Overall traffic volume is less during the PM peak traffic hour of traffic with 949 vehicles travelling eastbound and 1,270 vehicles travelling westbound. The eastbound approach of the highway operates at LOS "B" during both peak hours while the westbound approach operates at LOS 'C" during both peak hours. Traffic queues periodically formed on the Farrigton Highway approaches of the intersection with the most significant queues ocurring during the AM peak period. Average queues of 10-12 vehicles were observed on the eastbound approach during this peak period, while average queues of 4-6 vehicles were observed on the westbound approach during the same peak period. These queues were observed clearing the intersection after each traffic signal cycle change.

Intersection at Farrington Highway and Waipahu Depot Street

The Waipahu Depot Street approaches of the intersection carry 134 vehicles northbound and 299 vehicles southbound during the AM peak period of traffic. During the PM peak hour, the overall traffic volume is approximately the same with 176 vehicles travelling northbound and 281 vehicles traveling southbound. The Waipahu Depot Street approaches of the intersection operate at LOS "C" during both peak hours of traffic. Traffic queues occasionally formed on the Waipahu Depot Street approaches of the intersection with the most significant queues occurring on the southbound approach. Average queues of 4-5 vehicles were observed on this approach during both peak periods. These queues were observed clearing the intersection after each traffic signal cycle change.

Crosswalks are provided across all approaches of the intersectipon. During the AM peak hour, 28 pedestrians and 25 pedeestrians were observed crossing the highway to the west and east sides of the intersection, respectively, while 16 pedestrians and 24 pedestrians were observed crossing the Waipahu Depot Street on the south and north sides of the intersection, respectively. During the PM peak hour, 10 pedestrians were observed crossing the highway on the west and east sides of the intersection while 16 pedestrians were observed crossing Waipahu Depot Street on the south and north sides of the intersection.

Waipahu Depot Street at the Existing WCC

Additional field observations were also conducted along Waipahu Depot Street at the existing WCC project driveways. Due to the current configuraition of the off-loading areas on-site, only a limited number of vehicles are able to off-load at once (3 vehicles max). As such, vehicles waiting in queue use the shoulder area along Waipahu Depot Street while on-site personnel stationed near the entrance assist with directing vehicles in queue when its appropriate to enter the site. Field observations indicate that the peak of the generator occurs during the midday on a weekday with more significant queueing along Waipahu Depot Street occuring approximately between 1:00 PM and 3:00 PM. In addition, traffic data collected along Waipahu Depot Street at the existing WCC driveways indicate that the peak occurs approximately between 2:00 PM and 3:00 PM along this roadway. During the peak period, average queue lengths of 7-8 vehicles were observed along Waipahu Depot Street with a maximum queue of 13 vehicles, with the maximum back up of queue extending up to the Waipahu Recycling facility.

Impacts and Mitigation Measures

The Project Site is located approximately 1,700 feet south of the existing WCC and is expected to provide similar services with the anticipated improvements primarily addressing operational deficiences at the existing site. As such, the Proposed Action is not expected to generate additional new trips in the vicinity since site-generated trips currently accessing the convenience center are assumed to be encompassed within existing traffic data.

The Proposed Action is anticipated to result in the generation of a limited number of additional site-related trips, primarily linked to the expansion of the existing Refuse Rolloff Division's truck fleet. This expansion is necessary as all other functions associated with the Project's facilities are already accommodated on-site. The existing truck fleet is expected to grow by approximately 8 trucks. As outlined by ENV, a typical day sees these trucks leaving the site at 6:00 AM and returning around 4:00 PM. It is expected that drivers will adhere to their designated routes throughout the day. Consequently, it was assumed that all newly generated on-site trips would occur during the morning peak as they exit the Project Site and during the evening peak as they enter the site.

Table 3-3 summarizes the additional site-generated trips related to the Proposed Project applied to the AM and PM peak hours of traffic:

Table 3-3: Additional Peak Hour Trip Generation

		Projected Trip Ends
AM PEAK	ENTER	0
	EXIT	8
	TOTAL	8
PM PEAK	ENTER	8
	EXIT	0
	TOTAL	8

Total Traffic Volumes Without Project

The projected Year 2027 AM and PM peak period traffic volumes without the implementation of the Proposed Action are summarized in Table 3-4 below. The analysis incorporates the development of the Keawalau Affordable Housing Community, as well as ambient growth in traffic. The existing levels of service are provided for comparison purposes. LOS calculations are included in Appendix C

Under Year 2027 without project conditions, traffic operations along Farrington Highway are expected to deteriorate slightly. At the intersection with Waipahu Depot Street, the highway approaches of the intersection are generally expected to continue operating similar to existing conditions during both peak periods with the exception of the eastbound approach which is expected to operate from an LOS 'B" to slightly lower at LOS 'C" during the AM peak period. The Waipahu Depot Street approaches of the intersection are also expected to continue operating at LOS 'C" during both peak periods.

Table 3-4: Existing and Projected Year 2024 (Without Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM		PM	
		Exist	Year 2027 w/o Proj	Exist	Year 2024 w/o Proj
Farrington Highway / Waipahu Depot Street	Eastbound	B	C	B	B
	Westbound	C	C	C	C
	Northbound	C	C	C	C
	Southbound	C	C	C	C

Total Traffic Voumes with Project

Figure 7 of Appendix C shows the Year 2027 cummulative AM and PM peak hour traffic conditions resulting from the Proposed Action. The cummulative volumes consist of site-generated traffic superimposed over Year 2027 projected traffic demands. The traffic impacts resulting from the proposed action are adressed in the following section.

The Year 2027 cumulative AM and PM peak hour traffic conditions with the Proposed Action are summarized in Table 3-5. The existing and Projected Year 2027 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix C.

Table 3-5: Existing and Projected Year 2027 (Without and With Project) LOS Traffic Operating Condit							
Intersection	Approach/ Critical Movement	AM			PM		
		Exist	Year 2027		Exist	Year 2024	
			w/ out Proj	w/ Proj		w/ out Proj	w/ Proj
Farrington Highway / Waipahu Depot Street	Eastbound	B	C	C	B	B	C
	Westbound	C	C	C	C	C	C
	Northbound	C	C	C	C	C	C
	Southbound	C	C	C	C	C	C

Under Year 2027 with project conditions, traffic operations in the vicinity are expected to remain similar to without project conditions. The approaches at the intesection of Farrington Highway and Waipahu Depot Street are expected to continue operating at LOS "C" or better during the AM and PM peak periods. The majority of trips associated with the Proposed Project are already encompassed within the existing traffic data. The additional site-generated trips for the project are expected to be relaively low and the addition of these trips to current volumes along Waipahu Depot Street are expected to represent a minimal increase (less than 1%) in th overall traffic volumes along the highway during both peak periods.

In addition, the Proposed Project is expected to incorporate on-site improvements to mitigate existing deficiencies at the current WCC site. As discussed, average queue lengths of 7-8 vehicles were observed along Waipahu Depot Street during the peak of the generator due to the current configuration of the existing WCC which provides only 3 off-loading stations. The new WCC is planned to include an improved configuration with 10 off-loading stations to allow multiple users at the same time and accommodate the average queues observed at the existing site. The proposed site plan also incorporates queueing areas on-site to further minimize any potential impact to the adjacent roadway. Furthermore, the new WCC site will be located south of the Honolulu Police Academy / Training Facility where any potential conflicts with other uses along Waipahu Depot Street are less since the surrounding area is generally undeveloped.

Based on the analysis of the traffic data, the Proposed Project is not expected to have a significant impact on traffic operations at the surrounding roadways. As such, the following are the recommendations to be incorporated in the project designs to mitigate any potential impacts.

1. Provide sufficient sight distance for motorists to safely enter and exit the Project driveways.

2. Provide sufficient turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.

3. Provide one-way counter-clockwise traffic flow within the new WCC from the entrance at the south internal driveway to minimize conflicts with vehicles along Waipahu Depot Street.

4. Provide adequate signage to indicate the designation of vehicular access points for the WCC and the Refuse Facility.

5. Consider the preparation of a Construction Management Plan (CMP) given the expected construction activities associated with other projects in the vicinity.

3.13 Visual Resources

Visual resources are important to Hawai'i's tourism industry and the quality of life enjoyed by the State's residents. Visual resources may include a broad range of natural and developed areas and an assortment of land uses, water bodies, and vegetation types. Visual resources also include urbanized areas that range from small rural towns to the metropolitan center of Honolulu. The Project Site consists of rural development and residential communities. Views from the Project Site also include the Ko'olau and Wai'anae mountain ranges as well as the view of the Pouhala Marsh Wildlife Sanctuary. Adjacent to the West Loch of Pearl Harbor, the Project Site has views of the water East of the Site and views of the Ted Makalena Gold Course to the West.

Impacts and Mitigation Measures

In the short-term, construction activities are expected to have temporary visual impacts from neighboring areas directly surrounding the Project Site. Such impacts would be due to the presence of construction equipment within the Project Site.

The Proposed Action will not have significant long-term visual impacts. The Proposed Action consists of the demolition of the former Waipahu Convenience Center (WCC) from its existing location to the former WIF property located further south on Waipahu Depot Street; therefore, improvements made to the WCC would reduce operational inefficiencies while maintaining consistency with the surrounding industrial uses.

3.14 Socio-Economic Characteristics & Environmental Justice

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

The Project Site is located within the Waipahu Census Designated Place (CDP). The 2021 American Community Survey (ACS) was reviewed for the Waipahu CDP and the CCH and summarized in Table 3-6 below.

Table 3-6: Waipahu CDP and O'ahu Demographic Characteristics				
Subject	Waipahu CDP		City and County of Honolulu	
	Number	Percent	Number	Percent
Total Population	39,927	100	1,000,890	100
AGE				
Under 5 years	2,776	6.9	58,801	5.9
5-19 years	6,652	16.7	173,167	17.3
20-64 years	22,678	56.8	507,830	50.7
65 years and over	7,821	19.6	187,885	18.8
Median age	38.3	--	39.0	--
Race				
White (alone)	1,679	4.2	185,542	18.5
Black or African American (alone)	256	0.6	24,788	2.5
American Indian and Alaskan Native (alone)	32	0.1	2,962	0.3
Asian (alone)	27,099	67.9	418,614	41.8
Native Hawaiian or other Pacific Islander (alone)	5,191	13.0	97,409	9.7
Two or more races	5,526	13.8	253,310	25.3
Other	144	0.4	18,265	1.8
HOUSEHOLD				
TOTAL HOUSEHOLDS	8,651	100	338,093	100
Total Family Households (families)	6,900	79.8	232,228	68.7
Average family size	4.88	--	3.42	--
Average household size	4.47	--	2.85	--
Non-Family Households	1,751	20.2	105,865	31.3
HOUSING OCCUPANCY AND TENURE				
Total Housing Units	9,113	100	372,602	100
Occupied Units	8,651	94.9	338,093	90.7
By owner	4,790	55.4	200,544	53.8
By renter	3,861	44.6	137,549	36.9
Vacant Units	462	5.1	34,509	9.3
ECONOMIC CHARACTERISTICS				
Median household income ($)	83,671		92,600	
Per capita income ($)	26,237		40,339	
Persons in poverty (%)	10.8		10.0	

Based upon the data shown on the table, the Waipahu CDP has a similarly aged population compared to CCH. The median age of the population for the Waipahu CDP was 38.3 versus 39.0 for the County.

By racial mix, the Waipahu CDP has a higher percentage of Asians (67.9%) than the County (41.8%). The Waipahu CDP has a lower percentage of Whites (4.2%) and those of two or more races (13.8%) than the County (18.5% and 25.3%, respectively).

According to the 2021 ACS, the Waipahu CDP has a higher occupancy rate, 94.9%, than the County, 90.7%. Housing units in the Waipahu region are largely occupied by owners at 55.4%. The County data is slightly different from that of the Waipahu CDP in that a larger proportion of housing units are occupied.

Annual income characteristics for the Waipahu CDP are generally lower than the County with a mean household income of $83,671 compared to $92,600, respectively. The percent of persons in poverty for the Waipahu CDP is also a fraction higher than the County at 10.8% compared to 10%.

With regards to the socio-economic characteristics described above, it was assessed that Envionmental Justice (EJ) communities where present within the vicinity of the Project Site. EJ communities are classified as those of minority and/or low-income populations. The term “EJ” emerged in the 1980s following an effort to constuct a hazardous waste facility within a minority community. This project launched the EJ movement which aims to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.. In 1994, Executive Order 12898 was signed which documented federal actions to address environmental justice concerns in minority and low-income populations.

The DOH, through the implementation of Federal and State environmental laws, policies, and programs, seeks to ensures that no segment of the State‘s population bears a disproportionate share of risks and consequences as a result of any given project or action. In 2015, the DOH developed the EJ Plan which encourages participation by generating opportunities of public input and participation; partnering with relevant stakeholders through collaboration with Federal, City, and County agencies, and community-based groups; proving that EJ is being implemented in procedures by providing various environmental metrics and data; and develop long-term policy outcomes to ensure human health and quality environment in the State of Hawai‘i by implementing applicable BMPs and mitigation measures.

Impacts and Mitigation Measures

No significant impacts are anticipated to result from the construction or operation of the Proposed Action. In the short-term, development of the Proposed Action will provide positive benefits to the local economy. This would include creation of construction and construction support jobs, as well as indirect sales associated with supplying goods and services to construction companies and to the families of construction workers.

In the long-term, the Proposed Action will not be providing additional dwelling units to the area; therefore, it is not expected to impact population growth on O’ahu. The Proposed

Action is not anticipated to affect land and housing speculation, property values of area homes, or affordable housing in the area.

Although EJ minority and low-income populations are present within the vicinity of the Project Site, the Proposed Project entails the relocation and replacement of an exising facility within the region and is not anticipated to have adverse public health or environmental impacts. The effects of implementing the Proposed Action would not be more severe or greater in magnitude to minority or low-income communitites. Therefore, no disproportionately high and adverse impacts on public health or the environment would occur. Additionally, the EA process meets the DOH‘s EJ Plan‘s policies regarding public participation as discussed in Chapter 7.

3.15 Public Services and Facilities

3.15.1 Police, Fire, and Medical Services

Honolulu Police Training Academy is located north of the Project Site where Honolulu Police Department (HPD) recruits undergo 6 months of rigorous training. The academy is not a live-in facility; therefore, hours of operation are 6:30 am to 4:15 pm, Monday through Friday. Recruits undergo training in the law, control and arrest tactics, firearms, emergency vehicle operations, physical fitness, etc.

Police protection in the Project region is provided by the Honolulu Police Department. The Project Site is located within District 3 of Honolulu Police Department’s Patrol locality. District 3 encompasses roughly 10 miles between Red Hill, Village Park, and Waipahū. The district utilizes the Pearl City station on Waimano Home Rd. as its headquarters, located approximately 2.44 miles northeast of the Project Site, as well as for dispatching its patrol vehicles on emergency calls.

Fire protection is provided by the Honolulu Fire Department. The Project Site has 2 fire stations located within a two mile radius. Fire Station 12 is located approximately 1.28 miles west of the Project site, with Station 42 located approximately 1.65 miles north of the Project Site.

The nearest full-service hospital is the Queen’s Medical Center West O’ahu location approximately 2 miles west of the Project Site.

Pre-hospital emergency medical care and emergency ambulance service on O‘ahu is provided by the CCH’s Emergency Services Department, Emergency Medical Services (EMS) Division. The Department has 22 ambulance units under two districts. The Project Site is within District 1 and is covered by an EMS unit at the Waipahū Fire Station located approximately 1.28 miles west of the Project Site. All ambulance units are designated as advanced life support units, meaning they are staffed by at least two paramedics.

Impacts and Mitigation Measures

The Proposed Action 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 will not increase the on-site population and will not create long-term demand for additional police protection services. In the short-term, HPD may receive increased calls regarding construction-related traffic, and HPD may be required to assist with project-related construction activities and traffic flow. HPD provided comments on the Draft EA expressing concern regarding continued accessibility to the HPD Training Academy during construction, including maintaining access routes and coordinating with HPD regarding traffic and security. In response, ENV confirms that construction activities will not restrict or impede access to the HPD Training Academy, and access will be maintained throughout construction. ENV will coordinate with HPD as construction commences to confirm access needs and ensure that construction phasing, staging, and any temporary traffic control measures do not interfere with HPD operations. Potential traffic impacts will be mitigated through the implementation of construction staging and traffic management plans. With these measures, significant project-related impacts on HPD services are not expected. No long-term, secondary, or cumulative impacts on police protection are anticipated or expected, and no additional mitigation measures are necessary or recommended.

As the Proposed Site is near existing structures on parcels already developed for use with existing fire connections and hydrants, the Proposed Action 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. Fire apparatus access roads will be maintained with unobstructed width and vertical clearances in accordance with County requirements (National Fire Protection Association [NFPA] 1; 2018 Edition, Sections 18.2.3.4.1.1 and 18.2.3.4.1.2, as amended) and the Uniform Fire Code, Section 902.2.1, as amended. Civil drawings will be submitted to HFD for review and approval, and on-site fire protection requirements coordinated with the Fire Prevention Bureau of the HFD. The Proposed Action would not increase the population and therefore would not increase demand for fire protection services. No direct, secondary, or cumulative impacts on fire protection are anticipated or expected, and no mitigation measures are necessary or recommended.

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

3.15.2 Education

Waipahu is a part of the State Department of Education's (DOE) Waipahu Complex area. School boundaries within this area include Waipahu, Waipi'o, and Village Park. The area is comprised small businesses, residential neighborhoods, and community parks surrounded by rural development east of Pearl City. The State DOE public schools closest to the Proposed Action include:

- August Ahrens Elementary School
- Honowai Elementary School
- Kaleiopuu Elementary School
- Waikele Elementary school
- Waipahu Elementary School
- Waipahu High School
- Waipahu Intermediate School

Impacts and Mitigation Measures

The Proposed Action will not add any additional dwelling units; therefore, education facilities will not be impacted.

3.15.3 Recreational Facilities

The CCH Department of Parks and Recreation (DPR) operates and manages several recreational facilities in close proximity to the Proposed Action. Waipahu falls within District 3: Leeward O'ahu. 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 Site is the Waipi'o Soccer Complex, which is the first and only soccer facility owned by the State of Hawai'i operating 21 regulation fields, including a stadium seating a maximum 5,000 individuals. The complex covers 288 acres of land on the Waipi'o Peninsula and attracts both local and out of state soccer teams. Other CCH facilities near the Project Site include the following:

- Bill Balfour Jr. Waipahu District Park, approximately 0.75 miles from the Project Site;
- Pūpū'ole Street Mini Park, approximately 0.75 miles from the Project Site;
- Waipahu Central Garden Park, approximately 0.9 miles from the Project Site;
- Waipahu Uka Neighborhood Park, approximately 1.2 miles from the Project Site; and
- Honowai Neighborhood Park, approximately 1.7 miles from the Project Site.

Impacts and Mitigation Measures

In the short-term, access road improvements may have temporary impacts that are not anticipated to be significant. Impacts would cease after construction, therefore no impacts to the surrounding recreational areas are anticipated.

In the long-term, the Proposed Action would not result in a decrease in acreage of the existing recreational areas around the Proposed Action. Any access road improvements would improve current conditions and are not anticipated to significantly impact vehicle, pedestrian, or bicycle access. Relocation of the former WCC will not have a direct impact on the recreational resources around the Proposed Action. However, relocation is anticipated to improve traffic congestion during peak use, which may improve travel time to the surrounding recreational areas.

3.15.4 Solid Waste Collection and Disposal

In accordance with HRS Chapter 342G, any garbage, refuse, and other residential or commercial discarded materials, including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural operations are regarded as solid wastes. Solid waste also includes sludge from waste treatment plants and residues from air pollution control facilities and community activities. The ENV provides incineration services at the HPOWER facility that generates electricity, followed by disposal of ash and non-combustibles at the WGSL.

PVT Land Company conducts material recovery and recycling in addition to its Construction and Demolition Debris (C&D) landfill operations. Construction and demolition material is disposed at the PVT landfill, which is privately owned in Waiʻanae.

Impacts and Mitigation Measures

No significant impacts to solid waste collection and disposal are anticipated to occur due to the Proposed Action.

Wastes generated or introduced during construction activities, such as oil leaks from vehicles, would be handled and disposed of properly. In addition to the site-specific BMPs developed in the 2016 SWMPP, BMPs would be put in place prior to any construction activities. Spill prevention and response procedures are outlined in the SWMPP to prevent and minimize the discharge of pollutants off the site during the construction phase. Impacts from the construction phase would be less than significant with implementation of these procedures and controls. The Proposed Action is not anticipated to generate hazardous waste that would enter the surrounding soil or groundwater.

The operation of the Proposed Action would not alter any current procedures in place to manage solid or hazardous waste disposal. The mix, quantity, and type of refuse at the site would not change with operation of the Proposed Action. Relocating the WCC would improve access to and functioning of the convenience center and accommodate growing refuse needs. The Proposed Action is expected to have less than significant impacts on the site associated with solid and hazardous waste.

3.16 Infrastructure and Utilities

3.16.1 Water System

The Project area is serviced by a Board of Water Supply (BWS) 12-inch water main in the right-of-way of Waipahu Depot Street. A 12-inch water main connected to the BWS main currently supplies domestic, irrigation and fire protection water to the existing WIF. The existing WIF 12-inch water main will be removed during demolition of the remaining WIF structures. New water services for domestic, irrigation and fire protection will be installed as part of the Proposed Project and will be serviced by the existing 12-inch BWS water main.

Impacts and Mitigation Measures

No short- nor long-term significant impacts are anticipated to result from the development and operation of the Proposed Project. On-site water system improvements will be required to accommodate the Proposed Project. The final line size and location will be determined during the design phase of the project. Proposed connections and improvements will be confirmed when construction drawings for the Proposed Project are developed and submitted to BWS for review and approval.

During the design process, construction drawings should be submitted to BWS for review approval and on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department. BWS will require the implementation of water conservation measures.

3.16.2 Wastewater System

Several wastewater forcemain easements are located on the Project parcel, including a 20-foot wide easement dedicated for sanitary sewer purposes that bisects the Proposed Project. The location of the WCC is planned on the west side of this easement and the Refuse Facility on the east side. A 4-inch wastewater forcemain is located in the easement servicing the existing WIF and CCH Waipahu wastewater pump station (WWPS) located north of the HPD Training Academy. The existing WIF 4-inch forcemain will be removed during demolition of the remaining WIF structures (to the easement limits). Wastewater service for the Proposed Project will be connected to the existing 4-inch forcemain (if determined to be in service) or new forcemain will be constructed in the easement to the WWPS.

Impacts and Mitigation Measures

No significant impacts are anticipated on the existing wastewater system as a result of the construction and operation of the Proposed Project. The Proposed Project will not have any anticipated impacts to existing sewer flow.

In order to connect to the CCH sewer system, the Proposed Project would be required to submit a Sewer Connection Application (SCA) to be reviewed and approved by the CCH PP. Pending approval of the SCA, sewage flows from the proposed development are anticipated to be collected by one or more of the existing laterals adjacent to the parcel. Locations of the lateral connections and its ability to be utilized in the Proposed Project should be verified during the design process.

Trenching and backfilling of the proposed sewer lines will follow CCH standards and the recommendation of the project's geotechnical engineer.

Following City approvals of the SCA and constructions plans, along with payment of the sewer facilities charges, the proposed system can be connected to the City sewer system.

3.16.3 Drainage System

Flooding of Waipahu Depot Street has been observed at the entrance gate to the WIF (Project Site) and the southern access gate to the HPD Training Academy during heavy rains. The drainage system for the Proposed Project will incorporate Low Impact Design (LID) approaches

(to the extent possible) and include on-site management and treatment methods to detain or infiltrate stormwater flows to reduce their volume and runoff rates and the amounts of sediments and pollutants prior to discharge to a CCH stormwater system as authorized.

Impacts and Mitigation Measures

The Proposed Action is not anticipated to have an adverse effect on drainage to neighboring properties, roadways, and existing drainage systems. Drainage and road conditions at the entrance area of the Project Site and HPD Training Academy will be evaluated during the design phase to develop measures to eliminate or reduce flooding at that location. To the extent feasible, the road elevation at the southern gate of the HDP Training Academy and the Project Site entrance will be raised to help direct stormwater runoff to the shoulder of the road, and swales and detention basins located on the Project Site and HPD Training Academy. Other areas of the Project Site will incorporate fills (elevated) as necessary to direct stormwater runoff to onsite treatment swales and detention basins.

During construction, the project will adhere to requirements of the NPDES permit and the CCH's Storm Water Quality Rules. In the long-term, LID approaches including the drainage basins will be included to control drainage on site and mitigate for the potential for off-site stormwater runoff. The Proposed Action does not involve dredging, development that would reduce the size of any beach, development that would substantially interfere with views from the nearest highway to the coast, or development that will adversely impact water quality.

3.16.4 Electrical and Communications System

Electrical power on the island of O'ahu is provided by Hawaiian Electric Company (HECO). A significant electrical source for the Project Site is the Downtown Power Plant. Telephone service in the area is provided by Hawaiian Telcom. Spectrum is the local CATV provider in the region.

Impacts and Mitigation Measures

In the short- and long-term, the Proposed Action is not anticipated to impact regional electrical and communications infrastructure, nor will it result in any substantial increase to overall demand on electrical and communication systems in the area.

(This page intentionally left blank)

CHAPTER 4: RELATIONSHIP TO 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 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. Hawai‘i State Plan

The Hawai‘i State Plan, Chapter 226, HRS, as amended, provides goals, objectives, policies, and priorities for the State. The purpose of the Hawai‘i State Plan is to set forth a plan that shall serve as a guide for the future long-range development of the State; identify the goals, allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improve coordination of Federal, State, and County plans, policies, programs, projects, and regulatory activities; and, to establish a system for plan formulation and program coordination to provide for an integration of all major State, and County activities. The State Plan is divided into three sections. Part 1 is Overall Theme, Goals, Objectives and Policies. Part 2 is Planning Coordination and Implementation. Part 3 is Priority Guidelines. 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	
§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.	**S**
(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.	**S**
(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.	**S**
Discussion: The Proposed Action will support the objectives and policies of the State with regards to State goals.	

Table 4-1: The Hawai‘i State Plan	
The Proposed Action will contribute to a strong and viable economy by supporting solid waste management infrastructure. Efficient waste disposal services are essential for the community's well-being and overall economic stability. Additionally, the project will create job opportunities during the construction phase and for ongoing facility management and operations, further contributing to economic growth. The Proposed Action aligns with the goal of achieving a desired physical environment by providing proper waste disposal facilities, reducing the likelihood of illegal dumping or improper waste handling. A well-designed and efficiently operated facility will help maintain cleanliness in the area and prevent environmental pollution. By providing continued solid waste disposal services to the greater Leeward O‘ahu area, the Proposed Action will also support the physical well-being of individuals and families by ensuring proper waste management. This will contribute to public health and safety, as well as protect the environment. The improved waste disposal infrastructure will foster social well-being by enhancing the overall quality of life in the community. Additionally, the Proposed Action's goal to include strategic locations and improved facilities will promote community engagement and participation, fulfilling the sense of community responsibility, caring, and participation in community life as mentioned in this objective.	
§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.	**N/A**
(2) Encourage an increase in economic activities and employment opportunities on the Neighbor Islands consistent with community needs and desires.	**N/A**
(3) Promote increased opportunities for Hawai‘i's people to pursue their socio-economic aspirations throughout the islands.	**S**
(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.	**N/A**
(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.	**N/A**
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.	**N/A**
(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.	**S**
Discussion: The Proposed Action will support the objectives and policies of the State with regards to population. The Proposed Action’s relocation of the Waipahu Convenience Center (WCC) and development of the Refuse Rolloff Division Baseyard Facility (Refuse Facility) demonstrates a coordinated effort to manage population growth in the greater Leeward O‘ahu area. By enhancing waste disposal services and solid waste management operations in this region, the Proposed Action will contribute to the physical, economic, and social well-being of the local population. Access to efficient and convenient waste disposal services is essential for the local population to lead healthy and prosperous lives. The WCC and Refuse Facility will provide increased opportunities for the people of Waipahu to manage waste responsibly, promoting a cleaner environment, better public health, and a sense of community well-being. The proposed relocation of the WCC and the development of the Refuse Facility indicate a strategic approach to the management of land and water resources. By providing waste disposal services in the Waipahu area, the Proposed Action can support the desired levels of growth in this geographic region	

Table 4-1: The Hawai‘i State Plan	
without overburdening other waste management facilities on O‘ahu. This coordinated approach helps distribute growth and development more evenly across the island, contributing to balanced urban planning. The reuse of the former incinerator facility site for a new purpose (Refuse Facility) will reduce the need for additional land acquisition and minimize potential sprawl, supporting a more compact and sustainable use of land resources.	
§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. 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.	**N/A**
(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.	**N/A**
(3) Promote Hawai‘i as an attractive market for environmentally and socially sound investment activities that benefit Hawai‘i's people.	**N/A**
(4) Transform and maintain Hawai‘i as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.	**N/A**
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.	**N/A**
(6) Seek broader outlets for new or expanded Hawai‘i business investments.	**N/A**
(7) Expand existing markets and penetrate new markets for Hawai‘i's products and services.	**N/A**
(8) Assure that the basic economic needs of Hawai‘i's people are maintained in the event of disruptions in overseas transportation.	**N/A**
(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.	**N/A**
(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.	**N/A**
(13) Foster greater cooperation and coordination between the public and private sectors in developing Hawai‘i's employment and economic growth opportunities.	**S**
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.	**N/A**
(15) Maintain acceptable working conditions and standards for Hawai‘i's workers.	**X**

Table 4-1: The Hawai‘i State Plan	
(16) Provide equal employment opportunities for all segments of Hawai‘i's population through affirmative action and non-discrimination measures.	**N/A**
(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.	**N/A**
(18) Encourage businesses that have favorable financial multiplier effects within Hawai‘i's economy, particularly with respect to emerging industries in science and technology.	**N/A**
(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.	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will support the objectives and policies of the State for the economy – in general. By improving waste management infrastructure, the Proposed Action will lead to the creation of both short-term and long-term employment opportunities in the construction phase and ongoing facility management and operations. The Proposed Action will contribute to the local economy, directly and indirectly, during the construction period. The construction of the Proposed Action will create expenditures, a portion which will be used towards the purchase of material from local suppliers. The employment of a local workforce will enable the use of income for local retail businesses. Furthermore, implementation of the Proposed Action will provide necessary work experience to help build the local skilled labor workforce. The Proposed Action will maintain/improve acceptable working conditions and standards by adhering to relevant labor laws, regulations, and industry best practices in terms of worker safety. While the Proposed Action primarily focuses on waste management infrastructure, it will contribute to the economic base by ensuring efficient waste disposal services for the region. A well-functioning waste management system supports other industries and businesses by promoting cleanliness, environmental stewardship, and a favorable living environment, which are all essential for economic growth and diversification. Moreover, the Proposed Action, by improving waste management and maintaining a cleaner environment, indirectly supports the preservation of the scenic beauty and aloha spirit that are vital to Hawaii's tourism industry. A well-managed waste disposal system helps protect natural resources, landscapes, and cultural values, enhancing the overall attractiveness of the state to visitors and residents alike.	
§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.	**N/A**
(2) Encourage agriculture by making the best use of natural resources.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(3) Provide the governor and the legislature with information and options needed for prudent decision-making for the development of agriculture.	**N/A**
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.	**N/A**
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai‘i's economy.	**N/A**
(6) Seek the enactment and retention of federal and state legislation that benefits Hawai‘i's agricultural industries.	**N/A**
(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.	**N/A**
(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.	**N/A**
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.	**N/A**
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.	**N/A**
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.	**N/A**
(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.	**N/A**
(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.	**N/A**
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture	**N/A**
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.	**N/A**
(16) Facilitate the transition of agricultural lands in economically non-feasible agricultural production to economically viable agricultural uses.	**N/A**
(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.	**N/A**
(18) Increase and develop small-scale farms.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for the economy related to agriculture.	
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. 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.	**N/A**
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai‘i's people.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.	**N/A**
(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.	**N/A**
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai'i's people.	**N/A**
(6) Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the visitor industry.	**N/A**
(7) Foster a recognition of the contribution of the visitor industry to Hawai'i's economy and the need to perpetuate the aloha spirit.	**N/A**
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai'i's cultures and values.	**N/A**
Discussion: The Proposed Action 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. 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.	**N/A**
(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.	**N/A**
(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.	**N/A**
(4) Increase opportunities for entry and advancement of Hawai'i's people into federal government service.	**N/A**
(5) Promote federal use of local commodities, services, and facilities available in Hawai'i.	**N/A**
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i.	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for the economy related to federal expenditures. The Proposed Action will be constructed on land owned by the City and County of Honolulu and will utilize funding from the City's Capital Improvement Program (CIP) budget.	
§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.	

Table 4-1: The Hawai‘i State Plan	
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 diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors.	**N/A**
(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.	**N/A**
(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.	**N/A**
(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.	**N/A**
(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.	**N/A**
(6) Expand Hawai‘i's capacity to attract and service international programs and activities that generate employment for Hawai‘i's people.	**N/A**
(7) Enhance and promote Hawai‘i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.	**N/A**
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, and underground resources and solid waste.	**N/A**
(9) Promote Hawai‘i's geographic, environmental, social, and technological advantages to attract new economic activities into the State.	**N/A**
(10) Provide public incentives and encourage private initiative to attract new industries that best support Hawai‘i's social, economic, physical, and environmental objectives.	**N/A**
(11) Increase research and the development of ocean related economic activities such as mining, food production, and scientific research.	**N/A**
(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.	**N/A**
(13) Foster a broader public recognition and understanding of the potential benefits of new, growth oriented industry in Hawai‘i.	**N/A**
(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.	**N/A**
(15) Increase research and development of businesses and services in the telecommunications and information industries.	**N/A**
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation	**N/A**
(17) Recognize and promote health care and health care information technology as growth industries.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for the economy related to potential growth and innovative activities.	

Table 4-1: The Hawai‘i State Plan	
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. 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	**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.	**N/A**
(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.	**N/A**
(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.	**N/A**
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry.	**N/A**
(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.	**N/A**
(7) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry.	**N/A**
(8) Foster a recognition of the contribution of the information industry to Hawaii's economy.	**N/A**
(9) Assist in the promotion of Hawai‘i as a broker, creator, and processor of information in the Pacific**.**	**N/A**
Discussion: The Proposed Action 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. 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.	**N/A**
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	**S**
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	**S**
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	**S**
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai‘i.	**N/A**
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.	**N/A**
(8) Pursue compatible relationships among activities, facilities, and natural resources.	**S**
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.	**N/A**
Discussion: The Proposed Action will support the objective and policies for the physical environment related to land-based, shoreline, and marine resources. By relocating the Waipahu Convenience Center (WCC) and developing the Refuse Rolloff Division Baseyard Facility (Refuse Facility), the Proposed Action will ensure the prudent use of land-based resources for waste disposal purposes. Efficient and well-planned waste management facilities will help optimize land use for the benefit of the community and the environment. In addition, proper waste disposal will help prevent pollution, support sustainable use of resources, and reduce the risk of negative impacts on the surrounding land-based, shoreline, and marine environments. The Proposed Action's strategic location selection and design aim to minimize adverse effects on natural resources and ecological systems, promoting effective protection of the area's unique and fragile environment. The Proposed Action aims to ensure that waste management activities are in harmony with the ecological systems and water-based activities in the area. By analyzing the existing conditions and utilizing land owned by the CCH, the Proposed Action seeks to optimize facility design and layout to best suit the site's physical attributes. The strategic location of the WCC and Refuse Facility, as well as their design to minimize impacts, strive to foster a harmonious relationship between the project and the environment.	
§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 To achieve	
(1) Promote the preservation and restoration of significant natural and historic resources.	**S**
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.	**N/A**
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	**S**
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawai‘i's ethnic and cultural heritage.	**S**
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	**S**
Discussion: The Proposed Action will support the objectives and policies for the physical environment related to scenic, natural beauty, and historic resources. The Proposed Action will maintain the physical and scenic attributes of the Project Site. The Proposed Action consists of the demolition of the former Waipahu Convenience Center (WCC) from its existing location to the former WIF property located further south on Waipahu Depot Street; therefore, improvements made to the WCC would reduce operational inefficiencies while maintaining consistency with the surrounding industrial uses and preserving the visual resources of the area.	
§226-13 Objectives and policies for the physical environment--land, air, and water quality.	

Table 4-1: The Hawai‘i State Plan	
(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. 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.	**S**
(2) Promote the proper management of Hawai‘i's land and water resources.	**N/A**
(3) Promote effective measures to achieve desired quality in Hawai‘i's surface, ground, and coastal waters.	**N/A**
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai‘i's people.	**N/A**
(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.	**N/A**
(6) Encourage design and construction practices that enhance the physical qualities of Hawai‘i's communities.	**N/A**
(7) Encourage urban developments in close proximity to existing services and facilities.	**S**
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawai‘i's people, their cultures and visitors.	**N/A**
Discussion: The Proposed Action will support the objectives and policies for the physical environment related to land, air, and water quality. The Proposed Action aims to improve the management of solid waste, promoting the proper disposal and prevention of pollution, which can impact land, air, and water quality. Proper waste management helps maintain and pursue improved quality in the natural resources of the region. The relocation of the WCC and development of the Refuse Facility seek to optimize the use of land resources for efficient waste disposal and management, helping to minimize adverse impacts on the environment and natural resources. The Proposed Action’s focus on segregating waste types, improving waste offloading locations, and managing waste in a controlled environment, will help prevent pollutants from reaching surface, ground, and coastal waters, contributing to the desired water quality in the area. By providing efficient waste management facilities, the Proposed Action will also reduce potential air and aural pollution associated with waste handling.	
§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. 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.	**S**
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.	**S**
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.	**S**
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.	**S**

Table 4-1: The Hawai‘i State Plan	
Discussion: The Proposed Action will support the objectives and policies for facility systems in general. The Proposed Action addresses the waste disposal needs of the community in coordination with state and county plans. The Proposed Action's relocation and development of the Refuse Facility are part of the capital improvement priorities of the CCH, aiming to provide improved waste management services in line with the needs of the people. The strategic relocation and development of the WCC and Refuse Facility allow for better waste management, accommodating changing demands and priorities for efficient waste disposal and resource utilization. The Proposed Action's design and implementation consider resource capacities and strive to optimize waste management services cost-effectively.	
§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. (2) Provision of adequate sewerage facilities of physical and economic activities that alleviate problems in housing, employment, mobility, and other areas. 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.	**S**
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	**S**
(3) Promote research to develop more efficient and economical treatment and disposals of solid and liquid wastes.	**N/A**
Discussion: The Proposed Action will support the policies that involve facility systems related to solid and liquid wastes. The Proposed Action aims to improve solid waste management in the greater Leeward O‘ahu area, thus ensuring the maintenance of basic public health and sanitation standards. Proper waste management facilities are essential to ensure that planned growth does not lead to environmental degradation and can support the overall development of the community. By providing a well-planned and efficient waste disposal system, the Proposed Action will encourage proper waste handling, including recycling initiatives, thereby promoting a conservation ethic and reducing the overall amount of solid and liquid wastes generated in the region.	
§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. 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.	**S**
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.	**N/A**
(3) Reclaim and encourage the productive use of runoff water and waste water discharges.	**N/A**
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.	**N/A**
(5) Support water supply services to areas experiencing critical water problems.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(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.	**N/A**
Discussion: The Proposed Action will support the objectives and policies for facility systems related to water. No significant impacts on groundwater are anticipated to result from the construction and operation of the Proposed Action. The Project Site is situated below the Underground Injection Control Line (UIC) and the BWS‘s No Pass Zone Line, both of which demarcate areas where wastewater disposal facilities would potentially adversely affect potable water supplies in the underlying aquifers. As the Project Site is within the UIC / No Pass Zone Line, the Proposed Action would be a permitted use. Any activity occurring near groundwater would be conducted in accordance with applicable regulations. In addition, appropriate mitigation measures including silt fencing, proper storage, and movement of spoils, monitoring of groundwater, and careful site preparation will be utilized to minimize adverse impacts. In the short-term, construction activities are not likely to introduce to, nor release from the soils, any materials that could adversely affect the underlying groundwater. Any materials or wastes produced during the operation of the Proposed Action would be handled in compliance with the necessary CCH and State regulatory requirements.	
§226-17 Objectives and policies for facility systems--transportation. (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 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.	**N/A**
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives.	**N/A**
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.	**N/A**
(4) Provide for improved accessibility to shipping, docking, and storage facilities.	**N/A**
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs.	**N/A**
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.	**N/A**
(7) Encourage a variety of carriers to offer increased opportunities and advantages to inter-island movement of people and goods.	**N/A**
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs.	**N/A**
(9) Encourage the development of transportation, systems and programs which would assist statewide economic growth and diversification.	**N/A**
(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.	**N/A**
(11) Encourage safe and convenient uses of low-cost, energy-efficient, non-polluting means of transportation.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(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.	**N/A**
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for facility systems related to transportation.	
§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 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.	**N/A**
(2) Ensure a sufficient supply of energy to enable power systems to support the demands of growth.	**N/A**
(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.	**N/A**
(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.	**N/A**
(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.	**N/A**
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies.	**N/A**
(7) Promote alternate fuels and transportation energy efficiency.	**N/A**
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications.	**N/A**
(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects.	**N/A**
(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.	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for facility systems related to energy.	
§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.	**N/A**
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunication planning.	**N/A**
(3) Promote efficient management and use of existing telecommunication systems and services.	**N/A**
(4) Facilitate the development of education and training of telecommunication personnel.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
(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.	**N/A**
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.	**N/A**
(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.	**N/A**
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.	**N/A**
(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.	**N/A**
(8) Promote research and development of methods to reduce the cost of housing construction in Hawai‘i.	**N/A**
Discussion: The Proposed Action 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. 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.	**N/A**
(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.	**N/A**
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.	**N/A**
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.	**N/A**
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.	**S**
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will support the objectives and policies for socio-cultural advancement regarding health. Proper waste disposal is crucial for maintaining a clean and sanitary environment, which directly impacts public health. By relocating the Waipahu Convenience Center (WCC) and developing the Refuse Rolloff Division Baseyard Facility (Refuse Facility), the Proposed Action aims to enhance waste disposal efficiency	

Table 4-1: The Hawai‘i State Plan	
and promote better public health conditions for the general public in the greater Leeward O‘ahu area. The Proposed Action will help ensure that solid waste is properly handled and disposed of, minimizing potential health and environmental risks associated with inadequate waste disposal practices.	
§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.	**N/A**
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.	**N/A**
(3) Provide appropriate educational opportunities for groups with special needs.	**N/A**
(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.	**N/A**
(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.	**N/A**
(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.	**N/A**
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.	**N/A**
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.	**N/A**
(9) Support research programs and activities that enhance the education programs of the State.	**N/A**
Discussion: The Proposed Action 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. 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.	**N/A**
(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.	**N/A**
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities	**N/A**
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.	**N/A**
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.	**N/A**
Discussion: The Proposed Action 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. 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.	**N/A**
(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.	**N/A**
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.	**N/A**
(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	**N/A**
(5) Ensure opportunities for everyone to use and enjoy Hawai‘i's recreational resources.	**N/A**
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs	**N/A**
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai‘i's people.	**N/A**
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.	**N/A**
(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.	**N/A**
(10) Assure adequate access to significant natural and cultural resources in public ownership.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for socio-cultural advancement related to social services.	
§**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. 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.	**N/A**
(2) Uphold and protect the national and state constitutional rights of every individual.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.	**N/A**
(4) Ensure equal opportunities for individual participation in society.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for socio-cultural advancement related to individual rights and personal well-being.	
§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. 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.	**N/A**
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the life styles of Hawai‘i's people and which are sensitive and responsive to family and community needs.	**N/A**
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community life styles in Hawai‘i.	**N/A**
(4) Encourage the essence of the aloha spirit in people's daily-activities to promote harmonious relationships among Hawai‘i's people and visitors.	**N/A**
Discussion: The Proposed Action 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 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.	**N/A**
(2) Encourage increased community awareness and participation in public safety programs.	**N/A**
(b) 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.	**N/A**
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.	**N/A**
(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.	**N/A**
(b) 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.	**N/A**

Table 4-1: The Hawai‘i State Plan	
(2) Enhance the coordination between emergency management programs throughout the State.	**N/A**
Discussion: The Proposed Action 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. 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.	**N/A**
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.	**N/A**
(3) Minimize the size of government to that necessary to be effective.	**N/A**
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawai‘i.	**N/A**
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.	**N/A**
(6) Provide for a balanced fiscal budget.	**N/A**
(7) Improve the fiscal budgeting and management system of the State.	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will not impact any of the objectives and policies outlined above for socio-cultural advancement related to government.	

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
§226-103 Economic priority guidelines. 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.	**N/A**

Table 4-2: Part III of the Hawai‘i State Plan	S
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.	**N/A**
(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.	**N/A**
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.	**N/A**
(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.	**N/A**
(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.	**N/A**
(7) Continue to seek legislation to protect Hawai‘i from transportation interruptions between Hawai‘i and the continental United States.	**N/A**
(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. (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.	**N/A**
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawai‘i business.	**N/A**
(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.	**N/A**
(a) Priority guidelines to promote the economic health and quality of the visitor industry:	
(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawai‘i's residents and visitors.	**N/A**
(2) 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.	**N/A**
(3) 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.	**N/A**

Table 4-2: Part III of the Hawai‘i State Plan	S
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai‘i's significant natural, scenic, historic, and cultural resources.	**N/A**
(5) Develop and maintain career opportunities in the visitor industry for Hawai‘i's people, with emphasis on managerial positions.	**N/A**
(6) Support and coordinate tourism promotion abroad to enhance Hawai‘i's share of existing and potential visitor markets.	**N/A**
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.	**N/A**
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.	**N/A**
(b) 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.	**N/A**
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai‘i.	**N/A**
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.	**N/A**
(c) 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.	**N/A**
(2) Assist in providing adequate, reasonably priced water for agricultural activities.	**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.	**N/A**
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.	**N/A**
(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	**N/A**
(6) Seek favorable freight rates for Hawai‘i’s agricultural products from interisland and overseas transportation operators.	**N/A**
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.	**N/A**
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.	**N/A**
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.	**N/A**
(d) Priority guidelines for water use and development:	
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.	**N/A**
(2) Encourage the improvement of irrigation technology and promote the use of non-potable water for agricultural and landscaping purposes.	**N/A**

Table 4-2: Part III of the Hawai‘i State Plan	S
(3) Increase the support for research and development of economically feasible alternative water sources.	**N/A**
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.	**N/A**
(e) Priority guidelines for energy use and development:	
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.	**N/A**
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.	**N/A**
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.	**N/A**
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.	**N/A**
(f) 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.	**N/A**
(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.	**N/A**
(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.	**N/A**
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.	**N/A**
(5) Encourage research activities, including legal research in the information and telecommunications fields.	**N/A**
(6) Support promotional activities to market Hawaii's information industry services.	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will not impact the objectives and policies outlined within the Hawai‘i State plan for economic priority guidelines.	
§226-104 Population growth and land resources priority guidelines. Priority guidelines to effect desired statewide growth and distribution:	
(1) Encourage planning and resource management to insure 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.	**S**
(2) Manage a growth rate for Hawai‘i’s economy that will parallel future employment needs for Hawai‘i’s people.	**N/A**
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.	**S**

Table 4-2: Part III of the Hawai‘i State Plan	S
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.	**N/A**
(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.	**N/A**
(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.	**N/A**
(7) Support the development of high technology parks on the neighbor islands.	**N/A**
(a) 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.	**N/A**
(2) Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.	**N/A**
(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.	**N/A**
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.	**N/A**
(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.	**N/A**
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.	**N/A**
(7) Pursue rehabilitation of appropriate urban areas.	**N/A**
(8) Support the redevelopment of Kaka‘ako into a viable residential, industrial, and commercial community.	**N/A**
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.	**S**
(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.	**N/A**
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.	**N/A**
(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.	**S**
(13) Protect and enhance Hawai‘i’s shoreline, open spaces, and scenic resources.	**N/A**
Discussion: The Proposed Action will support the population growth and land resources priority guidelines. By providing enhanced waste disposal facilities, the Proposed Action will contribute to better resource management, ensuring that the growing population's waste disposal needs are met in a manner that aligns with available and planned resource capacities. Proper waste management is a critical aspect of	

Table 4-2: Part III of the Hawai‘i State Plan	S
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.	
§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.	**N/A**
(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.	**N/A**
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.	**N/A**
(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.	**N/A**
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.	**N/A**
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.	**N/A**
(3) Improve information and analysis relative to land availability and suitability for housing.	**N/A**
(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.	**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.	**N/A**
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.	**N/A**
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.	**N/A**
(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.	**N/A**

Table 4-2: Part III of the Hawai‘i State Plan	S
Discussion: The Proposed Action 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.	**N/A**
(2) Continue emphasis on general education “core” requirements to provide common background to students and essential support to other university programs.	**N/A**
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force.	**N/A**
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities.	**N/A**
(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.	**N/A**
(6) Pursue the establishment of Hawai‘i’s public and private universities and colleges as research and training centers of the Pacific.	**N/A**
(7) Develop resources and programs for early childhood education.	**N/A**
(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education.	**N/A**
(9) Strengthen and expand educational programs and services for students with special needs.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State.	**S**
(3) Promoting a diversified and dynamic economy.	**S**
(4) Encouraging respect for the host culture.	**N/A**
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.	**S**
(6) Considering the principles of the ahupua‘a system.	**S**
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai‘i.	**N/A**
Discussion: The Proposed Action will support the priority guidelines related to sustainability. Proper waste management is crucial for respecting and promoting living within the natural resources and limits of the State. By relocating and developing the WCC and Refuse Facility, the Proposed Action aims to	

Table 4-2: Part III of the Hawai‘i State Plan	S
accommodate the waste disposal needs of the community in a manner that is environmentally responsible and within the carrying capacity of the region's resources. Responsible waste management helps prevent pollution, preserve the environment, and ensure the well-being of both current and future generations. Moreover, the Proposed Action will support sustainable economic development and growth through the creation of short-term construction and long-term operation employment opportunities.	
§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.	**N/A**
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies.	**N/A**
(3) Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State.	**N/A**
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change.	**N/A**
(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.	**N/A**
(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.	**N/A**
(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.	**S**
(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.	**N/A**
(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.	**N/A**
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.	**N/A**
Discussion: The Proposed Action will support the priority guidelines related to climate change adaptation. The improvements in waste offloading locations, traffic staging, and waste segregation indicate a focus on optimizing waste management operations. Effective waste management will contribute to resource efficiency, waste reduction, and lower greenhouse gas emissions, overall supporting climate change mitigation efforts. 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 Site. It is anticipated that the Proposed Action will be flexible in order to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.	

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
1. Agricultural State Functional Plan (1991)	
Purpose: Continued viability of agriculture throughout the State.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
Discussion: The Proposed Action 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**.**	**N/A**
Discussion: The Proposed Action 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.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
Discussion: The Health State Functional Plan is not directly applicable to the Proposed Action.	
7. Higher Education State Functional Plans	
Purpose: Prepare Hawai'i's citizens for the demands of an increasingly complex world through providing technical and intellectual tools.	**N/A**
Discussion: The Proposed Action is not directly applicable to the Higher Education Functional Plan.	

Table 4-3: Hawai‘i State Functional Plans	S
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	**N/A**
Discussion: The Proposed Action 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	**N/A**
Discussion: The Housing State Functional Plan is not directly applicable to the Proposed Action.	
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’	**N/A**
Discussion: The Proposed Action 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.	**N/A**
Discussion: The Proposed Action is not directly applicable to the Recreation State Functional Plan.	
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.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
Discussion: The Proposed Action is not directly applicable to the Transportation State Functional Plan.	

4.1.3. State Land Use District

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

Discussion:
While the subject parcel is split-designated with portions falling within the Agricultural and Conservation Districts, the Proposed Action is situated entirely within the Agricultural District. In general, the Agricultural District includes lands for the cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture-support activities (i.e., mills, employee quarters, etc.) and land with significant potential for agriculture uses.

Pursuant to §205-4.5[a][7], permissibile uses within the Agricultural District includes public solid waste transfer stations, except for "offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures." The WCC component is a permissible use within the Agricultural District; however, the Refuse Facility will require the approvial of either a Special Permit or a State Land Use District Boundary Ammendment (DBA). As such, it is anticipated that a DBA petition will be filed to reclassify the area from the agricultural district to the urban district. As the subject parcel is split-designatred, it should be noted that the nearby conservation lands will not be reclassified.

As previously stated, the DDC will prepare and process a petition for a DBA for the existing and proposed uses within the project parcel, which includes the Proposed Action. the HPD Training Academy, and the HFD maintenance facility. The DDC will prepare and process a petition for a DBA following the conclusion of the EAs for the Proposed Action and for the HPD Training Academy. The State Land Use Commission will be consulted at an appropriate time in the project process to determine the requirements and necessary steps in filing a petition for a DBA.

4.1.4. Hawai‘i Coastal Zone Management Program

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

The Proposed Action is located entirely within the Special Management Area (SMA) as designated by the CCH (See Figure 4-1). SMAs are geographically defined areas that require stricter development regulation to safeguard sensitive ecosystems, water quality, and scenery. The CZMP, through its objectives and policies, aims to manage the state's coastal resources for sustainable use. As the project falls within a Special Management Area, adhering to these objectives and policies is essential.

Per the DPP's pre-assessment consultation response letter, it is understood that the Proposed Action would be considered a "development" per ROH §25-1.3, and the project's valuation would exceed $500,000, thus requiring an SMA Major Permit. Therefore, an SMA Major Permit will be obtained from DPP prior to construction.

FIGURE 4-1 SPECIAL MANAGEMENT AREA

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



Source: State OP and ESRI

The Proposed Action's conformance with the ten objectives and numerous policies of the State of Hawai'i CZMP is set forth in Table 4-4 below.

Table 4-4: Hawai'i Coastal Zone Management Act	
Recreational Resources	
Objective: Provide coastal recreational opportunities accessible to the public.	
Policies	
(A) Improve coordination and funding of coastal recreational planning and management; and	**N/A**
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:	**N/A**
i. Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;	**N/A**
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;	**N/A**
iii. Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;	**N/A**
iv. Providing an adequate supply of shoreline parks and other recreational facilities suitable public recreation;	**N/A**
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;	**N/A**
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;	**N/A**
vii. Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and	**N/A**
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.	**N/A**
Discussion: The Proposed Action will have no significant impact on the objectives and policies of the Hawai'i Coastal Zone Management Act for recreational resources.	
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;	**S**
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	**N/A**
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.	**S**
Discussion: The Proposed Action will support the objectives and policies of the Hawai'i Coastal Zone Management Act for historic resources. As discussed in Section 3.6 (Historic and Archaeological Resources), Honua Consulting prepared an Archaeological LRFI report for the Proposed Action to identify and analyze resources. No adverse impacts	

Table 4-4: Hawai‘i Coastal Zone Management Act	
are anticipated to result from the Proposed Action to historical or archaeological resources. The WIF building, completed in 1970, will need to be assessed by the Architectural Division of the SHPD. Due to the presence of the historic incinerator facility, it is likely SHPD will determine the project effect as “effect, with agreed upon mitigation commitments”. As proposed ground disturbance is currently unknown and traditional use of the property is documented through LCA located within the vicinity of the Project Site, it is currently recommended that the project proceed under an archaeological monitoring program, in accordance with HAR 13-279 (Rules for Archaeological Monitoring Studies and Reports). Should any unidentified resources be encountered during construction, all work will cease, and the State Historic Preservation Office (SHPO) will be contacted for review and approval of mitigation measures.	
Scenic and Open Space Resources	
Objective: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.	
Policies	
(A) Identify valued scenic resources in the coastal zone management area;	**N/A**
(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;	**S**
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and	**N/A**
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	**N/A**
Discussion: The Proposed Action will support the objectives and policies of the Hawai’i Coastal Zone Management Act for scenic and open space resources. The Proposed Action will not adversely affect existing public views to and along the shoreline. The Proposed Action consists of the demolition of the former Waipahu Convenience Center (WCC) from its existing location to the former WIF property located further south on Waipahu Depot Street; therefore, improvements made to the WCC would reduce operational inefficiencies while maintaining consistency with the surrounding industrial uses and preserving scenic resources. Construction of the Proposed Action will not significantly alter the topography in such a way that would diminish the aesthetic character of the area.	
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;	**N/A**
(B) Improve the technical basis for natural resource management;	**N/A**
(C) Preserve valuable coastal ecosystems of significant biological or economic importance, including reefs, beaches, and dunes;	**N/A**
(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	**N/A**
(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	**N/A**

Table 4-4: Hawai‘i Coastal Zone Management Act	
the development and implementation of point and nonpoint source water pollution control measures.	
Discussion: The Proposed Action will have no significant impact on the objectives and policies of the Hawai'i Coastal Zone Management Act for coastal ecosystems. All applicable construction best managements practices will be implemented with regard to runoff to ensure any potential impacts to coastal ecosystems are mitigated.	
Economic Uses	
Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.	
Policies	
(A) Concentrate coastal dependent development in appropriate areas;	**N/A**
(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	**N/A**
(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:	**N/A**
i. Use of designated locations is not feasible;	**N/A**
ii. Adverse environmental effects and risks from coastal hazards are minimized; and	**N/A**
iii. The development is important to the State's economy;	**N/A**
Discussion: The Proposed Action will have no significant impact on the objectives and policies of the Hawai'i Coastal Zone Management Act for economic uses.	
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;	**N/A**
(B) Control development, including planning and zoning control, in areas subject to coastal hazards;	**N/A**
(C) Ensure that developments comply with requirements of the National Flood Insurance Program; and	**S**
(D) Prevent coastal flooding from inland projects.	**N/A**
Discussion: The Proposed Action will support the objectives and policies of the Hawai'i Coastal Zone Management Act for coastal hazards. As discussed in Section 3.4 (Natural Hazards), no significant impacts on natural hazard conditions at the Project Site are anticipated to result from the construction or operation of the Proposed Project. The Project Site is located approximately 0.4 miles away from the nearest shoreline; however, it is located within the Extreme Tsunami Evacuation Zone, according to the Tsunami Evacuation Zone maps for O'ahu. Evacuation to a Safe Zone is recommended in the event of a tsunami, in accordance with guidance from the CCH Department of Emergency Management and International Tsunami Information Center. All of the	

Table 4-4: Hawai‘i Coastal Zone Management Act	
Proposed Action’s structures will be designed in compliance with the CCH’s building code. Impacts from natural hazards can be further mitigated by adherence to appropriate civil defense evacuation procedures. Flood Insurance Rate Maps (FIRM) for the area, prepared by the Federal Emergency Management Agency (FEMA), designate the majority of Project Site within Flood Zone D, where flood hazards are undetermined, but possible. The northwest portion of the Project Site is designated within Flood Zone X and AE. Flood Zone X is described as an area of minimal flood hazard that is determined to be outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance (or 500-year) flood. Flood Zone AE is described as areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Flood Zone AE is also considered a Special Flood Hazard Area (SFHA) on which the rules and regulations of the National Flood Insurance Program (NFIP) are enforced. Additionally, the Project Site is within 2,000 feet of the coastline areas which are susceptible to coastal flood and wave action. In addition to the rules and regulations of the NFIP, best management practices (BMPs) are recommended. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks so that impacts of flooding are not exacerbated from construction.	
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;	**N/A**
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and	**N/A**
(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.	**S**
Discussion: he Proposed Action supports the objectives and policies of the Hawai‘i Coastal Zone Management Act (CZMA) related to the orderly and environmentally responsible management of development. This Final Environmental Assessment (EA) has been prepared in accordance with the procedural requirements of Chapter 343, Hawai‘i Revised Statutes (HRS), and Title 11, Chapter 200.1 of the Hawai‘i Administrative Rules (HAR), which provide for public review and participation. The environmental review process informed interested parties of the Proposed Action and provided opportunities for public input on environmental issues relevant to the EA. A Draft EA was filed with and published by the Environmental Review Program (ERP), followed by a 30-day public comment period. All substantive comments received during the public review period were reviewed and addressed, and written responses were incorporated into the preparation of this Final EA, as appropriate. Accordingly, the preparation of this Final EA and the disclosure of the anticipated effects of the Proposed Action comply with the policy framework for managing development and have been subject to review by the public and applicable State and City and County of Honolulu agencies through the Chapter 343 environmental review process. Early Consultation and Pre-Assessment efforts were conducted to inform the community and solicit input to help define the scope of the EA for the Proposed Action. The Early Consultation/Pre-Assessment Package was mailed on July 20, 2023, to the agencies, organizations, and stakeholders identified in Section 7.1.	

Table 4-4: Hawai‘i Coastal Zone Management Act	
Agencies, organizations, and other stakeholders who submitted comments during the Draft EA 30-day public review period are identified in Sections 7.2 and 7.3. All comments received during the public review period were considered in the preparation of this Final EA, and responses to substantive comments are included in this document.	
Public Participation	
Objective: Stimulate public awareness, education, and participation in coastal management.	
Policies:	
(A) Promote public involvement in coastal zone management processes;	**S**
(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	**S**
(C) Organize workshops, policy dialogues, and site-specific mitigation to respond to coastal issues and conflicts.	**N/A**
Discussion: he Proposed Action supports the objectives and policies of the Hawai‘i Coastal Zone Management Act (CZMA) related to the orderly and environmentally responsible management of development. This Final Environmental Assessment (EA) has been prepared in accordance with the procedural requirements of Chapter 343, Hawai‘i Revised Statutes (HRS), and Title 11, Chapter 200.1 of the Hawai‘i Administrative Rules (HAR), which provide for public review and participation. The environmental review process informed interested parties of the Proposed Action and provided opportunities for public input on environmental issues relevant to the EA. A Draft EA was filed with and published by the Environmental Review Program (ERP), followed by a 30-day public comment period. All substantive comments received during the public review period were reviewed and addressed, and written responses were incorporated into the preparation of this Final EA, as appropriate. Accordingly, the preparation of this Final EA and the disclosure of the anticipated effects of the Proposed Action comply with the policy framework for managing development and have been subject to review by the public and applicable State and City and County of Honolulu agencies through the Chapter 343 environmental review process. Early Consultation and Pre-Assessment efforts were conducted to inform the community and solicit input to help define the scope of the EA for the Proposed Action. The Early Consultation/Pre-Assessment Package was mailed on July 20, 2023, to the agencies, organizations, and stakeholders identified in Section 7.1. Agencies, organizations, and other stakeholders who submitted comments during the Draft EA 30-day public review period are identified in Sections 7.2 and 7.3. All comments received during the public review period were considered in the preparation of this Final EA, and responses to substantive comments are included in this document.	
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:	

Table 4-4: Hawai‘i Coastal Zone Management Act	
(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;	**N/A**
(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	**N/A**
(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;	**N/A**
(D) Minimize grading of and damage to coastal dunes;	**N/A**
(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	**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.	**N/A**
Discussion: The Proposed Action will have no significant impact on the objectives and policies of the Hawai’i Coastal Zone Management Act for beach and coastal dune protection.	
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;	**N/A**
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;	**N/A**
(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;	**N/A**
(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	**N/A**
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.	**N/A**
Discussion: The Proposed Action will have no significant impact on the objectives and policies of the Hawai’i Coastal Zone Management Act for marine and coastal resources. Appropriate best management practices and erosion control measures will be implemented to ensure that marine and coastal resources are not adversely impacted from construction activities.	

4.2. City and County of Honolulu Land Use Plans and Policies

4.2.1. City and County of Honolulu General Plan (GP)

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 4-5 below:

Table 4-5: City and County of Honolulu: General Plan – Objectives and Policies	
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.	**N/A**
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.	**N/A**
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.	**N/A**
4. Establish geographic growth boundaries to accommodate future population growth while at the same time protecting valuable agricultural lands, environmental resources, and open space.	**N/A**
5. Support family planning and social equity.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
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.	**N/A**

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.	**S**
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.	**S**
Discussion: The Proposed Action will support Objective B of Section I of the CCH’s General Plan related to population distribution. The relocation and development of the WCC and Refuse Facility will contribute to providing necessary infrastructure to support the waste disposal needs of the growing population in the Leeward O‘ahu area. As the population in the region continues to grow, it is crucial to have adequate waste management facilities and services to accommodate the waste generated by residents. The Proposed Action addresses this need by establishing a modern and efficient waste management system, which is essential for supporting the distribution of O‘ahu’s resident population and facilitating responsible growth within the region.	
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.	**N/A**
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	**N/A**
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.	**N/A**
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.	**N/A**
5. Foster a healthy business climate by streamlining regulatory processes to be transparent, predictable, and efficient.	**N/A**
6. Encourage the development of local, national, and world markets for the products of O‘ahu-based industries.	**N/A**
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.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
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.	**N/A**
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.	**N/A**
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.	**N/A**
5. Provide related public expenditures for rural and urban-fringe areas that are highly impacted by the visitor industry.	**N/A**
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.	**N/A**
7. Concentrate on the quality of the visitor experience in Waikīkī, rather than on development densities.	**N/A**

8. Facilitate the development of the following secondary resort areas: Ko ʻOlina, Turtle Bay, Hoakalei, and Mākaha Valley in a manner that respects existing lifestyles and the natural environment	**N/A**
9. Preserve scenic qualities of Oʻahu for residents and visitors alike.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will not impact Objective B of Section II of the CCH's General Plan related to the viability of Oahuʻs visitor industry.	
Objective C. To ensure the long-term viability, continued productivity, and sustainability of agriculture on Oʻahu	
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 Oʻahu's economy	**N/A**
2. Support agricultural diversification to strengthen the agricultural industry and make more locally grown food available for local consumption.	**N/A**
3. Foster market opportunities and increased consumer demand for safe, locally grown, fresh, processed, and value-added agricultural products.	**N/A**
4. Streamline the implementation of regulations to enhance a producer's ability to develop, market, and distribute locally grown food and products.	**N/A**
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.	**N/A**
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.	**N/A**
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.	**N/A**
8. Encourage sustainable agricultural production to coexist on lands with renewable energy generation.	**N/A**
9. Prohibit the urbanization of agricultural land located outside the City's growth boundaries.	**N/A**
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.	**N/A**
11. Support and encourage the availability and use of non-potable water for irrigation, where feasible	**N/A**
12. Provide plans, incentives, and strategies to ensure the affordability of agricultural land for farmers.	**N/A**
13. Encourage both public and private investments to improve and expand agricultural infrastructure, such as irrigation systems, agricultural processing centers, and distribution networks.	**N/A**
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.	**N/A**
15. Protect the right to farm by enforcing right-to-farm laws, enacting policies to protect agricultural operations, and imposing meaningful buffer zones.	**N/A**
16. Seek ways to discourage agricultural theft and vandalism.	**N/A**
17. Recognize the scenic value of agricultural lands as an open-space resource and amenity.	**N/A**
Discussion: The Proposed Action will not impact Objective C of Section II of the CCH's General Plan related to the viability of agriculture on Oʻahu.	
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.	**N/A**
2. Encourage the ongoing development of aquaculture, ocean research, and other ocean related industries.	**N/A**

3. Encourage the expansion of ocean recreation activities for residents and visitors that are operated in a sustainable manner.	**N/A**
Discussion: The Proposed Action 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.	**S**
2. Make full use of State and Federal employment and training programs.	**N/A**
3. Encourage the provision of retraining programs for workers in industries with planned reductions in their labor force.	**N/A**
4. Identify emerging industries, encourage investments needed to support the industries, and develop a skilled workforce in these fields.	**N/A**
Discussion: The Proposed Action 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 WCC and Refuse Facility 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 Action 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.	**N/A**
2. Encourage the Federal government to pay for the cost of public services used by Federal agencies.	**N/A**
3. Encourage the Federal government to lease new facilities rather than construct them on tax-exempt public land.	**N/A**
4. Encourage the military to purchase locally all needed services and supplies which are available on O‘ahu .	**N/A**
5. Encourage the continuation of a high level of military-related employment both on and off base in the Hickam-Pearl Harbor, Wahiawā, Kailua-Kāne‘ohe, and ‘Ewa areas.	**N/A**
Discussion: The Proposed Action will not impact Objective F of Section II of the CCH General Plan related to economic activity as the Proposed Action does not involve any federal funds.	
Objective G. To bring about orderly economic growth on O‘ahu.	
1. Concentrate economic activity and government services in the primary urban center and in the secondary urban center at Kapolei.	**N/A**
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	**N/A**
3. Maintain sufficient land in appropriately located commercial and industrial areas to help ensure a favorable business climate on O‘ahu.	**N/A**
Discussion: The Proposed Action 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 O‘ahu’s natural environment, especially the shoreline, valleys, and ridges, from incompatible development.	**N/A**
2. Seek the restoration of environmentally damaged areas and natural resources.	**N/A**

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.	**N/A**
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	**S**
5. Require sufficient setbacks from O'ahu's shorelines to protect life and property, preserve natural shoreline areas and sandy beaches, and minimize the future need for protective structures or relocation of structures.	**N/A**
6. Design and maintain surface drainage and flood-control systems in a manner which will help preserve natural and cultural resources.	**N/A**
7. Protect the natural environment from damaging levels of air, water, carbon, and noise pollution.	**S**
8. Protect plants, birds, and other animals that are unique to the State of Hawai'i and the Island of O'ahu.	**N/A**
9. Increase tree canopy and ensure its integration into new developments, and protect significant trees on public and private lands.	**N/A**
10. Increase public awareness, appreciation, and protection of O'ahu's land, air, and water resources.	**N/A**
11. Support the State and federal governments in the protection of the unique environmental, marine, cultural and wildlife assets of the Northwestern Hawaiian Islands.	**N/A**
12. Plan, prepare for, and mitigate the impacts of climate change on the natural environment, including strategies of adaptation.	**N/A**
Discussion: The Proposed Action will support the Objective A of Section III of the CCH General Plan related to natural environment. The Proposed Action gives due consideration to the natural features and environment of the site and surrounding area through this environmental assessment. Potential impacts to the natural setting will be mitigated through BMPs during the implementation of the Proposed Action. This will minimize any potential impacts to plants, birds, and other animals unique to the island of O'ahu and State of Hawai'i. The Proposed Action will adhere to County, State, and Federal guidelines for noise, air, and water pollution.	
Objective B. To preserve and enhance natural landmarks and scenic views of O'ahu for the benefit of both residents and visitors as well as future generations.	
1. Protect the Island's significant natural resources: its mountains and craters; forests and watershed areas; wetlands, rivers, and streams; shorelines, fishponds, and bays; and reefs and offshore islands.	**N/A**
2. Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas.	**S**
3. Locate and design public facilities, infrastructure and utilities to minimize the obstruction of scenic views.	**S**
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.	**N/A**
Discussion: The Proposed Action will support Objective B of Section III of the CCH General Plan related to the natural environment. As discussed in Section 3.13 (Visual Resources), the Proposed Action is not expected to have significant long-term impacts on the natural landmarks and scenic views of O'ahu. The Proposed Action consists of the demolition of the former Waipahu Convenience Center (WCC) from its existing location to the former WIF property located further south on Waipahu Depot Street; therefore, improvements made to the WCC would reduce operational inefficiencies while maintaining consistency with the surrounding industrial uses and preserving scenic resources.	
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.	**N/A**
2. Streamline approval and permit procedures, in a transparent manner, for housing and other development projects.	**N/A**
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.	**N/A**
4. Support and encourage programs to maintain and improve the condition of existing housing.	**N/A**
5. Make full use of government programs that provide assistance for low- and moderate-income renters and homebuyers.	**N/A**
6. Maximize local funding programs available for affordable housing.	**N/A**
7. Provide financial and other incentives to encourage the private sector to build homes for low- and moderate-income residents.	**N/A**
8. Encourage and participate in joint public-private development of low- and moderate- income housing.	**N/A**
9. Encourage the replacement of low- and moderate-income housing in areas which are being redeveloped at higher densities.	**N/A**
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.	**N/A**
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	**N/A**
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.	**N/A**
13. Encourage the production and maintenance of affordable rental housing.	**N/A**
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.	**N/A**
15. Encourage equitable relationships between landowners and leaseholders, between landlords and tenants, and between condominium developers and owners.	**N/A**
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.	**N/A**
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.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
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	**N/A**
3. Seek public benefits from increases in the value of land owing to City and State developmental policies and decisions.	**N/A**
4. Require government-assisted housing to be delivered to qualified purchasers and renters.	**N/A**
5. Ensure that owners of housing properties, including government-subsidized housing, maintain housing affordability over the long term	**N/A**
Discussion: The Proposed Action 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.	**N/A**

2. Encourage the fair distribution of low- and moderate-income housing throughout the island.	**N/A**
3. Encourage the co-location of residential development and employment centers with commercial, educational, social, and recreational amenities in the development of desirable communities.	**N/A**
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	**N/A**
5. Support mixed-use development and higher-density redevelopment in areas surrounding rail transit stations.	**N/A**
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.	**N/A**
7. Encourage public and private investments in older communities as needed to keep the communities vibrant and livable.	**N/A**
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.	**N/A**
Discussion: The Proposed Action 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	**N/A**
2. Provide multi-modal transportation services to people living within the ʻEwa, Central Oʻahu, and Pearl City-Hawaiʻi 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.	**N/A**
3. Provide multi-modal transportation services outside the ʻEwa, Central Oʻahu, and Pearl City-Hawaiʻi 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.	**N/A**
4. Work with the State to ensure adequate and safe access for communities served by Oʻahu's coastal highway system, and to plan for the relocation of highways and roads subject to sea level rise away from coastlines	**N/A**
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.	**N/A**
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.	**N/A**
7. Design street networks to incorporate greater roadway and pathway connectivity.	**N/A**
8. Make transportation services safe and accessible to people with limited mobility: the young, elderly, disabled, and those with limited incomes	**N/A**
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	**N/A**
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.	**N/A**
11. Enhance pedestrian-friendly and bicycle-friendly travel via public and private programs and improvements.	**N/A**
12. Maintain separate aviation facilities for general aviation operations to supplement the capacity of the Daniel K. Inouye International Airport.	**N/A**

13. Support improvements to Kalaeloa Barbers Point Harbor as O‘ahu’s second deep-water harbor.	**N/A**
14. Support the operation, maintenance and improvement of Honolulu Harbor as O‘ahu’s primary cargo and ocean transportation hub.	**N/A**
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.	**N/A**
Discussion: The Proposed Action 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	**N/A**
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.	**N/A**
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.	**S**
4. Encourage the increased availability and use of recycled or brackish water to meet nonpotable demands.	**N/A**
5. Pursue strategies and programs to reduce the per capita consumption of water and the per capita production of waste.	**N/A**
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.	**S**
7. Pursue programs to expand on-island recycling and resource recovery from O‘ahu’s solid-waste and wastewater streams.	**N/A**
8. Support initiatives that educate the community about the importance of conserving resources and reducing waste streams through reduction, reuse, and recycling.	**N/A**
9. Require the safe use and disposal of hazardous materials.	**S**
Discussion: The Proposed Action will support Objective B of Section V of the CCH General Plan related to water resources and waste disposal. The relocation of the Waipahu Convenience Center (WCC) and the development of the Refuse Rolloff Division Baseyard Facility (Refuse Facility) indicate a commitment to improving solid waste management services. By incorporating modern technologies and efficient waste disposal methods, the Proposed Action aims to provide more effective and cost-efficient waste disposal and recycling services for the community. As discussed in 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 Site. Additionally, as discussed in Section 3.10 (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 Action 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.	**S**
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.	**S**
3. Facilitate timely and orderly upgrades and expansions of utility systems.	**S**

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.	**S**
Discussion: The Proposed Action will support Objective C of Section V of the CCH General Plan related to utilities. The relocation and upgrade of the Waipahu Convenience Center (WCC) and the development of the Refuse Rolloff Division Baseyard Facility (Refuse Facility) will contribute to the overall efficiency and reliability of the waste management utility system, reducing the risk of major breakdowns and service interruptions. The Proposed Action demonstrates an effort to facilitate the orderly expansion and upgrade of the waste management utility system in the Waipahu region. The proposed improvements to the WCC, such as providing ten waste offloading locations, strategically locating the facility attendant, and segregating residential and ENV refuse truck traffic, will enhance the efficiency of the solid waste disposal process. By improving the waste management facilities and practices, the Proposed Action aligns with this objective, leading to more resilient and efficient utility systems that better serve the needs of the community while considering climate impacts and resource availability.	
Objective D. To maintain transportation and utility systems which support 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.	**S**
2. Evaluate the social, cultural, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.	**S**
3. Require the installation of underground utility lines wherever feasible.	**N/A**
4. Seek improved taxing powers for the City in order to provide a more equitable means of financing transportation and utility services.	**N/A**
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.	**S**
Discussion: The Proposed Action will support Objective D of Section V of the CCH General Plan related to transportation and utilities. By relocating the Waipahu Convenience Center (WCC) and developing the Refuse Rolloff Division Baseyard Facility (Refuse Facility), the Proposed Action indicates a commitment to improving waste management services in the area. The Proposed Action is designed to address the inefficiencies experienced at the existing WCC and ensure that the new facilities are adequately sized and equipped to accommodate the needs of the community. The Proposed Action will be constructed on land owned by the CCH and will utilize funding from the City's Capital Improvement Program (CIP) budget. Allocating resources from the CIP budget demonstrates a commitment to providing adequate financial support for essential infrastructure upgrades and improvements, including transportation systems and utilities. The social, cultural, economic, and environmental impacts of the Proposed Action are evaluated in Chapter 3 and mitigation measures are described, where applicable. Specifically, for sea level rise, no significant impacts are anticipated to on the Project Site; however, severe storms may result in the flooding of roadways that will impact access to the site. Various mitigation measures to address potential impacts to the Project Area due to sea level rise include elevated infrastructure, road and drainage improvements, alternative access routes, and on-going adaptation pursuant to refined sea level rise research and policies. It is anticipated that the Proposed Action will be flexible in order to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.	
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.	**N/A**
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.	**N/A**
3. Ensure access to an adequate reserve of fuel and energy supplies to aid disaster response and recovery	**N/A**

4. Support the increased use of solid waste energy recovery and other biomass energy conversion systems	**N/A**
5. Support and participate in research, development, demonstration, commercialization, and optimization programs aimed at developing cost-effective and environmentally sound renewable energy supplies.	**N/A**
6. Support State and federal initiatives to utilize renewable energy sources.	**N/A**
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	**N/A**
8. Encourage and equitably incentivize the use of commercially available renewable energy systems in public facilities, institutions, residences, and business developments.	**N/A**
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.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will not impact Objective A of Section VI of the CCH General Plan related to renewable 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.	**N/A**
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.	**N/A**
3. Provide incentives and, where appropriate, mandatory controls to reduce energy consumption in existing buildings and outdoor facilities, and in design and construction practices.	**N/A**
4. Promote the development of a multi-modal transportation system that minimizes and seeks to eliminate fossil fuel consumption and greenhouse gas emissions.	**N/A**
5. Encourage the implementation of an adaptable and reliable electrical grid, energy transmission, energy storage, microgrids, and energy generation technologies.	**N/A**
6. Support the availability and use of energy efficient vehicles, especially hybrid, fuel cell, and pure electrical vehicles.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
2. Increase consumer awareness of available renewable energy sources and their costs and benefits.	**N/A**
3. Provide information concerning the impact of public and private decisions on future energy generation, transmission, storage, and use.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will not impact Objective C of Section VI of the CCH General Plan related to energy.	
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.	**N/A**
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.	**S**
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.	**N/A**

4. Facilitate and encourage compact, higher-density development in urban areas designated for such uses.	**N/A**
5. Encourage the establishment of mixed-use town centers that are compatible with the physical and social character of their community	**N/A**
6. Facilitate transit-oriented development in rail transit station areas to create live/work/play multi-modal communities that reduce travel and traffic congestion	**N/A**
7. Encourage the clustering of development to reduce the cost of providing utilities and other public services.	**S**
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	**N/A**
9. Locate community facilities on sites that will be convenient to the people they are intended to serve	**S**
10. Discourage uses which are major sources of noise, air, and light pollution	**S**
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.	**S**
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.	**N/A**
13. Promote opportunities for the community to participate meaningfully in planning and development processes, including new forms of communication and social media.	**N/A**
Discussion: The Proposed Action will support Objective A of Section VII of the CCH General Plan related to physical development and urban design. The upgrade and expansion of the WCC and the construction of the Refuse Facility are intended to improve waste disposal and recycling services in the region. By providing better waste management facilities, the Proposed Action will help to discourage improper disposal of waste and, in turn, reduce major sources of pollution. Moreover, by consolidating the WCC and Refuse Facility on the same site, the Proposed Action promotes the clustering of waste management infrastructure. This clustering can lead to operational efficiencies and cost savings for the provision of utilities and public services, such as water supply, sewage treatment, and transportation. Having both facilities in close proximity allows for more streamlined access to essential utilities, shared resources, and a more concentrated use of services and infrastructure. Further, the WCC and Refuse Facility will be conveniently relocated approximately 0.25 miles south of the existing WCC, ensuring minimal disruptions to current usage patterns within the region. The Proposed Action's impacts on nearby water, wastewater, drainage, electrical, and communication systems have been evaluated under Section 3.15 (Infrastructure and Utilities). Communication and coordination with the appropriate agencies will be conducted prior to the development of the Proposed Action. Additionally, as discussed in Section 3.1.2 (Observed Climate Change) and Section 3.4 (Natural Hazards), the design and construction of the Proposed Action will conform with guidance set forth by 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.	**S**
2. Coordinate plans in the private and public sectors that support research, monitoring, and educational programs on climate change.	**N/A**
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	**S**
Discussion: The Proposed Action will support Objective B of Section VII of the CCH General Plan related to climate change. As discussed under Section 3.1.2 (Observed Climate Change), the Proposed Action will be appropriately designed to take into consideration the context of the surrounding environment. The Proposed Action is not anticipated to significantly influence or affect temperatures, wind, or rainfall levels at the Project Site or within the greater region. It is anticipated that the Proposed Action will be flexible in order to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.	

As discussed in Section 3.4.1 of this EA, the Project Site is partially sited within the 3.2 ft and 6.0 ft sea level rise exposure area. This portion of the WCC includes the access ramp to the waste offloading stations. This area is prone to frequent flooding which may impact access to the site. Various mitigation measures to address potential impacts to the Project Area due to sea level rise include elevated infrastructure, road and drainage improvements, alternative access routes, and on-going adaptation pursuant to refined sea level rise research and policies.	
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.	**N/A**
2. Encourage the development of attractive residential communities in downtown and other business centers.	**N/A**
3. Maintain and improve downtown as the financial and office center of the island, and as a major retail center	**N/A**
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.	**N/A**
5. Encourage the development of attractive residential communities in downtown and other business centers.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will not impact Objective B 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.	**N/A**
2. Encourage the development of a major residential, commercial, and employment center within the secondary urban center at Kapolei.	**N/A**
3. Encourage the continuing development of the area encompassing Campbell Industrial Park, Kalaeloa Barbers Point Harbor, and West Kapolei as a major industrial center.	**N/A**
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.	**N/A**
5. Cooperate with the State and federal governments in the improvements to the deep-water harbor at Kalaeloa Barbers Point.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will not impact Objective C 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.	**N/A**
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.	**N/A**
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.	**N/A**
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	**N/A**
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.	**N/A**

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.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
2. Require the consideration of urban design principles in all development projects.	**N/A**
3. Require developments in stable, established communities and rural areas to be compatible with the existing communities and areas.	**S**
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.	**N/A**
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.	**N/A**
6. Promote public and private programs to beautify the urban and rural environments.	**N/A**
7. Design public structures to meet high aesthetic and functional standards and to complement the physical character of the communities they will serve.	**S**
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.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will support Objective E of Section VII of the CCH General Plan related to physical development and urban design. The Proposed Action will not adversely affect the visual resources of the area. The Proposed Action consists of the demolition of the former Waipahu Convenience Center (WCC) from its existing location to the former WIF property located further south on Waipahu Depot Street; therefore, improvements made to the WCC would reduce operational inefficiencies while maintaining consistency with the surrounding industrial uses. Furthermore, construction of the Proposed Action will not significantly alter the topography in such a way that would diminish the aesthetic character of the area.	
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.	**N/A**
2. Encourage, wherever desirable, the rehabilitation of existing substandard structures.	**N/A**
3. Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.	**S**
4. Seek the satisfactory relocation of residents before permitting their displacement by new development, redevelopment, or neighborhood rehabilitation.	**N/A**
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.	**N/A**
6. Support and encourage cohesive neighborhoods which foster interactions among neighbors, promote vibrant community life, and enhance livability.	**N/A**
Discussion: The Proposed Action will support Objective F of Section VII of the CCH General Plan related to physical development and urban design. As previously stated, the Proposed Action will not adversely affect the visual resources of the area. The Proposed Action consists of the demolition of the former Waipahu Convenience Center (WCC) from its existing location to the former WIF property located further south on Waipahu Depot Street; therefore, improvements made to the WCC would reduce operational inefficiencies while maintaining consistency with	

the surrounding industrial uses. Furthermore, construction of the Proposed Action will not significantly alter the topography in such a way that would diminish the aesthetic character of the area.	
Public Safety	
Objective A. To prevent and control crime and maintain public order.	
1. Provide a safe environment for residents and visitors on Oʻahu.	**N/A**
2. Provide adequate, safe, and secure criminal justice facilities.	**N/A**
3. Provide adequate training, staffing, and support for City public safety agencies.	**N/A**
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.	**N/A**
5. Support policies and programs that expand access to treatment, rehabilitation, and reentry programs for adult and juvenile offenders	**N/A**
6. Keep the public informed of the nature and extent of criminal activity on Oʻahu.	**N/A**
7. Establish and maintain programs to encourage public cooperation in the prevention and solution of crimes, and promote strong community-police relationships.	**N/A**
8. Seek the help of State and federal law-enforcement agencies to curtail the activities of organized crime syndicates on Oʻahu.	**N/A**
9. Conduct periodic reviews of criminal laws to ensure their relevance to the community's needs and values.	**N/A**
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.	**N/A**
11. Encourage the improvement of rehabilitation programs and facilities for criminals and juvenile offenders.	**N/A**
Discussion: The Proposed Action 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.	**S**
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.	**S**
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.	**N/A**
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.	**N/A**
5. Cooperate with State and federal agencies to provide protection from war, civil disruptions, pandemics, and other major disturbances.	**N/A**
6. Reduce hazardous traffic conditions.	**N/A**
7. Provide adequate resources to effectively prepare for and respond to natural and manmade threats to public safety, property, and the environment.	**N/A**
8. Foster disaster-ready communities and households through implementation of resilience hubs and other resiliency strategies.	**N/A**
9. Plan for the impacts of climate change and sea level rise on public safety, in order to minimize potential future hazards.	**S**
10. Develop emergency management plans, policies, programs, and procedures to protect and promote public health, safety, and welfare of the people.	**N/A**
11. Provide educational materials on emergency management preparedness, fire protection, traffic hazards, and other unsafe conditions	**N/A**
Discussion: The Proposed Action will support Objective B of Section VIII of the CCH General Plan related to public safety.	

The Proposed Action will be conducted following all building codes and OSHA/HIOSH standards to ensure the security of public health and safety are protected during construction and through day-to-day operations. Impacts from natural hazards will be further mitigated by adherence to appropriate civil defense evacuation procedures. The Project Site is within Zone D on the Floor Insurance Rate Map (FIRM) by the Federal Emergency Management Agency (FEMA). Zone D is an area where flood hazards are undetermined, but possible; therefore, applicable best management practices (BMPs) are recommended. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks so that impacts of flooding are not exacerbated from construction. As discussed under Section 3.1.2 (Observed Climate Change), the Proposed Action will be appropriately designed to take into consideration the context of the surrounding environment. The Proposed Action is not anticipated to significantly influence or affect temperatures, wind, or rainfall levels at the Project Site or within the greater region. It is anticipated that the Proposed Action will be flexible in order to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.	
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.	**N/A**
2. Provide prompt and adequate ambulance and first-aid services in all areas of O‘ahu.	**N/A**
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.	**N/A**
4. Integrate public health concerns such as air and water pollution as a consideration in land use planning decisions.	**N/A**
5. Encourage healthy lifestyles by supporting opportunities that increase access to and promote consumption of fresh, locally grown foods.	**N/A**
6. Encourage healthy lifestyles through walkable and livable communities, safe street crossings, safe routes to schools, and parks and pathways for pedestrians and bicyclists.	**N/A**
7. Support efforts to make healthcare accessible and affordable for everyone.	**N/A**
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.	**N/A**
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.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will not impact Objective A of Section IX of the CCH General Plan related to health and education.	
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.	**N/A**
2. Encourage the provision of informal educational programs for people of all age groups.	**N/A**
3. Encourage the after-hours use of school buildings, grounds, and facilities.	**N/A**
4. Encourage the construction of school facilities that are designed for flexibility and high levels of use	**N/A**

5. Facilitate the appropriate location of childcare facilities as well as learning institutions from the preschool through the university levels.	**N/A**
6. Encourage outdoor learning opportunities and venues that reflect our unique natural environment and Native Hawaiian culture.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
2. Encourage the development of diverse opportunities in higher education.	**N/A**
3. Encourage research institutions to establish branches on O'ahu.	**N/A**
4. Establish Honolulu as a knowledge center and international Pacific crossroads hub.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
2. Promote the preservation and enhancement of local cultures, values and traditions.	**S**
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.	**N/A**
4. Foster equity and increased opportunities for positive interaction among people with different ethnic, social, and cultural backgrounds.	**N/A**
5. Preserve the identities of the historical communities of O'ahu.	**S**
Discussion: The Proposed Action will support Objective A of Section X of the CCH General Plan related to culture and recreation. 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 Action 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 the State Historic Preservation Office will be contacted for review and approval of mitigation measures.	
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.	**N/A**
2. Identify and, to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.	**N/A**
3. Cooperate with the State and federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.	**N/A**
4. Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts	**N/A**
5. Seek public and private funds, and encourage public participation and support, to protect, preserve and enhance social, cultural, historic, architectural, and archaeological resources.	**N/A**
6. Provide incentives for the restoration, preservation, maintenance, and enhancement of social, cultural, historic, architectural, and archaeological resources.	**N/A**

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.	**N/A**
Discussion: The Proposed Action will not impact Objective B of Section X of the CCH General Plan related to culture and recreation. 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 Action 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 the State Historic Preservation Office will be contacted for review and approval of mitigation measures.	
Objective C. To foster the visual and performing arts.	
1. Encourage and support programs and activities for the visual and performing arts.	**N/A**
2. Encourage creative expression and access to the arts by all segments of the population.	**N/A**
3. Provide permanent art in appropriate City public buildings and places.	**N/A**
Discussion: The Proposed Action 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.	**N/A**
2. Develop, maintain, and expand a system of regional parks and specialized recreation facilities, based on the cumulative demand of residents and visitors.	**N/A**
3. Develop, maintain, and improve urban parks, squares, and beautification areas in high-density urban place	**N/A**
4. Encourage public and private natural reserves and botanical and zoological parks to foster greater awareness and appreciation of the natural environment.	**N/A**
5. Encourage the State to develop, improve, and maintain a system of natural resource-based parks, such as beach, shoreline, and mountain parks.	**N/A**
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.	**N/A**
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.	**N/A**
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.	**N/A**
9. Require all new developments to provide their residents with adequate recreation space.	**N/A**
10. Utilize our unique natural environment in a responsible way to promote cultural events and activities, and maintain cultural practices.	**N/A**
11. Encourage the after-hours, weekend, and summertime use of public school facilities for recreation	**N/A**
12. Provide for safe and secure use of public parks, beaches, and recreation facilities.	**N/A**
13. Create and promote recreational venues for kūpuna and keiki and for kama‘āina and malihini.	**N/A**
14. Encourage the State and federal governments to transfer excess and underutilized land to the City for public recreation use.	**N/A**
Discussion: The Proposed Action will not impact Objective D of Section X of the City and County General Plan related to culture and recreation.	
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.	**S**
2. Promote alignment and consolidation of State and City functions whenever more efficient and effective delivery of government programs and services may be achieved	**S**
3. Ensure that government attitudes, actions, and services are sensitive to community needs and concerns, and held accountable to the public trust	**N/A**
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.	**N/A**
5. Expand the adoption of technology across all City agencies to achieve greater transparency, efficiency, and accountability to the general public throughout government operations.	**N/A**
Discussion: The Proposed Action will support Objective A of Section XI of the CCH General Plan related to government operations and fiscal management. By implementing the Proposed Action, the CCH's Department of Environmental Services (ENV) is investing in essential waste management services for the community. Adequate funding for the development, operation, and maintenance of these facilities will ensure that waste disposal and recycling services are efficiently provided to the residents of Waipahu and the broader community on Oʻahu. The provision of necessary infrastructure and services aligns with the objective of maintaining effective city government services. The Proposed Action involves the relocation and consolidation of the Waipahu Convenience Center (WCC) from its existing location to the former WIF property. By bringing together the WCC and Refuse Rolloff Division Baseyard Facility (Refuse Facility) at a single location, the Proposed Action promotes the consolidation of services related to solid waste management. This consolidation can lead to more efficient operations, streamlined workflows, and better resource utilization, resulting in improved service delivery and cost-effectiveness. The coordination of facilities and services also aligns with the objective of achieving a more efficient and effective government service.	
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.	**N/A**
2. Allocate fiscal resources of the City and County to efficiently implement the policies of the General Plan and Development Plans.	**S**
3. Ensure accountability and transparency in government operations.	**N/A**
Discussion: The Proposed Action will support Objective B of Section XI of the CCH General Plan related to government operations and fiscal management. The Proposed Action will utilize funding from the City's Capital Improvement Program (CIP) budget, demonstrating the City's commitment to allocate fiscal resources to strategic projects that align with the goals and objectives of the General Plan related to improved public facilities and utilities for the community. By allocating funding from the CIP budget to the conversion of the former Waipahu Incinerator Facility (WIF) into a multi-use Refuse Division Facility, the City will be making targeted investments to achieve its development plans and objectives. The investment shows a commitment to meeting present demands while considering the needs of future generations.	
Discussion: The Proposed Action will support Objective B of Section XI of the CCH General Plan related to government operations and fiscal management. The Proposed Action will utilize funding from the City's Capital Improvement Program (CIP) budget, demonstrating the City's commitment to allocate fiscal resources to strategic projects that align with the goals and objectives of the General Plan related to improved public facilities and utilities for the community. By allocating funding from the CIP budget to the conversion of the former Waipahu Incinerator Facility (WIF) into a multi-use Refuse Division Facility, the City will be making targeted investments to achieve its development plans and objectives. The investment shows a commitment to meeting present demands while considering the needs of future generations.	
Objective C. To achieve equitable outcomes for City programs, policies, and allocation of resources throughout the Oʻahu community.	

1. Promote policies that actively address and eliminate disparate outcomes for historically underserved communities.	**N/A**
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.	**S**
3. Promote adherence to processes that advance procedural, distributional, structural, intergenerational, and cultural equity within the City.	**N/A**
4. Provide resources for City employees to understand and actively advance equity solutions within all agencies of City government.	**N/A**
Discussion: The Proposed Action will support Objective C of Section XI of the CCH General Plan related to government operations and fiscal management. The Proposed Action's focus on providing solid waste disposal services in the greater Leeward O'ahu area demonstrates a commitment to equitable distribution of resources and benefits. The Proposed Action recognizes the importance of solid waste management services to the greater Leeward O'ahu area and aims to improve the efficiency and capacity of the waste disposal facilities. The new WCC and Refuse Facility are intended to enhance the quality of services provided to the community. These improvements can lead to better waste disposal services, reduced waiting times, and improved overall waste management in the region, benefiting residents in the area. During the construction and operation of these facilities, there will be opportunities for job creation, including roles for drivers, supervisors, facility attendants, and other personnel associated with waste management operations. By investing in these facilities, the Proposed Action can contribute to employment opportunities for residents in the area. In addition, the infrastructure improvements of the Proposed Action not only serve the solid waste management needs of the community but also provide a boost to the local economy through construction and development activities.	

4.2.2. Central O'ahu Sustainable Communities Plan (2021)

The Project Site is located within the Central O'ahu Sustainable Communities Plan area. It is one of a set of eight community plans intended to help guide public policy, investment, and decision-making over the next 25 years. Each plan addresses one of eight regions of O'ahu, responding to specific to specific conditions and community values of each region. The Proposed Project's conformance with the objectives and policies of the Central O'ahu Sutainable Communities Plan is set forth in Table 4-6 below.

Table 4-6: Central O'ahu Sustainable Communities Plan	
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 access to hiking trails in the areas beyond the Community Growth Boundary on the slopes of both the Wai'anae Range and the Ko'olau Range	**N/A**
(2) Require public access to mountain areas where sensitive resources are not affected, including vehicular access to and parking at trail heads and public campgrounds, when new mauka developments are approved.	**N/A**
(3) Maintain the forest at higher elevations in the State Conservation District. Plan utility corridors and other uses to avoid disturbances to areas with high concentrations of native species.	**N/A**
(4) Identify endangered species, their habitats and other important ecological zones and protect them from threats such as fire, weeds, feral animals, and human activity	**S**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(5) Protect areas proposed by the State Office of State Planning in the State Land Use District Boundary Review (1992) for addition to the State Conservation District to protect the Leeward Ko‘olau Watershed and the hydrologic zone of contribution to the Navy Shaft in Waiawa from urban development; provided, however, that urban uses such as utility installations and public facilities specifically approved by the State Department of Health and the Honolulu Board of Water Supply may be permitted with the zone of contribution.	**N/A**
(6) Identify and protect areas that are important to Native Hawaiian cultural practices.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities 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. As discussed in Section 3.5.1, 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 would have minor adverse short-term impacts to 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 Action. 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 Action 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 the State Historic Preservation Office will be contacted for review and approval of mitigation measures.	
3.1.3.2 Natural Gulches and Drainageways	
(1) Preserve the major natural gulches within the Community Growth Boundary as part of the open space system.	**N/A**
(2) Integrate planned improvements to Central O‘ahu drainage systems into the regional open space network by emphasizing the use of retention basins and recreational access in the design approach.	**N/A**
(3) View drainageways and utility corridors as opportunities to link major open spaces with pedestrian and bike paths. Encourage shared use of these resources to realize both their environmental contribution and recreational value.	**N/A**
(4) Where practical, retain drainageways as natural or man-made vegetated channels rather than concrete channels.	**N/A**
(5) Provide for pedestrian and bicycle access where these can be safely accommodated.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Open Space Preservation and Development, pertaining to natural gulches and drainageways. However, construction of the Proposed Action 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 describe 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, 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 Hawai‘i Administrative Rules, 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	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(1) Provide public access to the Pearl Harbor shoreline at intervals of approximately 1/4 mile, except where access is restricted by the military for security reasons. To make this access usable by the public, provide adequate parking.	**N/A**
(2) Maintain and enhance, where necessary, nearshore wetlands and mangroves as wildlife habitats.	**N/A**
(3) Provide, at a 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 coastal erosion rates.	**N/A**
(4) 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.	**S**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Open Space Preservation and Development, pertaining to shoreline areas. As discussed under Section 3.4.1 (Sea Level Rise), no significant impacts are anticipated to on the Project Site; however, severe storms may result in the flooding of roadways that will impact access to the site. 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 sea level rise impacts. It is anticipated that the Proposed Action will be flexible in order to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.	
3.1.3.4 Agricultural Areas	
(1) Permit facilities necessary to support intensive cultivation of arable agricultural lands, including distribution, sales, or agri-tourism facilities.	**N/A**
(2) Permit facilities to support limited outdoor recreation use, such as camping, horseback riding and hiking, preferably in areas where agricultural use is least suitable.	**N/A**
(3) Permit residential use to the extent that it is accessory to the agricultural use. Where several farm 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.	**N/A**
(4) Ensure that uses of non-residential farm buildings are consistent with the intent and purpose of the agricultural zoning district and that the structures are in compliance with the regulations regarding flood hazards.	**N/A**
(5) Design and locate buildings and other facilities that are accessory to an agricultural operation to minimize impacts on nearby urban areas and roadways.	**S**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Open Space Preservation and Development, pertaining to agricultural areas. The Project Site is situated within a State Land Use Agricultural District (See Figure 3-10). In general, the Agricultural District includes lands for the cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture-support activities (i.e., mills, employee quarters, etc.) and land with significant potential for agriculture uses. However, pursuant to §205-4.5, HRS, “solid waste transfer stations” is a permitted use within the Agricultural State Land Use District. Thus, the purpose and intent of the Proposed Action are consistent with the Agricultural State Land Use District. Furthermore, the Project Site is within Zone D on the Floor Insurance Rate Map (FIRM) by the Federal Emergency Management Agency (FEMA). Zone D is an area where flood hazards are undetermined, but possible; therefore, applicable best management practices (BMPs) are recommended. Applicable BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks so that impacts of flooding are not exacerbated from construction.	
3.1.3.5 Parks	
(1) Maintain distant views of the Wai‘anae Range from Kamehameha Highway in the development and siting of facilities and landscaping in the Patsy T. Mink Central O‘ahu Regional Park.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(2) Develop trails leading from Patsy T. Mink Central O‘ahu Regional Park to Waikele Gulch and connecting to a trail system throughout Central O‘ahu gulches.	**N/A**
(3) Establish a new shoreline park complex at Waipi‘o Peninsula, giving access from Waipahū to the Pearl Harbor shoreline on the West Loch and Middle Loch.	**N/A**
(4) Retain Wahiawā Botanical Garden as primarily a gulch in its natural state.	**N/A**
(5) Expand Wahiawā Freshwater Park to include most of the area adjacent to the Wahiawā Reservoir, limiting public access only as necessary to protect water quality and public safety.	**N/A**
Discussion: The Proposed Action will not impact on the Central O‘ahu Sustainable Communities 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.	**N/A**
(2) Consider the impact on existing and proposed regional trails, paths, and bike routes in designing new golf courses. Provide safe corridors by or through the courses where necessary for those trails, paths, and bikeways.	**N/A**
(3) Design golf courses to provide view amenities for adjacent urban areas, including public rights-of-way.	**N/A**
(4) Use landscape treatment, setbacks, and modifications to golf course layout rather than fencing or solid barriers when screening is needed for safety reasons, where feasible.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Open Space Preservation and Development, pertaining to wildland.	
3.1.3.8 Greenways and Open Space Corridors	
(1) 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	**N/A**
(2) 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 and, preferably, obscure views of the overhead lines from the travel way and adjacent residential areas.	**N/A**
(3) Place new transmission lines underground where possible under criteria specified in State law	**N/A**
(4) Permit the use of utility easements for pedestrian and bicycle routes, consistent with all applicable operations, maintenance, and safety requirements.	**N/A**
(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 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.	**N/A**
(6) Where urban development abuts the H-2 Freeway, provide an open space/landscaped buffer of sufficient size to preserve a view of green, minimize the visual intrusiveness of the development, and reduce the noise and air quality impact of the freeway traffic on the abutting development.	**N/A**
(7) Link Wahiawā Botanical Garden to the Wahiawā Freshwater Park on Lake Wilson by a trail through the gulch connecting the two areas.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Open Space Preservation and Development, pertaining to greenways and open-space	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
corridors. The Pearl Harbor Historic Trail is accessed via a paved driveway which runs to the north of the existing WCC. The driveway also provides access to the Honolulu Fire Department Waipahu Maintenance Facility. Construction and demolition associated with the Proposed Action is not anticipated to impact access to these areas.	
3.2 Regional Parks and Recreation Complexes	
3.2.2.1 Appropriate Scaling 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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**
(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.	**N/A**
(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. Give preference to use of drought-resistant native Hawaiian plants where feasible and appropriate.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Regional Parks and Recreation Complexes, pertaining to community integration.	
3.2.2.4 Island-wide and Regional Parks	
(1) Continue developing planned facilities at Patsy T. Mink Central O‘ahu Regional Park, a major park of approximately 270 acres, at the site known as “Waiola”, near Waikele and Waipi‘o. Maintain distant views of the Wai‘anae Range from Kamehameha Highway in the development and siting of park landscaping and facilities.	**N/A**
(2) Provide trails from the Patsy T. Mink Central O‘ahu Regional Park to Waikele Gulch, connecting to a trail system throughout Central O‘ahu’s gulches.	**N/A**
(3) Connect the Wahiawā Botanical Garden to the Wahiawā Freshwater Park at Lake Wilson by way of a trail in the gulch which connects the two facilities.	**N/A**
(4) Expand Wahiawā Freshwater Park to include most of the area adjacent to the Wahiawā Reservoir, limiting public access only as necessary to protect water quality and public safety.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**
(2) Locate bus stops at all principal activity areas.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Regional Parks and Recreation Complexes, pertaining to transportation facilities.	
Views	
(1) Locate and design facilities for special events to be readily visible and identifiable from the principal transportation corridors that lead to them.	**N/A**
(2) Establish the visual identity of the complex through distinctive architecture, landscaping, or natural setting.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Regional Parks and Recreation Complexes, pertaining to sports and recreation complexes.	
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.	**N/A**
(2) Require a City review and approval process which provides adequate public notice and opportunity for input for any change in the location of an island-wide or regional park or a golf course.	**N/A**
(3) Allow additional regional sports and recreation complexes in areas designated for commercial, industrial, or park use, subject to a City review and approval process that provides public review and complete analysis	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(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.	**N/A**
(3) Where feasible, site Community and Neighborhood Parks near the center of neighborhoods, in order to maximize accessibility.	**N/A**
(4) Provide accessible pathways from surrounding streets to facilitate pedestrian and bicycle access to parks.	**N/A**
(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.	**N/A**
(6) Include passive areas for picnicking and large, outdoor community gatherings in district parks within master-planned residential communities.	**N/A**
(7) Use community-based parks in Central O‘ahu as sites for community gardens.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Community-Based Parks, pertaining to development of community-based parks.	
3.3.2.2 Access to Ravines and Mountain Trails	
(1) Where appropriate, new developments should provide a public access easement and parking area for hikers from the mauka boundary to a public mountain trail easement.	**N/A**
(2) Where appropriate, new developments should provide a means for a safe trail to major Central O‘ahu gulches which are either within or adjacent to the project area.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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 Sustainable Communities Plan when more detailed site information and planning analysis is available.	**N/A**
(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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**
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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Historic and Cultural Resources, pertaining to sites under review.	
3.4.2.2 Impacts of Development on Historic and Cultural Resources	
Compatible Setting	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(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	**S**
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. Do not permit development to block important public views, as listed in Table 3.2 and illustrated in Exhibit 3.2. Whenever possible, relocate or place underground overhead utility lines and poles that significantly obstruct public views, under criteria specified in State law.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Historic and Cultural Resources, pertaining to impacts of development. As discussed under Sections 3.6 and 3.7, no adverse impacts are anticipated to result from the Proposed Action to historical or archaeological resources. In addition, construction of the Proposed Action 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) As recommended in the Waipahū Town Plan (December 1995) and the Pearl Harbor Historic Trail Master Plan (May 2001), develop the right-of-way as a world-class heritage and educational corridor to enhance neighboring communities and serve as a major visitor and cultural attraction.	**N/A**
Adaptive Reuse	
(1) Develop a paved shared-use path for bicycles and pedestrians along the length of the OR&L right-of-way, either within or adjacent to the right-of-way.	**N/A**
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.	**N/A**
(2) Set back new development as specified in Neighborhood Transit-Oriented Development (TOD) Plans, TOD development regulations, or as otherwise specified in existing land use approvals, policies, and regulations.	**N/A**
(3) Provide landscaping along the adjacent path, with occasional rest stops with seating and other amenities.	**N/A**
Public Access	
(1) Encourage public use by providing and maintaining a shared path for pedestrians and bicyclists as part of a path running from ‘Aiea to Nānākuli.	**N/A**
(2) Interpretative signs along the route should explain the historic significance of the railroad and note points of interest.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for the OR&L Historic Railway. The Pearl Harbor Historic Trail is accessed via a paved driveway which runs to the north of the existing WCC. The driveway also provides access to the Honolulu Fire Department Waipahu Maintenance Facility. Construction and demolition associated with the Proposed Action is not anticipated to impact access to these areas.	
3.4.2.4 Waipahū Sugar Mill Environs	
Methods of Preservation	
(1) Retain the sugar mill stack and boiler room as visual symbols of Waipahū's plantation town history.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(2) Maintain the historic theme of the Waipahū Cultural Garden Park, and seek opportunities to establish a more direct physical and economic connection between the park and the mill.	**N/A**
(3) Promote economic revitalization and in-fill development in the old commercial core along Waipahū Street and Waipahū Depot Road to maintain the historic character of this area.	**N/A**
(4) Establish a transit linkage between Waikele Center and Waipahū Town.	**N/A**
Adaptive Reuse	
(1) Allow a variety of reuse options which are consistent with the purpose of retaining the historic plantation theme for the old town core at the Waipahū Sugar Mill site.	**N/A**
(2) Encourage adaptive reuse of older commercial buildings in the town core as a means to retain the historic building forms.	**N/A**
Urban Form	
(1) Limit buildings in the old commercial core to two or three floors in height in keeping with the area's historic scale and to preserve views of existing mill structures.	**N/A**
(2) In renovations to the sugar mill for adaptive reuse, minimize exterior alterations that substantially change the building profile or accessory structures that define the mill's original purpose.	**N/A**
(3) Promote a strong pedestrian shopping orientation in the old town core by expanding "storefront" businesses, enhancing the sidewalk areas with street trees and period fixtures, consolidating off-street parking behind buildings, and retaining on-street parking wherever possible.	**N/A**
(4) Modify development standards, as needed, to facilitate the retention and rehabilitation of historic structures and appropriate in-fill development.	**N/A**
Public Access	
(1) Retain the Waipahū Cultural Garden Park as a public facility.	**N/A**
(2) Encourage public access to the Waipahū Sugar Mill and other privately owned historic buildings in the Old Waipahū Town Anchor area.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for the Waipahū Sugar Mill.	
3.4.2.5 Native Hawaiian Cultural and Archaeological Sites	
Method of Preservation	
(1) Require preservation in situ for those features that the State Historic Preservation Officer has recommended such treatment.	**N/A**
(2) Determine the preservation method, ranging from restoration to "as is" condition, on a site-by-site basis, in consultation with the State Historic Preservation Officer.	**N/A**
Adjacent Uses	
(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.	**N/A**
(2) Include the sight lines that are significant to the original purpose and value of the site as criteria for adjacent use restrictions.	**N/A**
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.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Discussion: The Proposed Action will not impact any Native Hawaiian cultural, historic, and archaeological sites. A Literature Review and Field Inspection Report was conducted by Honua Consulting in April 2023 as part of this environmental assessment. No adverse impacts are anticipated to result from the Proposed Action to historical or archaeological resources. Additionally, potential adverse impacts to traditional and cultural practices in the vicinity of the Project Site are not anticipated. Construction of the Proposed Project 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. No mitigation measures are proposed. 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.	
3.5 Natural Resources Protection	
Water Conservation	
(1) Protect prime watershed recharge areas and the Pearl Harbor potable aquifer which underlies the Central O‘ahu area.	**N/A**
Endangered Species	
(1) 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.	**S**
Light Pollution	
(1) Use the minimum outdoor lighting necessary for public safety, security, and community aesthetics consistent with the goals of energy conservation and environmental protection.	**N/A**
(2) Minimize glare and obtrusive light by limiting outdoor lighting that is misdirected, excessive or unnecessary by fully shielding lighting fixtures so that no light escapes above the horizontal plane and by using lower wattage.	**N/A**
(3) Adopt outdoor night lighting standards for rural areas that reflect the rural character of those areas.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Natural Resource Protection. As discussed under Section 3.5 (Natural Environment), on November 22, 2022, AECOS surveyed the Project Site, as well as the existing Waipahu Convenience Center to the north of the Project Site. Regarding flora, no plants including naturalized, native, or Polynesian introduced, are of concern from a statutory (DLNR, 1998; USFWS, nd-a) or other conservation interest. Regarding avian, the Project Site offers no habitat for Hawaiian waterbird species, however, due to its proximity to waterbird habitats to the west, there is the potential for construction activity to attract and/or impact protected Hawaiian waterbirds. The endangered Black-necked Stilt was observed to overfly the Project site. Nesting habitat for endangered Hawaiian Coot and Common Gallinule is present in wetland vegetation at Kapakahi Stream and Pouhala Marsh adjacent to the Project site. Regarding mammalian resources, domestic dog (Canis lupis familiaris) and small Indian mongoose (Herpestes javanicus) were observed during this survey. It is likely that the site is also used by domestic cat (Felis catus), wild boar (Sus scrofa), and any of the four alien Muridae (rats and mice) currently established on the Island of O‘ahu. It is possible that the native Hawaiian hoary bat or ‘ōpe‘ape‘a (Lasiurus cinereus semotus) uses resources within the Project vicinity. In the short-term, construction activities may temporarily disrupt the behavior of common faunal species that are known to occur or frequent the Project Site, but will not result in permanent displacement, or adversely affect the regional distribution. Construction-related noise could disturb a nesting bird and passing construction vehicles could harm a young chick. The following BMPs are recommended to minimize or avoid impacts to Hawaiian waterbird species: • In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site or nearby. • If an endangered waterbird enters an active construction area, cease all construction activity. Work may resume after the individual leaves the area on its own volition. • Avoid creating surface water features (puddles, etc.) after grading and grubbing. Surface water should be removed to avoid creating a nuisance attractant. • A qualified biologist should conduct a preconstruction survey for endangered waterbird nests immediately prior to construction activity near water features. If a nest is found, contact USFWS immediately. Establish and maintain a 100-ft buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.	
3.6. Waipahū Town	
3.6.2.1 Urban Design	
(1) Preserve the scale and sense of Waipahū as a small town. Preserve existing zoning heights and densities throughout Waipahū Town to preserve views of the smokestack and to help maintain the small town scale, except as appropriate for redevelopment in the Transit-Oriented Waipahū Transit Center Waipahū Transit Center Rail Station Festival Market Place Waipahū Plantation Village OR&L/PHHT Central O‘ahu Sustainable Communities Plan Land Use Policies & Guidelines 3-40 Development (TOD) Special Districts around the Honolulu Rail Transit stations.	**N/A**
(2) Maintain the visual dominance of the sugar mill site, particularly the smokestack.	**N/A**
(3) Retain and renovate as needed structures having historic, cultural, and/or visual significance. Identify historic buildings on the mill site and in the Old Town Commercial Area. Encourage adaptive reuse of these historic buildings.	**N/A**
(4) Establish a special image for the Old Town Commercial Area signifying its historic character and role as the cultural and business center for Waipahū. Adopt detailed design guidelines for the Old Town Commercial Area to create the desired historic plantation theme.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(5) Enhance landscaping along Farrington Highway and adjoining roadways through the increased use of street trees and the establishment of planting schemes which help to identify and distinguish between the different commercial and industrial areas.	**N/A**
(6) Develop open space areas, the shoreline, and other available natural areas for use by the public and integrate them into the built environment.	**N/A**
(7) Make open space and coastal resource areas on the Waipi‘o Peninsula and along the Pearl Harbor shoreline available for increased use by the public.	**N/A**
(8) Use landscaped roads, and pedestrian/bicycle pathways to link parks, open space areas, and centers of interest.	**N/A**
(9) Modify development standards to facilitate the retention and rehabilitation of historic structures and appropriate in-fill development.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Waipahū Town, pertaining to urban design.	
3.6.2.2 Old Waipahū Town	
Sugar Mill Site	
(1) Retain the visual qualities and building character that defined the mill’s original purpose in renovations to the sugar mill site for adaptive reuse.	**N/A**
Old Town Commercial Area	
(1) Maintain the compactness of the town’s historic shopping area, and encourage new uses in-fill between existing buildings along Waipahū Street and Waipahū Depot Road.	**N/A**
(2) Except as necessary for adjustments to improve traffic flow and safety, maintain the character of Waipahū Street and Waipahū Depot Road in order to safeguard the historically and visually significant buildings and maintain the area’s pedestrian scale and orientation.	**N/A**
(3) Wherever possible, identify, maintain and restore existing significant historic structures and encourage their adaptive reuse where necessary to ensure their continued viability and use.	**N/A**
(4) Require the architectural character of new buildings to reflect the plantation era architecture of Waipahū’s historic past. Basic design principles, texture, construction materials, and colors should be compatible with styles from this era.	**N/A**
(5) Encourage and maintain a strong pedestrian orientation through the expansion of “storefront” businesses, enhancement of the streetscape and walking environment, and consolidation of off-street parking behind buildings.	**N/A**
(6) Locate new buildings or additions close to the street, creating a traditional “street line” of facades, with buildings forming an attractive edge to the roadway.	**N/A**
(7) Orient storefronts to the street and include elements such as canopies, overhangs, porches, and trellises to scale down building heights and enhance the street-level environment.	**N/A**
(8) Limit buildings to two or three floors in height in keeping with the area’s historic scale and to preserve views of existing mill structures.	**N/A**
(9) Discourage awkward or over-scaled building forms, and reduce long building forms or offset them into smaller masses of more residential proportions.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Waipahū Town, pertaining to Old Waipahū town.	
3.6.2.3 Community Facilities Anchor / Waipahū Transit Center Rail Station Area	
(1) Develop and landscape spaces between buildings in a manner which provides the area with a unifying visual image and creates the sense of an active, people-oriented civic park.	**N/A**
(2) Create an urban transit boulevard on Farrington Highway between Waipahū Depot Road and Mokuola Street to separate local traffic and through traffic and provide slower speeds and a safer pedestrian environment adjacent to the rail station.	**N/A**
(3) Allow mixed-use development in the Farrington/Mokuola Transit-Oriented Development (TOD) Special District in order to create a walkable, medium-density community with neighborhood retail and a commercial core near the rail station.	**N/A**
(4) Allow increased building heights to 60 feet generally within a 1/4 mile of the rail station and to 45 feet for properties generally from a 1/4 mile to a 1/2 mile away from the rail station, except where lots adjoin an R-5 residential district.	**N/A**
(5) Relax limits on maximum building area in the TOD Special District generally within a 1/4 mile of the rail station to create active street edges, and discourage surface parking lots in front of buildings.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(6) Allow a floor area ratio (FAR) as high as 3.5 as a bonus for realizing important community benefits.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Waipahū Town, pertaining to Community Facilities Anchor / Waipahū Transit Center Rail Station Area.	
3.6.2.4 Commercial Anchor Area / West Loch Rail Station Area	
(1) Establish attractive and distinctive entry features at the western end of the Commercial Anchor Area.	**N/A**
(2) Create an urban transit boulevard on Farrington Highway between Leokū/Leo‘ole Streets and Leoleo Street to separate local traffic and through traffic and provide slower speeds and a safer pedestrian environment adjacent to the rail station.	**N/A**
(3) Allow mixed-use development in the Farrington/Leokū Transit-Oriented Development (TOD) Special District in order to create a walkable, medium-density community with neighborhood retail and a commercial core near the rail station.	**N/A**
(4) Encourage mid-rise, medium density apartment and live/work uses when combined with retail commercial uses on the ground level generally within 1/4 mile of the West Loch station.	**N/A**
(5) Upgrade the visual appearance of business development through building façade improvement programs and through the greater use of shade trees within parking areas and of landscape buffers between parking areas and adjoining streets.	**N/A**
(6) Allow increased building heights up to 60 feet generally within a 1/4 mile of the station, and up to 45 feet for properties generally from a 1/4 mile to a 1/2 mile away from the station except where lots adjoin an R-5 residential district.	**N/A**
(7) Allow building heights up to 90 feet in the TOD Special District as a community benefits bonus.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Waipahū Town, pertaining to Commercial Anchor Area / West Loch Rail Station Area.	
3.6.2.5 Residential Areas	
(1) Where possible and appropriate, establish small community gardens in residential and apartment areas in order to increase green space and maintain a connection with the town’s agricultural roots.	**N/A**
(2) Provide street trees in all neighborhoods in order to soften the visual impact of development and enhance the walking environment for residents.	**N/A**
(3) Encourage mid-rise, medium density apartment buildings, including mixed-use developments, in areas generally within 1/4 mile of the West Loch and Waipahū Transit Center stations, with the exception of the Old Town Commercial Area.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Waipahū Town, pertaining to residential areas.	
3.6.2.6 Circulation Design Guidelines	
(1) Incorporate complete streets features wherever feasible.	**N/A**
(2) Improve existing pedestrian and bicycle connections and, where appropriate, develop new ones to nearby residential areas from the old commercial core and to recreational and cultural facilities located around the old commercial core	**N/A**
(3) Provide landscape improvements, including shade trees, to streets and front yards in the Farrington Highway business areas to accommodate, where possible, walkways and bicycle paths which link the different Central O‘ahu Sustainable Communities Plan Land Use Policies & Guidelines 3-45 business developments together and connect these areas to adjoining residential neighborhoods.	**N/A**
(4) Develop sidewalks, traffic signal improvements, and other measures to facilitate pedestrian circulation between mauka and makai areas of Waipahū.	**N/A**
(5) Develop plazas accessible to pedestrians at the two Honolulu Rail Transit stations and the Festival Marketplace.	**N/A**
(6) Provide bicycle parking and storage at residential buildings throughout the area generally within 1/2 mile of the two Honolulu Rail Transit stations.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Waipahū Town, pertaining to circulation design guidelines.	
3.6.2.7 Open Space and Views	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(1) Acquire shoreline setback areas and the shoreline trail park areas along West Loch, in part so that Pearl Harbor can be seen from key points along Leokāne Street and Pūpū‘olē Street on the makai edge of the area.	**N/A**
(2) Connect existing and planned parks and open space areas, wherever possible, by a series of tree-lined pedestrian pathways, jogging paths, and bikeways.	**N/A**
(3) Strengthen visual and physical connections between Waipahū Cultural Garden Park, the old commercial core and significant adjoining areas and roadways.	**N/A**
(4) Preserve significant views, including views of the Ko‘olau and Wai‘anae Mountain Ranges from along Farrington Highway, views of Pear Harbor from Farrington Highway in the vicinity of Waipahū High School, the view of the Waipahū Sugar Mill from the Waipahū Cultural Garden, and the view of the Wai‘anae Mountains from the Waipahū Cultural Garden.	**S**
(5) Preserve mature trees.	**N/A**
(6) Provide publicly accessible open spaces for passive recreation, play areas, and socializing in the area generally within 1/2 mile of the two Honolulu Rail Transit stations.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Waipahū Town, pertaining to open space and views. As discussed under Section 3.13 (Visual Resources), the Proposed Action will not have significant long-term visual impacts to the Project Site and its surrounding area. The Proposed Action consists of the demolition of the former Waipahu Convenience Center (WCC) from its existing location to the former WIF property located further south on Waipahu Depot Street; therefore, improvements made to the WCC would reduce operational inefficiencies while maintaining consistency with the surrounding industrial uses and preserving significant views.	
3.7 Wahiawā Town	
3.7.2.1 Business District	
(1) Re-establish Wahiawā’s historic “identity” within a “Town Center” located along Kamehameha Highway in the vicinity of California and Kīlani Avenue.	**N/A**
(2) Maintain and restore existing structures that reflect the historic and architectural character of Wahiawā where possible, and encourage adaptive reuse where necessary to ensure their continued viability and use.	**N/A**
(3) Require redevelopments to reflect an architectural theme consistent with the historic character of Wahiawā. Ensure the architectural character of new buildings and of the building renovations are compatible with historic buildings in the area and reflect the town’s plantation heritage.	**N/A**
(4) Provide open space and landscaping to reinforce the historic character of Wahiawā.	**N/A**
(5) Establish distinctive and attractively landscaped gateway features at each of the Kamehameha Highway entries to the town to reinforce a “sense of arrival” along these approaches.	**N/A**
(6) Encourage new commercial uses to in-fill on vacant and underutilized parcels within Wahiawā’s existing business district. Avoid expansion of the district since it is not needed.	**N/A**
(7) Allow repair shops, storage, and similar uses which provide needed services but confine them to the town’s existing industrial area between Palm and North Cane Street.	**N/A**
(8) Provide buffer landscaping and similar edge treatments around industrial sites to minimize impacts on adjoining areas.	**N/A**
(9) Limit building heights in keeping with Wahiawā’s small town scale. However, give some flexibility for public buildings, such as government offices and churches, in order to allow for designs that create symbols of identity for the community.	**N/A**
(10) Locate parking areas behind commercial establishments in order to improve the pedestrian environment and appearance of the streetscape.	**N/A**
(11) Upgrade the visual appearance of business developments through building façade improvement programs and through the greater use of shade trees within parking areas and landscape buffers between parking areas and adjoining streets.	
Discussion: The Proposed Action is not located in the town of Wahiawā, therefore the business district within Wahiawā will not be affected.	
3.7.2.2 Civic Center	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(1) Welcome and encourage expansion of existing government facilities and community services. To the extent possible, cluster these uses within and bordering the area bounded by California Avenue, North Cane Street, Kīlani Avenue, and Lehua Street.	**N/A**
(2) Expand and consolidate parking for the Civic Center and Wahiawā General Hospital within a multi-level parking garage located on Center Street.	**N/A**
(3) Landscape and develop available setback areas and open spaces in a manner which gives the area a unifying visual image and provides a “village green” for informal gatherings and relaxation.	
Discussion: The Proposed Action is not located in the town of Wahiawā, therefore the civic center within Wahiawā will not be affected.	
3.7.2.3 Residential Areas	**N/A**
(1) Prevent the intrusion of apartment buildings or other incompatible uses into existing single-family residential areas.	**N/A**
(2) Maintain the extensive use of street trees to enhance Wahiawā’s rural character and image as a “town within a forest”, and extend the trees into all of Wahiawā’s residential areas.	
Discussion: The Proposed Action is not located in the town of Wahiawā, therefore the residential areas within Wahiawā will not be affected.	
3.7.2.4 Circulation	**N/A**
(1) Incorporate complete streets features wherever feasible	**N/A**
(2) Make minor adjustments to street rights-of-way, alignments, intersections, and on-street parking where they would improve traffic flow and safety. In general, however, avoid new streets or major street widenings as they are not needed and would detract from Wahiawā’s rural and small town character.	**N/A**
(3) Provide on-street parking during non-peak traffic hours to “slow-down” traffic along Kamehameha Highway.	**N/A**
(4) Where possible, expand off-street parking where needed to support local businesses, such as along Kamehameha Highway.	**N/A**
(5) Establish a network of bicycle paths and designated bicycle routes along major traffic corridors in order to improve safety and convenience and encourage increased use of bicycles for travel within the community.	**N/A**
(6) Connect the Wahiawā Botanical Garden to the Wahiawā Freshwater Park on Lake Wilson by way of a trail through the gulch which connects the two facilities.	**N/A**
(7) Develop jogging paths and bike trails to take advantage of the Lake Wilson shoreline.	**N/A**
(8) Install landscaping, sidewalk and other streetscape improvements in areas lacking in greenery or with unsafe or inadequate provision for pedestrian traffic.	
Discussion: The Proposed Action is not located in the town of Wahiawā, therefore circulation within Wahiawā will not be affected.	
3.7.2.5 Open Space and Views	**N/A**
(1) Preserve and protect the natural scenic character of Lake Wilson and adjoining forested areas from alteration or encroachment of urban uses because they are vital elements of Wahiawā’s “town in a forest” image.	**N/A**
(2) Expand and improve Wahiawā Freshwater Park with appropriate facilities which will encourage and accommodate greater public use without major disruption to the site’s natural beauty.	**N/A**
(3) Upgrade recreational facilities in existing community parks and, where possible, add new facilities in order to meet current and future demands for sports activities.	**N/A**
(4) Where possible, design site layouts and building orientations for new developments to maximize view opportunities of prominent natural views in Wahiawā including Lake Wilson and the Waiʻanae Mountains, and, to a lesser degree, the Koʻolau Mountains.	**N/A**
(5) Preserve significant vistas, including the views of the upper Central Oʻahu plains toward Waialua and of the Waiʻanae Range from the intersection of Kamehameha Highway and Whitmore Avenue, near Kūkaniloko.	
Discussion: The Proposed Action is not located in the town of Wahiawā, therefore open space and views within Wahiawā will not be affected.	
3.8 Central Oʻahu Plantation Villages	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Method of Preservation	**N/A**
(1) Rehabilitate existing historic plantation houses as part of an assisted housing program.	**N/A**
(2) Rehabilitate and convert rental dwellings for sale, giving preference to existing residents to minimize displacement and retain the sense of community.	**N/A**
(3) Preserve the historic development pattern, architectural character and street appearance by allowing exceptions from conventional subdivision and other development codes, as appropriate.	**N/A**
(4) Replace structures that must be razed, and develop other vacant areas with new in-fill development that respects the historic character of the original village.	
Discussion: The Proposed Action will not have an impact on the method of preservation guidelines for Central O‘ahu’s Plantation Villages.	
Adaptive Reuse	**N/A**
(1) Rehabilitate residential areas with an emphasis on affordable home ownership opportunities for existing residents.	**N/A**
(2) When a historic structure is converted to a use other than its original purpose, rehabilitate the structure in a manner that does not alter its exterior appearance.	
Discussion: The Proposed Action will not have an impact on the adaptive reuse guidelines for Central O‘ahu’s Plantation Villages.	
Urban Form	**N/A**
(1) Maintain the current grid/loop street pattern in the existing villages and replicate it in new in-fill development.	**N/A**
(2) Do not use standard subdivision street hierarchy and design standards	**N/A**
(3) To minimize impacts on front yards and structure and to retain a rural village character, maintain narrow street widths without sidewalks in the residential portions of existing villages and establish narrow street widths without sidewalks in new villages.	**N/A**
(4) Locate any new collector streets outside existing villages.	**N/A**
(5) Plant and maintain principal entry roads to and through the villages as tree-lined boulevards. Highlight village entries with landscape features.	**N/A**
(6) Provide appropriate canopy trees along all street frontages.	**N/A**
(7) Ensure lot sizes and dimensions for new in-fill homes in the existing villages are similar to those of existing house lots.	**N/A**
(8) Require new structures on vacant lots in the existing villages to be designed to complement the exterior design of adjacent homes.	**N/A**
(9) Landscape and maintain yards and other open spaces to preserve and enhance the open space appearance of the villages.	**N/A**
Discussion: The Proposed Action will not have an impact on the urban form guidelines for Central O‘ahu’s Plantation Villages.	
Open Space/Views	
(1) Preserve and maintain existing village greens and play fields as places for community gatherings and recreation.	**N/A**
(2) Preserve existing landscaping within the villages and stands of trees in bordering ravines.	**N/A**
Discussion: The Proposed Action will not have an impact on the open space and views guidelines for Central O‘ahu’s Plantation Villages.	
Adjacent Land Uses	
(1) Maintain agricultural use on adjacent lands.	**N/A**
(2) Minimize the visibility of any new structures in the vicinity by appropriate landscape screening and building siting.	**N/A**
(3) If visibility is unavoidable, design the new structure to respect the scale and character of the villages.	**N/A**
(4) Improve roadways as necessary to provide access to public facilities.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Discussion: The Proposed Action will not have an impact on the adjacent land uses guidelines for Central O‘ahu’s Plantation Villages.	
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.	**N/A**
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.	**N/A**
Site Design	
(1) The site design for small-lot developments should avoid monotonous rows of garages and driveways along neighborhood street frontages by employing features such as varied building setbacks and shared driveways.	**N/A**
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.	**N/A**
Affordable Housing	
(1) Allow accessory and ‘ohana dwelling units without occupancy restrictions to increase the availability of affordable rentals and help create an age friendly community.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Existing and Planned Residential Communities, pertaining to residential communities.	
Low-Density Apartment	
Density	
(1) Develop at densities of 10 to 30 units per acre.	**N/A**
Height	
(1) In general, limit buildings to not exceed three stories above grade. Maximum building heights should allow for pitched roof form.	**N/A**
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.	**N/A**
Compatibility	
(1) Ensure that building scale, roof form, and the quality of materials are compatible with those of adjacent low-density residential areas.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Existing and Planned Residential Communities, pertaining to low-density apartments.	
Medium-Density Apartment	
Location	
(1) Develop Medium-Density Apartment as the predominant form of housing around the two Honolulu Rail Transit stations in Waipahū, either as a single use or mixed-use development.	**N/A**
(2) Allow Medium-Density Apartment uses in Wahiawā near the Town Center, and in Waiawa adjacent to the Major Community Commercial Center.	**N/A**
Density	
(1) Allow building densities to accommodate 25 to 90 units per acre	**N/A**
Height	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(1) Limit building heights to not exceed 60 feet, except as allowed in Sec. 3.6.2.4 Guidelines for the Farrington/Leokū Transit-Oriented Development (TOD) Special District and in Sec. 3.9.2 Guidelines for mixed-use buildings in Major Community Commercial Centers.	**N/A**
(2) Limit Medium Density Apartment building heights in Waipahū in the Farrington/Mokuola TOD Special District to not exceed 60 feet or the Central O‘ahu Sustainable Communities Plan Land Use Policies & Guidelines 3-63 elevation of the roof ridge line of the Waipahū Sugar Mill, whichever is lower.	**N/A**
Architectural Character	
(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.	**N/A**
(2) Allow lower building elements to directly abut the street front.	**N/A**
Height Setbacks	
(1) Building height setbacks and landscaping should be employed to reduce the direct visibility of taller buildings from lower density residential areas and from the streetfront. Lower building elements may directly about the streetfront.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Existing and Planned Residential Communities, pertaining to medium-density apartments.	
Circulation System	
(1) Use the circulation plan to define the hierarchy of streets within the project and its relationship to the surrounding transportation network.	**N/A**
(2) Design streets to provide safe access and mobility for all users, including pedestrians, bicyclists, transit users, motorists, and persons of all abilities, as determined through a context sensitive solution process that integrates community context and the surrounding environment, including land use, and balances the needs and comfort of all modes and users.	**N/A**
(3) 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.	**N/A**
(4) Provide pedestrian pass-throughs or mid-block cross walks, if possible, where blocks exceed 350 feet on a side.	**N/A**
(5) Connect new residential development to adjacent subdivisions to allow creation, where allowed by topography, of an east-west and mauka-makai roadway network at approximately 1/4 mile intervals.	**N/A**
(6) Allow roadway cross-sections within new residential developments to be reduced from current standards where higher capacity is provided by multiple routes.	**N/A**
Transit Routes and Facilities	
(1) Show on the circulation plan existing and proposed bus routes and specific measures to accommodate efficient bus transit service for as many households as possible.	**N/A**
(2) Design the rights-of-way along existing or potential bus transit routes to provide for bus shelters, bus pull-outs, and, if applicable, park-and-ride facilities and/or future rail transit stations in accordance with the Department of Transportation Services design standards.	**N/A**
(3) Require street patterns showing the alignment of proposed or potential bus transit routes, to be submitted to the Department of Transportation Services as part of the subdivision roadway master plan review process.	**N/A**
(4) Design the circulation plan so that at least 85 percent of all proposed residences will be within a five-minute (or 1/4 mile) walking distance of an existing or proposed bus stop or rail transit stop, unless localized topographic conditions make such a requirement impractical.	**N/A**
(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 stop.	**N/A**
(6) All development should be within 1/2 mile of a transit stop, unless localized topographic conditions make such a requirement impractical.	**N/A**
(7) Design the circulation plan so that potential bus 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.	**N/A**
Pedestrian and Bicycle Routes and Facilities	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(1) Design the circulation plan to indicate any principal pedestrian and bicycle paths that are physically separated from roadways.	**N/A**
(2) Design street intersections along these separated paths to have a tighter curb radius and include special signage and paving to encourage safe and convenient pedestrian and bicycle crossings.	**N/A**
(3) Allow interior mid-block pedestrian/bicycle routes to be provided as an alternative to paved sidewalks along local streets.	**N/A**
(4) Provide safe pedestrian and bike passage through barriers such as walls and fences, and across ditches and roadways.	**N/A**
Landscape Treatment	
(1) Include conceptual street tree plans in the circulation plan.	**N/A**
(2) Identify entries to the community with special landscape treatment.	**N/A**
(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.	**N/A**
(4) Where urban development abuts the H-2 Freeway, provide an open space/landscaped buffer of sufficient size to preserve a view of green, minimize the visual intrusiveness of the development, and reduce the noise and air quality impact of the freeway traffic on the abutting development.	**N/A**
(5) Provide canopy trees to shade the sidewalk/bike path areas.	**N/A**
(6) 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	**N/A**
(7) 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	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Existing and Planned Residential Communities, pertaining to circulation system.	
3.10 Planned Commercial Retail Centers	
All Commercial Centers	
Orientation to “Main Street” or the Town/Village Center	
(1) Locate and orient structures in the commercial center to the street up to the “build to” line along the designated “Main Street” or Town/Village Center frontage.	**N/A**
(2) Locate most parking for commercial structures fronting “Main Street” or the Town/Village Center behind the structures in joint development parking lots or in structures although some on-street parking can be provided on the Main Street or Town/Village Center frontage.	**N/A**
(3) Locate the main entrance to commercial structures fronting the “Main Street” or Town/Village Center on that street frontage with secondary entrances from parking areas.	**N/A**
(4) Construct sidewalks in front of retail uses fronting the “Main Street” or Town/Village Center wide enough (12 to 16 feet) to allow window shopping and/or outdoor dining.	**N/A**
Mix of Uses	
(1) Plan commercial centers primarily for retail and accessory office uses that provide services to the surrounding community. Residential uses and other uses which meet the social, cultural, recreational, and civic needs of the surrounding community may also be incorporated in such commercial centers.	**N/A**
Appropriate Scale	
(1) Design the building mass of a commercial center to be in keeping with its urban and natural setting.	**N/A**
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.	**N/A**
Accessibility	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(1) Design streets to provide safe access and mobility for all users, including pedestrians, bicyclists, transit users, motorists, and persons of all abilities, as determined through a context sensitive solution process that integrates Central O‘ahu Sustainable Communities Plan Land Use Policies & Guidelines 3-71 community context and the surrounding environment, including land use, and balances the needs and comfort of all modes and users.	**N/A**
(2) 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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Planned Commercial Retail Centers, pertaining to all commercial centers.	
Neighborhood Commercial Centers	
Architectural Character	
(1) Design the project architecture to reflect a residential architectural character and respect adjacent residential uses	**N/A**
(2) Use gable and hip-form roofs to create breaks in the roof line to reduce the apparent scale of large roof plates	**N/A**
(3) Use exterior materials and colors that are typically found in residential construction to express residential character.	**N/A**
Building Siting	
(1) Orient buildings to the pedestrian.	**N/A**
(2) Orient storefronts to face the street, and, to the extent possible, be sited close to the sidewalk	**N/A**
(3) Place parking and service areas behind the buildings or otherwise visually screened from streets and residential areas.	**N/A**
Discussion: The Proposed Project does not constitute the development of a commercial center. However, design development considers user access to the neighboring Transit Center Facility.	
Buiding Height and Density	
(1) Design buildings at a residential scale.	**N/A**
(2) Allow building heights limits which allow for gable and hip-form roof elements.	**N/A**
(3) Limit total floor area for a lot or contiguous lots with common parking to no more than 100,000 sq. ft.	**N/A**
Vehicular Access	
(1) Provide access to the parking and loading areas from a collector street.	**N/A**
(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.	**N/A**
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.	**N/A**
(2) Design and locate bicycle racks to provide security, convenience, and visibility from the street entry	**N/A**
(3) Provide appropriate signage to indicate the availability and location of bicycle racks.	**N/A**
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.	**N/A**
(2) 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	**N/A**
(3) Use only low level or indirect lighting in parking lots	**N/A**
(4) Require all signage to either be non-illuminated or indirectly illuminated.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Planned Commercial Retail Centers, pertaining to neighborhood commercial centers.	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Community Commercial Centers	
Architectural Character	
(1) Allow varied architectural character, depending on the context.	**N/A**
(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.	**N/A**
(3) Avoid disruptive contrasts between facades and extended blank walls that are visible simultaneously from public areas.	**N/A**
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. Central O‘ahu Sustainable Communities Plan Land Use Policies & Guidelines 3-7.	**N/A**
(2) Avoid blank facades on portions of buildings visible from a street by using texture, articulation, color, and fenestration to create visual interest.	**N/A**
(3) Require facades that are close to the public right-of-way to be composed of display windows and pedestrian entrances.	**N/A**
Building Height and Density	
(1) Limit building heights to generally not exceed 45 feet, except in Major Community Commercial Centers where a height up to 90 feet may be considered for mixed-use buildings that include residential uses, where justified by community benefits.	**N/A**
(2) Limit the total floor area to no more than 250,000 sq. ft. for a standard Community Commercial Center and 500,000 sq. ft. for a Major Community Commercial Center	**N/A**
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.	**N/A**
(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.	**N/A**
(3) Design bicycle racks to provide security and be visible from the street entry to the commercial center.	**N/A**
(4) Provide appropriate signage to indicate the availability and location of bicycle racks.	**N/A**
Visual Screening	
(1) Minimize the visibility of parking and service areas from the street and adjacent residential lots through screening	**N/A**
(2) In the case of major community commercial centers, minimize the visibility of large building volumes and expansive parking areas through site planning, architectural treatment of elevations and landscaping.	**N/A**
(3) Plant a landscape screen, consisting of trees and hedges, along street fronting the parking lot or garage.	**N/A**
(4) Plant shade trees throughout all parking lots.	**N/A**
(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.	**N/A**
(6) Provide landscape planters along the façade of each parking level for parking garages close to and readily visible from a street.	**N/A**
(7) Visually screen service areas from public and residential areas.	**N/A**
Signage	
(1) Indirectly illuminate signage visible from residential areas.	**N/A**
Transit Access	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(2) Design the circulation plan for master-planned projects with commercial development so that all commercial development with more than 1,000 sq. ft. and all employment sites with more than ten employees is within 1/8 mile of an existing or potential bus stop or rail transit stop.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Planned Commercial Retail Centers, pertaining to community commercial centers.	
3.11 Industrial Centers	
Appropriate Scale	
(1) Minimize visibility of large building volumes and tall building or machinery elements from arterial roads, major regional collector roads, residential areas, commercial and civic districts, and parks through site planning and landscaping.	**N/A**
Environmental Compatibility	
(1) Locate operations 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.	**N/A**
(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.	**S**
(3) Buffer industrial areas located within residential communities from residential uses, so that larger industrial building forms do not have a negative visual, lighting, noise, or odor impacts on residential areas.	**N/A**
(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.	**N/A**
Uses	
(1) Allow all uses that provide direct services to adjacent residential communities, including automobile service and repair, in Central O‘ahu industrial areas.	**S**
(2) Prohibit petroleum processing, resource extraction, and the manufacture of chemicals and explosives.	**N/A**
(3) Allow other industrial uses based on performance criteria established by regulatory agencies.	**N/A**
(4) Allow retail establishments in industrial areas as accessory uses only.	**N/A**
(5) Allow offices and business services in a building or complex of buildings which primarily consists of industrial uses and industrial building types, so long as no building is primarily used for offices or business services.	**N/A**
Location	
(1) Allow industrial areas within the master-planned communities of Waipi‘o-Gentry, Royal Kunia, Koa Ridge, and Waiawa.	**N/A**
(2) Maintain industrial areas oriented to small businesses providing consumer services within Wahiawā (north of Cane Street) and Waipahū, so long as these do not front on commercial streets or major collector streets, provided that designation of use areas is subject to redefinition either through Special Area Plans for those towns, or in the case of Waipahū, through the Waipahū Neighborhood TOD Plan and TOD Special Districts.	**N/A**
(3) Prohibit new industrial developments that front on streets with residences on the opposite side, and to the extent possible, design the developments to direct industrial traffic away from residential neighborhoods.	**N/A**
Building Height	
(1) Limit building heights to generally not exceed 60 feet.	**S**
(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 to determine if they can be sited or	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
designed to minimize visibility from residential and commercial areas, public rights-of-way, or the shoreline.	
Landscape Treatment	
(1) Landscaped setbacks and street trees should be required along the edges of industrial areas abutting arterial or major collector streets.	**S**
(2) In small-lot industrial areas, outdoor work and storage areas for vehicles, equipment and supplies should be visually screened from the street and adjacent lots by privacy walls and buildings, with minimal reliance on landscaping.	**S**
(3) In large-lot industrial subdivisions, visual screening should be accomplished primarily with landscaped setbacks and street trees.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Industrial Centers. The Proposed Action aims to relocate the Waipahu Convenience Center (WCC) to the former Waipahu Incinerator Facility (WIF) property and develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) adjacent to the new WCC. These facilities will directly serve the adjacent residential communities by providing essential waste disposal services and improved solid waste management operations. The Project Site is bordered by the Honolulu Police Academy / Training Facility to the north, the Ted Makalena Golf Course to the east, the Waipi‘o Peninsula Soccer Complex/Park to the south, a closed ash landfill to the southwest, and the Pouhala Marsh Wildlife Restoration Area to the west. The nearest residential area is located approximately 0.25 miles to the north of the Project Site. The Proposed Action will optimize facility design and layout to best suit the site's physical attributes. The strategic location of the WCC and Refuse Facility, as well as their design to minimize impacts, strive to foster a harmonious relationship between the project and the environment. The Proposed Action will employ design techniques and thoughtful landscaping to minimize the visibility of buildings, vehicles, equipment, and machinery. The proposed Refuse facility will consist of a two-story building that will not exceed 60 feet. 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. Noise generated from any stationary mechanical equipment on the project site will comply with the DOH property line noise regulations. Noise mitigate for stationary mechanical equipment will be considered during the design of the project.	
3.12 Mililani Technology Park	
Uses	
(1) Allow individual lots to mix light industrial uses with office use, with no limitation on the allocation of floor area.	**N/A**
(2) Limit retail and service uses supporting activities in the business park to ten percent of the total floor area of the business park.	**N/A**
Building Height and Density	
(1) Building heights should generally not exceed 40 feet, except for necessary communications antennae.	**N/A**
(2) The floor area ratio and maximum building coverage permitted on lots should be appropriate to an open, landscaped campus environment.	**N/A**
Discussion: The Proposed Action is located in Waipahū; therefore, it does not impact the uses, building, height and density guidelines within the Mililani Technology Park.	
3.13 Military Areas	
All Areas	
(1) Apply the policies and guidelines for circulation systems and landscape treatment in civilian areas (described previously in Section 3.9) to military lands in residential use.	**N/A**
(2) Apply the planning guidelines for industrial areas (described previously in Section 3.11.2) to the quasi-industrial uses on lands designated “Military.”	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Schofield Barracks/Wheeler Army Airfield	
(1) Support expansion of uses within the base which include residential, commercial, recreational and civic areas for the support of military personnel and their dependents to accommodate additional residents on base and/or augmented activities which do not significantly conflict with surrounding residential communities.	**N/A**
(2) Minimize the visibility of security fencing and utilitarian military facilities from off-base through the planting of a landscape screen, consisting of trees and hedges, along highway frontages.	**N/A**
(3) Provide adequate buffers for residential developments immediately adjacent to the Central O‘ahu training areas to ensure that residents will not be adversely impacted by noise or other environmental impacts of the training activities.	**N/A**
Discussion: The Proposed Action is located in Waipahū; therefore, it does not impact the Central O‘ahu Sustainable Communities Plan guidelines for Schofield Barracks/Wheeler Army Airfield .	
Joint Base Pearl Harbor-Hickam	
(1) Request Navy approval to expand limited public access to the shoreline waters of West Loch for recreational purposes beyond the West Loch Shoreline Park.	**N/A**
(2) Protect and enhance wetlands along the West Loch and Middle Loch shorelines.	**S**
(3) Allow agricultural uses to be renewed on the Waipi‘o Peninsula within the Navy restricted areas around the Joint Base Pearl Harbor-Hickam West Loch Annex.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Joint Base Pearl Harbor-Hickam. The Project Site for the Proposed Action sits upon the Waipi‘o Peninsula in Waipahu and is approximately 0.5 miles northeast of the West Loch of Pearl Harbor. The Project Site has one surface stream, Kapakahi Stream, in its vicinity which discharges into the West Loch through Pouhala Marsh Wildlife Sanctuary. No significant impacts on surface and coastal waters are anticipated to result from the construction and operation of the Proposed Action. Erosion and sedimentation measures will be implemented where necessary during construction activities. Therefore, off-site surface waters near the Project Site are not anticipated to be impacted as a result of stormwater during construction activities. The Proposed Action 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 Action. BMPs may include temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping and stabilization measures will be done as soon as possible on completed areas to help control erosion and runoff that could potentially enter the stream and flow towards the wetlands along the West Loch in the long-term.	
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;	**N/A**
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;	**N/A**
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	**N/A**
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.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**N/A**
(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.	**N/A**
(3) Identify safe routes to schools and ensure that these are pedestrian and bicycle-friendly.	**N/A**
(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	**N/A**
(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.	**N/A**
(6) Connect existing adjacent neighborhoods to new streets, bike ways, paths, and trails.	**N/A**
(7) Use traffic calming measures to slow traffic making short cuts through residential neighborhoods and to support a desirable living environment.	**N/A**
(8) Use multiple connecting streets within and between residential neighborhoods to knit neighborhoods together.	**N/A**
(9) Use streets, bikeways, and walkways to create a unifying circulation network that provides convenient routes throughout the community.	**N/A**
(10) Establish specific connectivity standards (minimum intersection frequency, maximum dead end length, number of dwellings or building on a cul-desac, and minimum street spacing) for each zoning district.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**S**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Water Allocation and System Development, pertaining to adequacy of water supply. The Applicant is coordinating with the BWS to ensure there is adequate water source, storage, and delivery to service the Proposed Action. Upon finalization of the design, BWS will determine if the current municipal water system is adequate to accommodate the demand generated by the Proposed Action.	
Watershed Protection	
(1) To ensure maximum recharge of the Pearl Harbor aquifer, protect lands above the Pearl Harbor aquifer in Central O‘ahu which receive more than 50 inches of rainfall annually and are zoned for agricultural or preservation uses from urban development unless it can be demonstrated that use of Low Intensity Development practices will sustain or increase the amount of recharge.	**S**
(2) Manage urban and agricultural land uses to ensure chemicals and nutrients do not contaminate the underlying potable aquifers. Require best practices for controlling potentially contaminating activities in accordance with the State Department of Health’s Source Water Assessment Program and the City’s Stormwater Management Program.	**S**
(3) Support watershed infiltration enhancement through replanting of native species and removal of invasive species in forest areas, soil conservation practices in agricultural areas, and low impact development practices in urban areas.	**S**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Water Allocation and System Development, pertaining to adequacy of water supply. The Proposed Action will not adversely impact the watershed protection. Construction of the Proposed Action 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, 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 Hawai‘i Administrative Rules, 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.	
Water Use Efficiency and Conservation	
(1) Require developments to conserve water resources by implementing water efficiency and conservation measures, such as monitoring water use and loss, installing low-flow plumbing fixtures, drought-tolerant landscaping, sub-metering and efficient irrigation systems with soil moisture sensors. Such requirements will be determined during review of building permit applications.	**S**
(2) Encourage owners of existing plumbing systems to conduct regular water audits and make repairs to reduce water loss.	**S**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines for Water Allocation and System Development, pertaining to adequacy of water use efficiency and conservation. The Applicant is coordinating with the BWS to ensure there is adequate water source, storage, and delivery to service the Proposed Action. Upon finalization of the design, BWS will determine if the current municipal water system is adequate to accommodate the demand generated by the Proposed Action.	
Use of Non-Potable Water	
(1) Develop an adequate supply of non-potable water for irrigation and other suitable uses in Central O‘ahu in order to conserve the supply of potable water.	**N/A**
(2) Use non-potable water low in total dissolved solids and chlorides for irrigation of lands above the Pearl Harbor aquifer to protect the quality of drinking water withdrawn from wells located down-gradient (i.e., in the direction groundwater flows) of the application.	**N/A**
(3) 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 and subdivision applications and construction plans.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Water Allocation and System Development, pertaining to use of non-potable water.	
Agricultural Water Sources	
(1) Allocate a sufficient amount of water to meet the diversified agricultural needs for Central O‘ahu along with high quality recharge of the Pearl Harbor aquifer.	**N/A**
(2) Request the State Commission on Water Resource Management consider all sources of water in making allocations. (A number of potential sources are identified in Table 4.2, including: Waiāhole Ditch water, Wahiawā Reservoir water, and recycled water recovered from wastewater. The amount of water available and the potential use of each of these sources vary according to location.)	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Water Allocation and System Development, pertaining to agricultural water sources.	
Recycled Water	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(1) Promote large-scale use of recycled water from the Army's Schofield Wastewater Treatment Plant (WWTP) and the City's Wahiawā WWTP and Mililani Wastewater Pre-Treatment Facility for urban and agricultural irrigation in Central O‘ahu to conserve potable water where consistent with State Department of Health and Board of Water Supply standards.	**N/A**
(2) Promote gray water reuse for on-site irrigation as allowed by State Department of Health Gray Water Reuse Guidelines and the Uniform Plumbing Code.	**N/A**
(3) Promote public and private partnerships and leverage State revolving funds and other grant funds and appropriations to plan, design, and construct recycled water treatment and distribution infrastructure to keep recycled water rates affordable.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Water Allocation and System Development, pertaining to recycled water.	
Stormwater Reclamation	
(1) Promote individual rain catchments connected to rain gutters for landscape irrigation, reducing both demand for municipal water and the volume of storm water runoff into streams and nearshore waters.	**N/A**
(2) Promote large-scale storm water impoundments and treatment systems to enhance watershed infiltration and supplement nonpotable irrigation systems in Central O‘ahu for urban and agricultural irrigation.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for Water Allocation and System Development, pertaining to stormwater reclamation.	
4.3 Wastewater Treatment	
(1) Require all new developments in Central O‘ahu to be connected to a regional or municipal sewer service system	**S**
(2) Where feasible, use recycled water recovered from treated wastewater effluent as a source of non-potable water for irrigation and other uses where appropriate and approved by the Department of Health and Board of Water Supply.	**S**
(3) Locate wastewater treatment plants in areas shown as planned for industrial use and away from residential areas shown on the Urban Land Use Map.	**S**
(4) Use a City review and approval process which provides adequate public notice and input for any major new private wastewater treatment plant. Do not require such comprehensive review and approval for other system elements, such as pump stations and mains.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities 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. Additionally, the Proposed Action will seek necessary approvals and permits from the DOH, Individual Wastewater Treatment System Review and the CCH BWS, Cross-Connection Control Requirements and Backflow Prevention Requirements.	
4.4 Electrical Power Development	
(1) Support efforts to increase the share of energy from clean sources through increased efficiency and production of energy from renewable sources.	**N/A**
(2) In approving solar facilities on agricultural lands, require protection of high-quality agricultural lands and maintenance of aquifer recharge, and encourage incorporation of complementary agricultural uses where feasible.	**N/A**
(3) 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.	**N/A**
(4) Give strong consideration to placing any new transmission lines underground where possible under criteria specified in State law.	**N/A**
(5) Locate electrical power plants in areas shown as planned for industrial use and away from residential areas shown on the Urban Land Use Map.	**N/A**
(6) 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.	**N/A**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
Discussion: The Proposed Action 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 will seek necessary approvals and permits relating to electrical power.	
4.5 Solid Waste Handling and Disposal	
(1) Analyze and approve siting and/or expansion of sanitary landfills based on island-wide studies and siting evaluations.	**S**
(2) Analyze and approve siting and/or expansion of sanitary landfills above the UIC line and the “No Pass” line only if recommended by the Department of Health and the Board of Water Supply.	**N/A**
(3) Use a City review and approval process which provides adequate public notice and input, complete technical analysis of the project, and approval by the City Council, for any new or major modification of private landfills, incinerators, garbage-to-energy plants, refuse convenience centers, or other major solid waste handling or disposal facility.	**S**
(4) For master-planned communities, consult 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.	**N/A**
Discussion: The Proposed Action supports the guidelines of the Central O‘ahu Sustainable Communities Plan related to solid waste handling and disposal. The Proposed Action involves the expansion and modernization of solid waste handling facilities to replace the existing Waipahu Convenience Center (WCC), which was constructed in the 1970s and is no longer adequately sized or configured to operate efficiently or accommodate current demand. The new WCC is designed to address operational limitations of the existing facility and improve functionality, safety, and user experience This Final Environmental Assessment (EA) has been prepared in accordance with the procedural requirements of Chapter 343, Hawai‘i Revised Statutes (HRS), and Title 11, Chapter 200.1 of the Hawai‘i Administrative Rules (HAR), which provide for public review and participation. The environmental review process informed interested parties of the Proposed Action and provided opportunities for public input on issues relevant to the EA. A Draft EA was filed with and published by the Environmental Review Program (ERP), followed by a 30-day public comment period. All substantive comments received during the public review period were reviewed and addressed, and written responses were incorporated into the preparation of this Final EA, as appropriate. Accordingly, the preparation of this Final EA and disclosure of the anticipated effects of the Proposed Action comply with applicable policies for managing development and have been subject to review by the public and relevant State and City and County of Honolulu agencies through the Chapter 343 environmental review process. Early Consultation and Pre-Assessment efforts were conducted to inform the community and solicit input to assist in defining the scope of the EA for the Proposed Action. The Early Consultation/Pre-Assessment Package was mailed on July 20, 2023, to the agencies, organizations, and stakeholders identified in Section 7.1.	
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. .	**S**
(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.	**S**
(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.	**S**

Table 4-6: Central O‘ahu Sustainable Communities Plan	
(4) Reduce the volume of sediment in Central O‘ahu streams by identifying sources and volumes of sediment polluting Central O‘ahu streams and Pearl Harbor, and developing projects to address problem areas.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities Plan guidelines, pertaining to drainage systems. Construction of the Proposed Project is anticipated to involve 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 under Section 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, 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 Hawai‘i Administrative Rules, 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. Further, drainage and road conditions at the entrance area of the Project Site and HPD Training Academy will be evaluated during the design phase to develop measures to eliminate or reduce flooding at that location. To the extent feasible, the road elevation at the southern gate of the HDP Training Academy and the Project Site entrance will be raised to help direct stormwater runoff to the shoulder of the road, and swales and detention basins located on the Project Site and HPD Training Academy. Other areas of the Project Site will incorporate fills (elevated) as necessary to direct stormwater runoff to onsite treatment swales and detention basins.”	
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 Department of Planning and Permitting 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.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan guidelines for School Facilities, pertaining to project review and approval assessment.	
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. .	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities 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.	**S**
(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.	**S**
(3) Encourage disaster resilient communities.	**N/A**
Discussion: The Proposed Action will support the Central O‘ahu Sustainable Communities 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 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.	

Table 4-6: Central O‘ahu Sustainable Communities Plan	
As discussed under Section 3.15.1 (Police, Fire, and Medical Services), the Proposed Action 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 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 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 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.	
9. Other Community Facilities	
Colleges and Hospitals	
(1) Locate colleges and hospitals in urban areas near transit stations, commercial centers, or high-density residential areas.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan, in terms of colleges and hospitals.	**N/A**
First Responder Technology Campus	
(1) Develop the campus to be consistent with the spirit and intent of the Central O‘ahu Sustainable Communities Plan vision, policies, and guidelines.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan, in terms of the First Responder Technology Campus.	
Correctional Facilities	
(1) Locate correctional facilities on lands planned for industrial and agricultural use. If such a facility is proposed for lands not planned for industrial or agricultural use, a City review and approval process which provides public review, complete project analysis, and City Council approval should be used.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan, in terms of corectional facilities.	
Antennas	
(1) Encourage co-location of antennas and minimization of visual impacts.	**N/A**
Discussion: The Proposed Action will not impact the Central O‘ahu Sustainable Communities Plan, in terms of antennas.	

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. Hence, the LUO is the CCH’s zoning code.

Discussion:

According to the CCH Department of Planning and Permitting (DPP) LUO, the Proposed Action is situated within the P-2 General Preservation designated zones (See Figure 4-2). The Proposed Action would be classified as “waste disposal and processing,” which would

be permissible use in the P-2 Zone, contingent upon a public hearing and the approval of a Conditional Use Permit – Major (CUP-M) by the DPP.

4.3. Permits and Approvals

The following is a list of permits, approvals, and reviews that may be required prior to implementation of the Proposed Action.

State of Hawai‘i

Department of Land and Natural Resources
- Chapter 6E, HRS, State Historic Preservation Law

Department of Health
- Disability and Communication Access Board
- National Pollutant Discharge Elimination System
- Pollution Control - Noise Permit

City and County of Honolulu

Department of Planning and Permitting
- Building Permits
- Certificate of Occupancy
- Construction Dewatering
- Excavation and Repair of Streets and Sidewalks
- Grading Permit/Trenching Permit
- Plan Review Use Major Modification
- Plan Review Use Minor Modification
- Special Management Area Permit
- Stormwater Drain Connection
- Wastewater Sewer Connection Applications

Board of Water Supply
- Water System Facilities Charges
- Cross-Connection Control Requirements
- Backflow Prevention Requirements

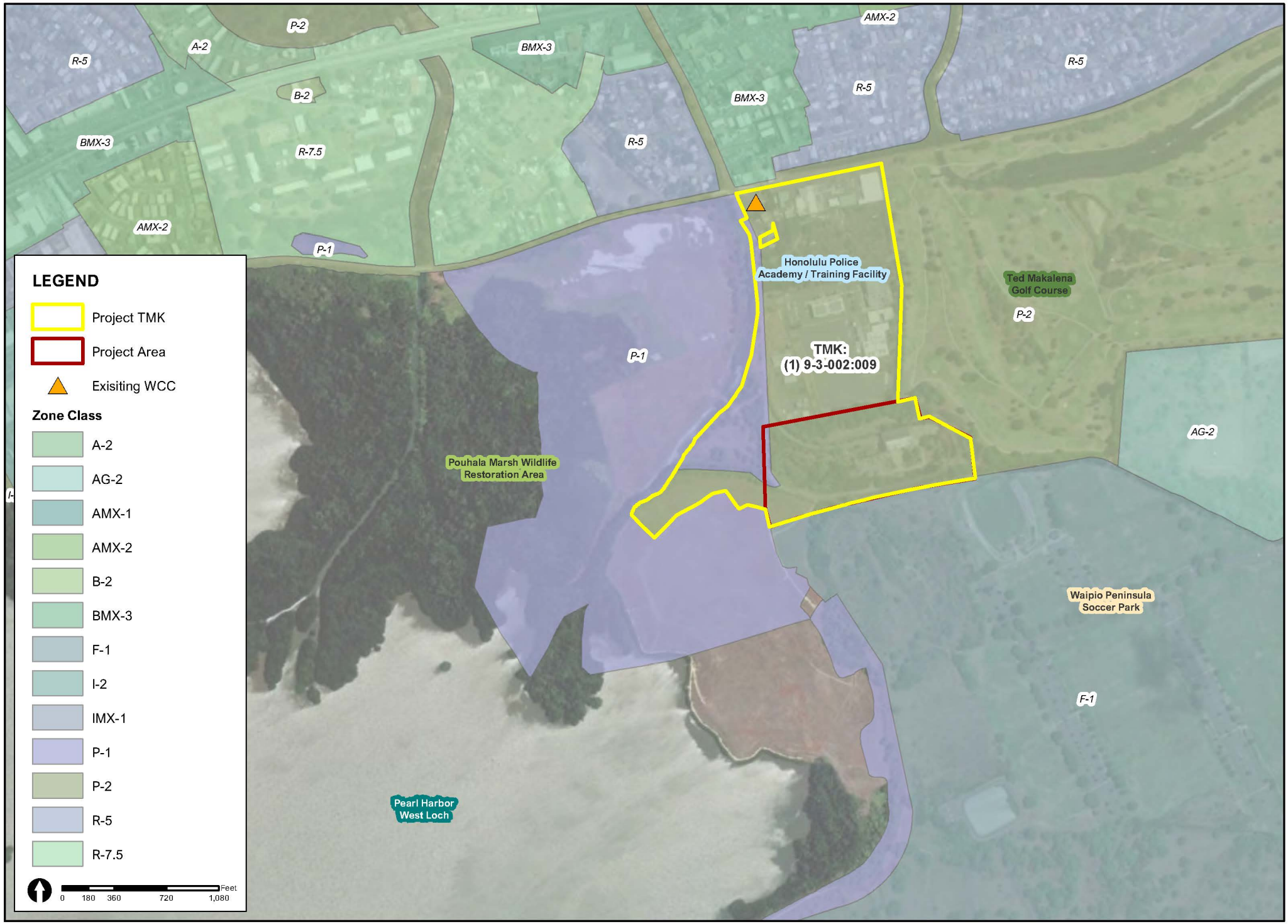
Department of Transportation
- Street Usage Permit

Honolulu Fire Department
- Plan Review

FIGURE 4-2 CITY AND COUNTY OF HONOLULU ZONING MAP

Waipahu Refuse Facility and Convenience Center

Waipahu, O'ahu, Hawai'i



(This page intentionally left blank)

CHAPTER 5: ALTERNATIVES

5. ALTERNATIVES

Under §11-200.1-18, HAR, an EA is required to present a discussion of the consideration of project alternatives that could reasonably attain the goals and objectives of the Proposed Action.

As discussed earlier, the goals and objectives of the Proposed Action are to provide continued solid waste disposal services to the greater Leeward O‘ahu area and facilitate improvements to ENV solid waste management operations in the region as presented in Section 2.1 of this EA.

In observance of these goals, a range of alternatives was considered as part of the planning process for the Proposed Action. These included the No Action Alternative, which would retain the existing facility in its current location and condition without addressing operational inefficiencies or capacity limitations. An alternative location was also evaluated, involving the potential siting of the facility at other properties within the Waipahu area; however, these sites were found to be either unavailable, less suitable in terms of access and compatibility, or unable to meet long-term operational needs. In addition, several alternative design schemes were developed and assessed, including variations in site layout, building configuration, circulation patterns, and facility components. These alternatives are further discussed in Chapter 2. The refined design presented as the Proposed Action was selected based on its ability to best meet project objectives while minimizing potential environmental impacts, which are assessed in Chapter 3The "No Action" alternative constitutes a scenario whereby the Proposed Action as described in Chapter 2 of the EA would not be implemented. In other words, the Project Site would remain as it currently exists now. A general assessment of the No Action alternative clearly underscores that maintaining the status quo would not meet the spirit and intent of the objectives of the Proposed Action.

5.1 No Action Alternative

Inclusion of a “No Action Alternative” in an alternatives analysis assists decision-makers with the evaluation of the extent of a Proposed Action’s potential environmental impact by providing a baseline against which impacts can be measured and assessed.

Under the No Action Alternative, improvements under the Proposed Action would not be constructed, and the Project Site would remain in its current configuration. The No Action Alternative would preclude permit approvals, as well as costs for design and construction, which would otherwise be required for the Proposed Action. The No Action Alternative would also avoid insignificant environmental impacts that would occur as a result of implementing the Proposed Action along with appropriate mitigation measures, as discussed in Chapter 3 of this EA.

However, this alternative would also not meet the objective of the Proposed Action as intended to provide continued solid waste disposal services to the greater Leeward O‘ahu area and facilitate improvements to ENV solid waste management operations in the region. The WCC and Rolloff Division are integral components of O‘ahu’s solid waste management system and vital for responsible management of MSW generated on the island. The WCC provides a location for area residents to drop-off municipal solid waste (MSW), white goods (refrigerators, air conditioners, and other similar appliances), and other household waste materials (e.g., tires, propane tanks, metal, and green waste) as an alternative to drop-off at the Waimanalo Gulch Sanitary Landfill or other solid waste management facility on O'ahu. As the existing WCC was constructed in the

1970's and is no longer sized to operate efficiently and accommodate the number of residents utilizing the facility, this alternative would fail to satisfy the purpose and need of the Proposed Action, and thus is not a feasible alternative.

5.2 Alternative Locations

Alternative locations were not carried forward for further consideration because no other suitable CCH owned lands in the vicinity are available for development to meet the needs of the Proposed Action. Privately owned lands in the vicinity of the Proposed Site may be able accommodate the Proposed Action, however, acquisition costs would be prohibitive and counterproductive to the implementation of the Proposed Action.

5.3 Alternative Design Schemes

During the design development process for the Proposed Action, the project team considered a range of alternatives to improve operational efficiency and service delivery while addressing environmental conditions such as flood risk, traffic circulation, and long-term facility resilience.

As discussed in earlier planning phases, the initial design for the Waipahu Refuse Facility and Convenience Center included a two-story administration building, a single shared access road for both residential and operational vehicles, a fully enclosed refuse cart storage structure, and a more compact site configuration. While functional, an alternative site layout was developed and ultimately selected as the Preferred Alternative. This revised design reflects the following major changes:

- Reduction in administration building height from two stories to a single-story layout, simplifying access and reducing overall building mass;
- Addition of solar canopy structures over both the employee/visitor parking area and rolloff truck parking zone to enhance sustainability and reduce operational energy costs;
- Incorporation of a 20,000-square-foot refuse cart storage structure, designed as an open-sided awning-style facility to increase storage capacity while maintaining visual openness and ventilation;
- Reconfiguration of the rolloff truck parking area, wash bay, and internal connector road, improving traffic flow for operational vehicles and separating them from residential users;
- Geometric refinements to the Waipahu Depot Street access road, including a new bypass/turnout lane and enhanced turning radii to reduce congestion and improve public safety.

This alternative was selected as the Preferred Design Scheme as it better supports the long-term operational needs of the facility, improves user safety through segregated circulation, enhances environmental performance through solar infrastructure, and provides expanded capacity for equipment and cart storage.

Although these revisions do not substantially alter the overall purpose or use of the project, they represent meaningful design refinements that respond to stakeholder feedback, site conditions, and evolving operational priorities. This revised scheme is reflected throughout Chapter 2 of this FEA and serves as the basis for the environmental impact analysis presented in this document.

(This page intentionally left blank)

CHAPTER 6: DETERMINATION

6. DETERMINATION OF FONSI

Potential impacts of the Proposed Action have been evaluated in accordance with the significance criteria of §11-200.1-13, HAR. Discussion of the Proposed Action'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 will occur in previously disturbed and developed areas. Hence, it is unlikely that any unknown cultural/historic properties and/or human skeletal remains would be encountered or disturbed by the various development and operation activities of the Proposed Action. In the event of unexpected discovery of historic or archaeological resources, the SHPD will be immediately notified for appropriate response and action. Thus, it is anticipated that if any significant plants or landscapes need to be removed or altered to implement the Proposed Action, 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 will not curtail the range of beneficial uses of the environment. As previously mentioned, the Project Site is situated in a heavily disturbed urban environment. The operations and uses associated with the Proposed Action are generally consistent with the character of the surrounding region and are anticipated to seamlessly integrate into the Waipahu district.

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

The Proposed Action will not conflict with the long-term environmental policies, goals, and guidelines of the State of Hawai'i as noted throughout Chapter 4 of the EA. Moreover, short-term impacts associated with various construction activities will be mitigated through best management practices noted throughout Chapter 3 of the EA.

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

The Proposed Action will not have a significant adverse effect on the economic welfare, social welfare, or cultural practices of the State as discussed in Chapters 3 and 4 of the EA.

In the short-term, construction jobs will be created to develop the Proposed Action and construction expenditures will provide positive benefits to the local economy but not at a level that would generate any significant population expansion.

In the long-term, the Proposed Action is intended to provide continued solid waste disposal services to the greater Leeward O'ahu area, and facilitate improvements to ENV solid waste management operations in the region. The WCC and Rolloff Division are integral components of O'ahu's solid waste management system and vital for responsible management of MSW generated on the island.

The Proposed Action will not have an effect on cultural resources or practices at the Project Site as none exist as discussed in Section 3.7 of the EA.

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

No identifiable adverse short- nor long-term impacts on public-health are anticipated to result from the construction and operation of the Proposed Action. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated; however, they will be temporary in nature and will comply with Federal, State, and County regulations as discussed in Chapter 3 of the EA.

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

Substantial impacts to public facilities are not anticipated to result from the construction and operation of the Proposed Action. Moreover, the Proposed Action is not anticipated to induce population changes in the area or region, nor will it increase overall tourism to the island of O'ahu. The Proposed Action is intended to provide continued solid waste disposal services to the greater Leeward Oʻahu area, and facilitate improvements to ENV solid waste management operations in the region.

Existing public water, wastewater, drainage, and utility infrastructure have served the area for many years and are expected to have sufficient capacity to serve anticipated demands for the Proposed Action. Agencies with jurisdiction over their respective infrastructure systems will be consulted as the Proposed Action proceeds to ensure that it can be accommodated.

(7) *Involve a substantial degradation of environmental quality;*

The Proposed Action is not anticipated to substantially degrade environmental quality. Long-term impacts to air and water quality, noise levels and natural resources will be minimal. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated, but will be temporary and will comply with State and County regulations as discussed in Chapter 3.

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

The Proposed Action is not anticipated to have a considerable effect upon the environment as discussed in Chapter 3 of the EA. 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;*

No rare, threatened and/or endangered flora or fauna species are known to inhabit the Project Site as discussed in Section 3.5.1 of the EA. The Project Site is situated within an industrial area of Waipahu. The Proposed Action is not anticipated to have any adverse effects on rare, threatened, or endangered species or any critical habitat areas. Soil disturbing construction related activities may unearth soil and plant material that potentially contains invasive fungal pathogens vertebrate and invertebrate pests or invasive plant parts that could harm Hawai'i's

native species and ecosystems. In general, to reduce potential impacts, the mitigation measures presented in Section 3.6.1 are recommended.

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

No long-term significant impacts to air quality, water quality, or noise levels within the Project Site are anticipated as a result of the construction and operation of the Proposed Action.

Land disturbing activities include demolition, foundation work, and potential utility repairs and upgrades. Construction and operation of the Proposed Action will be performed in accordance with Federal, State and County regulations, thereby minimizing potential impacts to air and water quality.

In the short-term, noise from construction activities such as demolition, clearing and paving will be unavoidable. The increase in noise level will vary according to the particular 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 State DOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" regulations. These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels stated in the DOH Administrative Rules. It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulatory limits. 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. Planting of landscaping and stabilization measures will be done as soon as possible on completed areas to help control erosion and runoff that could potentially enter the stream in the long-term. Respective contractors will be responsible for minimizing air quality impacts during the various phases of construction. Exhaust emissions from construction vehicles are anticipated to have 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 Site 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;

No short- nor long-term significant impacts are anticipated as the Project Site is not located within an environmentally sensitive area related to coastal or flood hazard as noted in Section 3.4.2 of the EA.

According to the FIRM, the Project Site is situated within Zone D, an unevaluated area where the flood hazard is currently undetermined. 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 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 will not result in significant impacts to view planes identified in County or State plans or studies. Moreover, the Proposed Action is not expected to adversely affect scenic and visual resources in the area. The Proposed Action will not degrade lateral coastal views or mauka-makai views from areas in the vicinity of the site. The Proposed Action is anticipated to be designed to be consistent with the existing visual character of the surrounding area.

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

The construction and operation of the Proposed Action will not require a significant level of energy consumption. Implementation of the Proposed Action will result in the short-term irrevocable release of GHGs from construction activities associated with the development of the proposed improvements. However, these activities will be temporary and the quantities of GHGs released will be negligible. To reduce vehicle and equipment emissions, carpooling and ensuring that equipment is functioning properly 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.

In the long-term, impacts on air quality from motor vehicle exhausts can potentially occur at or near locations that attract large volumes of motor vehicle traffic. The Proposed Action is not expected to have a significant impact on traffic operation; therefore, no significant impacts on air quality due to an increase in greenhouse gases is anticipated. Due to the minimal impact of the Proposed Action, further mitigation of any potential long-term impacts is not anticipated to be required.

Based on these findings and the assessment of potential environmental impacts, the Proposed Action does not require the preparation of an Environmental Impact Statement. The CCH ENV, as the accepting authority, has determined that this FEA supports the issuance of a Finding of No Significant Impact (FONSI).

(This page intentionally left blank)

CHAPTER 7: CONSULTATION

7. CONSULTATION

7.1 Early Consultation/Pre-Assessment Package

The Early Consultation/Pre-Assessment Package for the Proposed Action was mailed out on July 20, 2023, to the following agencies, organizations, and stakeholders listed below. Consultation was conducted to solicit comments regarding potential concerns and requirements pursuant to refining the scope of EA documentaion. Parties that formally replied during the Early Consultation/Pre-Assessment process are indicated by a "✓" below.
Copies of all comments received, along with the appropriate response letters, are reproduced herein as Appendix D.

Federal Agencies

- U.S. Environmental Protection Agency
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service
- ✓ U.S. Department of the Interior, Fish and Wildlife Service

Federal Representatives

- Senator Mazie Hirono
- Senator Brian Schatz
- Representative Jill Tokuda
- Representative Ed Case

State Agencies

- ✓ Department of Accounting and General Services
- Department of Business, Economic Development and Tourism (DBEDT)
- DBEDT, Hawai'i State Energy Office
- DBEDT, Land Use Commission
- ✓ DBEDT, Office of Planning and Sustainable Development (OPSD)
- OPSD, Environmental Quality Control
- ✓ Department of Defense
- ✓ Department of Education
- Department of Health (DOH)
- DOH, Clean Water Branch
- DOH, Environmental Management Division
- DOH, Hazard Evaluation and Emergency Response Office
- DOH, Wastewater Branch
- DOH, Safe Drinking Water Branch
- ✓ Department of Land and Natural Resources (DLNR)
- ✓ DLNR Division of Forestry and Wildlife
- DLNR, Office of Coastal and Conservation Lands
- DLNR, Historic Preservation Division
- Department of Hawaiian Home Lands
- Department of Transportation (DOT)
- DOT, Highways Division
- ✓ DOT, Airports Division
- Office of Hawaiian Affairs

State Representatives

Senator Michelle N. Kidani
Senator Henry Aquino
Representative Cory Chun
Representative Rachele Lamosao
Representative Elijah Pierick

City and County of Honolulu Agencies

✓ Board of Water Supply
Department of Community Services
✓ Department of Design and Construction
Department of Environmental Services
✓ Department of Facility Maintenance
Department of Parks and Recreation
✓ Department of Planning and Permitting
Department of Transportation Services
✓ Honolulu Fire Department
✓ Honolulu Police Department
Office of Climate Change, Sustainability, and Resiliency
Office of the Mayor

City Council

Councilmember Augie Tulba

Utility Companies

Hawai'i Gas
✓ Spectrum Hawai'i
✓ Hawaiian Telcom
Hawaiian Electric Company

Other Interested Parties and Individuals

Hawai'i State Library
Waipahu Public Library
Waipahu Neighborhood Board No. 22

7.2 Draft Environmental Assessment

Twelve (12) comment letters were received during the public and agency comment period for the subject EA, which began with the publication of the Draft EA in the ERP's *Environmental Notice* May 23, 2024, publication which ended 30 days later on June 22, 2024. The comment letters and responses are reproduced herein as Appendix E.

The following agencies and interest parties commented on the Draft EA:

City and County of Honolulu Agencies

Board of Water Supply
Department of Design and Construction
Department of Planning and Permitting
Department of Parks and Recreation

Department of Transportation Services

State Agencies

Department of Defense
Department of Education
Department of Transportation
DLNR, Office of Coastal and Conservation Lands
DBEDT, Office of Planning and Sustainable Development (OPSD)

Utility Companies

Hawaiian Electric Company
Hawai‘i Gas

7.3 Second Draft Environmental Assessment

Eight (8) letters were received during the public and agency comment period for the subject EA, which began with the publication of the Draft EA in the ERP's *Environmental Notice* December 23, 2025, publication which ended 30 days later on January 22, 2026. The comment letters and responses are reproduced herein as Appendix F.

The following agencies and interest parties commented on the Draft EA:

City and County of Honolulu Agencies

Department of Design and Construction
Department of Facility Maintenance
Honolulu Police Department

State Agencies

DBEDT, Office of Planning and Sustainable Development
Department of Defense
Department of Health
Department of Transportation (DOT)
DOT, Land Use Permits Review

Additionally, one comment was received following the conclusion of the 30-day public comment period. This comment was acknowledged and responded to directly, outside of the EA process.

(This page intentionally left blank)

CHAPTER 8: REFERENCES

8. REFERENCES

AECOS, Inc. November 2022. *Natural Resource Assessment*. Waipahu, Hawai'i. Biological Surveys.

Boden, T.A., Marland, G., and Andres, R.J. (2017). National CO2 Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2014, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, doi 10.3334/CDIAC/00001_V2017.

Chu, P.-S. 1995. Hawai'i Rainfall Anomalies and El Niño. Journal of Climate 8:1697-1703.

Chu, P.-S., and H. Chen. 2005. Interannual and Interdecadal Rainfall Variations in the Hawaiian Islands. Journal of Climate 18(22):4796–4813.

City and County of Honolulu. 2021. *One Climate One O'ahu Climate Action Plan 2020-2025.* https://www.resilientoahu.org/climate-action-plan

City and County of Honolulu Climate Change Commission, *Climate Change Brief*, June 2018. https://www.resilientoahu.org/s/Climate-Change-Brief.pdf

City and County of Honolulu Department of Emergency Management. 2020 January. Multi-Hazard Pre-Disaster Mitigation Plan For the City & County of Honolulu.

City and County of Honolulu, Department of Planning and Permitting, *Primary Urban Center Development Plan,* June 2004.

City and County of Honolulu, *General Plan, Objectives and Policies*, Amended October 3, 2002.

Climate Change Commission, City and County of Honolulu. 2018. *Sea Level Rise Guidance*. https://static1.squarespace.com/static/5e3885654a153a6ef84e6c9c/t/5ef121c353bdf278e3e4d253/1592861125312/FINAL+ADOPTED+w_rev_+Sea+Level+Rise+Guidance+2018.pdf

Collins, M. et al. 2010. The impact of global warming on the Pacific Ocean and El Niño. Nature Geoscience 3:391-397.

Courtney, C.A; Romine, B.M.; Lander, M.; Hintzen, K.D.; Owens, T.M.; Pap, R.A. 2020. "Guidance for Addressing Sea Level Rise in Community Planning in Hawai'i." Prepared by Tetra Tech, Inc. for the University of Hawai'i Sea Grant College Program and State of Hawai'i Department of Land and Natural Resources and Office of Planning, with funding from National Oceanic and Atmospheric Administration Office for Coastal Management Award No. NA16NOS4730016.

Federal Emergency Management Agency, *Flood Insurance Rate Map Panel No. 0353G*. gis.hawaiinfip.org/

Garza, J.A., P.-S. Chu, C.W. Norton, and T.A. Schroeder. 2012. Changes of the prevailing trade winds over the islands of Hawaii and the North Pacific. J. Geophys. Res. 117(D11):2156-2202.

Hawai‘i Climate Change Mitigation and Adaptation Commission. 2017. *Hawai‘i Sea Level Rise Vulnerability and Adaptation Report*. Prepared by Tetra Tech, Inc. and the State of Hawai‘i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai‘i Department of Land and Natural Resources Contract No: 64064.

IPCC. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp. 2014.

ISO (2018). ISO/TS12913-2:2018, *Acoustics—Soundscape—Part 2: Data Collection and Reporting Requirements (International Organization for Standardization, Geneva, Switzerland).*

Keener, V.W., K. Hamilton, S.K. Izuka, K.E. Kunkel, L.E. Stevens, and L. Sun. 2013. Regional Climate Trends and Scenarios for the U.S. National Climate Assessment. Part 8. Climate of the Pacific Islands, NOAA Technical Report NESDIS 142-8, 44 pp.

Lauer, A., C. Zhang, O. Elison-Timm, Y. Wang, and K. Hamilton. 2013. Downscaling of Climate Change in the Hawaii Region Using CMIP5 Results: On the Choice of the Forcing Fields. Journal of Climate 26:10006-10030.

FEMA, (2000). *The Disaster Mitigation Act of 2000*.

Foote, Donald E., E.L. Hill, S. Nakamura and F. Stephens (1972). *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. United States Soil Conservation Service, Washington DC.

Hawaii Department of Health. 2014. State of Hawai‘i Water Quality Monitoring and Assessment Report. Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress Pursuant to §303(d) and §305(b), Clean Water Act (P.L. 97- 117). Clean Water Branch.

Macdonald, Abbott & Peterson. 1983. *Volcanoes in the Sea*. University of Hawaii Press, Honolulu, Hawaii

Safeeq, M., A. Mair, and A. Fares. 2012. Temporal and spatial trends in air temperature on the Island of Oahu, Hawaii. Int. J. Climatol. 33(13):2816-2835. Doi:10.1002/joc.3629

Sea Grant. (2014). *Climate Change Impacts in Hawai‘i A Summary of Climate Change and Its Impacts to Hawai‘i’s Ecosystems and Communities*. https://seagrant.soest.hawaii.edu

Schroeder, T.A. 1993. Climate controls. In: Prevailing trade winds. Edited by Sanderson, M. Honolulu:University of Hawai‘I Press. Pp 12-36

State of Hawai‘I Department of Health, *Hawai‘I Administrative Rules Title 11 Department of Health Chapter 54, Water Quality Standards*, amended and compiled May 27, 2009.

State of Hawai'I Department of Health, *Hawai'I Administrative Rules Title 11 Department of Health Chapter 60.1, Air Pollution Control*, amended and compiled September 16, 2003.

State of Hawai'I Department of Health, *Hawai'I Ambient Air Quality Data*, Clean Air Branch. Internet. Available at: http://health.hawaii.gov/cab/Hawai'i-ambient-air-quality-data/

Sterling, Elspeth P. and Catherine C. Summers. 1978. *Sites of Oahu*. Bishop Museum Press, Honolulu, Hawai'i

Sweet, W.V., R.E. Kopp, C.P. Weaver, J. Obeysekera, R.M. Horton, E.R. Thieler, and C. Zervas,. 2017. Global and Regional Sea Level Rise Scenarios for the United States. NOAA Technical Report NOS CO-OPS 083. NOAA/NOS Center for Operational Oceanographic Products and Service,

Takahashi, M., O. Elison Timm, T.W. Giambelluca, H.F. Diaz, and A.G. Frazier. 2011. High and Low Rainfall Events in Hawai'I in Relation to Large-Scale Climate Anomalies in the Pacific: Diagnostics and Future Projections (Abstract #GC51D–1024). Poster presented at the American Geophysical Union Fall Meeting, San Francisco, CA

Tetra Tech. 2018. *State of Hawai'i 2018 Hazard Mitigation Plan.* Prepared for the State of Hawai'i Emergency Management Agency.

Timm, O. et al., 2014. Statistical Downscaling of Rainfall for the Hawaiian Islands using CMIP3 and CMIP5 Model Scenarios. Asia-Pacific Data-Research Center of the IPRC. http://apdrc.soest.hawaii.edu/projects/SD/ (03/19/14)

Timm, O., and H.F. Diaz. 2009. Synoptic-Statistical Approach to Regional Downscaling of IPCC Twenty-First-Century Climate Projections: Seasonal Rainfall over the Hawaiian Islands. J. Climate 22:4261–4280, doi: 10.1175/2009JCLI2833.1

Tokinaga, H. et al. 2012. Regional Patterns of Tropical Indo-Pacific Climate Change: Evidence of the Walker Circulation Weakening. Journal of Climate 25:1689-1710.

Trauernicht, C., (2014) Wildfire in Hawaii, Hawaii Wildfire Management Organization.

U.S. Census Bureau American Fact Finder, Profile of General Population and Housing Characteristics: 2010. http://factfinder2.census.gov

U.S. Department of Agriculture, Natural Resources Conservation Service (2001) *Soil Survey Geographic (SSURGO) database for Island of Oahu, Hawaii (hi980), U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.ncgc.nrcs.usda.gov/products/datasets/ssurgo/*.

U.S. Fish and Wildlife Service, National Wetlands Inventory
http://www.fws.gov/wetlands/Data/Mapper.html

United States Department of Agriculture Natural Resource Conservation Service. *Soil Classification*. Internet. Available at: http://soils.usda.gov/technical/classification/

United States Office of Noise Abatement and Control. 1977. *Toward a National Strategy for Noise Control*

Wilson Okamoto Corporation. 2023 August. *Traffic Impact Report for the Waipahu Refuse Facility and Convenience Center*

(This page intentionally left blank)

APPENDIX A:

Natural Resource Assessment

AECOS Inc.

AECOS No. 1746

A natural resources assessment for Waipahu Convenience Center improvements



AECOS Inc.
45-939 Kamehameha Highway
Suite 104
Kāneʻohe, Hawaiʻi 96744

March 13, 2023

A natural resources assessment for Waipahu Convenience Center improvements

March 13, 2023 *AECOS* No. 1746

Eric B. Guinther, Susan Burr, and Bryson Luke
AECOS Inc.
45-939 Kamehameha Highway Suite 104
Kāneʻohe, Hawaiʻi 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: bryson@aecos.com

Introduction

The City and County of Honolulu (C&C), Department of Design and Construction (DDC) is proposing to make various improvements to the former Waipahu Incinerator (TMK: 9-3-002:009 por.) site (the "Project"), presently serving as a roll-off container base yard. Included in planned development of the property will be a new convenience center to replace the existing Waipahu Convenience Center (TMK: TMK: 9-3-002:009 por.) located approximately 0.3 mi (0.5 km) north on Waipahu Depot Street. The new Waipahu Convenience Center would be at the *makai* end of Waipahu Depot Street directly adjacent to the HPD Training Academy (Ke Kula Māka'i).

AECOS, Inc. was contracted by Wilson Okamoto Corp. to survey the Project area for sensitive natural resources (flora and fauna), determine the presence/absence of federal jurisdictional waters (and delineate boundaries if present), and prepare a report of findings[1].

Site Description

The Project is located on the Waipiʻo Peninsula dividing the West and Middle lochs of Pearl Harbor in south central Oʻahu (Figure 1). The drainage basin at the site is part of the relatively small Kapakahi Watershed (DAR code 34018) covering central Waipahu. Elevation in the Project area is close to sea-level and tidal inundation occurs periodically at the very lower end of Waipahu Depot Street partly within the Project area. Two areas were surveyed in their entirety:

[1] This report is intended to become part of the public record and incorporated into an EA for the subject Project.

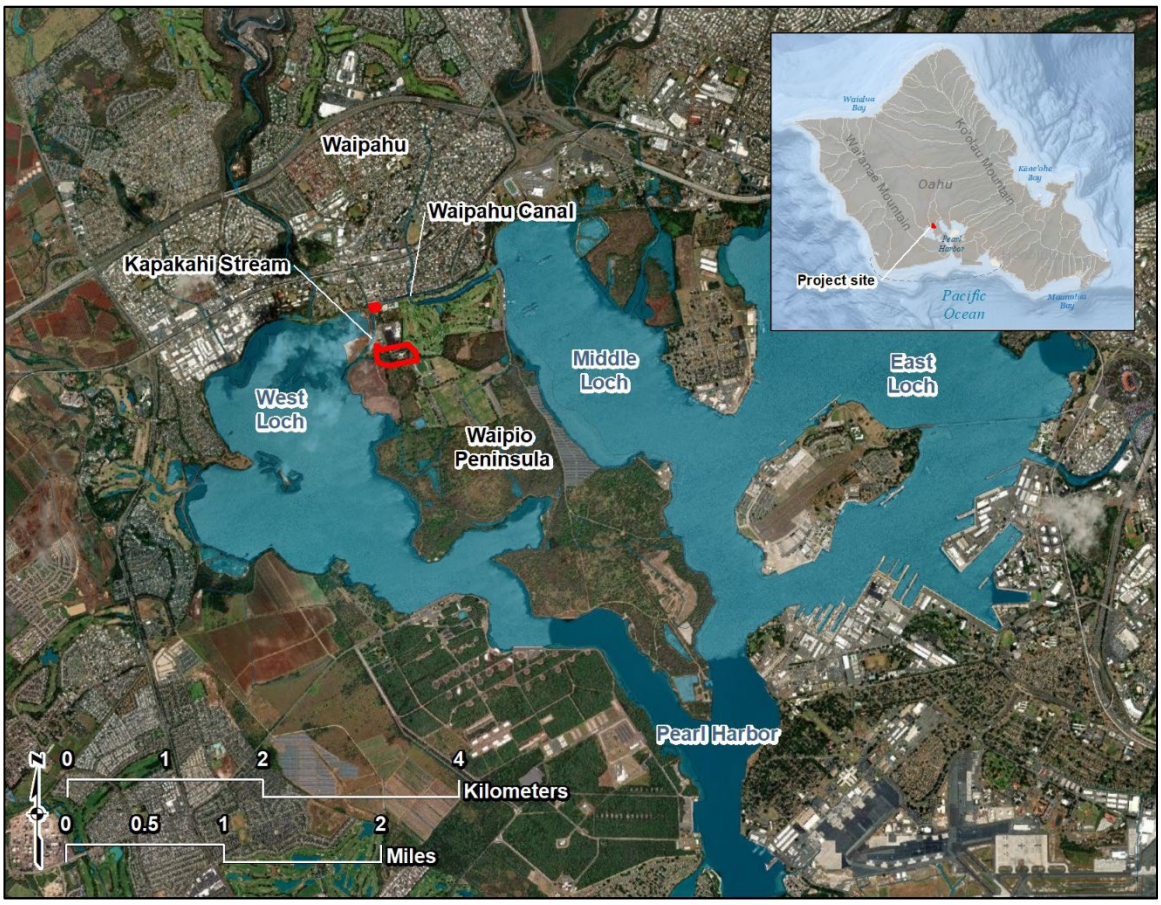


Figure 1. Project site (outlined in red) at the upper part of the Waipi'o Peninsula

the existing Waipahu Convenience Center site and the former Waipahu Incinerator property (see Figure 2).

The existing Waipahu Convenience Center is located on a fully developed, 0.24-ha (0.59-ac) lot (TMK: 9-3-002:009 por.). The Honolulu Fire Department maintenance facility and its access road border the north and east side. A shallow east-west swale follows the security fence of the adjacent wastewater pump station on the south. The small size of the site, and user access requiring cars to line up on Waipahu Depot Road, are problems that will be solved by the proposed move to the more spacious former incinerator property.

The former incinerator site is only partly occupied by the incinerator building and paved access roadway ramps that allowed truck access to the upper floors of the building. Other roads access surrounding areas, and all of the property shows evidence of having been disturbed at some point in the past. The proposed convenience center site itself is more or less level land located on the north side of the paved access road from the incinerator ramp and a short distance east



Figure 2. Survey areas (outlined in red) and NWI map (in blue overlay).

of the y-intersection of the loop road. This area is mostly a scrub forest with a shallow east-west ditch following the security fence of the adjacent police academy bordering the incinerator property on the north.

The Ted Makalena Golf Course, operated by C&C, borders the incinerator property on the east; and the Waipio Soccer Complex and former ash landfill border the site on the south. Waipahu Depot Street, Kapakahi Stream, and state-owned Pouhala Marsh Wildlife Sanctuary occur outside the area to the west (Fig. 2).

The Hawai‘i Dept. of Land and Natural Resources (HDLNR) *Flood Hazard Assessment Tool* (HDLNR, 2019) maps the majority of the Project site within Flood Zone D, indicating a flood risk is present, although the probability of that flood risk has not been quantified. The western edge of the Project site nearest Kapakahi Stream is within special flood hazard area Zone AE, subject to the 1% annual chance flood, and non-special flood hazard area Zone XS, subject to the 0.2% annual chance flood (Figure 3).

The U.S. Dept. of Agriculture, Natural Resources Conservation Service, *Web Soil Survey* (USDA-NRCS, 2021) maps the dominant soil types at the Project as Fill Land (map unit FD) and Fill Land mixed (map unit FL). Sources of the fill soil material originate from several deposition events dating from the 1930s to the 1970s, with the majority of fill likely being spoil from the dredging of Pearl Harbor during the WWII era (Hobdy, 2017). Fill soils are not listed as a hydric soil type in the USDA NRCS Soil Data Access *Hydric Soils List* for Oʻahu Island (USDA-NRCS, nd). Soils mapped north of the Project site are Typic Endoaquepts mucky silt loam, 0-1% slope (map unit TR), a hydric soil.

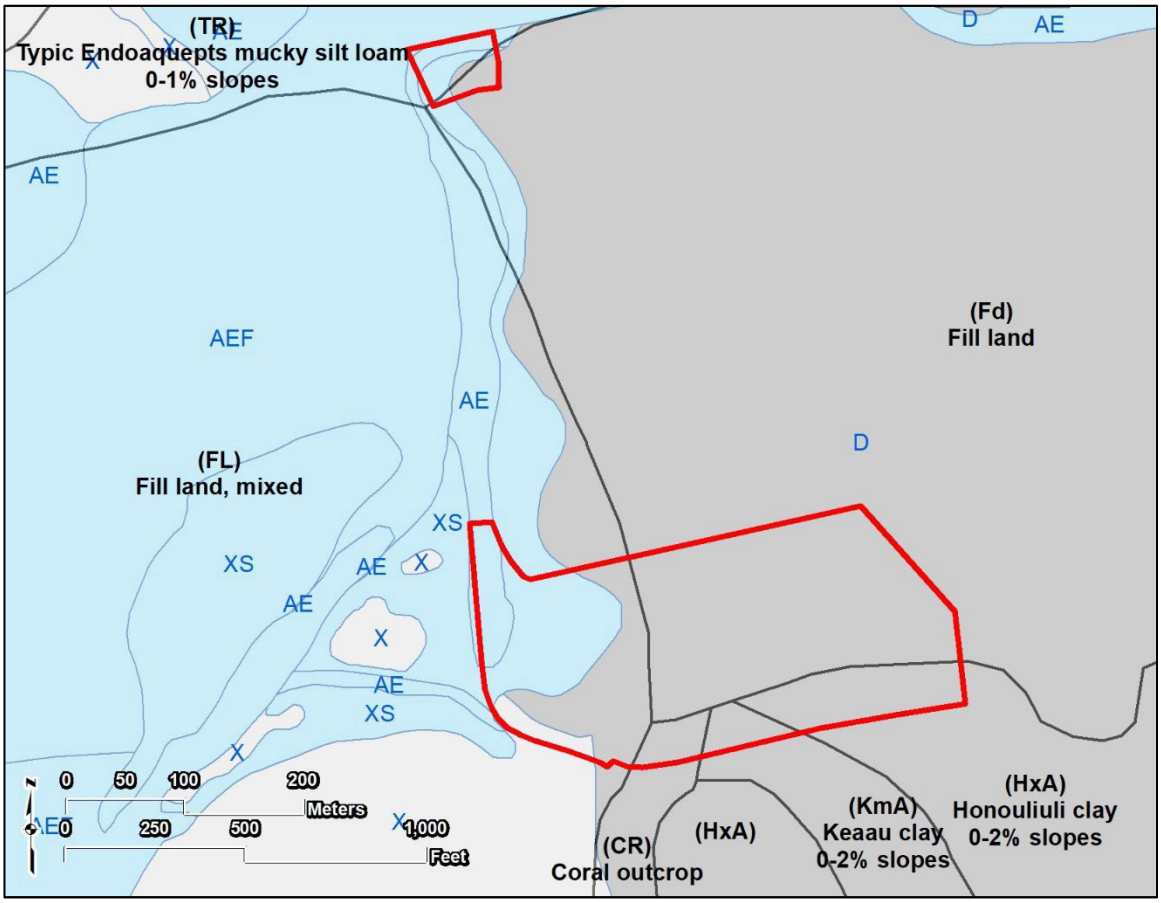


Figure 3. Survey areas (in red) with flood zone (blue) and USDA soil map overlays.

A roadside ditch on the east side of Waipahu Depot Street is isolated from the roll-off container base yard by a low earthen berm. This ditch conveys stormwater runoff to Kapakahi Stream via culverts under the street. As described above, Waipahu Depot Street and well inland of the road is within the flood zone. At least in front of Ke Kula Māka'i (the Honolulu Police Department Training Academy), Waipahu Depot Street floods regularly (*AECOS*, 2022). This flooding

appears tidal rather than the result of runoff during heavy rains. It is not clear at this time whether the area represents a *playa* (a shallow basin flooded by runoff or groundwater rising in response to the tide) or is directly fed by tidal flood from the nearby channels connected to West Loch (and therefore would be a tidal flat).

Climate

Climate at the Project site is mesic sub-tropical. The *Rainfall Atlas of Hawai'i* (Giambelluca et al., 2013) approximates the average annual rainfall at the Project site as 579 mm (22.8 in), with moderate variation through the wet and dry seasons. Rainfall is typically greatest in January and least in June (Figure 4). The *U.S. Climate Normals Dataset* (NOAA-NCEI, 2022) reports average annual rainfall at the nearest available climate normal station (Ewa Beach, USGS) as 433 mm (17.06 in), with rainfall being highest in March and least in June. U.S. Climate Normals data are based on a 30-year average from 1991 to 2020.

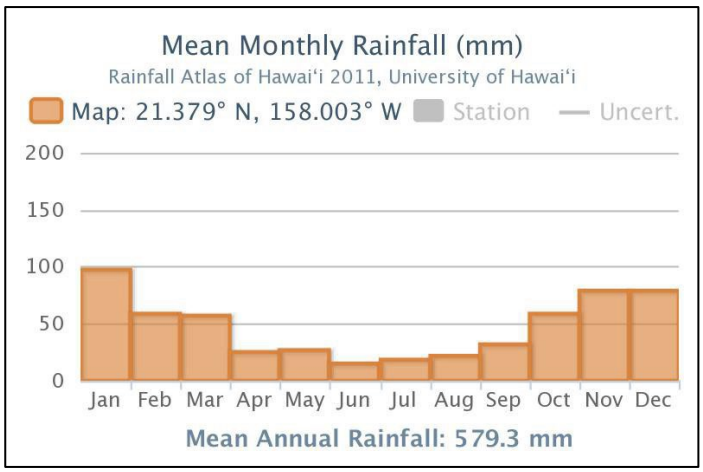


Figure 4. Mean monthly rainfall (mm) at the Project site (Giambelluca et al., 2013).

Jurisdictional Waters

Waters of the U.S. (also called "jurisdictional waters") are surface waters that come under federal jurisdiction as authorized by the Clean Water Act (CWA) and the Rivers and Harbors Act (RHA). Authority over these waters is granted to various federal agencies, including the U.S. Environmental Protection Agency (USEPA), with the U.S. Army Corps of Engineers (USACE) having permit authority for some actions that impact jurisdictional waters. Jurisdictional waters include all tidal waters and a subset of streams, lakes, reservoirs, and wetlands.

On March 20, 2023, the final "Revised Definition of 'Waters of the United States'" rule will go into effect (USACE and USEPA, 2023) and we based our jurisdictional assessment on these rules. Potentially jurisdictional waters in the Project area include:

- tidal waters (a)(1),
- tributaries to tidal waters that have relatively permanent water (a)(3)(i) or significantly affect the chemical, biological, or physical integrity of tidal waters (a)(3)(ii), and
- wetlands adjacent to (a)(1) waters.

Applicable waters that are specifically called out as not being waters of the U.S.in the revised definition include:

- ditches excavated wholly in and draining only dry land that do not carry a relatively permanent flow of water (b)(3)
- swales and erosional features characterized by low volume, infrequent, or short duration flow (b)(8).

Adjacent means bordering, contiguous, or neighboring. If a wetland is adjacent, CWA jurisdiction extends to the wetland/upland boundary.

Our jurisdictional assessment, as presented herein, is based upon best professional judgement, but the USACE must concur for our findings to become official determinations of federal jurisdiction. If a feature is determined by the USACE to be jurisdictional, certain activities would require a permit from that agency before undertaking work within the boundaries of that feature.

Methods

Jurisdictional Waters

AECOS scientist Susan Burr conducted a determination and delineation of federal jurisdictional waters in the Project area. Prior to the field survey, we reviewed literature, maps, and GIS datasets. Reviewed materials included: National Wetlands Inventory (USFWS, nd-a); Web Soil Survey (USDA-NRCS; 2021); U.S. Climate Normals (NOAA-NCEI, 2022); Federal Emergency Management Agency (FEMA) and HDLNR Flood Hazard Assessment Tool (HDLNR, 2019); tide predictions (NOAA, 2022), and previous surveys made in the subject area (*AECOS*, 2016, 2019, 2022). To determine 'typical' or 'atypical' conditions for ambient hydrological condition, we used federal precipitation data (NOAA-NWS; NOAA-NCEI) from rain gages with established historical averages compared to precipitation from a period of three months preceding our survey.

The survey of jurisdictional waters was conducted between the hours of 0800 to 1130 on November 22, 2022. The survey occurred a near low tide of -0.38 ft (relative to mean sea level or MSL) that occurred at 1012 at Sta. 1612366, Fort Kamehameha, Bishop Point, Pearl HBR (NOAA/NOS/CO-OPS, 2023). The previous high tide was +1.36 ft at 0318, and the next high tide was +0.09 ft at 1354. A wetlands survey for the Police Academy and the lot between the Police Academy and the HFDF maintenance facility was surveyed on January 11, 2022 (*AECOS*, 2022).

Wetlands

The approach for wetland delineation is described by the *Corps of Engineers Wetland Delineation Manual* ("Manual"; USACE, 1987) and *Regional Supplement for Hawai'i and Pacific Islands* (USACE, 2012a). The wetland status of plant species derives from the 2012 National Wetland Plant List (USACE, 2012b) and a 2020 update (USACE, 2020). Wetlands require positive evidence of hydrophytic vegetation, hydric soil, and wetland hydrology, and all three must be present for a positive wetland determination. The boundary between jurisdictional wetland and other aquatic feature or upland is established as a line outside of which at least one of the three indicators is absent.

To assess for the presence of wetlands, we established two sample points (SP-01 and SP-02). SP-01 is located in the shallow east-west ditch adjacent to the security fence of the police academy. SP-02 is in a low area east of the roadside ditch and berm adjacent to Waipahu Depot Street (see Figure 5). We completed a wetland data determination form at each SP and marked the positions using a handheld global navigation satellite system (GNSS) instrument (Trimble Geo 7X). The resulting shapefile was processed with GPS Pathfinder, including differential correction, and exported as ArcMap shapefiles using a projected coordinate system of NAD 1983 UTM Zone 4N.

Botanical Survey

AECOS botanist, Eric Guinther, surveyed the Project areas on November 22, 2022. Plant species were identified as they were encountered during wandering transects that covered the survey area (shown in Figs. 2, above) aided by a hand-held GNSS unit (Trimble Geo 7X) with the survey area boundaries shown on the instrument. The relative abundance of each plant species within the Waipahu Incinerator site was determined from notes made during the survey. Species names follow *Manual of the Flowering Plants of Hawai'i* (Wagner, Herbst, &



Figure 5. Location of jurisdictional waters survey test pits (SPs).

Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental plants. More recent name changes for naturalized plant species follow Imada (2019).

Terrestrial Vertebrates Survey

Avian Survey

A survey of extant birds was conducted in the morning hours of November 22, 2022. Birds were identified to species by visual observation, aided by Leica 10 X 42 binoculars, and by listening for vocalizations. Avian species abundance was estimated from four count stations located roughly equidistant around the Project area. A single six-minute avian point count was made at each count station. Any species observed outside of the timed counts was noted as an incidental observation. An additional 30-minute waterbird count was made at Kapakahi Stream from Waipahu Depot Street adjacent to the Project.

Weather conditions were ideal for avian detection with unlimited visibility, no precipitation, and light winds. The avian phylogenetic order and nomenclature used in this report follows the 62nd supplement to the AOS *Check-List of North and Middle American Birds* (Chesser et al., 2021).

Mammalian Survey

A list was made of all mammals encountered during the survey. Indicators of mammalian presence, such as tracks, scat, and other sign were noted. Mammalian phylogenetic order and nomenclature follow *Mammal Species of the World* (Wilson and Reeder, 2005).

Results

Jurisdictional Waters

The nearest National Oceanographic Atmospheric Administration–National Weather Service (NOAA–NWS) rain gage, Waiawa PH (WWFH1), recorded a total of 86.6 mm (3.41 in) of rainfall in the three months preceding our jurisdictional waters survey in November 2022, with the majority occurring in September (44.7 mm or 1.76 in; NOAA-NWS, 2023). Total rainfall in the three-month period of September through November, 2022 was 47% of the moving 30-year average rainfall for that gage. Climate Normals from the nearest NOAA-NCEI gage (‘Ewa Beach) for the same three-month period is 119.1 mm (4.69 in)—around 30% greater than that measured at WWFH1. Hydrologic conditions on Waipi‘o Peninsula during our survey can be considered drier than normal, but within “typical” range for a determination of federal jurisdictional waters.

Tributaries

No tributary streams are present within the Project sites. We evaluated three features to determine if they meet the definition of a jurisdictional tributary or of excluded waters (USACE and USEPA, 2023). The three features are (1) a dry swale that runs east-west along the south side of the existing Waipahu Convenience Center (Figure 6), (2) a man-made ditch that runs east-west along the north side of the roll-off container base yard (Fig. 5 and Figure 7), and (3) a roadside ditch that runs north-south along the east side of Waipahu Depot Street (Figure 8). Each of these features drains west to culverts under Waipahu Depot Street and each culvert discharges into Kapakahi Stream, which is a perennial tributary to the Pacific Ocean at West Loch Pearl Harbor.



Figure 6. Non-jurisdictional swale on south side of Waipahu Convenience Center.

Because of this direct connection (although none of these features carry a relatively permanent flow of water), the potential for any of them to significantly affect the chemical, biological, or physical integrity of the tidal segment of Kapakahi Stream exists. However, ditches excavated wholly in and draining only dry land that do not carry a relatively permanent flow of water and swales and erosional features characterized by low volume, infrequent, or short duration

flow are specifically excluded as waters of the U.S. The Project area is entirely fill land and each one these features was constructed to drain this constructed upland. The shallow features do not intersect basal groundwater and are higher than the extreme reaches of the highest tides, so none is jurisdictional.



Figure 7. Non-jurisdictional ditch on north side of roll-off baseyard.

Wetlands

No wetlands are present within the Project sites, even in the areas within the site in a geomorphic position conducive to wetland formation. SP-01 is in the ditch along the north side of the roll-off container base yard (see Fig. 7) and SP-02 is in a low area near Waipahu Depot Street (Fig. 5 and Figure 9). These areas were selected to be investigated for wetland characteristics because they are in the lowest points in the Project area and the presence of the plant hybrid, *Pluchea* x*fosbergii*[2] at these locations is suggestive of a wetland presence.

[2] *P*. x*fosbergii* is a hybrid of Indian fleabane (*P*. *indica*) and sourbush (*P*. *carolinensis*) and is common on Waipi'o Peninsula. *P*. *indica* and *P*. *carolinensis* are designated as facultative (FAC) wetland species. If not growing in wetlands, these two species are often found in wet features such as drainages and along the margins of wetlands. Even though *P*. x*fosbergii* is not on the NWPL (and, therefore, technically an upland species), we consider it to be a FAC species.



Figure 8. Non-jurisdictional ditch on east side of Waipahu Depot Street.

Whereas *P.* x*fosbergii* is the dominant species at SP-01 and SP-02, the indicator status of other dominant species in these low areas are upland (UPL) and, therefore, neither SP meets the requirement for wetland vegetation. SP-01 in the ditch does not meet the requirement for wetland soils or wetland hydrology: the soil is non-hydric fill material and only one secondary indicator of wetland hydrology (geomorphic position) is present. The surface layer of soil at SP-02 has oxidized rhizospheres on living roots, which is a primary indicator of wetland hydrology, but the soil is a non-hydric fill material (in this case, glass and ash flakes below a 4-in layer of sandy clay). Therefore, neither the ditch represented at SP-01 nor the low area represented at SP-02 qualify as a wetland. The wetland determination datasheet forms are provided in Attachment A.

Vegetation

The existing convenience center is fully developed and plants are limited to a narrow perimeter of the site. Most are weeds or planted ornamentals. The



Figure 9. SP-02 is in a low area of the roll-off container base yard.

proposed new convenience center site is a forest of *kiawe* trees and typical of most of the incinerator site, except the property also includes disturbed open ground with roads and structures. Refuse dump piles are scattered across the area, presumably reflecting a period of time in the past when public access to the area was as unrestricted. The south side of the incinerator building is a fenced, mostly paved yard, but with extensive ornamental plantings, including fruit trees.

Flora

A listing of plants recorded during the November 2022 survey is presented as Attachment C and shows 117 species observed during the survey as occurring in the survey area. At the existing convenience center site, 37 species were recorded. At the former incinerator site, 103 species were noted as present; 24 species were recorded from both locations. Seven species are indigenous natives and another 6 are regarded as early Polynesian introductions. The indigenous species are: *moa* (*Psilotum nudum*), *kou* (*Cordia subcordata*), *kīpūkai* (*Heliotropum procumbens*), *koali'ai* (*Ipomoea cairica*), *pa'uohi'iaka* (*Jacquemontia ovalifolia*), *milo* (*Thespesia populnea*), and *'uhaloa* (*Waltheria indica*). Species considered early Polynesian introductions (so-called "canoe plants") are: *niu* or

coconut (*Cocos nucifera*), *kī* (*Cordyline fruticosa*), *kukui* (*Aleurites moluccana*), *ʻulu* or breadfruit (*Artocarpus altilis*), and *maiʻa* or banana (*Musa* sp.). No endemic species were recorded, and all of these "native" plants are common throughout the Hawaiian Islands.

The most common plants recorded on the former incinerator site are: Guinea grass (*Megathyrsus maximus*), pluchea (*Pluchea* x*fosbergi* and *P. indica*), and *kiawe*. *Koa haole* (*Leucaena leucocephala*), *ʻuhaloa* (*Waltheria indica*), *Sida ciliaris*, comb hyptis (*Mesosphaerum pectinatum*), and (*Heliotropum procumbens*), Chinese violet (*Asystasia gangetica*), Bermuda grass (*Cynodon dactylon*), and buffelgrass (*Cenchrus ciliaris*) are common scattered across the property or particularly abundant in localized areas .

Avian Fauna

A total of 206 individual birds of 20 species representing 16 separate families were recorded from four count stations at the Project sites (Attachment C). Avian diversity and densities were in keeping with the mixed land-use and non-native forest, field, and landscaped habitats on the Project sites. The three most abundant species—Common Waxbill (*Estrilda astrild*), Common Mynah (*Acridotheres tristis*), and Warbling White-eye (*Zosterops japonicus*)—account for nearly half (48%) of all birds recorded during station counts.

The result of the 30-minute waterbird count was quite robust as three of the four Hawaiian waterbird species known to occur on Oʻahu—the Hawaiian Coot or *ʻalae keʻokeʻo* (*Fulica alai*), Black-necked Stilt or *aeʻo* (*Himantopus mexicanus knudseni*), and Black-crowned Night-Heron or *ʻaukuʻu* (*Nycticorax nycticorax*)—were recorded. A prior survey of the waterbird habitat at Kapakahi Stream and Pouhala Marsh by *AECOS* (2022) found all four species, including the Hawaiian subspecies of Common Gallinule or *ʻalae ʻula* (*Gallinula galeata sandvicensis*). One additional waterbird species—non-native Hawaiian Duck x Mallard Duck hybrid (*A. wyvilliana* x *A. platyrhynchos*)—was recorded from the 30-minute waterbird count and is included in Attachment C as waterbird count observations utilizing habitat beyond the Project area. The waterbird diversity and densities reflect waterbird habitats present near the Project area at Pouhala Marsh and Kapakahi Stream.

Black-necked Stilt and Hawaiian Coot were counted in both the station count at the Project site and the 30-minute waterbird count at Kapakahi Stream. Individual Black-necked Stilt were observed in-flight, transiting between waterbird habitat at Pouhala Marsh and the Ted Makalena Golf Course. In previous surveys of the area, Stilt were observed to forage along tidally flooded segments of Waipahu Depot Street (*AECOS*, 2022). Hawaiian Coot was audibly

detected during the point counts, and later visually confirmed during the 30-minute waterbird count. Hawaiian Coot would be anticipated to utilize the waterbird habitat at Pouhala Marsh and Kapakahi Stream, while no such habitat is available at the Project sites.

One additional indigenous migratory species, Pacific Golden Plover (*Pluvialis fulva*), was recorded at the Project sites outside of the timed count and is included in Attachment C as an incidental observation. Of the 23 species recorded by the survey, one species is endemic, two species are indigenous, and one species is an indigenous migrant. The remaining 19 avian species observed are non-native (alien) species naturalized in the Hawaiian Islands.

Mammals

We recorded two mammalian species during our survey: domestic dog (*Canis lupis familiaris*) and small Indian mongoose (*Herpestes javanicus*).

Discussion and Recommendations

Recommendations are partly based on U.S. Fish and Wildlife Service, Animal Avoidance and Minimization Measures (USFWS-PIFWO, 2022). Implementation of the recommendations (provided below as bulleted items) by the Project contractor will minimize impacts to listed species to the maximum extent practicable.

Jurisdictional Waters

We did not find any jurisdictional waters in the Project area. None of the options for the layout of the convenience center will result in the fill or alteration of any jurisdictional tributaries or wetlands.

The flooded area on and adjacent to Waipahu Depot Street, between the Waipahu Convenience Center and the roll-off base yard, is either a playa or a tidal flat. If it is a playa (a usually dry lake or pond) isolated from the ocean and fed by a basal groundwater rising with extreme tides, it would not be jurisdictional as the soil type is not hydric (*AECOS*, 2022). On the other hand, if it is an area representing the extreme reaches of the highest tides it would be considered jurisdictional (land below the reach of the highest tides).

Federal jurisdiction is solely determined by the US Army Corps of Engineers (USACE) and is based upon the USACE accepting our findings. Acceptance may

require a field visit by a USACE representative from the Regulatory Branch to inspect all or representative locations surveyed by *AECOS*. Our delineation is not official until an acceptance letter from the USACE is received by the applicant.

Floral Resources

No plants—naturalized, native, or cultural early introductions—are of concern from a statutory (HDLNR, 1998; USFWS, nd-a) or other conservation interest.

Avian Resources

Waterbirds

Protected Hawaiian waterbirds include the endemic Hawaiian Duck or *koloa maoli*, endemic Hawaiian Coot, the Hawaiian endemic subspecies of Common Gallinule, and the Hawaiian endemic subspecies of Black-necked Stilt. These waterbird species are protected under both state and federal endangered species statutes (HDLNR, 2015; USFWS, nd-a). Hawaiian Duck have populations on all major Hawaiian Islands but hybridize extensively with non-native Mallard, particularly on O‘ahu and Maui (Engilis et al. 2002; Uyehara et al. 2007; Fowler et al. 2009; VanderWerf, 2012). Hybrid ducks are not protected by the statutes.

Although technically not a waterbird, Hawaiian Goose or *nēnē* (*Branta sandwichensis*) is a federally-listed threatened and state-listed endangered, species but has no breeding population on O‘ahu. Black-crowned Night Heron is an indigenous water-obligate species with healthy populations on most Hawaiian Islands and protected under the federal Migratory Bird Treaty Act.

The upland vegetation presently at the Project site offers no habitat for Hawaiian waterbird species. However, the close proximity of the Project to waterbird habitat elevates the potential to for construction activity to attract and/or impact protected Hawaiian waterbirds. The endangered Black-necked Stilt was observed to overfly the Project site. Stilt forage and nest in a wide range of habitats and may be attracted to standing water or disturbed ground. Nesting habitat for endangered Hawaiian Coot and Common Gallinule is present in wetland vegetation at Kapakahi Stream and Pouhala Marsh adjacent to the Project site. Construction-related noise could disturb a nesting bird and passing construction vehicles could harm a young chick. The following BMPs are recommended to minimize or avoid impacts to Hawaiian waterbird species:

- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site or nearby.

- If an endangered waterbird enters an active construction area, cease all construction activity. Work may resume after the individual leaves the area on its own volition.

- Avoid creating surface water features (puddles, etc.) after grading and grubbing. Surface water should be removed to avoid creating a nuisance attractant.

- A qualified biologist should conduct a preconstruction survey for endangered waterbird nests immediately prior to construction activity near water features. If a nest is found, contact USFWS immediately. Establish and maintain a 100-ft buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.

Seabirds

Protected night-flying seabirds include Hawaiian Petrel (*Pterodroma sandwichensis*), Wedge-tailed Shearwater (*Ardenna pacifica*), Newell's Shearwater (*Puffinus newelli*), and Band-rumped Storm-petrel (*Hydrobates castro*). Hawaiian Petrel, Newell's Shearwater, and Band-rumped Storm-petrel nest in high-elevation mountainous habitat, and Hawaiian Petrel and Newell's Shearwater have recently been detected on the Island of Oʻahu (Young et al. 2019). In the summer and fall, nocturnally flying seabirds (especially fledglings) transiting to the sea from inland locations can become disoriented by exterior lighting. When disoriented, seabirds can collide with man-made structures or the ground. If not killed outright, dazed or injured birds are easy targets of opportunity for feral mammals (Podolsky et al., 1998; Ainley et al., 2001; Day et al., 2003). The primary cause of mortality in both Hawaiian Petrel and Newell's Shearwater is predation by alien mammalian species at the nesting colonies (Ainley et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality of these seabirds in Hawaiʻi.

- Deleterious impacts to transiting seabirds can be avoided if construction occurs during daylight hours and all outdoor lighting installed for the Project or construction activities is 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 Hawaiʻi endangered species statute on the Island of Oʻahu (HDLNR, 2015). White Tern was not observed during our survey. In the main Hawaiian Islands, the majority of the White Tern population is found in

central urban and suburban Honolulu, with a known nesting range extending from Niu Valley to Aloha Tower (isolated pairs occur at Hickam Air Force Base; VanderWerf and Downs, 2018). White Tern nesting in the Project area is possible, although the Project is outside of the known nesting range for the species.

- Examine all trees slated to be cut to determine if there are White Terns nesting in them, especially during the White Tern breeding season (January thru June). Do not trim branches or remove trees with nesting White Terns present.

Owls

The Hawaiian endemic sub-species of Short-eared Owl or *pueo* (*Asio flammeus sandwichensis*) is state-listed as endangered on Oʻahu (HDLNR, 2015). Short-eared Owl is a ground-nesting species susceptible to mammalian predation. The species is not habitat-restricted but is increasingly scarce on Oʻahu. No evidence of Short-eared Owl was found at the Project site from this survey, and the species optimal nesting habitat is not present at the Project site. However, Short-eared Owl have been observed around East Loch and other Pearl Harbor areas (Cotin and Price, 2018; R. David, pers. comm.).

Mammalian Resources

Domestic dog (*Canis lupis familiaris*) and small Indian mongoose (*Herpestes javanicus*) were observed during this survey. It is likely that the site is also used by domestic cat (*Felis catus*), wild boar (*Sus scrofa*), and any of the four alien Muridae (rats and mice) currently established on the Island of Oʻahu. With the exception of the endangered Hawaiian hoary bat, all terrestrial mammals currently found on the Island of Oʻahu are alien species; most are ubiquitous.

Hawaiian Hoary Bat

It is possible that the native Hawaiian hoary bat or *ʻōpeʻapeʻa* (*Lasiurus cinereus semotus*) uses resources within the Project vicinity. The species is solitary and rare but with a potentially widespread distribution on Oʻahu. The principal potential impact of the Project to bats would occur when site vegetation is cleared and grubbed. This species of bat uses multiple roosts within a home territory (Bonaccorso, 2015), so the disturbance associated with removal of any particular tree would be minimal. However, an exception would be during the pupping season, when a female bat carrying a pup may be unable to rapidly vacate a roost tree that is being felled; or, an unattended pup is unable to flee a tree that is being felled.

- Potential adverse impacts to Hawaiian hoary bat can be avoided or minimized by not clearing woody vegetation taller than 15 ft (4.6 m) between June 1 and September 15, the bat pupping season.

Other Resources of Potential Concern

Critical Habitat

No federally designated Critical Habitat for any species occurs within the Project area (USFWS, nd-b). No equivalent designation exists under State of Hawai'i endangered species statutes.

References Cited

AECOS, Inc. (AECOS). 2019. Jurisdictional waters survey for the Pouhala Marsh Wetland Restoration Project. Prepared for Bow Engineering and Development Inc. *AECOS* No. 1595: 67 pp.

_____. 2016. Environmental surveys for design and construction of a new wastewater force main across Waipi'o Peninsula to the 'Ewa Plain, O'ahu. Prepared for R. M. Towill Corp. *AECOS* No. 1427: 104 pp.

_____. 2022. A natural resources assessment for the proposed Honolulu Police Department Training Academy new parking and master plan improvements Waipahu, O'ahu. Prep. for Bowers + Kubota Consulting. *AECOS* No. 1667: 37 pp.

Ainley, D. G, R. Podolsky, L. Deforest, G. Spencer, and N. Nur. 2001. The Status and Population Trends of the Newell's Shearwater on Kaua'i: Insights from Modeling, in: Scott, J. M, S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna. Studies in Avian Biology No. 22*. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas. Pp. 108-123.

Bonaccorso, F. J., C. M. Todd, A. C. Miles, and P. M. Gorresen. 2015. Foraging range movements of the endangered Hawaiian hoary bat, *Lasiurus cinereus semotus*. *J. of Mammology*, 96:64-71.

Chesser, R. T., S. M. Billerman, K. J. Burns, C. Cicero, J. L. Dunn, B. E. Hernández-Baños, A. W. Kratter, I. J. Lovette, N. A. Mason, P. C. Rassmusen, J. V. Remsen Jr., D. F. Stotz, and K. Winker. 2021. Sixty-second Supplement to the American Ornithological Society's Check-list of North American Birds. 2021. *American Ornithological Society*, 138: 1-18.

Cotin, J., and M. R. Price. 2018. Population size, distribution and habitat use of the Hawaiian Short-eared Owl (*Asio flammeus sandwichensis*) on O'ahu. The Pueo Project. University of Hawaii, College of Tropical Agriculture and Human Resources, NREM.

Day, R. H., B. Cooper, and T. C. Telfer. 2003. Decline of Townsend's (Newell's Shearwaters (*Puffinus auricularis newelli*) on Kauai, Hawaii. *The Auk,* 120: 669-679.

Engilis, A., Jr., K. J. Uyehara, and J. G. Giffin. 2002. Hawaiian Duck (*Anas wyvilliana*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; available online at url: http://bna.birds.cornell.edu/bna/species/694.

Fowler, A. C., J. M. Eadie, and A. Engilis. 2009. Identification of endangered Hawaiian ducks (*Anas wyvilliana*), introduced North American mallards (*Anas platyrhynchos*) and their hybrids using multilocus genotypes. *Conservation Genetics*, 10:1747-1758.

Giambelluca, T. W., Q. Chen, A. G. Frazier, J. P. Price, Y.-L. Chen, P.-S. Chu, J. K. Eischeid, and D. M. Delparte. 2013. Online Rainfall Atlas of Hawai'i. *Bull. Amer. Meteor. Soc.*, 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1. available online at URL: http://rainfall.geography.hawaii.edu/; last retrieved January 18, 2022.

Hawaii Department of Land and Natural Resources (HDLNR). 1998. Indigenous Wildlife, Endangered And Threatened Wildlife And Plants, And Introduced Wild Birds. Department of Land and Natural Resources. State of Hawaii. Administrative Rule §13-134-1 through §13-134-10, dated March 02, 1998.

___. 2015. Hawai'i Administrative Rules, Title 13, Department of Land and Natural Resources, Subtitle 5 Forestry and Wildlife, Part 2 Wildlife, Chapter 124, Indigenous Wildlife, Endangered and Threatened Wildlife, Injurious Wildlife, Introduced Wild Birds, and Introduced Wildlife. February 27, 2015. 16 pp.

Hawaii Department of Land and Natural Resources (HDLNR). 2019. Flood Hazard Assessment Tool. Available online at URL: http://gis.hawaiinfip.org/FHAT/; last retrieved January 25, 2022.

Hawai'i Department of Land and Natural Resources-Division of Forestry and Wildlife (HDLNR-DOFAW). 2016. Wildlife Lighting. PDF available at URL: http://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf; last retrieved January 25, 2022.

Hobdy, R. W. 2017. Wetlands and waters of the U.S. survey and assessment for the Ted Makalena Golf Course Project – TMK 9-3-2:34, Waipi'o, 'Ewa, O'ahu. Prep. for: PBR Hawaii. 24 pp.

Imada, C. T. 2019. Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). *Bishop Museum Tech. Rept. 69*. 209 pp.

National Oceanographic and Atmospheric Administration/National Ocean Service/Center for Operational Oceanographic Products and Services (NOAA/NOS/CO-OPS). 2023. NOAA/NOS/CO-OPS Tide predictions at 1612366, Fort Kamehameha, Bishop Point, Pearl HBR, HI. Available online at URL: https://tidesandcurrents.noaa.gov/noaatidepredictions.html?id=1612366&units=standard&bdate=20221103&edate=20221103&timezone=LST&clock=12hour&datum=MSL&interval=hilo&action=dailychart; last retrieved February 20, 2023.

National Oceanographic and Atmospheric Administration-National Centers for Environmental Information (NOAA-NCEI). 2022. U.S. Climate Normals. Available online at URL: https://www.ncei.noaa.gov/products/us-climate-normals; last retrieved February 21, 2023.

National Oceanographic and Atmospheric Administration-National Weather Service Forecast Office (NOAA-NWS). 2023. Precipitation summaries. Available online at: https://www.weather.gov/hfo/hydro_summary; last retrieved February 21, 2023.

Podolsky, R., D. G. Ainley, G. Spencer, L. de Forest, and N. Nur. 1998. Mortality of Newell's Shearwaters Caused by Collisions with Urban Structures on Kaua'i. *Colonial Waterbirds*, 21: 20-34.

Staples, G. W. and D. R. Herbst. 2005. *A Tropical Garden Flora. Plants Cultivated in the Hawaiian Islands and other Tropical Places.* Bishop Museum, Honolulu. 908 pp.

U.S. Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetlands Delineation Manual*. Tech. Rept. Y-87-1. Environmental Laboratory, Dept. of the Army, Waterways Experiment Station, Vicksberg.

_____. 2005. Regulatory Guidance Letter No. 05-05. Ordinary High Water Mark Identification. 4 pp.

_____. 2012a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Hawai'i and Pacific Islands Region Version 2.0,* ed. J. F. Berkowitz, J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-12-5. U.S. Army Engineer Research and Development Center. Vicksberg, MS. 130 pp.

___. 2012b. Part II. Department of Defense. Department of the Army, Corps of Engineers. 77 CFR 90. Publication of the Final National Wetland Plant List. *Federal Register*, 77 (90; May 9, 2012): 27210-27214.

_____. 2020. National Wetland Plant List, version 3.5. Available online at URL: https://wetland-plants.usace.army.mil/nwpl_static/v34/home/home.html; last retrieved on February 21, 2023.

_____ and U.S. Environmental Protection Agency (USACE and USEPA). 2015. Department of Defense, Department of the Army, Corps of Engineers, 33 CFR Part 328, Environmental Protection Agency, 40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401, Clean Water Rule: Definition of "Waters of the United States". *Federal Register*, 80 (124; Monday, June 29, 2020): 37054-37127.

_____ and U.S. Environmental Protection Agency (USACE and USEPA). 2023. Department of Defense, Department of the Army, Corps of Engineers, 33 CFR Part 328, Environmental Protection Agency, 40 CFR Part 120, Revised definition of "Waters of the United States". *Federal Register*, 88 (11; Wednesday, January 18, 2023): 3004 - 3144.

_____ and _____. 2020. Department of Defense, Department of the Army, Corps of Engineers, 33 CFR Part 328, Environmental Protection Agency, 40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401, The Navigable Waters Protection Rule: Definition of "Waters of the United States". *Federal Register*, 85 (77; Tuesday, April 21, 2020): 22250-22342.

U.S. Army Corps of Engineers and U.S. Environmental Protection Agency (USACE and USEPA). 2021. Department of Defense, Department of the Army, Corps of Engineers, 33 CFR Part 328, Environmental Protection Agency,

40 CFR Part 120, revised definition of "Waters of the United States". *Federal Register*, 86 (232; Tuesday, December 7, 2021): 69372-69450.

U.S. Department of Agriculture–Natural Resources Conservation Service (USDA-NRCS). 2021. Web Soil Survey, Soil Map—Island Of Oʻahu Area, Hawaiʻi. Available online at URL: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx; last retrieved January 25, 2022.

_____. No date (nd). Soil Data Access, Hydric Soils List: State of Hawaii, County of Honolulu. Available online at URL: nrcs.usda.gov/publications/query-by-state.html; last retrieved February 21, 2023.

U.S. Fish & Wildlife Service (USFWS). 2005. 50 CFR 17. Endangered and Threatened Wildlife and Plants. Review of Species That Are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petition; Annual Description of Progress on Listing Actions. *Federal Register*, 70 (No. 90; Wednesday, May 11, 2005): 24870-24934.

_____. 2016. 50 CFR 17. Final Rule: Endangered and Threatened Wildlife and Plants; Endangered Status for 49 Species from the Hawaiian Islands. *Federal Register*, 81 (190; Friday, September 30, 2016): 67786-67860.

_____. Undated website (nd-a). National Wetlands Inventory (NWI). U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Access gateway online at URL: https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper; last retrieved February 21, 2023.

_____. Undated website (nd-b). USFWS Endangered Species. Available online at URL: https://www.fws.gov/endangered/; Last visited on September 4, 2019 and Environmental Conservation Online System (ECOS), online at URL: https://ecos.fws.gov/ecp/species-reports; last retrieved October 30, 2020.

_____. Undated (nd-c). Critical Habitat Portal. Available online at URL: https://ecos.fws.gov/ecp/report/table/critical-habitat.html; last retrieved April 21, 2021.

U.S. Fish & Wildlife Service-Pacific Islands Fish and Wildlife Office (USFWS-PIFWO). 2022. FINAL Avoidance and Minimization Measures (AMMs). Revised April 2022. Available online at URL: fws.gov/sites/

default/files/documents/Animal%20Avoidance%20and%20Minimization%20Measures-April%202022.pdf; last retrieved June 10, 2022.

Uyehara K. J., A. Engilis, and M. Reynolds. 2007. USGS Fact Sheet – Hawaiian Duck's Future Threatened by Feral Mallards. 2007-3047. Version 1.0. Available online at: https://pubs.usgs.gov/fs/2007/3047/; last accessed on December 21, 2021.

VanderWerf, E.A. 2012. Hawaiian Bird Conservation Action Plan. Pacific Rim Conservation, Honolulu, HI.

_____ and R. E. Downs. 2018. Current distribution, abundance, and breeding biology of White Terns (*Gygis alba*) on Oahu, Hawaii. *The Wilson Journal of Ornithology*. *V*. 130(1): 297-304.

Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1990. *Manual of the Flowering Plants of Hawai'i: Volume I and II*. Bishop Museum Special Publication 83. University of Hawai'i Press. 1853 pp.

_____ and _____. 1999. *Supplement to the Manual of the flowering plants of Hawai'i*, pp. 1855-1918. *In:* Wagner, W. L., D. R. Herbst, and S. H. Sohmer, Manual of the flowering plants of Hawai'i. Revised edition. 2 vols. University of Hawaii Press and B.P. Bishop Museum.

Wilson, D. E. and D. M. Reeder (eds.). 2005. Wilson & Reeder's Mammal Species of the World (Third Edition). Available online at URL: http://www.departments.bucknell.edu/biology/resources/msw3/browse.asp; last retrieved December 9, 2019.

Young, L. C., E. A. VanderWerf, M. McKown, P. Roberts, J. Schueter, and A. Vorsino. 2019. Evidence of Newell's Shearwaters and Hawaiian Petrels on Oahu, Hawaii. *The Condor, Ornithological Applications 2019,* 121: 1-7.

ATTACHMENT A

WETLAND DETERMINATION
DATSHEETS

Reset Form

WETLAND DETERMINATION DATA FORM-Hawai'i and Pacific Islands

Project/Site: Waipahu Convenience Center City: Waipahu Sampling Date: 1112212022 Time: 10:15

Applicant/Owner: City and County of Honolulu State/Terr./Comm.: Hawaii Island: Oahu Sampling Point: SP-01

Investigator 1: Susan Burr Investigator 2: Eric Guither TMK/Parcel: (1) 9-3-002:009

Landform: coastal floodplain Local relief: concave

Lat: 21.376259131deg N Long: 158.002891386deg W Datum: NAD 1983 (HI) Slope(%): 5

Soil Map Unit Name: Fillland NWI classification: upland

Are climatic/hydrologic conditions on the site typical for this time of year: Yes [Z] No D (If no, explain in Remarks)

Are Vegetation D, Soil [Z], or Hydrology [Z] significantly disturbed? Are "Normal Circumstances" present? Yes !✓! No D

Are Vegetation D, Soil D, or Hydrology D naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS-Attach a site map showing sampling point locations transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No		
Hydric Soil Present?	Yes	No		Is the Sampled Area within a Wetland? Yes n r7l
Wetland Hydrology Present?	Yes	No		No

Remarks: 30-year average annual rainfall at Honolulu Intl AP is 16.41 in. 30-year avg Oct is 1.51 in. 30-year avg Jan-Oct is 11.98 in (NOAA-NCEI, 2022). Oct 2022 rainfall at Sta. \MNFH1 was 1.14 in (NVVS-NOAA, 2022). In a swale along the north end of the survey area. Swale does not have an OHWM, connection to the ocean, or evidence of relatively permanent water.

VEGETATION-Use scientific names of plants.

Tree Stratum (Plot size: 10-m radius)	Absolute % Cover	Dominant SQecies?	Indicator Status
1. Prosopis pallida	20	Yes	FACU
2. Leucaena leucocephala	8	Yes	UPL
3. Schinus terebinthifolia	3		FACU
4. Acacia confusa		No	FACU
5.		No	Select
	32	=Total Cover (sum)	

SaQling/Shrub Stratum (Plot size: 1-m radius)			
1. Pluchea X fosbergii	100	Yes	FAC
2.		No	Select
3.		No	Select
4.		No	Select
5.		No	Select
	100	=Total Cover (sum)	

Herb Stratum (Plot size: 1-m radius)			
1. None		No	Select
2.		No	Select
3.		No	Select
4.		No	Select
5.		No	Select
6.		No	Select
7.		No	Select
8.		No	Select
	0	=Total Cover	

Wood::z:: Vine Stratum (Plot size: 10-m radius)			
1. None		No	Select
2.		No	Select
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total% Cover of:		Multiply by:	
OBL species	0	x1	0
FACW species	0	x2	0
FAC species	100	x3	= 300
FACU species	24	x4	= 96
UPL species	8	x5	40
Column Totals:	132 (A)		436 (B)

Prevalence Index = B/A= 3.30

Hydrophytic Vegetation Indicators:

D 1 - Rapid Test for Hydrophytic Vegetation

Q 2 - Dominance Test is >50%

D 3 - Prevalence Index is 3.0[1]

0 Problematic Hydrophytic Vegetation [1] (Explain in Remarks or in the delineation report)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No IZJ

Remarks: Pluchea x fosbergii is a hybrid of Pluchea indica (FAC) and Pluchea carolineneis (FAC), so we assign P. x fosbergii FAC. Bottom of swale is mostly bare. Pluchea X fosbergii is rooted along margins of swale. Megathyrsus maximus (FAC) grows in understory of surrounding land, beneath a canopy of mostly Prosopis pallida and Leucaena leucocephala.

SOIL

Sampling Point: S_P_-_0_1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	T:t:t2e [1]	Loc[2]	Texture	Remarks
0- 17	7.5YR 3/2	100	None	--	Select	Select	Sandy Loam	with 20% gravel
		--		--	]'select	-===-_	][Select	
		--		--	Select	S		.J
		--		--	Select	Jselect	Select	
		--		--	Select	Select	Select	
		--		--	Select	Select	Select	
					Select	Select	Select	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains; [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- select
- Histisols (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Muck Presence (AB)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Gleyed Matrix (S4)

- select
- Sandy Redox (S5)
- Dark-Surface (S7)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (FB)

Indicators for Problematic Hydric Soils":

- select
- Stratified Layers (A5)
- Sandy Mucky Mineral (S1)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type·_:

Depth (inches)_:

Hydric Soil Present: Yes **D** No **[Z]**

Remarks:

Soil pedon is fill material that contains gravel and glass. No layers present.

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

Primary Indicators (minimum of one required: check all that apply)

- select
- Surface Water (A1
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water Stained Leaves (B9)

- **select**
- Aquatic Fauna (B13)
- Tilapia Nests (B17)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tiled Soils (C6)
- Thin Muck Surface (C7)
- Fiddler Crab Burrows (C10) (Guam, CNMI, a
- Other (Explain in Remarks)

Seconda[Y Indicators (minimum of two required)

- select
- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- **3eomorohic Position (02)**
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	**YesO**	Noll]	Depth (inches):	none
Water Table Present?	**YesO**	Noll]	Depth (inches):	>17
Saturation Present? (includes capillary fringe)	Yes **D**	No[Z]	Depth (inches):	>17

Wetland Hydrology Present? Yes **D** No[{]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This area is a former fishpond.

Negative alpha-, alpha-dipyridyl reaction.

Hole dug at 10:00 am, observations made at 10:30 am

Reset Form

WETLAND DETERMINATION DATA FORM-Hawai'i and Pacific Islands

Project/Site: Waipahu Convenience Center City: Waipahu Sampling Date: 1112212022 Time: 10:40

Applicant/Owner: City and County of Honolulu State/Terr./Comm.: Hawaii Island: Oahu Sampling Point: SP-02

Investigator 1: Susan Burr Investigator 2: Eric Guither TMK/Parcel: (1) 9-3-002:009

Landform: coastal floodplain Local relief: concave

Lat: 21.375252 5028 deg N Long: 158.003788 1212 deg W Datum: NAD 1983 (HI) Slope(%): 5

Soil Map Unit Name: Fillland NWI classification: upland

Are climatic/hydrologic conditions on the site typical for this time of year: Yes [Z] No D (If no, explain in Remarks)

Are Vegetation D, Soil [Z], or Hydrology [Z] significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No D

Are Vegetation D, Soil D, or Hydrology D naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS-Attach a site map showing sampling point locations transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	-	No	i..	
Hydric Soil Present?	Yes	7	No	✓	Is the Sampled Area within a Wetland? Yes n No rZI
Wetland Hydrology Present?	Yes		No		

Remarks: 30-year average annual rainfall at Honolulu Intl AP is 16.41 in. 30-year avg Oct is 1.51 in. 30-year avg Jan-Oct is 11.98 in (NOAA-NCEI, 2022). Oct 2022 rainfall at Sta. \MNFH1 was 1.14 in (NVVS-NOAA, 2022). In a low area in the west end of the survey area. This low area may receive drainage from the swale to the north (SP-01). This area is bounded to the west by a berm and \1\/aipahu Depot Street. Not connected to oc.

VEGETATION-Use scientific names of plants.

Tree Stratum (Plot size: 10-m radius)	Absolute % Cover	Dominant SQecies?	Indicator Status
1. Prosopis pallida	10	Yes	FACU
2. Desmanthus pernambucanus	4	Yes	UPL
3. Schinus terebinthifolia	2	No	IFACU
4.		No	Select
5.		No	Select
	16	=Total Cover (sum)	

SaQling/Shrub Stratum (Plot size: 1-m radius)			
1. Pluchea X fosbergii	150	Yes	FAC
2. Megathyrsus maximus (from herb stratum)	2	No	FAC
3.		No	Sct.
4.		No	Select
5.		No	Select
	152	=Total Cover (sum)	

Herb Stratum (Plot size: 1-m radius			
1 (moved to sapling/shrub stratum)		No	Select
2.		No	Select
3.		No	Jselect
4.		No	I's iect
5.		No	Select
6.		No	Select
7.		No	Select
8.		No	Select
	0	=Total Cover	

Wood::z:: Vine Stratum (Plot size: 10-m radius)			
1 None		No	Select
2.		No	Select
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total% Cover of:		Multiply by:	
OBL species	0	x1	0
FACW species	0	x2	0
FAC species	152	x3	= 456
FACU species	12	x4	= 48
UPL species	4	x5	20
Column Totals:	168 (A)		524 (B)

Prevalence Index = B/A= 3.12

Hydrophytic Vegetation Indicators:

D 1 - Rapid Test for Hydrophytic Vegetation

Q 2 - Dominance Test is >50%

D 3 - Prevalence Index is 3.0[1]

0 Problematic Hydrophytic Vegetation [1] (Explain in Remarks or in the delineation report)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No IZJ

Remarks: Pluchea x fosbergii is a hybrid of Pluchea indica (FAC) and Pluchea carolineneis (FAC), so we assign P. x fosbergii FAC.

SOIL

Sampling Point: S_P_-_0_2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/4	100	2.5YR 3/3	4	C	PL	Sandy Clay	with 10% glass and gravel
					]'select		Select	
4 - 12	7.5YR 2.5/1	100	None		Select	S		ash with glass and ash flakes
					Select	Jselect	Select	
					Select	Select	Select	
					Select	Select	Select	
					Select	Select	Select	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains; [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- select
- Histisols (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Muck Presence (AB)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Gleyed Matrix (S4)

- select
- Sandy Redox (S5)
- Dark-Surface (S7)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (FB)

Indicators for Problematic Hydric Soils":

- select
- Stratified Layers (A5)
- Sandy Mucky Mineral (S1)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: hard pack ashfill

Depth (inches): 12

Hydric Soil Present: Yes **D** No **[Z]**

Remarks:

Lower level of soil pedon is ash fill material.
Upper layer does not contain a sufficient number of redox features to meet indicator F8

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

Primary Indicators (minimum of one required: check all that apply)

- select
- Surface Water (A1
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water Stained Leaves (B9)

- select
- Aquatic Fauna (B13)
- Tilapia Nests (B17)
- Hydrogen Sulfide Odor (C1)
- <S"xidized Rhizospheres_on. Livina Roots:(C31
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tiled Soils (C6)
- Thin Muck Surface (C7)
- Fiddler Crab Burrows (C10) (Guam, CNMI, a
- Other (Explain in Remarks)

Seconda[Y Indicators (minimum of two required)

- select
- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- **3eomorohic Position (02)**
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	**YesO**	NoII]	Depth (inches):	none
Water Table Present?	**YesO**	NoII]	Depth (inches):	>12
Saturation Present? (includes capillary fringe)	Yes **D**	No[Z]	Depth (inches):	>12

Wetland Hydrology Present? Yes **[Z]** No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This area is a former fishpond.

Negative alpha-, alpha-dipyridyl reaction.

Hole dug at 10:40 am, observations made at 11:15 am

Although the low area where SP-02 is located does have a berm surrounding it to the west, it is not a "closed depression" and does not appear to be subject to ponding (i.e., does not meet the criteria required to be considered for F8).

ATTACHMENT B

FLORA LISTING

Attachment B.
Listing of plants identified in the Ke Kula Maka'i expansion survey area.

Species listed by family	Common name	STATUS	ABUNDANCE	"	NOTES
	FERNS				
PSILOTACEAE					
Psilotum nudum (L.) P. Beauv.	*moa*	**Ind**	R		<1>
PTERIDACEAE					
Pteris vittata L.	ladder brake	Nat		✓	<1>
	FLOWERING PLANTS				
	MONOCOTS				
ALOEACEAE					
Aloe vera (L.) N.L. Burm.	aloe	Orn	R	✓	<1>
ARECACEAE					
Cocos nucifera L.	*niu*, coconut	**Pol**	u		
Dypsis lutescens (H. Wendi.) Beentje & Dransfield	golden-fruited palm	Orn		✓	<1>
Livistona chinensis Qacq.) R.Br. ex Mart.	Chinese fan palm	Nat	**R**		<2>
Vietchia merrillii (Beccari) H.E. Moore	Manila palm	Orn	**R**		<1>
AREACEAE					
Zamioculeas zamiifolia (Lodd.) Engl.	ZZ plant	Orn	**R**		<1>
ASPARAGACEAE					
Cordyline fruticosa (L.) A. Chev.	ti, *kl*	**Pol**	u		<1>
Dracaena /rag rans (L.) Ker GawI.	fragrant dracaena	Orn	**R**		<1>
BROMELIACEAE					
Tilandsia spp.	air plants	Orn		✓	<1>
COMMELINACEAE					
Commelina benghalensis L.	hairy *honohono*	Nat	**R**		
COSTACEAE					
Costussp.	costus	Orn	**R**		<1>
CYPERACEAE					
Cyperus involucratus Roxb.	umbrella sedge	Nat	u	✓	
Cyperus rotundus L.	nut grass	Nat	**R**		
HELICONIACEAE					
Heliconia rostrata Ruiz & Pavon	parrot's-beak heliconia	Orn	**R**		<1>

Attachment B.

Species listed byfamily	Common name	STATUS	ABUNDANCE *	NOTES
LILIACEAE				
Allium cf. *cepa* I..	onion	Orn	**R**	<1>
Ophiopogon sp.	mondo	Orn	**R**	<1>
POACEAE				
Bambusa vulgaris J.C. Wendi.	golden bamboo	Nat	R	
Cenchrus ciliaris L.	buffelgrass	Nat	C ...*J*	
Chloris barbata (L.) Sw.	swollen fingergrass	Nat	0 ...*J*	
Cynodon dactylon (L.) Pers.	Bermuda grass	Nat	C	
Dactyloctenium aegyptium (L.)Willd.	beach wiregrass	Nat	u	
Dichanthium sp.		Nat	...*J*	
Diplachne fusca uninervia Q. Presl.) P.M. Peterson &Snow	sprangletop	Nat		
Eleusine indica (L.) Gaertn.	wiregrass	Nat	u	
Eragro.stispectinacea (Michx.) Nees	Carolina lovegrass	Nat	u	
Eriochloa procera (Retz.) C.E. Hubb.	cupgrass	Nat	u	
Megathyrsus maximus Oacq.) B. K. Simon & W.L. Jacobs	Guinea grass	Nat	AA ...*J*	
Melinus repens (\IVilld.) Zizka	Natal redtop	Nat	C	
Sporobolus pyramidatus (Lam.) Hitch.	rat-tail grass	Nat	Oc	
Urochloa distichya (L.) Nguyen		Nat	u	
Urochloa mutica (Forssk.) Nguyen	California grass	Nat	0	
FLOWERING PLANTS MAGNOLIIDS				
LAURACEAE				
Persea americana Mill.	avocado	Nat	**R**	<1>
FLOWERING PLANTS EUDICOTS				
ACANTHACEAE				
Asystasia 9an9etica (L.) T. Anderson	Chinese violet	Nat	C	
AIZOACEAE				
Trianthema portulacastrum L.		Nat	**R** ...*J*	
AMARANTHACEAE				
Achyranthes aspera L.		Nat	**R**	
Amaranthus spinosus L.	spiny amaranth	Nat	R	
Amaranthus viridis L.	slender amaranth	Nat	...*J*	
ANACARDIACEAE				
Mangifera indica L.	*manak6,* mango	Nat	R	
Schinus terebinthefolius Raddi	Christmas beny	Nat	0	

Attachment B.

Species listed byfamily	Common name	STATUS	ABUNDANCE *	NOTES
ANNONACEAE				
Annona muricata L.	soursop	Orn	R	<1>
APOCYNACEAE				
Plumeria rubra L.	graveyard flower	Orn	R	<1>
ASTERACEAE (COMPOSITAE)				
Bidens pilosa L.	beggartick	Nat	0 ...J	
Calyptocarpus via/is Less.		Nat	u ...J	
Emilia fosbergii Nicolson	*pualele*	Nat	R	
Pluchia carolinensis Oacq.) G. Don	sourbush	Nat	0	
Pluchia xfosbergii Cooperr. & Galang		Nat	AA	
Pluchea indica (L.) Less.	Indian fleabane	Nat	AA	
Synedrella nodiflora (L.) Gaertn.	nodeweed	Nat	u	
Tridax procumbens L.	coat buttons	Nat	R	
Verbesina enceliodes (Cav.) Benth. & Hook	golden crown-beard	Nat	u	
BATACEAE				
Batis maritima L.	*'akulikuli kai*	Nat	u	
BIGNONIACEAE				
Spathodea campanulata P. Beauv.	African tulip tree	Nat	...J	
BORAGINACEAE				
Cordia subcordata Lam.	*kou*	Ind	...J	
Heliotropium curassavicum L.	*kfpllkai*	Ind	u ...J	
Heliotropum procumbens Mill.		Nat	C	
CACTACEAE				
Echinocactus;Jrusonii Hildmann	golden-barrel cactus	Orn	R	<1>
Hylocereus undatus (Hawthorn) Britton & Rose	night-blooming cereus	Orn	R	<1>
CHENOPODIACEAE				
Atriplex sp.	salt bush	Nat	u	<3>
CLUSIACEAE				
Clusia rosea N.Jacq.	autograph tree	Orn	R	
CONVOLVU LACEAE				
lpomoea cairica (L.) Sweet	*koali 'ai*	Ind?	R	
lpomoea obscura (L Ker-Gawl.		Nat	0 ...J	
Jacquemontia ovalifolia (Choisy) H. Hallier	*pa'uohi'iaka*	Ind	R	
Merremia ae[Jyptia (L.) Urb.	*koali kua hulu*	Nat?	R	

Attachment B.

Species listed byfamily	Common name	STATUS	ABUNDANCE	*	NOTES
CUCURBITACEAE					
Coccinia 9randis (L.) Voigt	ivy gourd	Nat	R		
Momordica charantia L.	wild bitter melon	Nat		✓	
EUPHORBIACEAE					
Aleurites moluccana **(L.)** Willd.	*kukui*	Pol	R		<1>
Codiaeum variegatum **(L.)** Blume	croton	Orn	R		**<1>**
Euphorbia hirta L.	garden spurge	Nat	u		
Euphorbia hypericifolia L.	graceful spurge	Nat	R		
Euphorbia mi/ii Des Moulins	crown-of-thorns	Orn	R		**<1>**
Euphorbia sp.	indet. weed	Nat	R		<3>
Macaranga tanarius **(L.)** Mi.ill. Ar.		Nat		✓	<2>
Phyllanthus debilis Klein ex Willd	*niuri*	Nat	R		
Ricinus communis L.	castor bean	Nat	0		
FABACEAE					
Albizia saman F. Muell.	monkeypod	Nat	R		
Cassia xnealiae H.S. hwin & Barneby	rainbow shower	Orn	u	✓	<3>
Chamaecrista nictitans (L.) Moench	*!auk[*	Nat	u		
Desmanthus virgatus (L.) Willd.	virgate mimosa	Nat	0		
Desmodium tortuosum (Sw.) DC.	Florida beggarweed	Nat	0	✓	*Leucaena*
leucocephala (Lam.) deWit	*koa haole*	Nat	C	✓	*Indigo/era hendecaphyla*
(Forssk)	creeping indigo	Nat	u	✓	*Macroptilium*
atropurpureum (DC.) Urb.		Nat	u	✓	
Pisum sativum var. *sativum* L.	garden pea	Orn		✓	<1>
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	*kiawe*	Nat	*AA*		
VacheIlia farnesiana (L.) Wight & Arnott	*klu*	Nat			
LAMIACEAE					
Leonotis nepetifolia (L.) R. Br.	lion's ear	Nat	u		
Mesosphaerum pectinatum (L.) Poit	comb hyptis	Nat	C	✓	
MALVACEAE					
Abutilon grandifolium (\IVilld.) Sweet	hairy abutilon	Nat	u		
Malvastrum coromandelianum **(L.)** Garek	false mallow	Nat	0	✓	
Sida ciliaris **L.**		Nat	C	✓	
Sida rhombifolia **L.**	Cuba jute	Nat	u		
Sida spinosa L.	prickly sida	Nat	0		

Attachment B.

Species listed byfamily	Common name	STATUS	ABUNDANCE	*	NOTES
MALVACEAE (cont.)					
Thespesia populnea (L.) Sol ex Correa	*milo*	Ind	u		
Waltheria indica L.	*'uhaloa*	Ind?	C	✓	
MORACEAE					
Artocarpus a/ti/is (Z) Fosb.	*'ulu,* breadfruit	Pol	R		<1>
Ficus macrocarpa L.	Chinese banyan	Orn	R	✓	
Ficus macrophylla Pers.	Moreton Bayfig	Orn	R		<1>
Ficus religiosa L.	bo tree	Orn	R		<2>
MUSACEAE					
Musa acuminata hybrid	banana, *mai'a*	Pol	R		<1>
MYRTACEAE					
Eucalyptus sp.	?lemon gum	Nat	R		<3>
Psidium guajava L.	common guava	Nat		✓	<1>
NYCTAGINACEAE					
Boerhavia coccinea Mill.	false *alena*	Nat	u	✓	
OXALIDACEAE					
Averrhoa bilimbi L.	bilimbi	Orn	R		<1>
PASSIFLORACEAE					
Passiflora foetida L.	running pop	Nat	0	✓	
Passiflora suberosa	*huehue haole*	Nat	R	✓	
PHYTOLACCACEAE					
Rivina humilis L.	coral beny	Nat		✓	
PORTULACACEAE					
Portulaca oleracea L.	pigweed	Nat	R		
RUBIACEAE					
Morinda citrifolia L.	*noni*	Pol	R		
RUTACEAE					
Citrus maxima Q. Burm.) Merr.	pummelo	Orn	u		<1>
Citrus reticulata Blanco	tangerine	Orn	R		<1>
SAPOTACEAE					
Chrysopyllum oliviforme L.	satin leaf	Nat	R		
SOLANACEAE					
Capsicum annum L.	bird pepper			✓	<1>
Solanum americanum Mill.	*popolo*	Pol	R		
Solanum lycopersicum var. *cerasiforme* (Dunal) Spooner, G.J. Anderson &R.K. Jansen	cheny tomato	Nat	R		<2>
Solanum cf. *melongena* L.	egg plant	Orn	R		<1,3>

Attachment B.

Species listed byfamily	Common name	STATUS	ABUNDANCE	NOTES
			*	
VERBENACEAE				
Citharexylum caudatum L.	fiddlewood	Nat	✓	

* Presence of species at transfer site indicated by✓.

Legend to Table 1

STATUS= distrtbutional status for the Hawaiian Islands:

end= endemic; native to Hawaii and found naturally nowhere else.

ind= indigenous; native to Hawaii, but not unique to the Hawaiian Islands.

nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

orn = exotic, ornamental or cultivated; plant not naturalized (not well-established outside of cultivation).

pol= Polynesian introduction before 1778.

ABUNDANCE= occurrence ratings for plants by area:

R - Rare seen **in** only one or perhaps two locations.

U - Uncommon- seen at most in several locations

0 - Occasional seen with some regularity

C - Common observed numerous times during the survey

A- Abundant found in large numbers; may be locally dominant.

AA- Very abundant abundant and dominant; defining vegetation type.

Numbers following an occurrence rating indicate clusters within the survey area. The ratings above provide an estimate of the likelihood of encountering a species within the specified survey area; numbers modify this where abundance, where encountered, tends to be greater than the occurrence rating:

o - several plants present

c - many plants present

a - locally abundant

NOTES:

<1> -Associated with ornamental plantings; planted as an ornamental.

<2> - Seedling or juvenile only seen.

<3> - Plant observed lacking fruit or flowers; identification uncertain.

ATTACHMENT C

AVIAN FAUNA LISTING

Attachment C.
Avian species detected at the Wapahu Convenience Center improvement Project.

Common Name	ORDER FAMILY *Species*	Status	Count
	ANSERIFORMES		
	ANATIDAE		
Hawaiian Duck, *koloa maoli* x Mallard hybrid	*Anas wyvilliana* x *A. platyrhynchos*	NN	+
	GALLIFORMES		
	PHASIANIDAE		
Domestic Chicken	*Gallusgallus*	NN	1.00
	COLUMBIFORMES		
	COLUMBIDAE		
SpottedDove	*Streptopelia chinensis*	NN	1.50
Zebra Dove	*Geopelia striata*	NN	4.50
	GRUIFORMES		
	RALLIDAE		
Hawaiian Coot, *'alae ke'oke'o*	*Fulica alai*	E	0.25
	CHARADRIIFORMES		
	RECURVIROSTRIDAE		
HawaiianBlack-necked Stilt, *ae'o*	*Himantopus Mexicanus knudseni*	I	2.00
	CHARADRIIDAE		
Pacific Golden-Plover, *k6lea*	*Pluvialisfulva*	**IM**	+
	PELECANIFORMES		
	ARDEIDAE		
Cattle Egret	*Bubulcus ibis*	NN	0.50
Black-crowned Night-Heron, *'auku'u*	*Nycticorax nycticorax*	I	1¢

Attachment C (continued).

Common Name	ORDER FAMILY *Species*	Status	Count
	PASSERIFORMES		
	PYCNONOTIDAE		
Red-vented Bulbul	*Pycnonotus cafer*	NN	6.25
Red-whiskered Bulbul	*Pycnonotusjocosus*	NN	1.25
	ZOSTEROPIDAE		
Warbling White-eye	*Zosterops japonicus*	NN	7.00
	STURNIDAE		
Common Myna	*Acridotheres tristis*	NN	8.50
	MUSCICAPIDAE		
White-rumped Shama	*Copsychus malabaricus*	NN	0.50
	ESTRILDIDAE		
Common Waxbill	*Estrilda astrild*	NN	9.50
African Silverbill	*Euodice cantans*	NN	2.00
Java Sparrow	*Padda oryzivora*	NN	0.75
	PASSERIDAE		
House Sparrow	*Passer domesticus*	NN	2.00
	FRINGILLIDAE		
House Finch	*Haemorhous mexicanus*	NN	1.25
	CARDINALIDAE		
Northern Cardinal	*Cardinalis cardinalis*	NN	0.50
	THRAUPIDAE		
Red-crested Cardinal	*Paroaria coronata*	NN	1.25
SaffronFinch	*Sica/isflaveola*	NN	0.50
Yellow-facedGrassquit	*Tiaris olivaceus*	NN	0.50

Key to Attachment C table:

Status:

E = Endemic to the Hawaiian Islands.
I= Indigenous to the Hawaiian Islands.
IM= Indigenous, migratoryspecies.
NN = Naturalized, non-native species (introduced).

Total Count: Total species counted from point-count stations (n=2).
<t> = Observed from 30-minute waterbird count in habitat outside of the Project site.
t = Incidental observation, observed beyond the timed counts.

APPENDIX B:

Archeological Literature Review and Field Inspection

Honua Consulting

Archaeological Literature Review and Field Inspection for the Proposed Waipahu Convenience Center and Refuse Facility, Waikele Ahupua‘a, ‘Ewa District, O‘ahu Island TMK: [1] 9-3-002:009



Prepared for
Wilson Okamoto Corporation

Prepared by
Rosanna M. R. Thurman, M.A.,
Nathan J. DiVito, B.A.,
and
Trisha Kehaulani Watson, J.D., Ph.D.

HONUA CONSULTING

Honolulu, Hawai‘i
February 2024

Management Summary

This Literature Review and Field Inspection (LRFI) was conducted for the Proposed Waipahu Convenience Center and Refuse Facility project located in Waikele Ahupua‘a, ‘Ewa District on the island of O‘ahu, Tax Map Key (TMK): [1] 9-3-002:009. The proposed project area encompasses approximately 15.71 acres (684,327 square feet [sq. ft.] or 63,576 square meters [sq. m.]). The project area is owned by the City and County of Honolulu.

The Department of Environmental Services (ENV) plans to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to the former Waipahu Incinerator Facility (WIF) property located to the south at 93-71 Waipahu Depot Street, within the current project area. The project area is adjacent to the south side of the Honolulu Police Academy/Training Facility. The WCC provides a location for area residents to drop-off municipal solid waste (MSW), white goods (refrigerators, air conditioners, and other similar appliances), and other household inert waste materials (e.g., tires, propane tanks, metal, and green waste) as an alternative to drop-off at the Waimanalo Gulch Sanitary Landfill or other solid waste management facility on O‘ahu. The existing WCC was constructed in the 1970’s and is no longer sized to operate efficiently and accommodate the number of residents utilizing the facility. The new WCC will include the following improvements to reduce operational inefficiencies experienced at the existing WCC: 1.) ten proposed waste offloading locations to allow several residents to offload at the same time; 2.) sufficient area within the facility for traffic staging and maneuverability; 3.) strategic location for the facility attendant to direct residents and oversee facility activities; 4.) segregated residential and ENV refuse truck traffic; and 5.) white goods and other inert waste material storage areas separated from MSW offloading areas.

The ENV also plans to develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) east of the new WCC, within the project area. The Refuse Division currently houses their Rolloff Division at the former WIF, utilizing existing structures for parking and dispatch operations. The remaining WIF structures will be demolished during construction of the new WCC and Refuse Facility. The Refuse Facility will consist of the following major components: 1.) 2-story office building with a dispatch office, locker and break rooms for Rolloff Division employees, offices, and training and public education facilities for Refuse Division employees; 2.) parking area for Rolloff and Refuse Division employees; 3.) parking area for rolloff trucks, a truck wash pad and canopy, an equipment storage building; and 4.) designated area for future container repair shop and/or rolloff container storage yard. Project plans are still being developed and no estimation of potential ground disturbance is currently known.

The purpose of the literature review and field inspection is to determine the land-use history and identify any potential artifacts or historic properties present on the ground surface of the property. This study is not an archaeological inventory survey (AIS), however, this report was written using standards outlined within Hawai‘i Revised Statutes (HRS) 6E-8 and Hawai‘i Administrative Rules (HAR) 13-276 for AIS studies and is intended to assist with historic preservation efforts for the proposed project.

Background research indicates that Waikele Ahupua‘a is rich in cultural traditions. The project area is located just east of the former Kapakahi Stream and was fertile land containing Land Commission Awards (LCA) and Land Grants (LG) which described springs, loko (ponds), kula (pasture), and a house lot. Historic maps from the 1950s show the parcel was formerly located

within the Naval Reservation Pearl Harbor, with no formal structures other than an elevated roadway (constructed berm) extending through the center of the project area from the north to the southwest. Historic aerial photographs indicate the project area was located within a cultivated field area with many agricultural plots. The Waipahu Incinerator Facility (WIF) was constructed within the project area by 1970 to burn the islands trash. A review of previous archaeological studies found that a single previous study, conducted in 2000 by Cultural Surveys Hawai‘i (CSH), included the current project area (Hammatt and Chiogioji 2000b). The study was an archaeological and cultural assessment of a parcel located on Waipi‘o Peninsula owned by the City and County of Honolulu. The study recorded the presence of an existing land fill and modern building activities. No historic properties were recorded. No other archaeological studies have been conducted and no sites have been recorded within the project area.

The archaeological field inspection conducted for the current project included a 100% pedestrian survey. Buildings and infrastructure associated with the late-twentieth century Waipahu Incinerator Facility (WIF) were observed and photographed. Additionally, several inscriptions made on a concrete jacket were photographed and described, but were not determined to be a historic property. The berm shown on historic maps was not observed. No other archaeological materials were observed.

The WIF building, built by 1970, will need to be assessed by the Architectural Division of the SHPD. It is beyond the scope of the current study to assess the facility for integrity or significance. Due to the presence of the historic incinerator facility it is likely SHPD will determine the project effect as “effect, with agreed upon mitigation commitments”.

As proposed ground disturbance is currently unknown and traditional use of the property is documented through LCA located within the project area, it is currently recommended that the project proceed under an archaeological monitoring program, in accordance with HAR 13-279 (Rules for Archaeological Monitoring Studies and Reports).

Table of Contents

Management Summary i

Introduction 1

1.1 Project Background 1
1.2 Environmental Setting 6
1.2.1 Natural Environment 6
1.2.2 Built Environment 7

Traditional and Historical Background 8

2.1 Place Names and Moʻolelo 8
2.2 Excerpts of Traditional Accounts 20
2.2.1 The Kapu Chiefess Kalanikepoolauheaiku 22
2.2.2 A Tradition of Kamapuaʻa 22
2.2.3 Tradition of the Mullet of Kaihuopalaai 24
2.2.4 Ka Moolelo o Kalelealuaka (The Tradition of Kalelealuaka) 29
2.2.5 Alahula Puʻuloa, he Alahele na Kaʻahupāhau (The Swimming Trails of Puʻuloa [Pearl Harbor], are the Trails Traveled by Kaʻahupāhau) 33
2.2.6 He Moolelo Kaao Hawaii no Keliikau o Kau (A Hawaiian Tradition of Keliikau o Kau) 36
2.2.7 He Moolelo Hawaii – No na Aumakua Moo (A History of Hawaii – About the Moo Guardians/Ancestral Gods) 38
2.2.8 He Moolelo Kaao Hawaii no Laukaieie… (A Hawaiian Tradition of Laukaieie…) 39
2.2.9 Naming Storied Places of Waikele and Neighboring Lands 47
2.2.10 A Prophecy and the Death of Kahahana 49
2.3 Noted Places of Waikele in Accounts of the Larger ʻEwa District 52
2.3.1 Events at Waikele Described in ca. 1805-1811 52
2.3.2 Na Wahi Pana o Ewa i Hoonalowaleia i Keia Wa a Hiki Ole ke Ikeia (Storied Places of ʻEwa, That are Now Lost and Cannot be Seen) (1899) 54
2.4 Māhele ʻĀina (The Land Division) of 1848 Fee Simple Property Rights in Waikele Ahupuaʻa 56
2.5.1 Oahu Sugar Company 59
2.5.2 Naval Reservation Pearl Harbor 61

Previous Archaeology 67

3.1 Previous Archaeological Studies in the Vicinity 67
3.1.1 McAllister 1933 67
3.1.2 Dicks et al. 1987 74
3.1.3 Rosendahl 1987 75
3.1.4 Kawachi and Griffin 1990 75
3.1.5 Folk 1990 75
3.1.6 Hammatt and Shideler 1991 75
3.1.7 Spear 1993 75
3.1.8 Cleghorn 1996 76
3.1.9 Jensen and Head 1997 76
3.1.10 Hammatt and Shideler 1999 76
3.1.11 Athens et al. 2000 76
3.1.12 Hammatt et al. 2000 77
3.1.13 Hammatt and Chiogioji 2000a 77
3.1.14 Hammatt and Chiogioji 2000b 77
3.1.15 Ostroff et al. 2001 77

3.1.16 Hammatt et al. 2004 77
3.1.17 Perzinksi et al. 2004 78
3.1.18 O'Hare et al. 2006 78
3.1.19 Rasmussen and Tomomari-Tuggle 2006 78
3.1.20 Tulchin et al. 2009 78
3.1.21 Hammatt 2010 79
3.1.22 O'Hare et al. 2011 79
3.1.23 Sroat et al. 2012 79
3.1.24 Gotay and Rechtman 2018 and 2019 79
3.1.25 LaChance et al. 2022 80

Archaeological Field Inspection 81

Methodology 81
Survey Results 81

Summary and Recommendations 92

References Cited 93

List of Figures

Figure 1. Portion of a 2013 Waipahu U.S. Geological Survey (USGS) Topographic Map Showing the Location of the Project Area 2
Figure 2. Aerial Photo Showing the Project Area (Esri 2023) 3
Figure 3. Tax Map Key (TMK) Plat Map: [1] 9-3-002 Showing the Project Area 4
Figure 4. Conceptual Layout for the Waipahu Refuse Facility (provided by client) 5
Figure 5. Portion of a USGS with Soil Series Overlay Showing Anticipated Soils Within the Project Area (Foote et al. 1972, Esri 2023) 7
Figure 6. Portion of 1873 Map of West Loch Showing the Location of the Project Area (notice the project area is within "Swamp") (Lidgate 1873, Registered Map [RM] 322) 9
Figure 7. 1913 Monsarrat Map of O'ahu Fisheries, Pearl Lochs Section, Showing the Location of the Project Area (RM 2848, Sheet 8) 10
Figure 8. Portion of an 1889 Map of the Makai Part of Waikele Ahupua'a Showing the Project Area (Awana 1889, RM 1498) 57
Figure 9. Portion of a 1939 Ewa Plantation Company Map Showing the Location of the Project Area (HCF 2014) 62
Figure 10. Portion of a 1950 Oahu Sugar Company Map Showing the Extent of Sugar Operations and Location of the Project Area 63
Figure 11. Portion of a 1954 Waipahu USGS Topographic Map Showing the Project Area 64
Figure 12. Portion of a 1962 Aerial Photo Showing the Project Area (USGS Orthoimage) 65
Figure 13. Portion of a 1977 Aerial Photo Showing the Project Area (USGS Orthoimage) 66
Figure 14.Topographic Map Showing Previous Archaeological Studies Within a 1.5 Mile Radius of the Project Area 68
Figure 15. Portion of a 2013 Waipahu USGS Showing Historic Properties Within a 1.5 Mile Radius of the Project Area 69
Figure 16. Aerial Photo Showing Pedestrian Survey GPS Tracks 82
Figure 17. Overview photo of the former Waipahu Incinerator facility, looking east 83
Figure 18. Plaque commerating the construction of the Waipahu Incinererator in 1970 83
Figure 19. Overview photo of the paved loop road from the entrance to the property (on left) at the end of Waipahu Depot Road (on right), looking south 84
Figure 20. Overview of the split in the paved loop road in the northeastern portion of the facility for two weigh stations, looking northwest 84
Figure 21. Overview photo of the covered interior of the incinerator facility showing a garbage trough and rail cranes in the back left of the frame and the former weigh station office in the back right of the frame, looking southeast 85
Figure 22. Overview photo of the former incineration chamber, looking north 85
Figure 23. Overview of gravel parking area located to the west of the main incinerator building, looking east 87
Figure 24. Overview photo of a concrete pad and metal infrastructure for water tanks located to the south of the incineration chamber, looking south 87
Figure 25. Overview photo of a pump station building and water storage tank to the southwest of the incineration chamber, looking northeast 88
Figure 26. Overview photo of the offices on the east side of the incinerator building, looking northwest, note the raised roadway and weighing stations in the background 88
Figure 27. Overview photo of a graded area with shipping containers on the north side of the proeprty, looking west 89

Figure 28. Photo of a basalt boulder and cobble push pile along the northern periphery of the property, looking east....89
Figure 29. Overview photo of the typical vegetation observed in the western undeveloped portion of the property, looking north....90
Figure 30. Overview photo of the typical vegetation observed in the western undeveloped portion of the property, looking northeast....90
Figure 31. Overview photo of 1970s-era inscriptions on a concrete jacket crossing through the project area: *top left*: an abstract side portrait, the name "COLE", and a rectangular inscription with flowers in the corners reading "Debbie" in cursive script; *bottom left*: date and name inscription reading "July 1975 PICO / VERNON"; *top right*: a side view of a menehune with a small umbrella like inscription above; *bottom right*: a diamond shaped inscription divided into squares....91

List of Tables

Table 1. Listing of Place Names in the Vicinity of the Project Area....11
Table 2. Table Listing Māhele Data Located Within the Project Area....58
Table 3. Table Listing Previous Archaeological Studies in the Vicinity of the Project Area....70

Introduction

1.1 Project Background

At the request of Wilson Okamoto Corporation, Honua Consulting conducted this Literature Review and Field Inspection (LRFI) for the Proposed Waipahu Refuse Facility project located in Waikele Ahupua‘a, ‘Ewa District on the island of O‘ahu, Tax Map Key (TMK): [1] 9-3-002:009. The proposed project will include 15.71 acres (684,327 square feet [sq. ft.] or 63,576 square meters [sq. m.]). The project area is owned by the City and County of Honolulu. The project area is located on Waipi‘o Peninsula in Pearl Harbor, just east of Waipahu Depot Street. The street address is listed as 93-071 Waipahu Depot Street, Waipahu, Hawai‘i 96797. The project area is shown on an USGS topographic map (Figure 1), an aerial photo (Figure 2), and a TMK (Figure 3). A preliminary site plan is also provided (Figure 4).

The Department of Environmental Services (ENV) plans to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to the former Waipahu Incinerator Facility (WIF) property located to the south at 93-71 Waipahu Depot Street, within the current project area. The project area is adjacent to the south side of the Honolulu Police Academy/Training Facility. The WCC provides a location for area residents to drop-off municipal solid waste (MSW), white goods (refrigerators, air conditioners, and other similar appliances), and other household inert waste materials (e.g., tires, propane tanks, metal, and green waste) as an alternative to drop-off at the Waimanalo Gulch Sanitary Landfill or other solid waste management facility on O‘ahu. The existing WCC was constructed in the 1970’s and is no longer sized to operate efficiently and accommodate the number of residents utilizing the facility. The new WCC will include the following improvements to reduce operational inefficiencies experienced at the existing WCC: 1.) ten proposed waste offloading locations to allow several residents to offload at the same time; 2.) sufficient area within the facility for traffic staging and maneuverability; 3.) strategic location for the facility attendant to direct residents and oversee facility activities; 4.) segregated residential and ENV refuse truck traffic; and 5.) white goods and other inert waste material storage areas separated from MSW offloading areas.

The ENV also plans to develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) east of the new WCC, within the project area. The Refuse Division currently houses their Rolloff Division at the former WIF, utilizing existing structures for parking and dispatch operations. The remaining WIF structures will be demolished during construction of the new WCC and Refuse Facility. The Refuse Facility will consist of the following major components: 1.) 2-story office building with a dispatch office, locker and break rooms for Rolloff Division employees, offices, and training and public education facilities for Refuse Division employees; 2.) parking area for Rolloff and Refuse Division employees; 3.) parking area for rolloff trucks, a wash pad and canopy, and an equipment storage building; and 4.) designated area for future container repair shop and/or rolloff container storage yard. Project plans are still being developed and no estimation of potential ground disturbance is currently known.

The purpose of the literature review and field inspection was to determine the land-use history of the property area and to identify any potentially significant artifacts or historic properties present on the ground surface. Fieldwork for this project was performed under the archaeological permit number 23-23 issued to Honua Consulting by the State Historic Preservation Division/Department

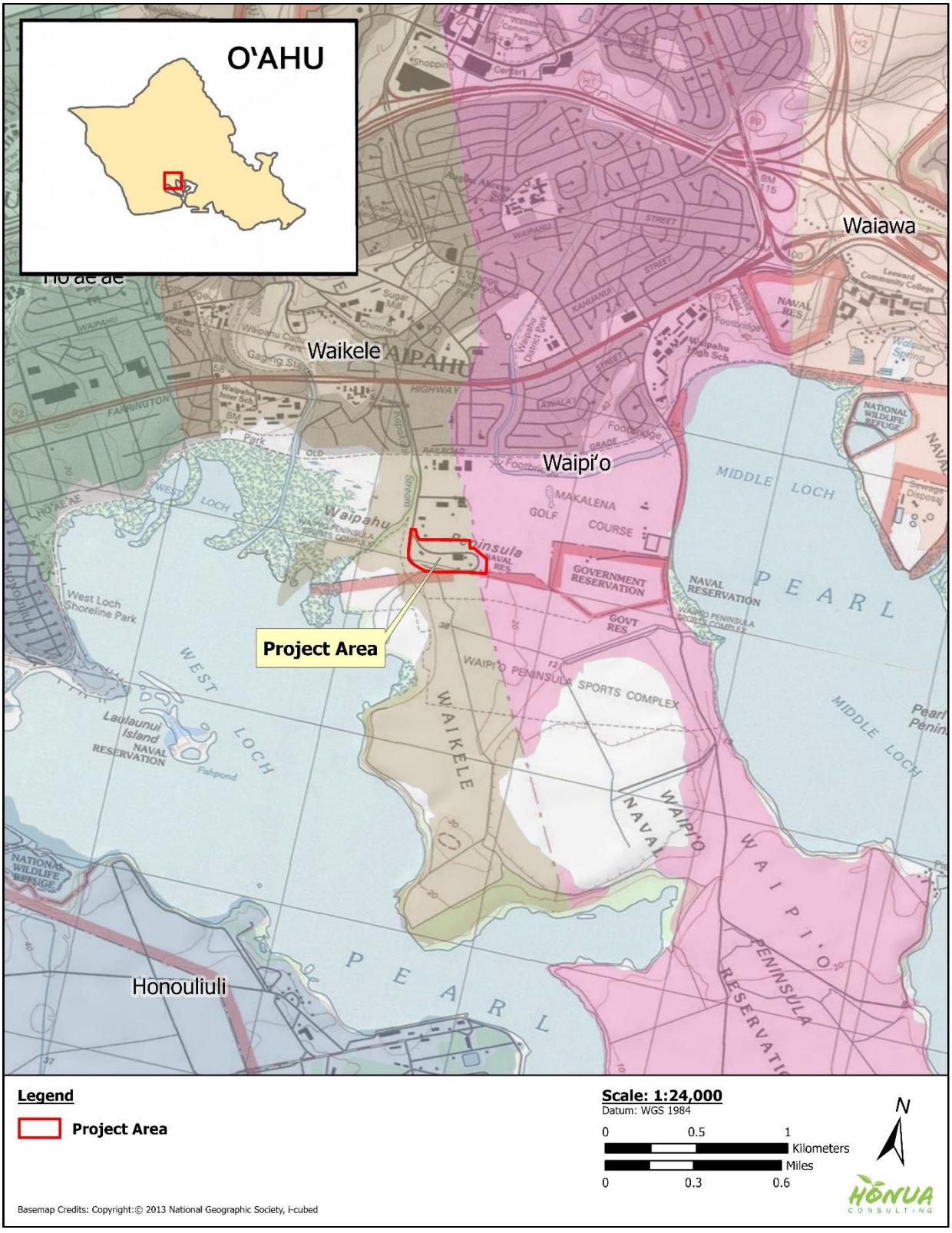


Figure 1. Portion of a 2013 Waipahu U.S. Geological Survey (USGS) Topographic Map Showing the Location of the Project Area

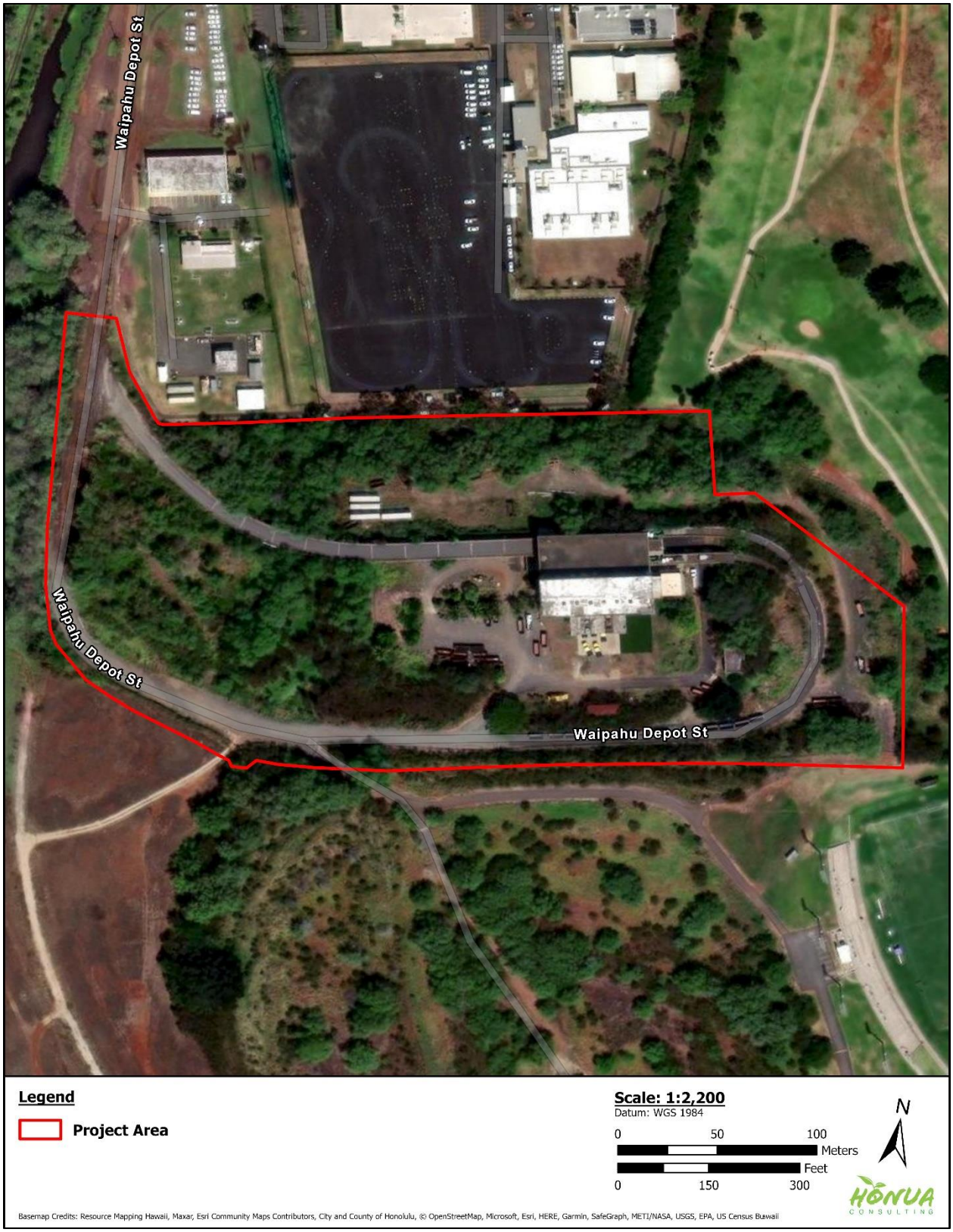


Figure 2. Aerial Photo Showing the Project Area (Esri 2023)

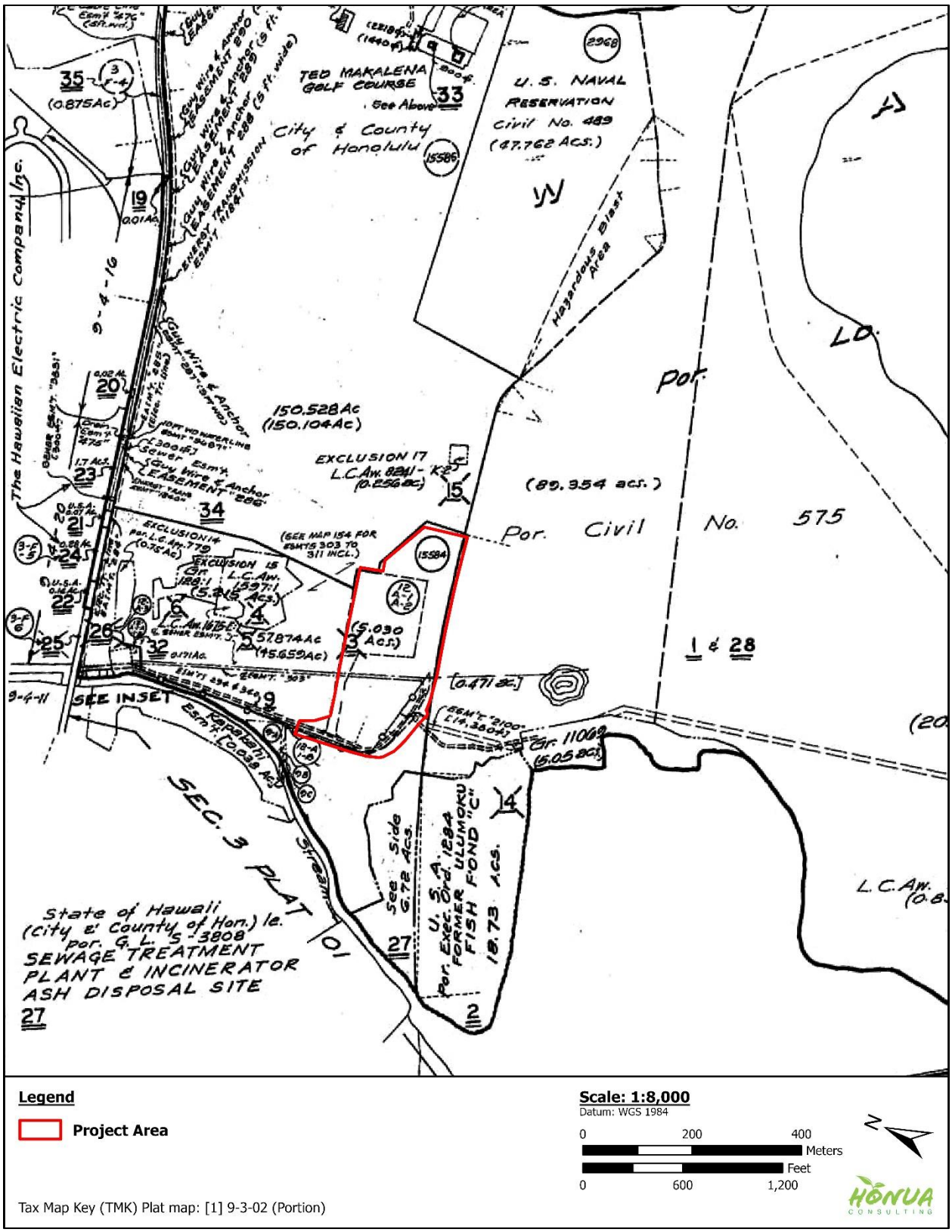


Figure 3. Tax Map Key (TMK) Plat Map: [1] 9-3-002 Showing the Project Area

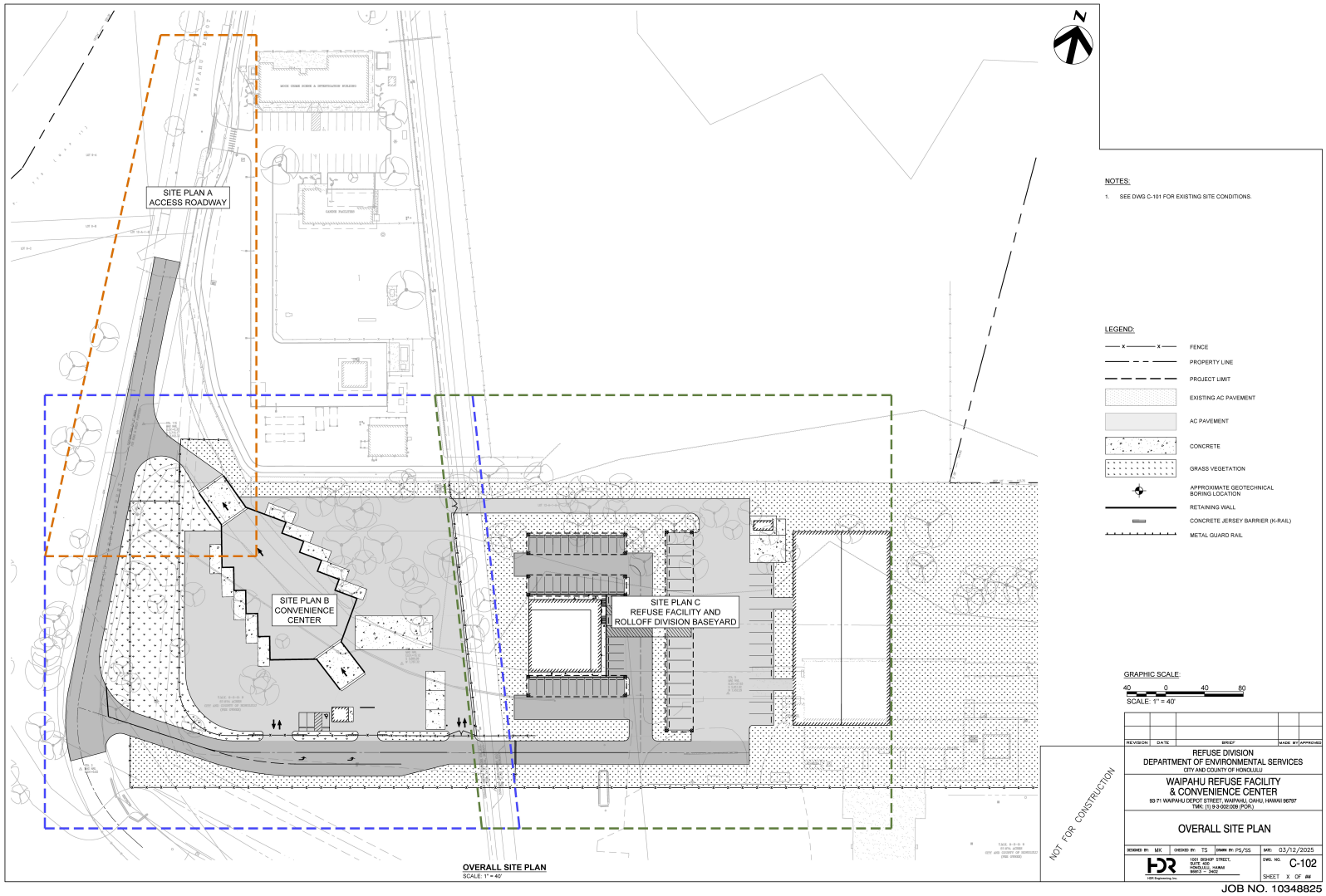


Figure 4. Conceptual Layout for the Waipahu Refuse Facility (provided by client)

of Land and Natural Resources (SHPD/DLNR) in accordance with Hawai‘i Administrative Rules (HAR) Chapter 13-282. This study is not an archaeological inventory survey (AIS), however, this report was written using standards outlined within Hawai‘i Revised Statutes (HRS) 6E-8 and HAR 13-276 for AIS studies and is intended to assist with historic preservation efforts for the proposed project.

1.2 Environmental Setting

1.2.1 Natural Environment

The project area is situated on the leeward side of O‘ahu within Waikele Ahupua‘a of the ‘Ewa District. ‘Ewa is the largest of the six moku (districts) of O‘ahu and encompasses the south-central portion of the island. Waikele Ahupua‘a extends from the Ko‘olau Mountains to Waipi‘o Peninsula within Pearl Harbor, separating the Middle and West Lochs. The project area ranges from approximately 400 feet in elevation to sea level. Rainfall near the project area ranges from 9.7 cm (3.8 inches) in the wet, winter months to 1.6 cm (0.7 inches) in the dryer, summer months; with a mean annual rainfall of 58.0 cm (22.8 inches) (Giambelluca et al. 2013). Water resources in the area consist of the intermittent Waikele and Kapakahi Streams which border the ahupua‘a on either side and smaller perennial streams, natural springs, and coastal lands within Pearl Harbor.

The soil within the project area consists of five soil typologies, fill lands (FL and Fd), coral outcrop (CR), Keaau Clay (0-2% slopes, KmA), and Honouliuli Clay (0-2% slopes, HxA) (Figure 5). Fill land soil typologies consist of areas filled with dredge material and excavation from uplands, garbage, and bagasse and slurry from sugar mills. Fill Land (FL) consists of “materials [that] are dumped and spread over marshes, low-lying areas along the coastal flats, coral sand, coral limestone, or areas shallow to bedrock” (Foot et al. 1974:31). This soil type was typically used for sugarcane cultivation. Mixed Fill Land (Fd) is typical in urban development for construction of airports, housing areas, and commercial areas, particularly near Pearl Harbor and within Honolulu.

Coral Outcrop (CR) consists of cemented calcareous sand formed in shallow ocean water (Foote et al. 1974:29). CR lands are typically used for military facilities, quarries, and urban development. Natural vegetation on this soil type includes kiawe (*Prosopis pallida*), koa haole (*Leucaena leucocephala*), and fingergrass (*Chloris barbata*).

Keaau Clay with 0-2% slope (KmA) is found on lowlands and coastal plains where permeability and runoff is slow and the erosion hazard is no more than slight. “Workability is difficult because the soil is very sticky and very plastic” (Foote et al. 1974:65). This soil type was commonly used for sugarcane cultivation and pasture. Typical vegetation consists of kiawe, fingergrass, bermudagrass (*Cynodon dactylon*), and bristly foxtail (*Setaria verticillata*).

Honouliuli Clay with 0-2% slope (HxA) is found in lowlands along coastal plains where permeability is moderately slow, runoff is slow, and the erosion hazard is no more than slight (Foote et al. 1974:43). This soil type was commonly used for sugarcane, truck crops, and pasture. Typical vegetation includes kiawe, koa haole, fingergrass, bermudagrass and bristly foxtail.

1.2.2 Built Environment

The project area is located within agricultural zoned property, just east of Waipahu Depot Street on the Waipi‘o Peninsula of Pearl Harbor. The project area includes an asphalt roadway that acts as a circle-drive around the property and accesses the former Waipahu Incinerator Facility (WIF). The Honolulu Police Department (HPD) Training Academy is to the north, a golf course is to the east, and the Waipahu Depot Road is to the west and south. Vegetation within and near the project area includes large kiawe trees (*Prosopis pallida*), low shrubs, and grasses.

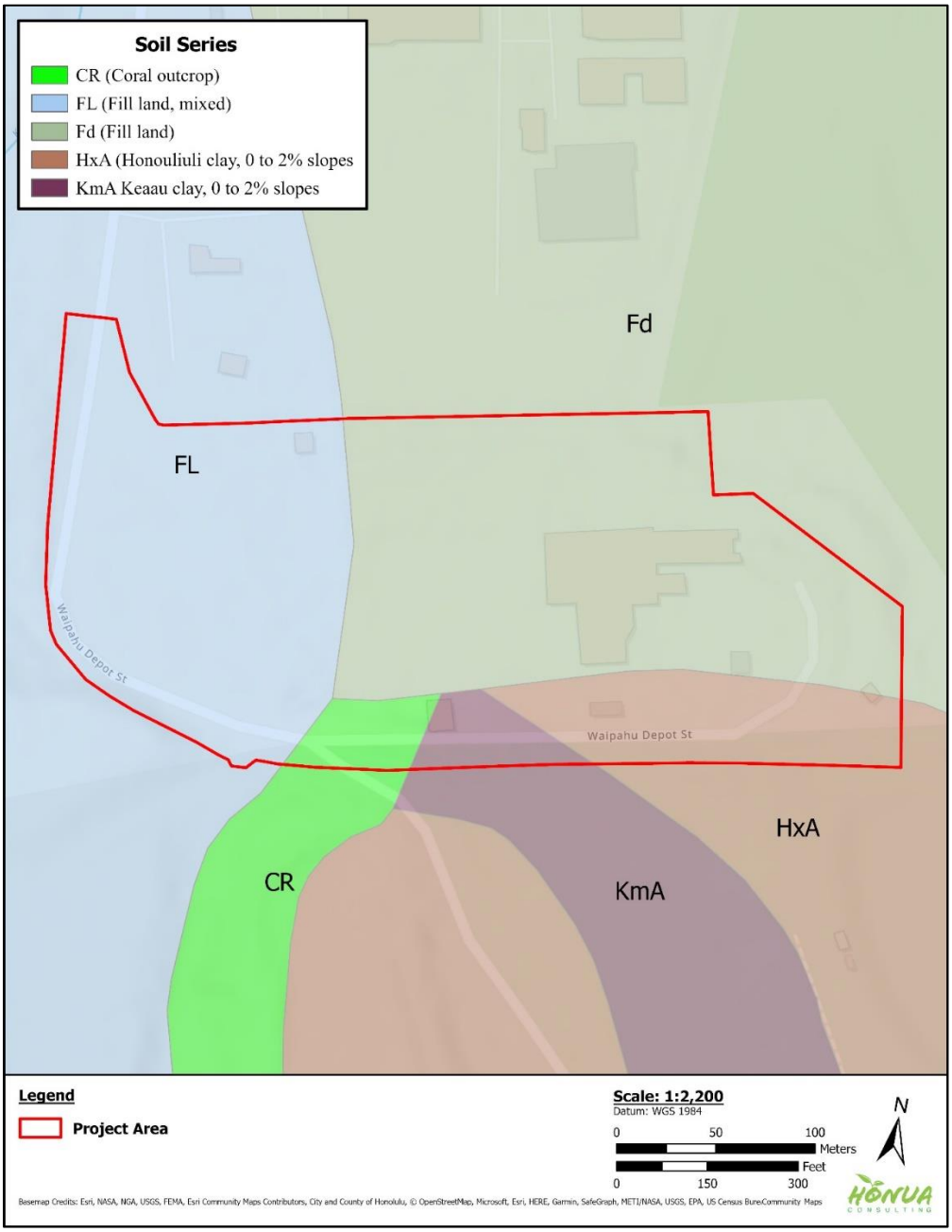


Figure 5. Portion of a USGS with Soil Series Overlay Showing Anticipated Soils Within the Project Area (Foote et al. 1972, Esri 2023)

Traditional and Historical Background

Background research for the literature review was conducted using materials obtained from the State Historic Preservation Division (SHPD) library in Kapolei and the Honua Consulting LLC. report library. On-line materials consulted included the Ulukau Electronic Hawaiian Database (www.ulukau.com, Soehren 2002-2019), Papakilo Database (www.papakilodatabase.com), the State Library on-line (http://www.librarieshawaii.org/ Serials/databases.html), and Waihona ʻAina Māhele database (http://www.waihona.com). Hawaiian terms and place names were translated using the on-line Hawaiian Dictionary (Nā Puke Wehewehe ʻŌlelo Hawaiʻi, www.wehewehe.com) and Place Names of Hawaii (Pukui et al. 1974). Historic maps were obtained from the State Archives, State of Hawaiʻi Land Survey Division website (http://ags.hawaii.gov/survey/map-search/), and UH-Mānoa Maps, Aerial Photographs, and GIS (MAGIS) website (http://guides.library.manoa.hawaii.edu/magis).

Maps were geo-referenced for this report by Fredrick LaChance, B.A. using ArcGIS Pro desktop. GIS is not 100% precise and historic maps were created with inherent flaws; therefore, geo-referenced maps should be understood to have some built-in inaccuracy.

2.1 Place Names and Moʻolelo

The project area is located within the traditional ahupuaʻa of Waikele, an ahupuaʻa (traditional land division) located within the moku (district) of ʻEwa. The project area is situated on Waipiʻo Peninsula, separating the Middle and West Lochs within Puʻuloa (“long hill”, now named Pearl Harbor) (Pukui et al. 1974:201). An 1873 map of West Loch shows the project area within swamp land surrounded by numerous fishponds (Figure 9). The region has a rich and interesting cultural history, and many moʻolelo and legends are associated with it. The area is now commonly referred to as Waipahu, which once was only a small place where a tapa anvil was said to have come out of and drifted down the stream. The name Waipahu, meaning “bursting water”, grew in usage after the area was tapped for its water supply by the Oʻahu Sugar Company.

In ancient times, named localities served a variety of functions, telling people about: (1) places where the gods walked the earth and changed the lives of people for good or worse; (2) heiau or other features of ceremonial importance; (3) triangulation points such as koʻa (ceremonial markers) for fishing grounds and fishing sites; (4) residences and burial sites; (5) areas of planting; (6) water sources; (7) trails and trail side resting places (oʻioʻina), such as a rock shelter or tree shaded spot; (8) the sources of particular natural resources/resource collections areas, or any number of other features; or (9) notable events which occurred at a given area. Through place names, knowledge of the past and places of significance were handed down across countless generations.

Place names that follow below provide a glimpse into the relationship shared between Hawaiians and the ʻāina of Waikele. Table 1 lists place names mentioned throughout this report which were able to be identified through research. Most of the names have their origins rooted in ancient traditions; others were recorded through historical accounts such as in claims of the Māhele ʻĀina (Land Division) of 1848 or in other descriptions of land and land use. Several of the place names are marked with an asterisk, indicating they are connected with native tenant land claims within or in the vicinity of the project area. Figure 7 show many of the locations of these place names located within the vicinity of the project area.

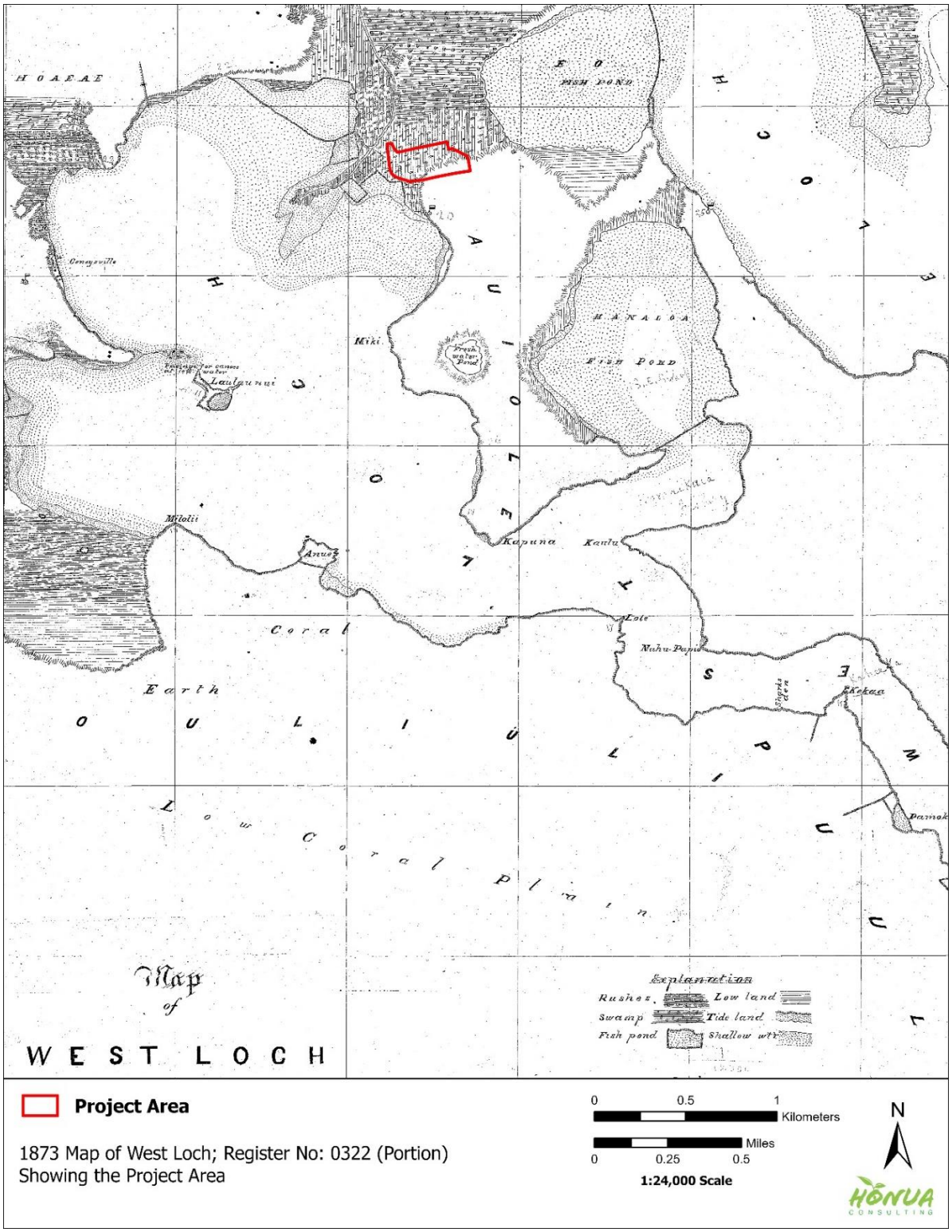


Figure 6. Portion of 1873 Map of West Loch Showing the Location of the Project Area (notice the project area is within "Swamp") (Lidgate 1873, Registered Map [RM] 322)

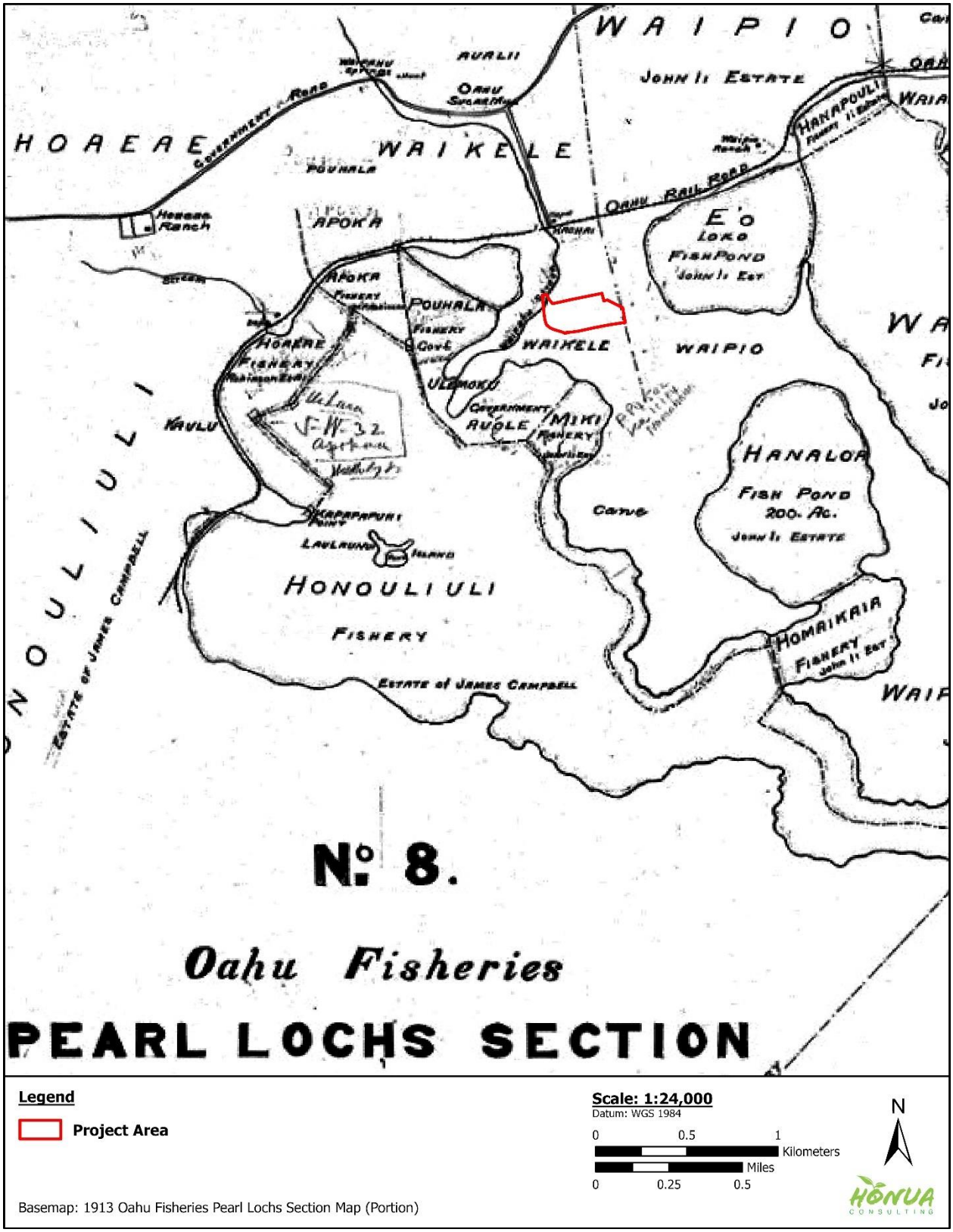


Figure 7. 1913 Monsarrat Map of O‘ahu Fisheries, Pearl Lochs Section, Showing the Location of the Project Area (RM 2848, Sheet 8)

Table 1. Listing of Place Names in the Vicinity of the Project Area

Inoa ʻĀina	Description
ʻĀlele (see Waiahuʻalele)	A spring above Waipahu (Kamakau 1961:75)
ʻAiea	Land sections, mill, village, bay, stream, field, recreation center, and schools, west of Honolulu, Oʻahu. *Lit., Nothocestrum* tree. (Pukui et al. 1974:7)
ʻAioloolo (ʻĀʻīʻoloʻolo)	A land area on the shore of Waikele, situated below Kupapaʻulau. (ʻĪʻī 1959:76)
Āliamanu	Schools, playground, and crater near Salt Lake, Honolulu. *Lit.,* bird salt-pond. The goddess Pele and her family lived here once. When they left, Pele dropped some salt, and the pet bird of Hiʻiaka, Pele's favorite sister, escaped. Birds gathered here. (Pukui et al. 1974:11)
Āliapaʻakai	Salt Lake, Oʻahu, said to have been dug by Pele on her first circuit of the islands. Some of the viscid matter from her eyes dropped and formed salt. Hawaiians believed that the lake was connected to the sea by a hole in the center of the lake. *Lit.,* salt pond. (Pukui et al. 1974:11)
Apokaʻa*	A named locality, a lele (discontinuous, jump land) of Hanohano. Cited in project area claims of the Māhele.
Aualiʻi	An ʻili (land division within an ahupuaʻa). Cited in claims of the Māhele.
ʻAuiʻole	An ʻili. Cited in the traditions of "Kapuaohelo" and claims of the Māhele.
Eo	An ʻili in the ahupua'a of Waipio, on the island of O'ahu. (Soehren 2019)
ʻEwa*	Plantation, plantation town, elementary school, and quadrangle west of Pearl Harbor, Oʻahu. *Lit*., crooked. Kane and Kanaloa threw a stone to determine district boundaries. The stone was lost but was found later at Pili-o-Kahe. (Pukui et al. 1974:28)
Haiao	An ʻili. Cited in claims of the Māhele.
Hālaulani	Land division near the Pineapple Research Institute, Waipiʻo, Waipahu qd., Oʻahu; *Lit*., high-born chiefs large house. (Pukui et al. 1974:36)
Hālawa	Land section, district park, elementary school, town, and stream, Waipahu qd., Oʻahu. *Lit.,* curve. (Pukui et al. 1974:36)
Hanaloa	Point and fishpond, Waipi'o peninsula, Oʻahu. *Lit.,* long bay. (Pukui et al. 1974:41)

Inoa ʻĀina	Description
Hanapouli	An ʻili in the ahupuaʻa of Waipio on the island of O'ahu. (Soehren 2019)
Hanohano*	An ʻili. Cited in project area claims of the Māhele.
Hīnano	A named locality. Cited in project area claims of the Māhele.
Hōʻaeʻae	Land section and point, ʻEwa, ʻOahu. *Lit*., to make soft or fine. A stone called Pōhakupili (clinging rock) is on the edge of the cliff on the boundary of Hōʻaeʻae and Waikele; it belonged to the gods Kāne and Kanaloa. (Pukui et al. 1974:47)
Holonaio	A named locality. Cited in project area claims of the Māhele.
Honouliuli*	Land division, village, forest reserve, and gulch, Wai-pahu, Oʻahu. *Lit*., dark bay. (Pukui et al. 1974:51)
Honuaʻula	*Lit.,* red land. (Pukui et al. 1974:51)
Hopeiki & Hopenui	Honouliuli, Waikele and Waipiʻo. ʻIli lands. Cited in claims of the Māhele.
Kaʻelekū	A named locality. Cited in project area claims of the Māhele.
Kahakuʻōhiʻa	Waikele (and other ahupuaʻa of the ʻEwa District). An ʻili. Cited in claims of the Māhele. The name bears with it ceremonial significance, as the "haku ʻōhiʻa" was the choice ʻōhiʻa post selected for the carving of images when the heiau (temples) were restored following the Makahiki.
Kahāpuʻupuʻu* (also referenced as Kahaupuʻupuʻu)	An ʻili. Cited in claims of the Māhele. (Soehren 2019) "Here lived the kapu Chiefess, Kalanikepoolauheaiku, who was called Waimahuʻi only by her own people...(Pukui 1939, cited in Sterling and Summers 1978:26)
Kahuaiki	Waipiʻo. A spring that was once connected to Waipahu, in Waikele, and celebrated in the account of Laukaʻieʻie and Makanikeʻoe. Stream, Kāne'ohe qd., O'ahu. *Lit.,* the small fruit. (Pukui et al. 1974:66)
Kahuawai	A small waterfall on Kalauao Stream, Oʻahu, once a favorite resting place exclusively for chiefs. Also called Kahuewai (the water gourd). (Pukui et al. 1974:66)
Kahuku	Village, land division, northernmost point of Oʻahu, golf course, ranch, schools, forest reserve and surfing beach, Oʻahu. A lone rock here, Kū's Rock Spring, was said to give forth pure spring water. Oʻahu was believed to have consisted of two islands ruled by a brother and a sister who locked fingers to pull the islands together; at a pool called Pōlou, perhaps a shortening of Poulou (hooked post). *Lit.,* the projection. (Pukui et al. 1974:66-67)

Inoa ʻĀina	Description
Kaihuopalaʻai	West Loch, Pearl Harbor, Oʻahu. Palaʻai was a woman from here who married a Lāʼie man; she sent her husband from Lāʻie to fetch mullet from Honouliuli; mullet followed him as far as Kaipapaʼu and then turned back–as they do today. *Lit.,* the nose of Palaʼai. (Pukui et al. 1974:68)
Kalaeokāne	Honouliuli-Waikele. An area disputed between the people of Honouliuli and Waikele. Site of the ancient village, Kupaliʻi (Boundary Commission proceedings). The name translates as "the point of Kāne," and may be suggested to be associated with the tradition of a visit by the gods Kāne and Kanaloa to the region. Cited in the tradition of Maihea.
Kalāhikiola	*Lit*., the life-bringing sun or the day bringing salvation. (Pukui et al. 1974:73)
Kalapawai	*Lit.,* the water ridge. (Pukui et al 1974:75)
Kalauao	Land section and stream, Waipahu qd., Oʻahu. A battle was fought in the area between here and ʻAiea Heights from November 16 to December 12, 1794; Kalanikūpule defeated and killed Kaʻeokūlani, chief of Maui, Molokaʻi, Lānaʻi, and Kauaʻi (RC 168-170). *Lit*., the multitude [of] clouds. (Pukui et al. 1974:75)
Kalihi	Land section, channel, stream, valley, elementary school, field, street, and shopping center, Honolulu, said to have been named by Prince Lot (afterwards Kamehameha V) in 1856. Kalihi in Honolulu is famous in legend as the home of Peleʼs sister Kapo, and of Haumea, Peleʼs mother who is identified with Papa, the wife of Wākea. (Pukui et al. 1974:77)
Kalokoloa	A named locality. Cited in project area claims of the Māhele.
Kamaʻomaʻo	*Lit.,* the greenness. (Pukui et al. 1974:81)
Kanupoʻo	An ʻili. Bounded by a stream gulch marking the boundary with the ʻili of ʻŌhua and adjoining Aualiʻi. Cited in claims of the Māhele. The name may be translated as meaning, "Planted skull" and seems to imply an event of some importance. A tradition for this name has not been located, though it may be tied to events of the battle at Kīpapa and the naming of Poʻohilo, at Honouliuli.

Inoa ʻĀina	Description
Kaʻōhai	An ʻili. Kaʻōhai was a chiefess of the ʻEwa region, and wife of Kaihuopalaʻai. Kaʻōhai gave birth to Kapapapūhi (a girl), and Pūhi Laumeki, born in the form of an eel. The traditions of these places and the people who gave their names to them are told in accounts of Ka ʻAnae o Kaihuopalaʻai, Laukaʻieʻie, Makanikeʻoe, and Pūhi o Laumeki. Their traditions explain how the famed ʻanae holo (traveling mullet) established their annual circuit around the island of Oʻahu. Cited in claims of the Māhele.
Kaopele	Ahupuaʻa of Halawa, island of Oʻahu. (Soehren 2019)
Kapahupū	A named locality. Cited in project area claims of the Māhele.
Kapālaha	An ʻili. Cited in claims of the Māhele.
Kapapakōlea	Old name for Papa-kōlea, and a hill on Damon property, Moanalua, Honolulu. *Lit.,* the plover flats. (Pukui et al. 1974:88)
Kapakahi	A stream and named locality. Cited in claims of the Māhele.
Kapūkakī	Old name for Red Hill and Makalapa Crater near Pearl Harbor, Oʻahu. (Pukui et al. 1974:90)
Kapukanawaiokahuku	A portion of the Waipahu spring system, which was connected by underground caverns to Kahuku in Koʻolauloa District. The tradition of this place recounts the disappearance of a kapa beating anvil from Kahuku, and it's being found by a kapa maker at this place in the Waipahu spring. Cited in historical accounts and Na Wahi Pana o Ewa (1899).
Kapuna	A place of kapa makers, loʻi kalo (irrigated terraces of taro [*Colocasia esculenta*]), and houses. The fishery fronting Kapuna belonged to Honouliuli. The people of Kapuna had a way of avoiding the payment of tribute. When the Waikele collector came along, they would claim that they were of Honouliuli; when the Honouliuli collector came along, they would claim they were of Waikele. Their homes were in Waikele, but their fish belonged to Honouliuli (ʻĪʻī 1959:32). Kapuna was a cave in which chiefs of ancient times once lived. Cited in Na Wahi Pana o Ewa (1899). In claims of the Māhele.
Kauhakō	*Lit*., the dragged large intestines. (Pukui et al. 1974:92)
Kaʻuiki	*Lit.,* the glimmer. (Pukui et al. 1974:92)
Kaupea	A place in the ahupuaʻa of Honouliuli on the island of O'ahu. (Soehren 2019)

Inoa ʻĀina	Description
Keahupuaʻa	A named locality. Cited in project area claims of the Māhele. By its name, the site is expected to be associated with ceremonies of the annual Makahiki.
Keanapuaʻa	Cave near Pearl Harbor, Oʻahu. *Lit.*, the pig's cave (Kamapuaʻa slept here). (Pukui et al. 1974:103)
Keanapueo	A cave in the Waipahu vicinity in which the kapa maker who found the kapa anvil at Kapukanawaiokahuku, worked. Cited in Na Wahi Pana o Ewa (1899).
Keonekuilimalaulāoʻewa*	A kula (plain) land situated above the place called Waipahu and crossed by the government road. There once lived a chief here, who was tricked and killed by his younger brother, who then became the ruler of the region. The kula was noted for its flowering plants of maʻo and ʻilima. Cited in Na Wahi Pana o Ewa (1899) and historical accounts.
Kepoe	A named locality. Cited in project area claims of the Māhele.
Kinimakalehua	n. Name of a mountain rain. *Lit.*, countless lehua blossoms. (Ulukau 2020)
Koalipeʻa	An ʻili. Cited in claims of the Māhele.
Koʻokā	A named locality. Cited in project area claims of the Māhele.
Koʻolina	A place in the ahupuaʻa of Honouliuli on the island of Oʻahu. (Soehren 2019)
Kualāʻau	A named locality. Cited in project area claims of the Māhele.
Kuhialoko	An ʻili in the ahupua'a of Waiawa on the island of Oʻahu. (Soehren 2019)
Kuhiawaho	An ʻili in the ahupua'a of Waiawa on the island of Oʻahu. (Soehren 2019)
Kūmelewai	Mountain, Waiʻanae range, Oʻahu. *Lit*., rising Pleiades. (Pukui et al. 1974: 124)
Kupahu	A canoe landing on the northeastern side of Hālaulani (ʻĪʻī 1959:76).
Kupaliʻi	Honouliuli-Waikele. A village site at Kaleokāne. The area disputed between the people of Honouliuli and Waikele; "…in assessing the ancient tax, putting houses on the line so as to evade both…" (Honouliuli Boundary Commission [1873] proceedings)
Kupapaʻulau	A field where Makahiki contests occurred (ʻĪʻī 1959:76). The name, may be translated as "many corpses," and could be an indicator of cultural significance.

Inoa ʻĀina	Description
Lae o Kāne	A point at Miki (the ocean fishery claimed by Honouliuli). By name, an area of potential religious significance by association with the god Kāne.
Leilono	Land area, Moanalua, Honolulu, one of the leaping places of ghosts to the nether world. *Lit.,* Lono's lei. (Pukui et al. 1974:131)
Līhuʻe	An upland plain and lower mountain region. Waikōloa is a strong wind of Līhuʻe that blows from the uplands to the lowlands (cited in the tradition of Ku-a-Pakaa 1901). Mauʻunēnē is a light breeze that blows down the slopes of Līhuʻe to the lowlands of ʻEwa. Cited in claims of the Māhele for Honouliuli, Hōʻaeʻae, Waikele, and Mānana iki, also in Na Wahi Pana o Ewa (1899).
Mālamanui	A named locality. Cited in project area claims of the Māhele.
Malau	A named locality. Cited in project area claims of the Māhele.
Māmala	Bay, Honolulu Harbor to Pearl Harbor, Oʻahu, named for a shark woman who lived at the entrance of Honolulu Harbor and often played kōnane. She left her shark husband, ʻOuha, for Honokaʻupu. ʻOuha then became the shark god of Waikīkī and of Koko Head. (Pukui et al. 1974:144)
Mānana	Land division, elementary school, and stream at Pearl City, Oʻahu. (Pukui et al. 1974:145)
Mauakapuaʻa (Manakapuaʻa)	Waikele and Kalauao. A ʻili and named locality. Cited in project area claims of the Māhele.
Manawaiʻelelu	Waikele, Honouliuli, and Hōʻaeʻae. Boundary junction zone. A gulch near Poliwai, and site of an ancient hōlua track (Boundary Commission proceedings).
Māpuna	An ʻili. Cited in claims of the Māhele.
Miki	Waikele, disputed with Honouliuli. Kalaeokāne sits on the shore of the ʻili. Cited in claims of the Māhele.
Mikiokai	A named locality. Cited in project area claims of the Māhele.
Moanalua	Land division, park, playground, golf course, residential area, shopping center, schools, and stream near Fort Shafter, Honouliuli, said to be named for two encampments (moana lua) at taro patches, where travelers bound for Honolulu from ʻEwa rested. (Pukui et al. 1974:152-153)
Mokuʻumeʻume	Old name for Ford Island, Pearl Harbor, Oʻahu. Water was brought for melons raised here. *Lit*., ʻume game island (famous for this sexual game). (Pukui et al. 1974:156)

Inoa ʻĀina	Description
Moʻokapu	Honouliuli-Waikele boundary zone. An ancient path which leads into Waiʻanae uka. (Honouliuli Boundary Commission 1873)
Moʻoleʻa	A named locality. Cited in project area claims of the Māhele.
Nīnauele (Nīnauwale)	Waikele & Waipiʻo. Named ʻili cited in claims of the Māhele. Nīnauwale is noted in traditions for the paʻakai (salt) which was made and gathered from near shore ponds.
ʻŌhua	A named locality. Cited in project area claims of the Māhele.
ʻŌniʻo	A named locality. Cited in project area claims of the Māhele and Boundary Commission proceedings.
Paʻahao* (Pahao)	A named locality. Cited in project area claims of the Māhele.
Pahuwiliwili	An ʻili. Cited in claims of the Māhele.
Pāʻiwa*	An ʻili. Cited project area claims of the Māhele and Boundary Commission proceedings.
Palea	Point, north side of Hanauma Bay, Oʻahu. *Lit.,* brushed aside. (Pukui et al. 1974:176)
Papaʻa	An ʻili. Cited in clams of the Māhele.
Pau-kuʻu-loa "Aole i pau kuʻu loa"	Waikele-Honouliuli. A near shore land and fishery (below Hōʻaeʻae), fronting Ulemoku (Honouliuli Boundary Commission 1873). The source of naming this place is found in the tradition of Puʻukuʻua. Cited in Na Wahi Pana o Ewa (1899).
Pōhākea	Mountain and pass (2,200 feet elevation), Waiʻanae mountains, Oʻahu; from here Hiʻiaka saw by cloud omens that her lehua groves on Hawaiʻi had been burned by Pele, and that her friend Hōpoe had been turned to stone; this is where Kauhi brutally murdered his wife, Kahalaopuna, because he thought she had been defiled. Land section and rock off Kualoa; elementary school, ʻEwa Beach, Oʻahu. *Lit.,* white stone (pōhā is short for pōhaku). (Pukui et al. 1974:185)
Pōhakupili	Waikele-Hōʻaeʻae boundary zone. The supernatural stone that belonged to the gods Kāne and Kanaloa, who divided out the district of ʻEwa while playing a game. Pōhakupili is situated on the edge of a cliff above Waipahu. Cited in Na Wahi Pana o Ewa (1899).
Pouhala*	A named locality. Cited in project area claims of the Māhele.
Pulee	An ʻili in the ahupua'a of Waianae Uka on the island of Oʻahu. (Soehren 2019)
Punamanō	*Lit.,* shark spring. (Pukui et al. 1974:194)

Inoa ʻĀina	Description
Puʻuloa	Land section, camp, salt works, station, street, playground, beach park, village, area east of Pearl Harbor, and old name for Pearl Harbor, Oʻahu; it is said that bread fruit were brought here from Samoa. *Lit.,* long hill. (Pukui et al. 1974:200-201)
Puʻukāhea	Land section, Waiʼanae, Oʻahu; site of Kahoaliʻi heiau, restored by Kahahana but destroyed in 1870 when its stones were used for fences. *Lit.,* calling hill. (Ke alanui hele mauka o Puʻukāhea la, e kāhea aku ka pono e komo maiʻoe I loko nei, the path going inland of Calling-hill, the right to call you to come within). (Pukui et al. 1974:197)
Puʻuohulu	Hill, Lualualei, Oʻahu, said to be named for a chief who was in love with Māʻiliʻili, one of twin sisters; since he could not tell the sisters apart, a moʼo changed them both to mountains, and he still lokos at them. A cave (Kāneana) here was said to be the home of Māaui and Hina. *Lit.,* Huluʼs hill. (Pukui et al. 1974:203)
Puʻuokapolei	Hill, Honouliuli, Oʻahu. The pig-man demigod, Kamapuaʻa, established his grandmother here as queen after conquering most of Oʻahu. (Pukui et al. 1974:203)
Ulemoku	An ʻili. Cited in claims of the Māhele and Boundary Commission proceedings.
Ulumalu	An ʻili. Cited in claims of the Māhele and Boundary Commission proceedings.
Waiāhole	*Lit.,* mature āhole (a fish) water. (Pukui et al. 1974:219)
Waiahuʻalele (ʻAlele)	A spring of water above Waipahu, the resting place of the supernatural stone named, Pōhakupili. Cited in the tradition of Laukaʻieʻie, Makanikeʻoe, Kapuaʻōhelo; and in Na Wahi Pana o Ewa (1899). A short distance above Waipahu is another spring called ʻAlele. At that time, high chief Peleioholani resided at Waikele. Ka-makaʻi-moku became pregnant by Peleiholani, with Ka-lei-ʻōpuʻu, who later became known as Kalaniʻōpuʻu, king of the island of Hawaiʻi (Kamakau, 1961:75).
Waiʻanae	Quadrangle, mountain range, land division, town, valley, school, district, and homesteads, Oʻahu. *Lit.,* mullet water. (Pukui et al. 1974:220)
Waiau	Land division and village, Waipahu qd. *Lit.,* swirling water. (Pukui et al. 1974:221)
Waiawa	Land division, ditch, and stream, Wahiawā, Waipahu, and Waikāne qds., Oʻahu. *Lit.,* milkfish water. (Pukui et al. 1974:221)

Inoa ʻĀina	Description
Waikakalaua	An upland ʻili. During the reign of Kākuhihewa, a great battle was fought here and on neighboring lands (see Kīpapa). Cited in numerous traditions and historical accounts.
Waikele*	Land section, stream, and park, Waipahu qd., Oʻahu. *Lit*., muddy water. (Pukui et al. 1974:223) Ahupuaʻa. This is one of the "wai" (watered lands) granted to priests of the Lono class, by the demigod, Kamapuaʻa. At Wailele, in Waikele, king Kahahana, his wife, Kekuapoʻi, and his trusted friend, Alapaʻi lived, hiding from the forces of Kahekili. It was here that Kahahana and Alapaʻi were killed by the treachery of Kekuamanohā (the half-brother of Kekuapoʻi). Their bodies were taken first to Hālaulani at Waipiʻo and then to Waikīkī as sacrifices (Kamakau, 1961:136-137). "In the flatland, where the Kamehameha Highway crosses the lower valley of Waikele Stream, there are the remains of terraces on both sides of the road, now planted to bananas, beans, cane, and small gardens. For at least 2 miles upstream there were small terrace areas" (Handy, 1940:82).
Waimalu	Hill (1,450 feet high), land section, town, elementary school, playground, and stream debouching at Pearl Harbor, Oʻahu; the Spaniard Francisco de Paula Marin had a home here (Ii 95). *Lit.,* sheltered water. (Pukui et al. 1974:225)
Waimānalo	Land division, road, and gulch, Barber's Pt. Qd., Oʻahu, and the site of the home of Chief Kākuhihewa, *Lit.,* potable waters. (Pukui et al. 1974:225)
Waimano	Stream, trail, and land division near Pearl Harbor, Oʻahu; the shark demigoddess Kaʻahupāhau bathed here. *Lit.,* many waters. (Pukui et al. 1974:225)

Inoa ʻĀina	Description
Waipahu*	An ʻili. Waipahu is named for a noted spring which fed into the Waikele Stream. The spring is said to have been connected to a spring (Kapukanawaiokahuku) at Kahuku; also said to be one of the entrances to the famed royal burial cave of Pohukaina. Site where the man-eating shark Mikololou was first killed following his attack on people of the Puʻuloa region. Site of the old Oʻahu Sugar Mill. Cited in Na Wahi Pana o Ewa (1899), He Moolelo Kaao Hawaii no Keliikau o Kau (1902), and claims of the Māhele. "Between West Loch of Pearl Harbor and Loko ʻEō the lowlands were filled with terraces which extended for over a mile up into the flats along Waikele Stream. The lower terraces were formerly irrigated partly from Waipahu Spring, which Hawaiians believed came all the way through the mountains from Kahuku. It is said that terraces formerly existed on the flats in Kīpapa Gulch for at least 2 miles upstream above its junction with Waikele. Wild taros grow in abundance in upper Kīpapa Gulch" (Handy 1940:82).
Waipiʻo	Land sections, village, golf course, peninsula, point, river, and station, Waipahu and Wahiawā qds., south central Oʻahu. *Lit.,* curved water. (Pukui et al. 1974:227)

2.2 Excerpts of Traditional Accounts

Research found a number of site-specific traditions from Waikele Ahupuaʻa, but much more of the available history is associated with the traditions of neighboring lands of the larger ʻEwa District—notably with Ke Awalau o Puʻuloa (The many Bays or Lochs of Puʻuloa)—and in some cases connected to events in history across the pae ʻāina (island group). As a result, many of the following citations include other notable places.

Hawaiian moʻolelo (traditions and historical narratives) share expressions of native beliefs, customs, practices, and history. The Hawaiian landscape is itself storied and each place name is associated with a tradition, ranging from the presence and interactions of the gods with people, to documenting an event or the characteristics of a given place. Unfortunately, today many of these moʻolelo have been lost. Through the moʻolelo that have survived the passing of time we are able to glimpse the history of the land and people who have called Waikele home.

The narratives are generally organized chronologically by period of time or the events being described, such as when the gods walked the land, touching the lives of the people, or when chiefs engaged in conflicts on the land. In some instances when the moʻolelo span generations, speaking of the transmission of traditional knowledge and beliefs, the collection of history is linked together. It will be noted that in a number of instances, wahi pana (storied and sacred landscapes) were named in the traditions as a means of commemorating notable events in history.

The project area is located within the moku of ʻEwa, within the ahupuaʻa of Waikele, and the ʻili of Waipahu. Places beginning with the word "wai", or water, are watered lands said to have been granted to priests of the Lono class by the demigod Kamapuaʻa. Kamapuaʻa is a "multi-formed deity of traditional significance on Oʻahu and all the major islands of the Hawaian group. The Hawaiian deity Kamapuaʻa is part of the Lono god-force and possessed many kinolau (body forms), representing both human and various facets of nature. He was born in pig form to Hina (mother) and Kahikiʻula (father)" (Kahiolo 1861). Within one moʻolelo is an instance in which Kamapuaʻa and his friend Kuolohele walked from Moanalua to Waiawa, and on to Waipahu. Once arrived, Kuolohele bathed in Waipahu stream, when Kamapuaʻa noticed a puʻu, or large lump on Kuolohele's back. To heal his friend, Kamapuaʻa picked up and threw a rock at Kuolohele's back. Kuolohele then found that the lump was gone. Kamapuaʻa set the stone on the cliff-side, where it is said to remain today. That stone is called Kuolohele.

S.M. Kamakau (1964, 1976) wrote about several practices and beliefs pertaining to manō, or sharks in ancient life. It was believed that people could transform into an ʻaumakua after death, meaning they would live on as a family god or guardian, often taking the form of an animal. In the region of Puʻuloa, it was common for an ʻaumakua to return in the form of a manō, or shark, and they would protect and assist their living family in various ways. It is also said that sharks could be tamed and even rode by humans. Sharks were categorized as either manō kānaka (sharks with human affiliations) or manō iʻa (wild sharks/man-eaters). The shark gods had a kānāwai, or law which prohibited attacking humans, which was well known from Puʻuloa to ʻEwa. There are many stories involving the sharks of ʻEwa, with one account of the sharks traveling up the Waipahu river. Two famous shark-gods were brother and sister and named Kahiʻuka and Kaahupahau. They were visited by Mikololou, a man-eating shark from the coast of Maui. Although Kahiʻuka and Kaahupahau treated him with hospitality, Mikololou was angry that they would not grant his request for human flesh. Despite the law, Mikololou attacked and feasted upon humans. To bring justice, the sibling sharks invited Mikololou to a feast in his honor at a favorite spot up the Waipahu river. Mikololou was fed and given so much awa until he was in a daze. In the meantime, the many friends of the favorable shark-gods gathered with their fish nets to close up the Waipahu river so Mikololou could not escape. Mikololou was dragged out of the river and burned to ashes. However, the tongue of Mikololou was partially eaten, then thrown back into the river, reviving the spirit of the shark and allowing the live tongue to travel and plead with his man-eating sharks to go to war with the sharks of ʻEwa. It is said that Kaahupahau was killed by a shark friend of Mikololou, named Keliʻikau-o-Kaʻū. "Upon her death, Kaʻahupāhau's body became a coral formation near the place called Papio, and that place is still seen on the side of Honouliuli to this day" (He Moolelo Kaao Hawaii no Keliikau o Kau 1902:47).

The land as well as the waters of ʻEwa are known for many pastimes of demigods and notable humans alike and shed light on beliefs as well as why things are the way they are. From travel, to battles, to connections made, these stories give us insight to what life was like in the surrounding areas of the project area, during traditional Hawaiian times. These legends, myths, and themes are further presented below.

2.2.1 The Kapu Chiefess Kalanikepoolauheaiku

An account of a high cheifess of Waikele mentions areas and pohaku (stones) which may have been in the vicinity of the current project area.

> The site of the present Waipahu Continuation School was called Kahapuupuu. Here lived the kapu Chiefess, Kalanikepoolauheaiku, who was called Waimahu‘i only by her own people. It was a custom of old to have a name by which a chief was called and a name for members of the household only. She was so very kapu that even her own children could not eat a portion of any food served for her and no other chief, except Keopuolani, could enter her house with a skirt on…
>
> Above the store, near the school house are two stones, known as “Ku a‘e Ewa, Noho iho Ewa.” (Standing Ewa, sitting Ewa). Just why they were called by those names, she did not say, but I did hear her say that, “Ku a‘e Ewa, he Ewa alii; noho iho Ewa, he Ewa kanaka,” that is, “Standing Ewa is the Ewa of chiefs and Sitting Ewa, the Ewa of commoners.” (Pukui 1939, cited in Sterling and Summers 1978:26)

2.2.2 A Tradition of Kamapua‘a

S.W. Kahiolo (1861) contributed the tradition of Kamapua‘a to the native newspaper *Ka Hae Hawaii* (the original Hawaiian texts may be viewed in the Hawaiian digital library at www.ulukau.org). This is the earliest detailed account of Kamapua‘a, a multi-formed deity of traditional significance on O‘ahu and all the major islands of the Hawaiian group. The Hawaiian deity Kamapua‘a is a part of the Lono god-force and possessed many kinolau (body forms), representing both human and various facets of nature. He was born in pig-form to Hina (mother) and Kahiki‘ula (father) at Kaluanui in the Ko‘olau loa District of O‘ahu.

Excerpts from S.W. Kahiolo’s “He Moolelo no Kamapuaa” in *Ka Hae Hawaii* provide details on places of traditional cultural significance in the ‘Ewa District. This mo‘olelo offers traditions associated with the naming of, or traditional importance and uses of, localities from Honouliuli to Moanalua. Notably, the account shares that place names with the word “wai,” such as Waikele, were gifted by Kamapua‘a to the priestly line of the god Lono. These storied places include, but are not limited to: Waimānalo, Waikele, Waipi‘o, Waiawa, Waimano, Waimalu, Pu‘uokapolei, Keanapua‘a, Pu‘uloa, Moanalua, Waipahu, and Kuolohele.

> ***Ka Hae Hawaii***
> **He Moolelo no Kamapuaa.**
>
> **July 10, 1861**
>
> …When the chief Olopana was killed, the island of Oahu became Kamapuaa’s. He then fetched his people (who he had hidden) from above Kaliuwaa and brought them down, and they then returned to their lands. The priest (Lonoaiwohi) asked Kamapuaa if he could be given some lands for his own as well. He asked, “Perhaps the water lands might be mine.” Kamapuaa agreed. This was something like a riddle that the lands which have the word “water” (wai) in their names would be his, like: Waialua, Waianae, Waimanalo, Waikele, Waipio, Waiawa, Waimano, Waimalu,

Waikiki, Waialae, Wailupe, Waimanalo 2, Waihee, Waiahole and etc.

The parents of Kamapuaa, Hina and Kahikiula, thought that this amount of land was too great, and they criticized Kamapuaa for agreeing to it. But his elder siblings and grandmother did not criticize him, agreeing to the priest's request. The remainder of the lands went to Kamapuaa's family…

[Following a journey to Hawaii, where Kamapuaa fought with Pele, he returned to Oahu. Upon arriving at Oahu, Kamapuaa learned that the island was under the rule of another chief, and that his parents had been chased to Kauai, and that his favorite brother Kekeleiaiku had been killed. The following excerpts include accounts describing sites and activities in Ewa.]

August 7, 1861

…Kamapuaa walked to Keanapuaa, on the shore at Halawa, and he slept there. When he woke up from his sleep, he urinated in the sea, and that is why the fish of Puuloa have a strong smell to them, so say the uninformed.

From there, he went to Honouliuli and saw his grandmother, Kamauluaniho, sitting along the side of a taro pond field. She was looking with desire to the lands below, where some of the men of the king were working and wishing that they would leave even a little bit of taro behind for her to eat. Kamapuaa then went and stood next to her and greeted her. She replied, greeting him, but did not recognize him as her grandson. He then asked her why she was sitting there. She told him, "I am looking to the lowlands, where the men of the chief are working, and wishing that they would leave a little behind so that I may have some food." Kamapuaa then said to his grandmother, "How did you live before?"

She answered, "What is it to you? My grandchildren have died, one in a battle with Pele, another buried, and one on Kauai." This is how she spoke, not understanding that the one before here was her own grandson. Kamapuaa then answered, "I am going to get some food for me." She asked, "Where will you get your food?" He told her, "I will go and perhaps ask for some, and maybe they will give me some of their food.

August 14, 1861

Kamapuaa went and said to one of the men who was pulling taro, "Let the two of us pull taro for us." The man agreed, and the two of them pulled taro, some for the man and some for Kamapuaa. Kamapuaa pulled a large quantity and then carried it up to his grandmother. Because of the large load that he carried, Kamauluaniho suspected that the man was indeed her own grandson, Kamapuaa. She chanted a name song to Kamapuaa and he chanted to her as well. Together, they carried the taro to the house she shared with another old woman, at Puuokapolei. Setting down their bundles of taro, Kamauluaniho placed Kamapuaa on her lap and wept over him. The two were joined by the other old woman and she was introduced to

Kamapuaa, who she thought had been lost. Preparations were made for a meal, and Kamapuaa and the old woman went out to her garden to collect sweet potatoes. They then returned to the house and ate…

August 21-28, 1861

…Kamapuaa went to Nuuanu and performed a ceremony, bringing his brother, Kekeleiaiku, back to life. He then traveled to Kou where he killed the chiefs and people who had killed his brother and forced his family into their live of despair… Returning from Kou, Kamapuaa met his friend Kuolohele and the two of them walked from Moanalua. They reached Waiawa and continued on to Waipahu. Standing on the edge of the stream there, Kuolohele went to bath in the stream. Kamapuaa noticed that Kuolohele had a large lump (puu) on his back. Picking up a stone, Kamapuaa struck the lump on Kuolohele's back.

Kuolohele cried out, thinking that he was about to be killed. Kamapuaa reassured him that he was not going to die, but that instead, he would be healed. He then instructed Kuolohele to touch his back. In doing so, Kuolohele found that the lump was gone.

Kamapuaa then picked up the stone and set it on the cliff-side. That stone remains there at this time, and it is a stone which many travelers visit [the stone is named Kuolohele]… Kuolohele and Kamapuaa continued traveling together for a short distance, until Kuolohele reached his destination. Kamapuaa continued to Puuokapolei, where he met with his grandmother and brother. He told them what had transpired, and he then set off for Kauai, to bring his parents back to Oahu…

2.2.3 Tradition of the Mullet of Kaihuopalaai

One of the notable traditions of Ke Awalau o Puʻuloa is set in Honouliuli and includes descriptions of valuable resources in neighboring ahupuaʻa. The tradition was originally published in 1866 under the title "Ka Amaama o Kaihuopalaai" and offers an explanation as to why the famed migration of the ʻanae holo (traveling mullet) around Oʻahu occurs annually. It was published again in the native language newspaper *Nupepa Ka Oiaio* between November 8, 1895 and February 14, 1896 by native historian, Moses Manu under the title "He Moolelo Kaao Hawaii no ka Puhi o Laumeki, ka Mea i Like me ka Ilio Puapualenalena" (The Hawaiian tradition of Pūhi Laumeki [A Deified Eel] and how the ʻAnae-holo Came to Travel around Oʻahu) (Manu 1895). The moʻolelo (newspaper article) cites numerous wahi pana (legendary places), features of the land, important events, resources, and residents of Honouliuli Ahupuaʻa. The narratives include important descriptions of lands fronted by Ke Awalau o Puʻuloa as the source of the ʻanae holo for fisheries around the island of Oʻahu.

Nupepa Ka Oiaio

November 8, 1895

It is perhaps not unusual for the Hawaiian people to see this type of long fish, an eel, about all the shores and points, and in the rough seas, and shallow reefs and coral beds of the sea. There is not only one type of eel that is written about, but

numerous ones that were named, describing their character and the type of skin which they had. In the ancient times of our ancestors, some of the people of old, worshipped eels as Gods, and restrictions were placed upon certain types of eels. There are many traditions pertaining to eels. It is for this fish that the famous saying "An eel of the sea caverns, whose chin sags."[1]

Indeed, this is the fish that was desired by Keinohoomanawanui, the eels of the fishpond of Hanaloa, when he was living with his friend, Kalelealuaka, above Kahalepoai at Waipio uka, when Kakuhihewa was the king of Oahu. It was necessary for us to speak of the stories above, as we now begin our tradition.

It is said in this account of Laumeki, that his true form was that of an eel. His island was Oahu, the district was Ewa, Honouliuli was the land. Within this land division, in its sheltered bay, there is a place called Kaihuopalaai. It is the place of the anae (mullet), which are known about Honolulu, and asked for by the people, with great desire.

Kaihuopalaai was human by birth, but he was also a kupua [dual-formed being], who was born at Honouliuli. His youngest sister was known by the name of Kaihukuuna. In the days that her body matured and filled out, she and some of her elders left Ewa and went to dwell in the uplands of Laiemaloo, at Koolauloa, where she met her husband. The place known by the name Kaihukuuna, at Laiemaloo, is the boundary of the lands to which the anae of Honouliuli travel.

At the time that Kaihukuuna was separated from her elder brother and parents, Kaihuopalaai had matured and was well known for his fine features, and his red-hued cheeks. He was known as the favorite of his parents and all the family. There was a young woman, who like Kaihuopalaai, was also favored by her family. Her name was Kaohai, and she lived at the place where the coconut grove which stands at the estuary of Waikele and Waipio. Thus, these two fine children of the land of the fish that quiet voices (Ka ia hamau leo), that is Ewa, were married in the traditional manner.

In their youth, the two lived as husband and wife in peace. And after a time, Kaohai showed signs of carrying a child. This brought great joy to the parents and elders of these two youth. When the time came for Kaohai to give birth, her child was born, a beautiful daughter, who also had the same red-hued nature as her father. While Kaohai was cleaning the child and caring for the afterbirth, she looked carefully at her daughter and saw a deep red-spotted mark that looked like an eel, encircling the infant. Everyone was looking at the mark, contemplating its meaning, and Kaohai was once again taken with birth pains. It was then understood that perhaps there would be a twin born as well. But when the birth occurred, an eel was seen moving about in the blood, on the side of Kaohai's thigh. This greatly frightened the family and attendants, they fled, taking the child who had been born

[1] An expression that was used to describe a prosperous person (Pukui 1983 No. 1545).

in a human-form, with them. Kaihuopalaai also separated himself from his wife. Kaohai remained with the blood stains upon her, and no one was left to help her.

It was the eel which had been born to her, that helped to clean Kaohai. He worked like a human, and Kaohai looked at the fish child which had been born to her, and she could find no reason to criticize or revile him. Kaohai then called to her husband, Kaihuopalaai, telling not to be afraid, and he returned. They both realized the wondrous nature of this child and cared for him at a good place, in the calm bay of Honouliuli. They named this eel child, Laumeki, and his elder sister, born in human-form, was named Kapapaapuhi. This eel became a cherished child, and was cared for as a God. Laumeki, the one who had been consecrated, asked that the first-born, his sister, also be cared for in the same manner, and a great affection was shared between the children born from the loins of one mother.

November 15, 1895

Thus, it is told in this tradition, that this is the eel Laumeki. It is he who caused the anae to remain at Honouliuli, and why they are known as "Ka anae o Kaihuopalaai" (The mullet of Kaihuopalaai). With the passing of time, the forms of this eel changed. At one time, he was red with spots, like the eel called puhi paka, at other times he was like the laumilo eel.

A while after the birth of Laumeki, another child was born to Kaohai, a son. He was named Mokumeha, and he was given to Wanue, an elder relative of Kaihuopalaai's, to be raised. There are at Honouliuli, Ewa, places named for all of these people. The natives of that land are familiar with these places. For this Wanue, it is recalled in a song:

> The thoughts are set upon the sea at Wanue,
> I am cold in the task done here…

The eel-child Laumeki, followed the fish around in the expanse of the sea, and on the waves of this place. This was a work of love and care, done for his parents and family, that they would have no difficulties. In those days, this eel lived in the sea at a place where a stone islet is seen in the bay of Honouliuli, and he would not eat the fish which passed before him. He did these things for his parents and sister Kapapaapuhi.

Laumeki was very watchful of his family, protecting them from sharks, barracudas, and the long billed marlin of the sea which entered into the sheltered bay of Honouliuli, the land of his birth. Because of his nature, Laumeki did many wondrous things. It was Laumeki who trapped the Puhi lala that had lived out in the sea, in the pond of Hanaloa. This Puhi lala was the one who bragged about his deeds, and when he was trapped his eyes glowed red like the flames of and earthen oven.

It is perhaps worthy here, my readers that we leave Laumeki and speak of

Mokumeha and his journey around Oahu. At the time when the sun rested atop the head [describing Mokumeha's maturity], and his fine features developed. He was very distinguished looking. At that time, he determined to travel around the island of Oahu. He asked his parents and guardian permission, and it was agreed that he could make the journey.

Mokumeha departed from Honouliuli and traveled to Waianae, and then went on to Laiemaloo, at Koolauloa, the place where the youngest sister of his father dwelt. She [Kaihukuuna] was pounding kapa with her beater and thinking about her elder brother. She rose and went to the door of her house and saw a youth walking along the trail. Seeing the youth, her thoughts returned once again to her brother Kaihuopalaai and his wife Kaohai. The features of this youth in every way, looked like those of his father, and upon seeing him, tears welled up in Kaihukuuna's eyes. She called to the youth inquiring about his journey, and he responded, answering each of the questions. The moment the youth said the name of his parents, and the land from which he came, Kaihukuuna wept and greeted her nephew in the custom of the people of old.

This greatly startled her husband who was out in the cultivated gardens tending to his crops. He thought that perhaps one of his own family members had arrived at the house. When he reached their house, he saw the strange youth and he quickly went to prepare food for their guest. In no time, everything was prepared, and he then went to his wife asking her to stop her crying, and invite the visitor to eat of the food that had been prepared. He told his wife, "Then, the talking and crying can resume." She agreed and they sat down together and ate, and had a pleasant time talking.

Kaihukuuna then asked Mokumeha about the nature of his trip, and he explained that he was traveling around Oahu on a sight-seeing trip. Kaihukuuna told him, "It is wonderful that we have met you and can host you here." She then asked him to consider staying with her and her husband at Laiemaloo, where all of his needs would be met. "We have plenty of food and if you desire a wife, we can arrange that as well." Mokumeha declined the invitation, explaining his desire to continue the journey and then return to Honouliuli.

November 22, 1895

Now it is true that at this place, Laiemaloo, there was grown great quantities of plant foods, but the one thing that it was lacking was fish. Mokumeha, his aunt, and her husband, Pueo, spoke about this, and it was determined that Pueo should go to Ewa. Mokumeha instructed him to seek out Kaihuopalaai, Kaohai, Kapapaapuhi, and Laumeki, and to ask for fish. He told them that "Laumeki will be able to lead the fish to you here at Laiemaloo."

Pueo departed for Honouliuli [various sites and features are described along the way]… and he met with Kaihuopalaai. Kaihuopalaai's love for his sister welled up within him, and it was agreed that fish would be given to her and her family. But

rather than sending fish home with Pueo in a calabash—fish which would be quickly consumed, causing Pueo to continually need to make the journey between Laiemaloo and Honouliuli—Kaihuopalaai said that he would "give the fish year round."

November 22, 1895

When Kaihuopalaai finished speaking, Pueo exclaimed, "This is just what your son said you would do!" Kaihuopalaai and Pueo then went to the house of Kapapaapuhi, who, when she learned that Pueo was her uncle, leapt up and greeted him. They discussed the request for fish, and ate while speaking further. Kaihuopalaai then asked, "Where do you come from?" Pueo answered, "Laiemaloo," and he described the land to her.

The next day, Kapapaapuhi and Pueo went on a canoe out to the stone islet where Laumeki lived. They took with them food, and as they drew near the stone, the water turned choppy like the water of the stormy winter season. The head of Laumeki rose out of his pit and remained on the surface of the water. Kapapaapuhi offered him the awa and food she had brought with her. This eel was cared for just as a chief was cared for. When he had eaten his food and was satisfied, he rested on the surface. Kapapaapuhi explained to Pueo that he too would need to care for and feed Laumeki, in order to obtain the fish he needed. Kapapaapuhi then called out to Laumeki, "Here is an elder of ours, tomorrow you will go with him and take the fish of our parents with you."

December 6, 1895

The next day, Pueo rose while it was still dark, and the stars, Aea, Kapawa and Kauopae were still in the heavens. He prepared the foods needed for Laumeki, and prepared the canoes. He and his wife's family and attendants then went towards Laumeki's house, where he was resting. When Laumeki saw the canoes coming toward him from Lae o Kahuka, he rose up before them. Together, they passed Kapakule, the place where the sharks were placed in ancient times as play things of the natives of Puuloa. When the canoes and people aboard reached the place where the waves of Keaalii break, Laumeki cared for them, to ensure that no harm would befall them. This place is right at the entrance of Puuloa.

As the rays of the sun scattered out upon the water's surface, the people on the canoes saw the red-hues upon the water and upon those who paddled the double-hulled canoes. Pueo then saw something reflecting red, beyond the paddlers, and below the water's surface. Pueo realized that it was Laumeki with the anae fish. The anae traveled with Laumeki outside of Kumumau, and past Ahua. They continued on past the Harbor of Kalihi at Kahakaaulana, with the fish being urged on, by the people back at Kalaekao, Puuloa, and Laumeki was at the front, leading the fish at Mamala… They continued on around Kawaihoa, Makapuu, and traveled passed Koolaupoko, and on past Laniloa at Laiemaloo, Koolauloa…

December 27, 1895

…This is how the mullet came to regularly travel between the place called Kaihukuuna at Laiemaloo and Honouliuli at Ewa…

January 10 and 17, 1896

…Mokumeha and Laumeki returned to Honouliuli, and Mokumeha offered a prayer chant to his elder brother:

O eel,
O Laumeki,
Who passed before the point,
Dwelling in the pit,
Eel of the cavern,
You of the kauila (body) form,
That is the form of the Laumilo,
Your wooden body,
It is Laumeki.
Amen, it is freed…

…While Laumeki was resting at Honouliuli, Mokumeha set off once again to visit various locations around the island of Oahu. He bid aloha to his family and walked across the broad plain of Ewa. He arrived at Kapukaki, which is the boundary of the land of the streaked seas, that land in the calm, reddened by the dirt carried upon the wind. This is where Ewa ends and Kona begins… (Manu 1895)

2.2.4 Ka Moolelo o Kalelealuaka (The Tradition of Kalelealuaka)

The tradition of Kalelealuakā touches on places throughout the Hawaiian Islands. Kalelealuakā and his father, Ka‘ōpele, possessed supernatural attributes and their story describes several places in the ‘Ewa District. The tradition was published in *Ka Nupepa Kuokoa* and was submitted by J.W.K. Kaualilinoe between April 9, 1870 and June 4, 1870. The original account offers a richer narrative of places and practices than those cited by Fornander (Vol. IV 1916:464-471) and Beckwith (1970:415-418). There are several wahi pana named in the tradition with descriptions of place and how the names were given.

Ka Nupepa Kuokoa

April 9 to April 23, 1870

Kaopele (k) and Makalani (w) were the parents of Kalelealuaka (k). Kalelealuaka was born on Kauai, the native land of his mother. His father had been born at Waipio, Hawaii, and possessed certain supernatural powers. Kaopele was a great cultivator of the land, and he is credited with the planting of large fields on Hawaii, Maui, Oahu, and Kauai. On Oahu, it was at Kapapakōlea in Moanalua, and at Līhu‘e, in the district of Ewa that Kaopele had cultivated large tracts of land. While Kaopele worked the land with great speed, he was also overcome by a deep sleep that lasted for six months at a time. On many occasions, it was thought that Kaopele

had died, and then he would reawaken and resume his tilling of the land. When Makalani became pregnant, Kaopele gave her certain items to identify the child as his own, and shortly before giving birth, Kaopele went to sleep.

April 30, 1870

Kalelealuaka was born and grew quickly. When Kaopele woke up from his sleep, he instructed his son in various techniques of fighting, and Kalelealuaka became known as an exceptional warrior, who moved so swiftly, that no one could even see him… One day, when looking out across the ocean, Kalelealuaka saw a land in the distance, and he inquired of Kaopele, "What land is that?" Kaopele told him that it was "Kaena on the island of Oahu. Kalelealuaka then asked, "What is the village that is there beyond the point?" Kaopele answered, telling him that it was "Waianae." When Kalelealuaka expressed a desire to travel and see that land more closely, Kaopele made a canoe for his son to travel on.

When preparations were being made for Kalelealuaka's departure, he befriended a youth named Kaluhe, and it was agreed that Kaluhe would travel with Kalelealuaka. When everything was made ready, Kaopele told Kalelealuaka:

Sail until you reach the point outside of the village of Waianae, then travel across the plain to a place where there is a pool of water. That will be the pool of Lualualei. Then you will ascend the pass of Pohakea, from where you will see the flat lands spread out before you. You may also see the expansive cultivated fields of Keahumoa which I planted before coming to Kauai…

May 7, 1870

Kalelealuaka and Kaluhe sailed to Oahu and passed the heiau of Kanepuniu and landed on the shore. There Kalelealuaka was met by a group of youths who were surfing. One of the youth inquired about the journey of the two travelers, and one asked if he might accompany Kalelealuaka and his companion. Kalelealuaka agreed, and the group walked across the plain and found the pool of Lualualei. From there, they then ascended the mountain, to the pass at Pohakea, from where they looked out across the broad flat lands of Keahumoa. Descending the slope, they found a large garden planted in bananas that had been planted by Kaopele.

Kalelealuaka then shot his supernatural arrow (pua), and it flew down slope, passing the plains of Puunahawele and Kekuaolelo, and it landed at Kekuapoai, awaiting Kalelealuaka's arrival. This was at Waipio, above Ewa. The people of the area saw the flight of the arrow, and cried out "Ka pua lele hoi e!" (How the arrow flies!). That is why the place is called "Lele-pua" (Flying-arrow), to this day…

Kalelealuaka stayed in the uplands above Lelepua, at Kahalepoai, and asked his companions to go and fetch the arrow. He also told them to gather some clumps of awa and sedges for straining it. The two companions went and arrived at the edge of the stream called Kaniukulou, where they saw some women bathing. They asked, "Have you perhaps seen our arrow?" The women denied having seen it, hoping that

they might keep it for themselves. Because they had found it and greatly admired its beauty. Sensing that they were lying, Kaluhe called out to the arrow, and it leapt from the place at which it had been hidden, into his hands. The women were frightened by this, and fled away.

Kaluhe and his companion left the stream and arrived at a large house with clumps of awa planted all about it. Looking around, they found no one in the house or in the surrounding lands, so they began to gather some of the awa. While picking the awa, they heard a voice call out to them, "Set aside that which you have taken, or I shall return." Startled by this command, they dropped the awa and fled, returning to Kalelealuaka, and describing the house, its surroundings, and events to him. They noted that the house was an excellent one, and only lacked sleeping mats inside.

Kalelealuaka had them gather rolled sleeping mats and kapa and they then traveled to the house. Entering the house, they found that all was in order, and they prepared food, ate, and drank awa, with no other voices calling to them. The next day, Kalelealuaka arose, and he and his companions planted large fields with various crops. The field planted by Kalelealuaka extended from the uplands of Kahalepoai to the lowlands of Puunahawele. When the work was completed they returned to the house and prepared popolo, aheahea, and inamona as their food. These were the only things which presently grew around the house that could be eaten until their own gardens matured. While they were eating, The youth from Oahu, ate with great haste and ferocity, and Kalelealuaka called to him, urging him to eat with patience. Because of this, the youth from Oahu, came to be called "Keinohoomanawanui."

One of the problems in living in the uplands was that there were plenty of plant foods to be had, but there was no fish. One day, while preparing their food, Keinohoomanawanui was making inamona (kukui nut relish). When he struck a broiled kukui nut, the shell flew up and struck him in the eye, blinding him in that eye. Kalelealuaka then took up the task of preparing the food…

May 14, 1870

Kalelealuaka told Keinohoomanawanui, "I will prepare that food which we two desire. Keinohoomanawanui said, "That which I desire are the sweet potatoes of the planted fields below, and the eels of the pond at Hanaloa." Kalelealuaka told Keinohoomanawanui, that "in time, you will have your desire." Now these foods were the property of the king Kakuhihewa, and they were kapu to all but him and his people. Kalelealuaka told Keinohoomanawanui, "Tomorrow, Kakuhihewa and his people will arrive here in the uplands of Waipio, to gather wood with which to make new houses in the lowlands.

Now while Kalelealuaka and Keinohoomanawanui were discussing these things, Kakuhihewa himself had come to the uplands to gather some of the awa that grew at Kahauone. Seeing the large house in which Kalelealuaka and his companions dwelled, he quietly drew near and overheard the conversation, curious about who these men were. He set a wooden image in the ground near the house to mark the

area, and then departed, returning to Puuloa. Kakuhihewa thought about what he had heard, and the bold remarks that they would soon eat the favored eels of Hanaloa. Kakuhihewa spoke of this with his advisors and war leaders, some of whom suggested that a party go to the uplands to kill the impertinent youth.

Instead, Kakuhihewa sent to Waimanalo (Ewa) for his priest, Napuaikamao. Napuaikamao traveled to Koolina where Kakuhihewa was staying, and listened to the words of his chief, describing the youth and their conversation. Napuaikamao thought about their words, and the symbolism of the desire for the eels of Hanaloa, and discerned that one of the youth was the great warrior, Kalelealuaka, of Kauai. Now at this time, Kakuhihewa was at war with a chief named Kualii, the two kings seeking to rule all of Oahu. Napuaikamao told Kakuhihewa, that it was Kalelealuaka who would bring victory to his side, and that he should prepare a house for the youth and allow them to fulfill their desires.

Kakuhihewa agreed, and ordered preparations to be made. He then had his counselor, Maliuhaaino go to the uplands of Waipio and invite Kalelealuaka and his companions to the shore…

May 21, 1870

Maliuhaaino arrived before the youths, and following a discussion, it was agreed that they would meet with Kakuhihewa… Descending to the coast, they passed the plain of Puunahawele. They then passed below Puukuua which is near the mountain ridge, and descended to the shore of Puuloa. Kalelealuaka and his companions were shown the houses and foods that had been prepared for them, and they took up residence at Puuloa…

(During this time, the identity of Kalelealuaka, remained hidden from Kakuhihewa and his people. Because the king had heard Keinohoomanawanui speaking about his desire for the eels of Hanaloa, and because Keinohoomanawanui told people that he had been blinded in one eye by a spear, it was assumed that Keinohoomanawanui was the great warrior that they sought.)

With the passing of several periods of ten days (anahulu), a messenger from the king, Kualii, arrived bearing the message that Kualii challenged Kakuhihewa to a battle on the field at Kanalua [Kauālua], in Moanalua… The warriors met, and a great battle took place in which the champion of Kualii was killed. It was thought that Keinohoomanawanui (mistaken as being Kalelealuaka) had secured the victory for Kakuhihewa… During this battle, Kalelealuaka had stayed behind at Puuloa, and after the battle began, ran secretly with great speed to the battle ground, and killed Kualii's champion…

May 28, 1870

At each of the subsequent battles between the warriors of Kakuhihewa and Kualii, Keinohoomanawanui was credited with, and accepted the honor of having defeated Kualii's champions. Because Kalelealuaka moved so swiftly, no one even saw him

enter the battle field. Kalelealuaka had stayed behind at Puuloa, and secretly entered into the battle, killing Kualii's champions, and taking their capes and feather helmets, with which he returned to Puuloa, hiding the items in his house.

June 4, 1870

At the last battle between Kakuhihewa and Kualii's champions, the forces met near Waolani [in Nu'uanu], and Kalelealuaka killed all of the warriors of Kualii. Great honor was to be bestowed upon Keinohoomanawanui, but Kalelealuaka arrived before the assemblage and claimed the privilege. Kalelealuaka accused Keinohoomanawanui of deception, and challenged him to a fight to prove it. As quickly as the battle began, Keinohoomanawanui was killed, and Kalelealuaka took his head to Maliuhaaino.

Seeing that all of his warriors had been killed, Kualii, thought that his life too was forfeit, but Kalelealuaka invited him to live under Kakuhihewa, to which Kualii agreed. The head of Keinohoomanawanui was taken to Puuloa and then set atop an aa hillock above Kalauao… Kalelealuaka, Kakuhihewa and Kualii, and their people lived out their days in peace… (Kaualilinoe 1870)

2.2.5 Alahula Pu'uloa, he Alahele na Ka'ahupāhau (The Swimming Trails of Pu'uloa [Pearl Harbor], are the Trails Traveled by Ka'ahupāhau)

In 1870, native historian S.M. Kamakau wrote about several practices and beliefs pertaining to manō (sharks) in ancient life. One practice of note in the Pu'uloa region was the practice of transforming deceased family members into manō as 'aumakua (family gods/guardians). These family 'aumākua would help its relatives when in danger on the sea—if a canoe capsized or a man-eating shark was threatening attack. Hawaiians also worked with and tamed manō so that one could ride them like a horse, steering them to where one wished to go (Kamakau 1976). Kupuna Mary Kawena Pukui shared that there were two basic classes of sharks — manō kānaka (sharks with human affiliations) and manō i'a (wild sharks of the sea–man eaters). The manō kānaka were revered and cared for, while the manō i'a were at times hunted and killed following ceremonial observances. The practice of chiefs hunting sharks using the flesh of defeated enemies or sacrificial victims as kūpalu manō (shark fishing chum) and of commoners using rotted fish as kūpalu manō are further described in several historical narratives.

Ke Awalau o Pu'uloa are famed in traditional and historical accounts of manō. The traditions center around the several deified sharks, foremost of whom is the goddess, Ka'ahupāhau, then followed several others, including but not limited to Kahi'ukā, Kūhaimoana, Komoawa, Ka'ehuikimanōopu'uloa, Keli'ikau-o-Ka'ū (Kealiikauaoka'ū) and Mikololou. With the exception of Mikololou, all these shark gods were friendly to people, and dedicated to keeping manō i'a (wild sharks of the sea), man eaters out of the Pu'uloa-'Ewa waters, and protecting people.

Traditions of Ke Awalau o Pu'uloa tell us that one of the most important kānāwai (laws) governing manō was that they would not attack humans. This kānāwai was created by the shark gods themselves. One of the native traditions of Ka'ahupāhau and the killing of the chiefess Papio places the event on the shore of Hō'ae'ae, near a cave which is known by the name Ka-nahuna-o-Papio (The biting of Papio). Kamakau wrote about the establishment of this kānāwai stating that:

> Oahu was made a kapu land by this kanawai placed by [the shark gods] Kanehunamoku and Kamohoali‘i. But their sister Ka‘ahupahau broke the law and devoured the chiefess Papio. She was taken and “tried” (ho‘okolokolo) at Uluka‘a [the realm of these gods], but she escaped the punishment of death. It was her woman kahu who paid the penalty of the law because it was her fault—she reviled Papio. The trouble arose over a papahi lei of ‘ilima flowers which belonged to Ka‘ahupahau that her kahu was wearing. [The kahu refused to give it to Papio, and] Papio said, “I am going bathing, but when I come back you shall be burned with fire.” But Ka‘ahupahau devoured Papio before she could carry out her threat, and she was punished for this. That is how Pu‘uloa became a [safe] thoroughfare (alahula). After her confinement ended several years later, Ka‘ahupahau was very weak. She went on a sightseeing trip, got into trouble, and was almost killed. But she received great help from Kupiapia and Laukahi‘u, sons of Kuhaimoana, and when their enemies were all slain, the kanawai was firmly established. This law—that no shark must bite or attempt to eat a person in Oahu waters—is well known from Pu‘uloa to the Ewas. Anyone who doubts my words must be a malihini there. Only in recent times have sharks been known to bite people in Oahu waters or to have devoured them; it was not so in old times (Kamakau, 1964:73, Pukui, translator).

In addition to the traditions of Ka‘ahupāhau, two other accounts center around the nature of sharks in the ‘Ewa District and battles that were fought to kill offending sharks. In the early 1820s, members of the Protestant mission station traveled to the ‘Ewa District and learned something about the shark gods of Pu‘uloa.

Hiram Bingham accompanied King Kamehameha II (Liholiho), the royal family and attendants to ‘Ewa in 1823, where they stayed near the shore of Pu‘uloa. During the visit, the King and party, along with Bingham, visited the dwelling place of a noted shark god. The name of the god was not recorded in Bingham’s journal, though one must infer that it was either the goddess Ka‘ahupāhau or her brother, Kahi‘ukā. Bingham wrote:

> I one day accompanied the King [Liholiho] and others by boat to see the reputed habitation of a Hawaiian deity, on the bank of the lagoon of Ewa. It was a cavern or fissure in a rock, chiefly under water, where, as some then affirmed, a god, once in human form, taking the form of a shark, had his subterraqueous abode. Sharks were regarded by the Hawaiians as gods capable of being influenced by prayers and sacrifices, either to kill those who hate and despise them or to spare those who respect and worship them. It had been held that, when a mother gave her offspring to a shark, the spirit of the child dwelt in it, and the shark becoming an akua, would afterwards recognize and befriend the mother on meeting her, though ready to devour others… (Bingham 1969:177)

Later in January 1825, Elisha Loomis also traveled to ‘Ewa and stayed along the Pu‘uloa shore (Loomis Journals, Jan. 18, 1823, in Westervelt 1937). During his visit, Loomis learned the name of the shark goddess who protected the waters of the Pearl Harbor region and also reported hearing about a war between the good sharks and those who sought to eat human flesh. It will be noted

that due to his limited Hawaiian language skills, Loomis apparently transposed she for "he" in his journal.

> After supper I conversed with them a long time on the subject of religion… during the conversation one of them mentioned that in former times there dwelt at Puuloa a famous shark named Ahupahau. He had a house in the hole of a rock. He was one their gods. On one occasion a strong shark 3 or 4 fathoms long came into the channel to make war upon the sharks and upon the natives that dwelt there. Ahupahau immediately communicated to the natives information advising them to get a net out and secure him. They took the hint and spread their nets, and in a little time the stranger was captured.

Loomis's reference to a "war" between an invading shark coincides with the traditions of Ka-'ehu-iki-manō-o-Pu'uloa (Uaua 1870-1871), Mikololou and Keali'ikauaoka'ū (He Moolelo Kaao Hawaii no Keliikau o Kau 1902), in which battles between sharks are fought in order to protect the people of the 'Ewa region from attacks by manō i'a.

J.S. Emerson presented a paper titled "The Lesser Hawaiian Gods" before the Hawaiian Historical Society on April 7, 1892. In this report are details of Ka'ahupāhau, Kahi'ukā and Mikololou in the history of 'Ewa and the waters of Pu'uloa:

> One reason for the affection shown to the shark aumakua was the fact that so many of them claimed human parentage, and were related by ties of kinship to their kahus. Such was the case with Kaahupahau and her brother Kahi'uka, the two famous shark-gods of the Ewa Lagoon on this island. Their birth and childhood differed in no essential features from that of other Hawaiian children up to the time when, leaving the home of their parents, they wandered away one day and mysteriously disappeared. After a fruitless search, their parents were informed that they had been transformed into sharks. As such, they became special objects of worship for the people of the districts of Ewa and Waianae, with whom they maintained pleasant relations, and were henceforth regarded as their friends and benefactors. After a time the man-eating shark, Mikololou, from the coast of the island of Maui, paid them a visit and enjoyed their hospitality until he reproached them for not providing him with his favorite human fleas. This they indignantly refused to give, whereupon, in spite of their protest, he made a raid [page 10] on his own account upon the natives, and secured one or more of their number to satisfy his appetite. Kaahupahau and her brother promptly gave warning to their friends on shore of the character of this monster that had invaded their waters. To ensure his destruction they invited their unsuspecting guest to a feast made in his honor at their favorite resort up the Waipahu river. Here they fed him sumptuously, and at length stupefied him with the unusual amount of awa which they supplied him. While he was in this condition, their friends, who had come in great numbers from the surrounding country, were directed to close up the Waipahu river, which empties into the Ewa Lagoon, with their fish nets, brought for the purpose, while they attacked him in the rear. In his attempt to escape to the open sea he broke through one net after another, but was finally entangled and secured. His body was then dragged by the victorious people on shore and burned to ashes, but certain got hold of his tongue,

and, after eating a portion, dropped the remainder into the river. The spirit of the man-eater revived again, and, as a tongue, now restored and alive, made his way to the coasts of Maui and Hawaii, pleading with the sharks of those waters for vengeance upon the sharks of the Ewa Lagoon. They meantime secured the aid of Kuhaimoana and other notable sharks from the islands of Kaula, Niihau, Kauai, and Oahu. A grand sight it was to the numerous spectators on the shore when these mighty hosts joined in combat and began the great shark-war. It was a contest of gods and heroes whose exploits and deeds of valor have long been the theme of the bards of the Hawaiian Islands… [I]n the first great battle the friends and allies of the cruel man-eater were touted by the superior force of their opponents, which the good Kaahupahau and her brother long continued to enjoy the affectionate worship of their grateful people. It is said that she is now dead, while her brother Kahi‘uka still lived in his old cave in the sea, where he was visited from time to time by his faithful kahu, Kimona, now deceased. Sometimes Kimona missed his fish nets, when he was pretty sure to find that Kahi‘uka had carried them to a place of safety, to preserve them from destruction by hostile sharks (Emerson 1892:10-11).

2.2.6 He Moolelo Kaao Hawaii no Keliikau o Kau (A Hawaiian Tradition of Keliikau o Kau)

Keli‘ikau-o-Ka‘ū was a shark god who traveled to Pu‘uloa, ‘Ewa from the island of Hawai‘i. The tradition appears only in the short-run Hawaiian language newspaper *Home Rula Repubalika* and is incomplete. The following narratives are different in relation to the events and their outcome than those found in more widely reported narratives. There is no specific reference to the source of the account, and only two articles in the series are available. The narratives offer some details on named localities and events that are of significance in the history of Ke Awalau o Pu‘uloa.

Home Rula Repubalika
He Moolelo Kaao Hawaii no Keliikau o Kau.

Ianuali [January] 6, 1902 (‘ao‘ao [page] 7-8) & Malaki [March] 15, 1902 (‘ao‘ao 7)

Summary — A Hawaiian Tradition of Keli‘ikau-o-Ka‘ū

Keli‘ikau-o-Ka‘ū was born to his mother as the result of her relationship with the spirit form of Kalani, a king of the sharks. He was a favorite of Kalani, and transformed into a shark, whose body was almost three fathoms long.

At this point in our story, we now look to another mysterious formed shark, and his death at the entrance of Pu‘uloa at ‘Ewa. His name was Mikololou, it was him who was killed at Pu‘uloa, and this is why Keli‘ikau-o-Ka‘ū went there. The background of this shark, Mikololou is given in the traditions Kāneialehia, and Pāpa‘i and Paukūpahu of Puna, Hawai‘i. Kāneialehia, protected the lands from Leleiwi and Makaokū, near the low islet of Mokuola, and all the way to Makahanaloa of Hilo Palikū. Under the law of Kāneialehia, it was forbidden to kill any human. Kāneialehia saw swimming past the cliffs, and discerned Mikololou’s nature as an spirit-transformed shark, he also recognized that Mikololou was a man-eater.

> Kāneialehia decided to take Mikololou as an attendant, perhaps even as a foster-son, and to teach him how to live under the law of not killing humans…
>
> [We know from various accounts, as cited earlier in this section of the study, that Mikololou departed from Hawai‘i, in the company of other man-eaters, and traveled to Pu‘uloa, where he was eventually killed by Ka‘ahupāhau, Kahi‘ukā and the people of ‘Ewa. Based on other accounts, Mikololou was restored to life, and returned to Hawai‘i, where he enlisted the aid of Keli‘ikau-o-Ka‘ū and other sharks to avenge his treatment by the sharks and people of Pu‘uloa. The issues of the paper with this portion of the tradition are missing, and the account is picked up again on March 15, 1902.]
>
> Keli‘ikau-o-Ka‘ū fought with and killed Ka‘ahupāhau, and it is because of this event, that the famous saying, “Mehameha Pu‘uloa, ua make o Ka‘ahupāhau” (Pu‘uloa is alone, for Ka‘ahupāhau is dead), came about. Keli‘ikau-o-Ka‘ū assumed various body forms he possessed and attacked Ka‘ahupāhau from within, and outside her body. Ka‘ahupāhau went in spirit form to her attendant, Koihala, calling to her, saying that she was dying. Upon her death, Keli‘ikau-o-Ka‘ū called out to Kamoana and Kahi‘ukā, taunting them. He then proceeded to swim through Pu‘uloa, biting and tearing at the native sharks of the region, throwing their bodies up onto the dry land from Kalaekao, Kapua‘ikāula, Keanapua‘a, Kamoku‘ume‘ume, ‘Aiea, Kalauao, Waimalu, Waiau, Waimano, the two lands of Mānana, Waiawa, Hanapōuli, Waipi‘o, Waikele, Hō‘ae‘ae, Honouliuli, Kalaeokahuka, Kanahunaopapio, Kepo‘okala and Pu‘uloa.
>
> Keli‘ikau-o-Ka‘ū destroyed all the sharks of ‘Ewa, and the stench rose upon the land. Thus came about the saying, “Pu‘uloa is alone, for Ka‘ahupāhau is dead.” Upon her death, Ka‘ahupāhau’s body became a coral formation near the place called Papio, and that place is still seen on the side of Honouliuli to this day.
>
> Following the death of Ka‘ahupāhau in this war between the sharks, the shark chiefs of both sides met in council and agreed to no further wars should be fought between them… (He Moolelo Kaao Hawaii no Keliikau o Kau 1902)

It should be noted here, the elder kama‘āina of the ‘Ewa District still claim that Ka‘ahupāhau was seen and cared for during their lifetime.

Noted Hawaiian scholar Mary Kawena Pukui wrote about visits she made to ‘Ewa and the Pu‘uloa region in 1907. She observed that the name “Ka‘ahupāhau” could be translated as “Cloak well cared for;” her place in the history of the land is commemorated in the saying, “Alahula Pu‘uloa he alahele na Ka‘ahupahau, Everywhere in Pu‘uloa is the trail of Ka‘ahupahau” (Pukui 1943:57).

The role of Ka‘ahupāhau as a goddess and guardian in the waters of the Pu‘uloa bays remains alive in the minds of natives in the ‘Ewa District. Her brother Kahi‘ukā (the smiting tail) is also remembered and it is said that with his great tail, Kahi‘ukā was responsible for destroying any foreign sharks “that offended his sister” Ka‘ahupāhau (Pukui 1943:57-58). His cave is reported in several locations, including Drydock No. 1, between Moku‘ume‘ume and Keanapua‘a, and another

in the Waiawa Estuary (Manu 1895). The cave, destroyed in the construction of Drydock No. 1, was once his home.

2.2.7 He Moolelo Hawaii – No na Aumakua Moo (A History of Hawaii – About the Moo Guardians/Ancestral Gods)

In this excerpt from "A History of Hawai'i," readers learn of the mo'o (water spirit) goddess, Kānekua'ana. It was to her that the heiau waihau (heiau specifically for mo'o spirits) were established along the Pu'uloa lochs to ensure the abundance of various fisheries, particularly the pipi, nahawele, mahamoe and other bivalve species for which 'Ewa's inland fisheries were famed. Among the kapu (restrictions) of Kānekua'ana was that fisher-people needed to be very quiet when going to sea to gather the pipi (pearl oysters), momi (pearls) and bivalves. The slightest voice would cause the wind to blow, thus making the pipi and other bivalves sink deep into the sands where they would be difficult to find.

It is because of this kapu associated with Kānekua'ana that the famous saying of 'Ewa, "ka i-a hamau leo o Ewa," came into being.

Ka Nupepa Kuokoa
He Moolelo Hawaii (Mokuna VII.)

Mei 20, 1893 ('ao'ao 1)	**May 20, 1893 (page 1)**
…Kanekuaana ko Ewa moo kiai, hilinai nui ko Ewa poe kamaaina iaia, mai Halawa a Honouliuli. Ina e pilikia ka ia, hoeu like na kanaka i na waihau e pili ana iaia, a o ka ho-a no ia o ke ahi e hoaia i ka pomaikai o ka aiona. O ka Pipi ka ia kaulana o Ewa. Aole e hala ka mahina eono e ku ai ka lala hau ua piha ka aina i ka Pipi, mai Namakaohalawa a na pali o Honouliuli, mai na kua-pa o ua a na pa akule [Pākule]; mai ka hohonu a ka papa nahawele o kula; mai kaliawa a ka pohaku ona loko a pela aku.	…Kanekuaana is the moo (water spirit) guardian of Ewa; many of the natives of Ewa, from Halawa to Honouliuli followed (believed) in her. If there was trouble with the fishing, the people dedicated her temple (Waihau) with the lighting of a fire to bring about blessings upon the land. The pipi (pearl oyster) is the famous fish of Ewa. Before six months would pass the hau branches would take hold, and the land would be filled with the pipi, from Nā-maka-o-Hālawa to Honouliuli, from the inland pond walls to the Pā-akule. From the depths to the nahawele reefs and flats. From the channel inlet to the stone-lined ponds, and so forth.
Aia maloko o ka io o ka Pipi momi nani, e like ka nunui me ka onohi ia; he onohinohi keokeo kekahi, ua kapaia he muhee kea; onohinohi ulaula kekahi me anuenue la, he muhee makoko ia. He liilii a nunui	There is within the flesh of the pipi a beautiful pearl, its size is similar to the eyeball of a fish. Some are like the shiny white of an eye, and are called mūhe'e kea. Others are shiny red, like a rainbow, and are called mūhe'e mākoko. Some

kekahi; a he waiwai kumukuai nui ko ia mea.	are small and others are larger, and they are highly valued.
O ka Opaehuna a Opaekala kekahi ia; paapu mailoko o ke kai a na loko kua-pa a no loko puuone.	The ʻōpae huna and ʻōpae kala [types of shrimps] are other fish, that are in the sea, the walled ponds, and dune banked ponds.
O ka nehu pala kekahi ia; piha mai ka nuku o Puuloa a uka o na Ewa, pela me na nuku awalau a pau; no laila ka olelo ia ana:	The nehu pala is another fish which fills the waters from the entrance of Puʻuloa to the coastal flats of Ewa. It is the same with all of the lochs (awalau). This is why the saying is told:
"He kai puhi nehu puhi lala Ke kai o Ewa—e. E noho i ka lai o Ewanui— A Laakona—a."	"Nehu appear to be blown upon the sea, causing the water to shine It is the sea of ʻEwa, Dwelling in the calm of great ʻEwa, of Laʻakona"
He Mahamoe kekahi ia kaulana, a he Okupe a mau ia e ae no kekahi. A ina i ike ia keia mau ia a pau alaila, eia ka olelo a na pulapula:	The mahamoe is another famous fish, and the ʻōkupe, another, and there are others. And if all these fish are seen there, here are the words of the natives of the land:
"Hoi mai nei ua luahine nei mai na kukulu mai o Kahiki; noho mai la paha a loha i na moomoo ana."	"The old woman (Kānekuaʻana) has returned from the foundations of Kahiki; she dwells here perhaps for the love of her descendants…"
O lakou no kekahi i hai mai i ke ano o na pae aina o Kahiki a me na aina e ae i ike ole ia… …O Hauwahine, he kiai ia no na loko o Kawainui a me Kaelepulu. O Laukupu ko Moanalua; he malama lakou i ka pomaikaʻi, e pale ana i na pilikia maluna o ke kina a me ka ohana…	They are the ones spoken of coming from the Kahiki and the other lands which have not been seen… …Hauwahine is the guardian of the ponds of Kawainui and Kaelepulu. Laukupu is of Moanalua; it is they who tend to the blessings, protecting the lands and people from trouble… (*Ka Nupepa Kuokoa* 1893)

2.2.8 He Moolelo Kaao Hawaii no Laukaieie… (A Hawaiian Tradition of Laukaieie…)

Moses Manu penned several lengthy traditions for the native newspaper *Nupepa Ka Oiaio*, in which he included detailed accounts of a wide range of practices, including those associated with fisheries and deified guardians of the ocean and fresh water fisheries. This account, "He Moolelo

Kaao Hawaii no Laukaieie…," was published between January 5, 1894 and September 13, 1895. The tradition is a rich and complex account with island-wide place name references and details for Honouliuli and the larger ʻEwa District. The tradition also includes descriptions of fisheries and aquatic resources, history, and mele, interspersed with accounts from other traditions and references to nineteenth century events. The narratives also include references to the cherished "lei momi" (oyster pearl adornments) made from the sacred pipi (pearl oysters) of Ke Awalau o Puʻuloa.

The following excerpts of Manu's account were translated by Maly and include an overview of the moʻolelo and reference narratives which recount the travels of Makanikeʻoe, one of the main figures in the account. During his travels, Makanikeʻoe sought out caves and tunnels that served as underground trails. Through the description of his travels, we learn about some of the wahi pana and resources of the lands through which he traveled.

The following accounts, describing places of the ʻEwa District and neighboring lands, are excerpted from the longer narratives which describe the travels of Laukaieie, her younger brother Makanikeʻoe, and their companions. Earlier in the tradition, the lei momi (pearl garlands) of ʻEwa were described by Laukaieie while she and her companions were at Kāʻana, Molokaʻi.

> **March 9, 1894 (page 4)**
>
> Leiomanu (a youth of Kaala, Oahu) gave Kaana of Molokai, and Kawelonaakalailehua, the prized lei momi of Ewa as gifts. The characteristics of these pearls (momi) included those with a fine yellowish tint, others had bumps like diamonds, and some were bluish-yellow. There were many types of pearls, and they were once regularly seen in the sheltered bays of Ewa at Oahu. They came from the Pipi (oysters), and the pearls were found near the edges of the Pipi shell. They were a thing greatly cherished by the chiefs of old and worn in lei (necklaces). This is why it is said:
>
> My fish which quiets the voices,
> You mustn't speak or the wind will blow.
>
> This is the famous thing of Ewa, where the fish quiet the voices, to these new times[2]. This is the type of lei which had been given to the alii of Lehua, the island which snatches the sun…
>
> **April 19, 1895 (page 1)**
>
> …Laukaieie and her companions, Hinahelelani and Koiahi arrived at Honouliuli and were greeted by the natives of that land. Koiahi, a chiefess from Makua, Waianae, was related to Kahoonani (w), Ulalena (w), and Kauakiowao (k), the alii of Honouliuli. It is for these alii that the chant is sung:

[2] Tradition has it that the pipi (mother of pearl oysters) were very sensitive to any sounds, and those who were noisy would scare the shellfish into hiding. Thus, when going to catch pipi and other similar oysters, no one spoke (see Pukui, 1983, No.'s 493, 1357 & 1377).

Kahoonani resides upon the plain,
Ulalena is completely surrounded by the Kauakiowao rains…

While they were being hosted at the house of these natives, they saw the beginnings of a red-hued rainbow form near the shore and knew that Kauakiowao, the elder brother of the two beautiful sisters, was crossing the flat lands, drawing near to house. When he arrived, Hinahelelani asked Koiahi to invite Kauakiowao to accompany them on their journey to Kauai… The party departed from the residence at Honouliuli and traveled to Puuokapolei, where they met the young maidens Nawahineokamao and Peekaua, the beauties who dwelt upon the lowlands of Puuloa. These two maidens accompanied the travelers to Waimanalo and Kaiona, for which the song writer of the late chiefess Bernice Pauahi Bishop wrote:

Respond o woman,
Who travels the plain of Kaiona,
Pursuing the mirages,
On the plain covered with ohai blossoms.

Thus, all these beautiful residents of the land of Honouliuli were gathered together, by the famous beauty of Waianae (Koiahi), who is there on the resonating and fine sands of Makua…

April 26, 1895 (page 1)

…While Laukaieie and her companions were traveling through Waianae, Makanikeoe was following behind. Having landed on the shores of Mamala, he then traveled to Kahakaaulana and the landing at Kalihi. He then looked down along the glistening sands and waters where the mullet are found, outside of Keahua, at the place called Keawakalai. There he saw a crevasse open in the sea. In this place, were sleeping many sharks and turtles, almost as if under the sand. Makanikeoe quickly entered into the cave with the turtles and sharks, to see them more closely. Because of his great speed, they didn't know that he had entered their house. Makanikeoe crawled along one of the crevasses in the sea, and going beneath the land, he exited out at Aliapaakai, at the place called Manawainuikeoo. That is the entrance of the sea into that great salt water pond of Moanalua…

Let the author explain here, that this channel was first made when Pele traveled along the islands making craters here and there. This crater is something like the crater of Kauhako, at Kalaupapa, Molokai.

By this little explanation my readers, you may also know that the remaining crater is there above Aliamanu, the hiding cave of the chief Kahahana, his companion, Alapai, and his beautiful wife, Kekuapoi. He (Kahahana) is the one who killed the priest Kaopulupulu and his son Kahulupue, at Waianae. This is how the famous words of the priest came to be spoken:

Strive for the sea my son,
for from the sea shall come (others of) another land.

And this cave has been given the name "Pililua" from the time of the death of the chief Kahahana.

Pililua, the two of you shall go to Ewa,
You are like a canoe,
Pulled by the rope,
To the cliff of Kealia,
At Kamaomao,
There at Kinimakalehua.

After seeing these places, Makanikeoe then went to the top of Leilono, one of the deity of ancient times. There is a pit dug there in which the foul smelling bodies of the dead and the defiled matter of the dead are thrown.

Makanikeoe left that place and went to a place that was covered with something like a rough pahoehoe surface, below the present-day 5 mile marker on the road at Kapukaki. There he saw the spirit of a woman moving swiftly over a portion of the pahoehoe. Makanikeoe recognized that this was a spirit form rather than that of a living woman, and he felt compassion for her. He then saw that there was a deep pit there, filled with the spirits of dead people, swaying back and forth, and crying out, with moaning and wailing. This is the pit which in ancient traditions is called Kaleinaakauhane. The spirits of the dead go there and can only be freed if their aumakua (ancestral family god) fetches them. They might even be returned back to life again...

Now you may be wondering my readers, what was the name of this woman that Makanikeoe took up in his hands. Well the writer will tell you the name of this beautiful young woman of Kaiahamauleo o Ewa-nui-a-Laakona (The fish that quiets the voice of Great-Ewa-of-Laakona), it was Kawailiula. She was a native of two lands of Ewa, Waiau and Waimano. And it is for this woman that Kawailiula, between the 9 and 10 mile markers from Waiau and Manana 2nd is named; it is near the present-day court house of Ewa…

At this place, Kaleinaakauhane, hundreds and thousands of spirits have been lost…

May 3, 1895 (page 1)

…Makanikeoe then went to the uplands, atop the cliffs and ridges of Koolau, where he looked down and chanted:

Beautiful is Halawa in the Waahila rains,
Which visits also, the heights of Aiea,
The heat and warmth travels across the plain of Kalauao.

It is true, that he then went to Kalauao, where he saw the pool of Kahuawai. He turned to the uplands and saw the source of the water coming out of the earth, near the top of the cliff of Waimalu. The source of this water, from where it flows, cannot be easily seen because it comes out from the ground in an area where there are many deep holes hidden on the side of the cliff of Waimano. It is from one of these pits that the water flows. It is also at one of these places that the body of David Malo[3] was laid to rest.

This place, between Waiau and Waimano, called Waipuhia [in Nu'uanu], is the place of Kawailiula, who was brought back to life at Kaleinaakauhane, at Kapukaki…

Kawailiula invited Makanikeoe to her home where food was prepared, the anae (mullet) from the pond of Weloka and the famous foods of the land. Kawailiula invited Makanikeoe to stay with her, but he declined, explaining that his elder sister and her companions were waiting for him at Waianae… Kawailiula bid farewell to Makanikeoe and he disappeared from sight, born by the wind, Moaeku of Ewa.

Makanikeoe then traveled to Manana, now the 10 mile marked, and the place where the court house of Ewa stands. This is the place where Oulu, the famous warrior of Kahekili, king of Maui, was surrounded by warriors who thought to take him prisoner. It is there that Oulu fought like the eel Palahuwana, and with great strength and skill, overcame those who fought against him. The place where this fight occurred is called Kaoinaomakaioulu to this day.

Makanikeoe then followed the trail to a place where he saw a large gathering of youth along the trail, at the place called Napohakuhelu. The activity of the children at this place was the shooting of arrows, something that was always done by the youth of those times.

There was among this gathering of youth from Waiawa, a handsome boy named Kanukuokamanu (not to be confused with a place of the same name in Hilo, Hawaii). His place of residence was on the shoreward side of the government road, a place something like a hillock from where one can look to the estuary of Waiawa. It is about at the ten and a half mile point, and the place is known by the name of this youth today.

When Makanikeoe arrived at the place where the youth were playing, he was saddened at seeing the young boy crying. This was because the older children had taken all the arrows, and left none for the younger child to play with. Makanikeoe took the young boy away from the group to a place off to the side. He told the boy "Stop crying and I will give you an arrow of your own. This arrow will fly farther than any of the arrow of your friends." Makanikeoe then gave the boy an arrow like none other he'd seen.

3 This is not David Malo of Lahaina Luna, but a namesake, who was also a historian and active church member.

Now Kanukuokamanu was the son of the chief of Waiawa… When he returned to the group of other children who were still playing, he prepared to compete as well. He chanted first to his arrow:

Kaailehua flies,
Kainiki flies,
Ahuahu flies…

May 10, 1895 (page 1)

Kanukuokamanu shot his arrow and it flew beyond all the other arrows of the competitors. It flew all the way to "the end of the nose of the pig" at Waimano, and then returned to the youth who had shot it…

Makanikeoe then departed and was lost from sight. Looking seaward, Makanikeoe saw the fin of a shark passing by, in front of a stone in the estuary of Waiawa, on the west side of Kanukuokamanu, next to Piliaumoa. Seeing the shark, Makanikeoe drew nearer and he saw that it was Kahiuka, a native of this estuary. His cave was comfortably situated on the side of the stone. Kahiuka was a good shark, and in his story, he is the guardian of Manana and Waiawa.

The author has met a man at Manana who was known by the name, Kahiuka. He learned the traditions of this shark in his youth, and was taken by this shark for a period of time, and returned again to the land in good health. The man has since died, but his daughter is still alive, and his story is an amazing one.

After seeing the house of this hero of the sea (Kahiuka), Makanikeoe turned and walked along the place where the waters flow from the land at Piliaumoa, Mokaalina, Panaio, Kapuaihalulu, Kapapau, and Manuea. The trail then turned and went to the top of Haupu, where the foundation of the Luakini (Church) of Ewa was later situated. Near there, was a large pond in which awa (milkfish), anae (mullet), and aholehole (*Kuhlia sanvicensis*) fish were found.

Oh readers, let the author explain something here. At the time Luau came from Maui to dwell on Oahu, he arrived at Waiawa, Ewa. He saw some men thatching dried ti leaves on the Luakini (church) that was being built there. Luau asked some people, "Who is the one that is having this important house built?" They answered, "Kanepaiki." Luau then stated, "The house shall not be finished to its ridge pole before the one who is having it built dies." The people asked, "Why?" Luau answered, "The house is atop the Heiau (temple) and the Fishpond is below, it is because the waters [life and wealth] are flowing out from this place. (So too shall the life flow out.)" These words of Luau were true, the Luakini of Waiawa was not completed before Kanepaiki died. His body was buried in the uplands of Waimalu.

These were the words of Luau. The one who discerned the nature of the land (kuhikuhi puuone), in the time of the King Kauikeaouli K. III. And his descendants

are still living at Kanaio, Honuaula, Maui…

From this place, Makanikeoe then turned and looked to the calm waters of Kuhia Loko and Kuhia Waho. He went to the ponds and saw water bubbling out, and in the pond were many fish of the sea. It was of this pond, that Kane and Kanaloa spoke, while in Kahiki, as heard by the prophet Makuakaumana, who crossed the see and traveled to Hawaii:

> The mullet are at Kuhia-loko,
> The seaweed is at Kuhia-waho,
> The salt is at Ninauele,
> The nehu pala are at Muliwai
> The lone coconut tree stands at Hape,
> The taro leaves are at Mokaalika,
> The water is at Kaaimalu,
> The awa is gathered at Kalahikiola.
> Behold the land.

All of these places named by the gods can be seen, extending from the sea of Waiawa, to Halalena at Waiawa uka.

From this place, Makanikeoe then went to a large deep spring which flows from waters beneath Waipio and Waiawa. At a place where the priests discard their offerings. He then came upon another spring at the entrance of the estuary of Waiawa. The trail then turned towards Palea and Pipiloa, where there grew groves of kou and hau in ancient times, and it was the residence of the rulers of Oahu. This is the place where the king of Oahu, Kualii-a-Kauakahiakahoowaha, found his first wife, Kawelaokauhuki, who was of the uplands of Waimano. It is this Kualii who built the long house called Makanaole, on the inland plains of Manana 2nd. It is near the place now called Kulanakauhale Momi (Pearl City).

Makanikeoe then traveled to the fishponds of Hanaloa and Eo, the great ponds of Ewa. It is for these ponds that the lines of the song say:

> The water of Eo is not fetched,
> It is the sea of Hanaloa the ripples forth.

At this pond, Makanikeoe saw a deep crevasse and inside, there was a giant eel sleeping. The name Hanaloa was given because of the great amount of work that was done by the chief and the people in carrying the stones with which to surround the crevasse and build the pond wall. Thus the pond was built. And it is a famous pond for it is rich with fish, and for the eels which Keinohoomanawanui desired to eat.

From the pond, Makanikeoe then walked to a place where there were several small points of land, near where Papio was bitten and where the sea enters Honouliuli.

He noticed how very calm the surface of the water was here, but he also saw that it was agitated in its depths. Looking more closely, he saw in the depths some very large fish, as if guarding the entrance to the harbor. One of these two large fish was like a marlin with a long bill and rows of teeth. The other one was a barracuda whose teeth protruded out of both side of its mouth. These two fish of the bays of Ewa, had ears with which to hear. They leapt in the ocean like flying fish, and are spoken of in some of the traditions of Hawaii.

The marlin is the one, who with his sharp bill, divided the waters that enter into Ewa. Thus, Makanikeoe understood the nature of these fish, and what their work was. They were the guardians of the place. It is true also, that in a short while Makanikeoe saw a procession of many sharks arrive. There was in this group, the famous chiefess, Kaahupahau, of Puuloa, and the messengers of the king shark [Kamohoalii] of Kahoolawe. She was taking them on a tour and to drink the waters of Waipahu and Waiahualele, and to drink the awa from Kahauone, in Waipio uka…

Makanikeoe then turned again to the place where Papio had been bitten as a result of her asking for the ilima [*Sida fallax*] garlands of the old woman, Koihala. This is what the old woman told Papio:

> The beautiful girl asks,
> That the garlands of the old woman be given to her.
> Heed my words dirt of the dog, dirt of the pig,
> String your own garland and let it wilt.

Makanikeoe then departed from this place, turning to the plain of Puuloa. He passed many pits in this place where the bones of men have been left. He then followed the trail to the of the breadfruit tree, Leiwalo, at Honouliuli. This is the breadfruit tree of the expert sailor, Kahai (Kauluakahai), so told in his story.

There are also many pits in which were planted sugarcane and bananas, and planting mounds. He also saw manu oo (honey creepers) sipping the nectar of noni blossoms. There were also two ducks that had gone into a pit, and with a great strength, they were trying to push a stone over, to hide the pit. This Makanikeoe knew what the ducks were trying to do. They wanted to hide a spring of water which flowed underground there. It is this spring which in calm times could be heard, but not found by the people who passed through this area. It was a secret spring, known only to certain native residents of the area, and its name is recorded in the last line of the song:

> The o-u is the joyful bird of Kaupea,
> The joyful voiced o-o is of Puuloa,
> Softening the blossoms of the wiliwili,
> Drinking the drops of nectar from the noni,
> The birds drink and pass time,

The eyes cast about seeking,
The water of the natives,
The eyes seek the water of Kaiona.

This hidden spring, known only to the natives, was not hidden to Makanikeoe. From there, Makanikeoe then turned back towards Honouliuli and saw the pit of the native eel, Kapapapuhi, the elder of Laumeki, whose stone-form body is there at the base of Kauiki, Hana, Maui. He was an eel of Oahu who traveled to Hana where he stayed and was turned into stone.

There is also at this place, Kaihuopalaai, where the anae (mullet) begin their journey from Honouliuli to Kaihukuuna at Laiemaloo, Koolauloa.

Seeing this pit, Makanikeoe swiftly ran back to Waipahu, where he looked at the source of the water, where it came out of the earth, and flowed to the estuary of Waikele. Makanikeoe dove into the water to determine its hidden source. He swam underground, and first arrived at Kahuaiki, at Waipio, for which the song is sung:

Return to the coolness of Waipio,
The cold water of Kahuaiki…

He then dove under and came out on the plain of Puunahawele, that barren and people less plain. There he saw the source of the water of Kahuaiki. It is near a hidden stone (shaped like a hook pendant) and close to Kekuaolelo, along the trail which ascends straight up to Waipio uka. Makanikeoe then turned and followed the water path, and with great strength, he arrived at Kawaipuolo, at Waialua. There, he saw the pool of Laniwahine in the famous pond of Ukoa. He then quickly went from Waialua to Kawela, and from there, to Punahoolapa, a deep spring on the plain of Kahuku. There he found the water source that the kapa anvil fell into and was carried to Waipahu, at Ewa. Makanikeoe the crawled along another path and arrived at Punamano, also at Kahuku…

(Makanikeoe continued his journey through the various springs of Oahu, until he rejoined his sister and companions at Waianae. The group then continued on their journey to Kauai…) (Manu 1894-1895)

2.2.9 Naming Storied Places of Waikele and Neighboring Lands

The tradition of Puakaʻōhelo was published in *Ka Nupepa Kuokoa* between December 16, 1893 and August 18, 1894, and introduced a sacred chiefess, Puakaʻōhelo, born to Leleiwi and Kapoho. Because of her sacred nature, Puakaʻōhelo was raised in seclusion; when she came of age, she traveled across the Hawaiian Islands in the company of other royal youth. While on Oʻahu, she and her companions were befriended by aliʻi of the ʻEwa District and in the narratives of ʻEwa, we learn about the naming of places in Waikele and its vicinity. The following story is connected to the return of some of the royal youth to Hawaiʻi Island.

Ka Nupepa Kuokoa
He Kaao Hoonaue Puuwai no Puakaohelo.

Maraki 17, 1894 (‘ao‘ao 1)

…Makaukau na waa no ka hoi ana, eia ka mea apa ia lakou, o ka hapa nui o lakou, aia no iuka o Honouliuli i ka huki ulua me na kaikamahine maka palupalu, aole wale i Honouliuli wale, aia i Hoaeae, aia i Waikele e huki ai i ka ulua o keia poe e lalama nei, o ka poe mea huli lau ole o hope, ala lakou ke hoomakaukau pu Ia i na waa me Puakaunaoa ke alii nona ka waa, hoouna ia aku nei ka elele e kii aku ia lakou, o ka poe makemake nohoi e hoi i Hawaii, o Lakou kai hoi mai i kai o Puuloa, a o kahi poe ua hoi me ke aloha i na wahine a lakou, a o kahi poe ua noho no, ua noho a ua kamaaina ia Ewa.

O ka inoa o kekahi keiki alii i noho i Waikele no ke aloha i ka wahine, oia o Hualele, a oia ka mea i haku ia i ke mele hoaeae, aia hoi kahi i noho ai mauka ae o Waipahu a oia iho keia:

Aloha au o kahi wai o Waiahualele

I lele maopu aku hoi au iaia

O ka poe i hoi i kai, ke pau lakou i ka hoi i Hawaii, a o ka poe i koe aku iuka o Ewa, o Hualele me kona wahi kahu, a o Pohakupili alua laua ilaila, a i Hoaeae hoi, alua laua ilaila, o Kaulu he keikialii no ia, no Puna, Pualaa oia, ma ka inoa o keia alii i kapaia ai kela wahi Kauluhuaikahapapa, pela no i kapaia ai keia wahi, o Kaulu i Hoaeae, a o kona wahi kahu, oia o Auiole, a o keia poe eha kai noho ia Ewa nei, a pau no i ka make ia Ewa, a e luakaha ana i ka nani o Ewa nona ke kalo kaulana, a

March 17, 1894 (page 1)

…The canoes for their return [to Hawai‘i] were ready, but here is why they were delayed, many of them were in the uplands of Honouliuli, drawing in the “ulua” (their sweethearts), the girls with alluring eyes, and not only at Honouliuli, but also there in Hō‘ae‘ae and Waikele where they found those ulua. Those who hadn’t gone to overturn the leaves arose and prepared the canoes with Puakauna‘oa, the chief to whom the canoes belongs. A messenger was then sent to call them, for those who wished to return to Hawai‘i. They returned to shore of Pu‘uloa, some of them with the love of their women, and others chose to stay and became natives of ‘Ewa.

The name of one of the chiefs who resided at Waikele, for the love of the woman, was Hu‘alele. He is the one for whom the hō‘ae‘ae (chant of love) was composed, and the place where he resided was there above Waipahu, and it is this:

I love the spring of Waiahu‘alele

Where I leap and dive into it.

The people who returned to the shore all returned to Hawai‘i. And those who remained in the uplands of ‘Ewa, Hu‘alele and his guardian, Pōhakupili, they two are there. Also at Hō‘ae‘ae, there were two of them, Ka‘ulu, the chief of Pū‘ala‘a, Puna. He is the one who went by the name Ka‘uluhuaikahāpapa. It is for him that the place at Hō‘ae‘ae is call Ka‘ulu. There was also his guardian, Aui‘ole [in Waikele]. These are the four individuals who remained ‘Ewa until

nona keia wahl kanaenae:

they died, living pleasantly in the beauty of the land famed for the kalo, celebrated in this chant:

Aole oe e pakele aku
Ua ai i ke ka-i koi o Ewa

Nana e hoowali ko kino

Ai iho oe mikomiko
Ko‘u ka puu ke ai aku…

You are can not be released
Having eaten the choice kāī koi kalo of ‘Ewa
That which has made our body supple
You’ve eaten it well seasoned
Dampening the throat as it is eaten… [Maly, translator] (*Ka Nupepa Kuokoa* 1893-1894)

2.2.10 A Prophecy and the Death of Kahahana

One significant tradition of O‘ahu takes place in the 1780s and includes events on the lands of Honouliuli, Hō‘ae‘ae, Waikele and Waipi‘o in the ‘Ewa District. As a part of his plan to take control of O‘ahu, Kahekili, then king of the Maui group of islands, tricked Kahahana, his nephew and King of O‘ahu, into killing his high priest, Ka‘ōpulupulu. Kahekili had raised Kahahana, and he desired to make O‘ahu a part of his kingdom. It was Ka‘ōpulupulu who instructed Kahahana and warned him against certain actions proposed by Kahekili. In January 1862, J.H. Kānepu‘u, a frequent contributer of island history to native newspapers, penned one of the earliest native accounts pertaining to the deaths of Ka‘ōpulupulu and his son Kahulupu‘e and the prophecy uttered at their deaths.

Ka Hoku o ka Pakipika

Ianuari 23, 1862 (‘ao‘ao 2)

…Ua hooko mai ke Akua i wanana ma o Kaopulupulu la, kekahi kaula mana Oahu nei, e haawi mua ana no i ka aina no na mamo a Sapeta, penei kana olelo i kana keiki, i nui ke aho a make i ke kai, no ke kai ka hoi ua aina, aia la, lilo ka aina ia kai. Mai kai mai no o Kahekili maluna mai o ka waa, a pae ana i Oahu nei, kaua me Kahahana, a holo o Kahahana i ka nahelehele, lilo ka aina ia kai. Mai kai mai no o Kamehameha, a kaua me Kalanikupule ma Nuuanu nei, a hee o Kalanikupule, lilo ka aina ia kai. Mai kai mai nei no ka haole maluna mai nei o ka moku a noho ana i uka nei, he oluolu wale no ka lakou la hana ana

January 23, 1862 (page 2)

God has fulfilled the prophecy of Kaopulupulu, one of the powerful prophets of Oahu—giving the land to the descendants of Japheth [cf. Genesis 9:27]—who spoke thus to his son, “Strive to die in the sea, for those of another land shall come from across sea, and the land shall belong to them from across the ocean.” Kahekili came from across the sea on a canoe and landed on Oahu. He then engaged in war with Kahahana, who fled to the forests. Thus the land was taken by the sea. Kamehameha then came from across the sea and engaged in war with Kalanikupule at Nuuanu. Kalanikupule was defeated, and the land was taken by

> mai i na'lii o kakou, aohe i eha ka ili, lilo no ia lakou la na hooponopono aupuni, na aina, na kuleana ma ka hoolimalima, ma ke kuai, ma ka hoaie i kahi awelu lole, i ka rama, ia mea ae ia mea ae, ua lilo ia lakou la, o kau no ia o ka hoaa aku ma ka palekai.
>
> the sea. Then the foreigners came from the across the sea on ships and now reside on the land. Their deeds for our chiefs were kindly, and they took on the work of setting the nations right, the land, the properties and leasing, selling, creating debt for new clothing, rum, this thing and that, it is all theirs now, and built up on the breakwater… [Maly, translator] (Kānepuʻu 1862)

Kamakau (1867) elaborated that about eight years into Kahahana's reign as king of Oʻahu, Kahekili succeeded in tricking Kahahana into killing Kaʻōpulupulu.

Kahahana called for Kaʻōpulupulu and his son, Kahulupuʻe to be brought before him at Waiʻanae. The call was made from Puʻukāhea (Hill of calling). Upon the summons, Kaʻōpulupulu prayed to his gods and discerned that he and his son would be killed once in the presence of the chief. Arriving at the place now called Nānākuli (ahupuaʻa in Waiʻanae District), Kaʻōpulupulu called out to Kahahana who looked at him, but made as if he didn't hear the call (nānā kuli). Kaʻopulupulu then knew for certain that he and his son were to be killed, and he told Kahulupuʻe:

> "I nui ke aho a moe i ke kai! No ke kai ka hoi ua aina!"
> Strive to lie down in the ocean! For our revenge will come from other lands across the sea (Kamakau 1867).

Kahulupuʻe ran into the water near Puʻuohulu where he was killed. Kaʻōpulupulu continued his flight across the Honouliuli plain to the shore of Puʻuloa, where he was then killed (Kamakau 1867). Kamakau also wrote about the last years of Kahahana's life and his death at the command of Kahekili, placed by some native writers at Hōʻaeʻae and Waikele:

> For two years and six months Ka-hahana and his wife and Ka- hahana's friend, Alapaʻi, hid in the mountains and were fed and clothed by the commoners, who had compassion upon them. Thus, were the misdeeds of Ka-hahana justly repaid. They were finally betrayed by Ke-ku-manoha', father of Ka-lani-moku and half brother of Ke-kua-poʻi, Haʻaloʻu being the mother of both. Their last place of hiding was near Wailele at Waikele in 'Ewa. Alapaʻi said to Ka-hahana, "Let us kill our wife and then we shall be able to escape." Ka-hahana was more merciful, perhaps because he could not endure to lose Ke-kua-poʻi, who was an incomparable beauty. He said, "Why kill our wife who has been so faithful a companion to us while we have dodged death in cold and wet, wandering here in the mountains, in the thickets of Wahiawa, in this ocean of Kaʻieʻiea? Perhaps she can persuade her kinsmen to help us some day." Learning that Ke-ku-manohaʻ was at Waikele and Ka-lani-ku-pule and Koa-lau-kani at Kapapapuhi [on the Hōʻaeʻae-Waikele boundary], Ke-kua-poʻi made herself known to her brother, hoping that he would save them all three for her sake. "Where are Ka-hahana and his friend?" asked her brother. "Will you spare us three?" asked the woman. "Why should you die? are we not all

> chiefs?" he answered; but his words were false; he intended to give up his brother-in-law to Ka-hekili. Alapa'i urged, "O heavenly one! let us flee. We shall die if we stay here; only Ke-kua-po'i will be saved." "If Kekua-po'i is saved, we shall be also." "You will not be saved; you are a chief, a ruler by descent." Then Ke-ku-manoha' sent men to Ka-hekili at Waikiki to tell him that Ka-hahana was at Waikele. Ka-hekili ordered him to be killed and brought to Waikiki and he sent double canoes to Halaulani at Waipi'o in 'Ewa. Ke-ku-manoha' killed Ka-hahana and his friend Alapa'i, wrapped them in coconut leaves, placed them on the platform of the canoes, and took them to Kahekili at Waikiki… (Kamakau 1961:136-137)

The words of Ka'ōpulupulu's prophecy remained fresh in the minds of elder kama'āina through time and was often the subject of writings. As noted above in the account of Kānepu'u (1862), many considered that the priest's words were fulfilled a short time later with the arrival of Kahekili and his forces on the shores of O'ahu. This was followed by the arrival of foreigners, Hawaiians' loss of their land and kingdom, and military control over a larger area of the 'Ewa District.

In 1900, the native leadership of the Independent Hawaiian party conducted a tour of O'ahu to advocate for restoration of Queen Lili'uokalani to the throne. David Kalauokalani, president of Hui Kalai'āina, spoke to district residents while in Wai'anae, recalling the power of the prophecy. His talk was described in the *Pacific Commercial Advertiser* (1900). While some facts differ from the earlier account, the connection between events is significant:

> Kalauokalani waxes reminiscent in his speech at Waianae and referred to an incident of the early days of Oahu which he said was applicable to the present situation of affairs as far as the natives were concerned with relation to their political status. He referred to the time when Kahanana was chief of the island of Oahu. There was then living in Waianae a famous kahuna named Kaopulupulu whose son Kahulupue had committed a crime for which he fled the district. When he was being closely pursued the old kahuna called after his son, saying: "My child, bear up until you reach the water, for when you touch the water, then the land shall belong to those who come over the sea."
>
> The speaker said this prophecy had been fulfilled, and had culminated in the overthrow of the monarchy. He appealed to the people to rectify the evil which the old kahuna had brought upon them (*Pacific Commercial Advertiser* 1900:5).

Similar recollections of the meaning and fulfillment of Ka'ōpulupulu's prophecy were shared with the author by Samuel Hoapili Lono (1973, pers. comm.) and Sister Thelma Genevieve (Dowsett) Parish (1997, pers. comm.).

Native historian Moke Manu wrote further on these events in 1907. Following his defeat at the hands of Kahekili in ca. 1783, Kahahana went into hiding in the 'Ewa District. In 1785, while Kahahana was at Honouliuli, Kahekili sent his warriors to kill him and they landed their canoes at Kūpahu at the estuary of Hanapouli. The warriors killed the O'ahu chief on the plains of Hō'ae'ae and brought his body back to Hālaulani at Waipi'o. From there the body was taken to be offered on a temple in Waikīkī (Thrum 1906:57).

2.3 Noted Places of Waikele in Accounts of the Larger ‘Ewa District

Hawaiians became prolific writers and wrote on many aspects of Hawaiian history. Oftentimes, Hawaiians debated over the details or accuracy of statements. The collection of narratives almost always connects events in history and people with storied places; accounts which identify places in Waikele and their connection to the larger ‘Ewa District follow below.

2.3.1 Events at Waikele Described in ca. 1805-1811

John Papa ‘Ī‘ī, one of the preeminent native Hawaiian historians was born at Kumelewai, Waipi‘o in ‘Ewa in 1800. Raised as an attendant to the Kamehameha heirs, he was privy to many facets of early history, practices, and events during his life. In the 1860s, ‘Ī‘ī published a history titled “Na Hunahuna o ka Moolelo Hawaii,” translated by Mary Kawena Pukui and published as “Fragments of Hawaiian History” (1959). Among his narratives are found the following references to Waikele, the adjoining lands, and customs of the residents. While describing an early visit to Waikele with his father:

> …his father’s task took them all down to Kapuna in Waikele, a good place for dyeing *tapa*. There, patches of taro were grown, draw nets made, and houses built. The fishing was done in the sea of Honouliuli. Because the people of the place did not like Waikele’s farm overseer, and for other reasons too, perhaps, they would say, “We are of Honouliuli.” If the farm overseer went to Honouliuli, they would say, “We belong to Waikele.” It was true that their homes were in Waikele, but all of their fishing was done in Honouliuli. It was laziness and dislike of the overseer that made them point one way and then another. (‘Ī‘ī, 1959:32)

Observance of the Makahiki occurred when the god Lono was paramount. During the Makahiki, the god Kū, along with the strict rituals of the heiau luakini (temples of highest state worship and sacrifice) were set aside. The annual season of Lono was noted as a time of collecting tribute for the gods and chiefs, giving thanks for the abundance of land and sea, and in celebrating the arts, including competency in fighting arts. As a youth, ‘Ī‘ī witnessed the procession of Makahiki gods and events which took place in Waikele. His narratives follow, beginning with a description of the people awaiting the return of the Akua Loa and Akua Poko (god images) from their circuit around the island to collect tribute:

> From the time of the closing of the *kuahu* altar until the gods returned no canoe was allowed to sail and no one was permitted to go to the mountains. The time was spent in waiting for the return of the gods and their attendants. While waiting, those who knew how to reckon time figured out how long it would take to get ready and what day the gods would arrive. When the gods returned to the *luakini*, the two persons bearing the *akua loa* and the *akua pa‘ani* approached from the right, while the person bearing the *akua poko* (short god) came from the left. When the *akua poko* finished its journey from the lands [page 75] designated for its visit, such as Kailua and Kaneohe, it returned to the *luakini*. On its way back, it received no more gifts from lands whose taxes had already been collected. The return of this god was called *papio‘ia* (the-gathered-in). Many people followed the procession on its tour

over the land, among them the boxers, and all partook of the foods that were contributed by the people of each place. Ii followed the procession of the gods as far as Waipio in Ewa, and thus learned the customs of the *makahiki* period.

In imitation of what he saw on his journey from Honolulu with the god of play, the boy made two images that looked very much like the *makahiki* gods. Beside them he placed ferns and a clump of bananas bearing fruit.

For four days there was boxing with the boys from Waikele. The matches were held in front of the images, starting about four o'clock in the afternoon. Then, because the visiting boys plotted to take the images, they were put away in a safe place.

At noon of the fifth day the battlers met at a designated place and fought back and forth with stones. One of the Waipio boys was struck by a Waikele boy, and so the battle was postponed until evening. Then those of both sides gathered. Kaapuiki, wearing his dark red shoulder covering, was on the side of the opponents, and when Ii threw his stone, it struck Kaapuiki on the eyebrow and made him cry. This ended their devilish behavior; but Ii, having been told that the other was the son of a sorcerer, was frightened. Later he learned that the report was not true.

After this "battle" of the children a sham battle between adults took place on the southwestern side of Kupapaulau at Waikele. Two chiefs who had gone from Honolulu to Puuloa with some chiefs of that locality landed at Aioloolo in Waikele, and the battle was staged between them and residents of Waikele that very afternoon. The two sides gathered at a place above Aioloolo on the slope of the hill leading down to Kupapaulau.

The spectators noticed that both sides were equally skilled in stone throwing and in dodging the stones that flew back and forth. No one was hurt or harmed, and the skill of the participants and the chiefs who arranged the sham battle was praised. It seems that the chiefs watched to see how skilled their people were in battle.

At about the time of the sham battle, a proclamation came from Kawelo, the overseer of the land of Waikele, for the men of the land to fetch the double canoe beached at Kupahu, on the northeastern side of Halaulani in Waipio. Because this proclamation came from Kawelo, who said the order was from Kalanimoku, the men of Waipio made ready to detain the canoe. They felt that the command should have come from their own leader, Papa.

When Kawelo and the men of Waikele had taken their places from prow to stern of the canoe and the command, "Go ahead," was given, the canoe did not budge. It was being held back by the men of Waipio. Kawelo's men tried again [page 76] to make it go forward, hut to no avail, so Kawelo asked the Waipio men why they held on. Kaimihau answered, "You cannot do this, for we were not told of it by our leaders. If Kalanimoku had made this request through our own leaders, we should have heard of it and therefore done nothing to prevent the removal of the canoe. If

you persist in the idea of taking the canoe, day may change to night and night to day without its budging from its resting place. All things left here at Waipio are protected, from the sea to the upland, and we shall not let them go unless we hear from our own leaders." O companions, see how well the people served their leader. The peace of the land of Waipio was well known while the high chiefs were in charge and up to the time of Papa's death… ('Ī'ī 1959:75-78)

2.3.2 Na Wahi Pana o Ewa i Hoonalowaleia i Keia Wa a Hiki Ole ke Ikeia (Storied Places of 'Ewa, That are Now Lost and Cannot be Seen) (1899)

Between June 3, 1899 and January 13, 1900, the Hawaiian newspaper *Ka Loea Kalaiaina* published a series of articles titled "Na Wahi Pana o Ewa i Hoonalowaleia i Keia Wa a Hiki Ole ke Ikeia." The author of the series is not identified, but it is a rich resource of traditions, named places, and history of the district. Excerpts pertaining to Waikele as published in various issues are presented below. A careful review of the original Hawaiian texts has been made and the translations summarized with reference to notes developed by Mary Kawena Pukui.

Iune [June] 10, 1899 ('ao'ao 4)

Eia ka moolelo i loaa ai keia wahi pana o "Keonekuilaulimalaula o Ewa." He mau alii ka mea i loaa ai ka inoa o keia wahi, aole nae i loaa ka laua mau inoa, o ka laua hana oia ka i mahele iki ia'u a penei kahi moolelo pokole:

O ke kaikuaana oia ke alii o Oahu nei e noho ana ia ma Waikele, a o kona kaikaina e noho ana ia ma Waikiki. A no ka pono ole o ka manao o ke kaikaina me ka manao kipi o kona kaikuaana, oia kana hana…

Translation – Summary

Here is the tradition of how the famous place "Keonekuilimalaulā o 'Ewa" got its name. It was from two chiefs that the name of this place was gotten. I did not get their names, but I know a little of what they did, and this is the short story.

The elder brother was the king of O'ahu, and he resided at Waikele. His younger brother resided at Waikīkī. Because the younger brother had unjust thoughts, he thought to rebel against his sibling, this is what he did.

The chiefs of old were fond of catching niuhi (great white sharks), and men were killed in those times to be used as bait. Catching such fish was done under the direction of priests. When [the younger chief] caught his large fish, the shark was divided from head to tail, all of the contents were removed leaving only the 'alu'alu (misshapen form) [skin]. The chief then made a house-like structure within, securing it, and leaving the sharp teeth of the shark as they were. When it was completed and secure, there was a place in which the [younger] chief could sit. Now, we leave him to his work, and go to the elder brother, who was residing in peace.

While the chief was pleasantly living at Waikele, his priest discerned what was to

come. One day the priest went to the chief telling him that his younger brother was plotting against him. The chief at Waikele did not believe his priest and failed to heed the warning. When the messenger of the younger chief arrived at Waikele, he lied to the elder chief saying that his younger brother was sending a gift to him, a great shark that had been caught.

When the elder chief agreed to the visit, the younger one made ready all his people, and had them gather up stones which were bundled up and wrapped in ti-leaves to look like gifts. The young chief then went into the belly of the shark, and people from Waikīkī, Honolulu, Kapālama, Kalihi, Moanalua, Hālawa and all the way to Waiawa, joined together in the procession. They all carried with them the wrapped and bundled stones. They traveled with the great fish to the plain on Waipiʻo. All the time the chief sat in silence in the fish waiting until it was taken to his brother. In the meantime, the priest who had warned the chief at Waikele about the deception saw the procession of the chief of Waikīkī from above Waipahu, and he quickly ran upland to hide.

The party was called to order and set in alignments, to give their gifts of paʻi ʻai (hard pounded taro), which were really the stones, in front of the great fish. The overseer instructed everyone to Kui paha na lima, o na lima o kekahi me kahi (Join together their hands, one to another), and march forward, calling out "E ʻEwa e – E kui na lima o ʻEwa e – e kui na lima e" (O ʻEwa – Join your arms together o ʻEwa – join your arms together).

The people then surrounded 50 hālau (long houses) of the chief and the great fish was at the front. When the chief came outside of his hālau, the young chief ordered all the people to throw their stones, and the elder chief was killed.

It is because of all the people joining their hands together as one, that the plain there above Waipahu, on the makai side of the old Alanui Aupuni (Government Road) is named "Keonekuilimalaulā o ʻEwa" (The land where hands were held across the expanse of ʻEwa). So that those who travel the area may know, the Onekuilimalaulā are the kula lands where the Oʻahu Sugar Company Mill was built, above Waipahu.

[A later reference in this series, published on Oct. 29, 1899, identified Keonekuilimalaulā as a plain where maʻo blossoms intertwined with the ʻilima blossoms.]

There is also at Waipahu, another famous place known as Kapukana wai ʻo Kahuku (The water outlet of Kahuku), and from that opening there came the kapa making anvil from Kahuku, which was found by a woman of Waikele. The woman traveled all around from Kahuku seeking it to get it back. She went all along the Koʻolau region, seeking the sound of her kua kapa, as each one had its own voice. Each one was recognizable to its user, some with sharp voices, others with deep voices. She then traveled on to Wailupe and Kapālama, but she did not hear the voice of her kua kapa until the gentle mauʻunēnē breeze from the uplands of Līhuʻe bore the

voice of her kua kapa from the uplands at Keanapueo. There she found her kua kapa and returned with it to Kahuku…

Iulai [July] 1, 1899 (‘ao‘ao 3)

Pohaku-pili is a stone of the gods Kane and Kanaloa. They divided the lands of ‘Ewa in the time when they physically walked upon the land. The division boundaries that they made are the same as the lands to this day. It is said that this stone is supernatural one, and that it is the boundary between Waikele and Hō‘ae‘ae; this is a stone that is on the edge of the cliff; and there is nothing to hold it in place. It is situated on a sheer precipice, but it has remained unmoved to this day. The place where it is set is on the side of **Waipahu**, mauka of Waiahu‘alele (Water-of-floating-froth)… (*Ka Loea Kalaiaina* 1899-1900)

2.4 Māhele ‘Āina (The Land Division) of 1848 Fee Simple Property Rights in Waikele Ahupua‘a

Prior to Western contact, all land in the Hawaiian Islands was held by the chiefs as descendants of the gods—no one owned the land. After Western contact, some foreigners were granted gifts of land for services to Kamehameha I and/or his heirs. With a growing number of foreigners arriving and establishing business interests or in service of the mission stations, many petitioned for fee-simple title to land upon which they lived or worked. In 1848, Kauikeaouli-Kamehameha III agreed to the Māhele ‘Āina, which defined the land interests of the King, some two hundred and fifty-two high-ranking Ali‘i and Konohiki (including several foreigners who had been befriended by members of the Kamehameha line), and the Government. As a result of the Māhele, all lands in the Kingdom of Hawai‘i and associated fisheries came to be placed in one of three categories: (1) Crown Lands (for the occupant of the throne); (2) Government Lands; and (3) Konohiki Lands. The “Enabling” or “Kuleana Act” of the Māhele (December 21, 1849) further defined the framework by which hoa‘āina (native tenants) could apply for, and be granted fee-simple interest in “Kuleana” lands (cf. Kamakau 1961:403-403). The Kuleana Act reconfirmed the rights of hoa‘āina to: access, subsistence and collection of resources from mountains to the shore, which were necessary to sustain life within their given ahupua‘a. Though not specifically stated in this Act, the rights of piscary (to fisheries and fishing) had already been granted and were protected by earlier Kingdom laws. An 1889 Map of Waikele shows the numerous kuleana Land Commission Awards (LCA), purchased Land Grants (LG), and Royal Patents (RP) in the area (Figure 8). Table 2 lists the claims and grants nearest to the project area.

A review of Māhele documents of Waikele found claimants provided testimony of the following uses and features:

- Ala, ala hele, ala nui (trails and government roads);
- Hale, kahuahale, pā hale (houses and house lots);
- Kahawai, ‘auwai and muliwai (river-stream flow, irrigation channels and estuaries) supported agricultural practices;
- Kō‘ele (agricultural fields) lands dedicated to cultivation of crops for the king or chiefs;
- Kula (dry land parcels) used for diversified agriculture; cultivation of wauke (paper

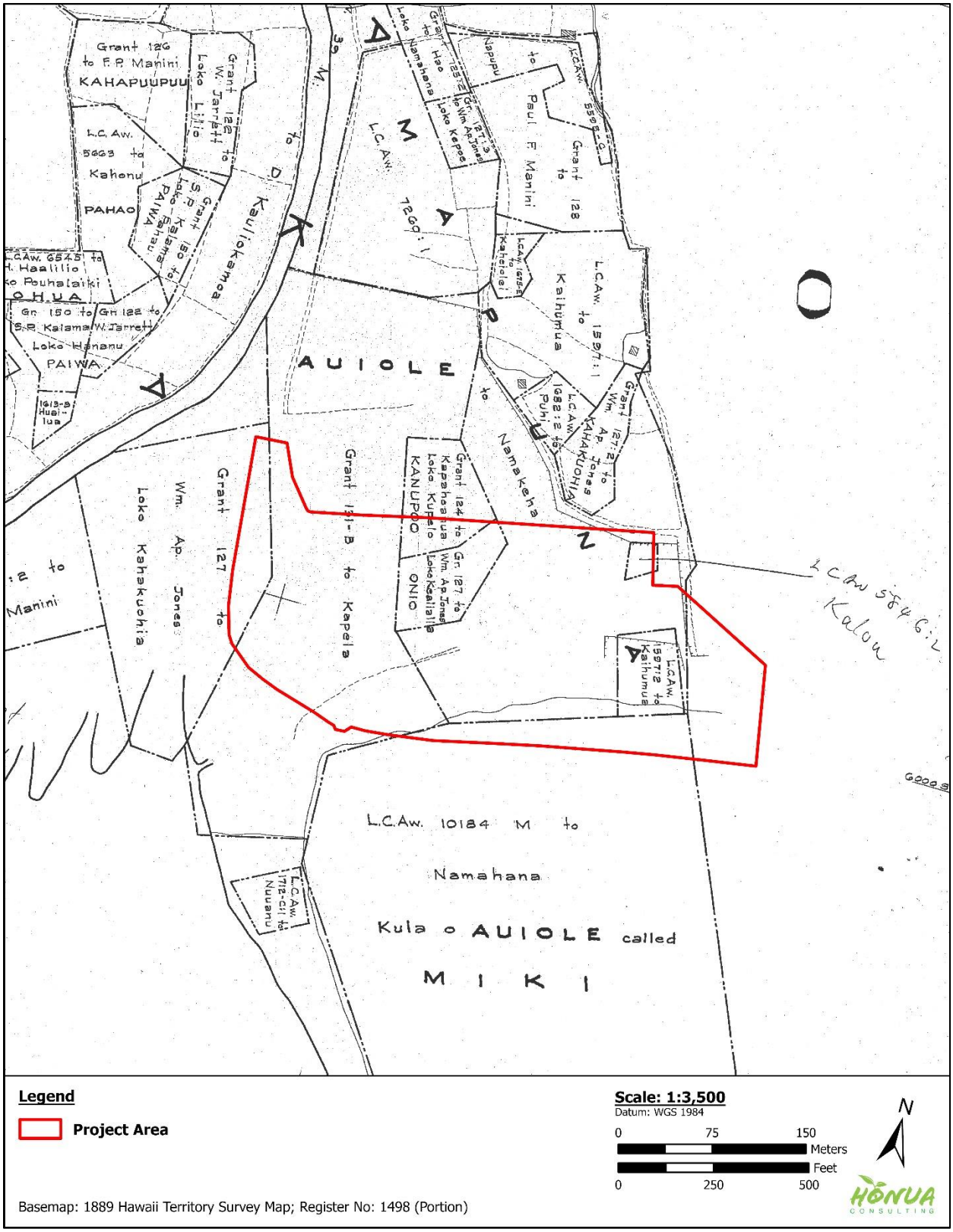


Figure 8. Portion of an 1889 Map of the Makai Part of Waikele Ahupua‘a Showing the Project Area (Awana 1889, RM 1498)

mulberry), maiʻa (bananas), ʻuala (sweet potatoes), uhi (yams), ʻulu (bread fruit), niu (coconut), hala (pandanus) and watermelons;
- Kula (pasture lands) for grazing introduced ungulates (cited in uplands);
- Loʻi kalo (taro pond fields);
- Loko, loko iʻa, puʻuone (fishponds) made and maintained to supply fish to chiefs and tenants; fishery rights; ʻakaʻakai (bulrush) ponds;
- Pā, pā ʻāina (fences and walls) used to enclose land parcels and determine boundaries;
- Paʻakai (salt) processed and harvested;
- Pōʻalima (Friday agricultural parcels) lands dedicated to cultivation of crops for the chiefs/konohiki

Table 2. Table Listing Māhele Data Located Within the Project Area

LCA, LG, RP				
LG 131-B	Kapela	ʻAuiʻole	15.07 acres	
LG 124	Kapahoanua (Kapahoanui)	Kanupoʻo	2.03 acres	Loko Kūpelo in Kanupoʻo (shown on Figure 8)
LG 127 (same as LG 131)	William Ap. Jones	Waikele, Kahakuohia ʻŌniʻo	18.92 acres	Loko Keālialia in ʻŌniʻo and Loko Kahakuohia (shown on Figure 8)
LCA 1597:2	Kaihumua	Kapuna, Kamāpuna, ʻAuiʻole	2 ʻāpana (land parcel), 3.832 acres	House lot, 3 loʻi patches, 2 sand dunes (not clear which resources within project area)
LCA 5846:2	Kalou (Kalau)	Kapakahi, Kapuna	2 ʻāpana, 0.897 acres	House by a spring, bound on all sides by kula
LCA 7260:1	Namakeha	Waikele	4 ʻāpana, 39.13 acres	
LCA 10184	Namahana (Mahana)	ʻAuiʻole	199.5 acres	

The project area was located just east of the former Kapakahi Stream and was fertile land containing springs, loko (ponds), kula (pasture), and a house lot. Figure 8 shows Māpuna ("bubbling spring") in the north and eastern portions of the project area and Loko Kūpelo located along the central-north extent of the project area. LG 127, comprising two separate locations within the center and west extent of the project area, included two loko, Loko Keālialia and Loko Kahakuohia (also referred to as Loko Hanahou ["new pond"] (Ulukau 2019, LG Reel 1, 00297-00300 and LG Reel 1, 00313-00314 quoted in Waihona ʻAina 2023).

LCA 5846:2 was located within the northeast corner of the project area. The claim states "There is a claim for a house at Kapuna in Waikele. It is bounded on all sides by kula" and "A house lot

(site) by the spring of [a] pasture" (N.R. 157-153v5 and F.T. 114v9 quoted in Waihona ʻAina 2023).

2.5 1880s to Present

2.5.1 Oahu Sugar Company

In 1894, Benjamin F. Dillingham proposed the idea of a 10,000 acre sugar company on Oʻahu. The biggest challenge confronting this ambition was the lack of water available on the Leeward side of Oʻahu. In order to ensure the area had adequate water, testing was conducted and it was determined that the sugar company would be located in the area traditionally known as Aualiʻi, (Oahu Sugar Company n.d.).

Oahu Sugar Company (OSC) was established in 1897 and began harvesting sugar cane two years later, in 1899. The company grew from there, quickly taking over 20 square miles in the area. Most of the land was leased from existing large landowners, including ʻĪʻi Estate (lands formerly owned by famed Hawaiian historian John Papa ʻĪʻi), Oʻahu Railway and Land Co. (OR&L), Bishop Estates, Robinson Estates, and Campbell Estates. Many of the landowners, like the Robinson Estates (now known as the Robinson Trust), continue to own lands in modern-day Waipahu. Any lands not leased by OSC were owned by OSC fee simple (Oahu Sugar Company n.d.).

While the name Waipahu already existed as a place name and stream name west of Aualiʻi, after Oʻahu Sugar Company began drilling in the area, the name Waipahu, meaning gushing water, grew in usage for the area.

Once OSC was established, it began to steadily bring in plantation workers from around the world. Many of the skilled laborers, known locally as "luna," which means "above" in Hawaiian, reflecting both the fact that these luna oversaw the plantation laborers and also often rode on horseback.

Impacted by the lack of unskilled laborers to work in the plantations, OSC also brought in plantation workers from the Philippines, Japan, China, Portugal and Norway to supplement the small number of Native Hawaiian laborers. As was standard operating procedure in the era, each laborer was provided housing, firewood, fuel, and water (Oahu Sugar Company n.d.).

By 1923, OSC finalized full development and production of over 11,000 acres of land, realizing Dillingham's dream. Sugar and pineapple plantations worked cooperatively throughout the region. OSC had numerous reservoirs throughout the lands. In 1923, the largest held 12 million gallons, but OSC built an even larger reservoir, which held 41 million gallons of water (*The Honolulu Advertiser* 1923a:4).

The factory was described by *The Honolulu Advertiser* as follows:

> Oahu Sugar Company's factory looms up like a medieval castle as one approaches it from the Waipahu railway station. It is a great steel framed corrugated iron building at the edge of a pali overlooking the rice fields and Pearl Harbor, its tall concrete smoke-stack, flanked by a shorter steel one, being a landmark visible for many miles.

> Above the mill are the railway storage tracks and sidings with room for 700 cane cars, with a commodious concrete office building to the east, and shops and miscellaneous warehouses to the west. The mill yard is the terminus of the fifty-odd miles of permanent railroads forming a network extending to every field. Seven locomotives varying in size from 12 tons to 30 tons bring the cane to the mill.
>
> The mill plant, on the side towards the office, consists of two trains each comprising a crusher, Searby shredder, and four 3 roller mills. Adjoining it is the mill electric station comprising three stream turbine units with a total generation capacity of 950 kilowatts. This supplies all of the electric power for the motor driven apparatus in the factory and shows, and for lighting the mill and the houses in the main camp (*The Honolulu Advertiser* 1923:10).

Another important milestone in the evolution of the plantation industry on O‘ahu was the completion in 1906 of the Oahu Rail & Land Company line from Waipahu to Wahiawā. This ensured reliable transport of pineapple and sugar cane from the Wahiawā fields to Honolulu canneries. Eventually, spur lines were extended to outlying fields and workers’ camps.

The Honolulu Advertiser (1939) wrote of the importance of the railway to the pineapple industry.

> “The Oahu Railway was the savior of the Wahiawa pineapple industry in its early days,” declared Harry N. Denison, kamaaina railroad man and now assistant general manager of the Oahu railway. Mr. Denison came here in 1897 and has been with the railroad more than forty years, working up from car repair man.
>
> The cannery, established in 1903, was successfully preserving the fruit, but during the long trip to Honolulu the penetration by the red dust made much of it worthless.
>
> The growers were desperate. It was a railroad or close the doors. Mr. James D. Dole, backed by the Wahiawa colonists, was very aggressive in the struggle to bring the railroad into Wahiawa. Finally in 1905 it was decided to put the railroad through. The actual construction was finished in July 1906 to the gate of Wheeler field; the bridge to Wahiawa was put in the next year.

A 1939 map showing fields of the Ewa Plantation Company, located adjacent to the west side of the West Loch of Pearl Harbor, shows the project area within lands of the Oahu Sugar Company (Figure 9).

During the Japanese attack on Pearl Harbor in December 1941, a mill in Waipahu was shot at by aircrafts in the Imperial Japanese Navy. The attack killed one civilian and injured seven others. Despite this and other effects from the war, the plantation continued to successfully operate.

Figure 10 shows the significant amount of land OSC continued to control into 1950. The area was a thriving center of plantation life for thousands of workers and families. This era continued until OSC was purchased by AmFac, Inc in 1961. AmFac was originally incorporated in Hawaii in 1918 as American Factors, Ltd. as the successor company to H. Hackfield & Company, Ltd., which had been first established in 1849. OSC would continue to operate even after the purchase by AmFac.

From the year of its establishment until 1967, when Henry A. Walker Jr. would take control of the company, AmFac primarily engaged in Hawaii's sugar plantations. Walker sought to change the company to one that operated a diverse number of businesses, most of them having little to do with Hawaii or the plantation industry (Lehman Brothers Collection n.d.). Oahu Sugar Company would be shut down after the 1995 harvest.

2.5.2 Naval Reservation Pearl Harbor

U.S. use of Pearl Harbor for shipping and economic purposes began in 1875 with passage of the Reciprocity Treaty. In the early 1900s, Pearl Harbor was used by the U.S. as a coaling station for ships traveling across the Pacific (Hinnershitz 2021). In 1908, Congress approved the construction of a dry dock to establish Naval Station Pearl Harbor and to straighten the channel. By 1919, Pearl Harbor was a fully functioning naval base. Military operations on Waipi'o Peninsula have been integral to the success of war efforts in the Pacific. The naval base and Hickam Air Force Base (initially dedicated as Hickam Field in 1938), were realigned to form Joint Base Pearl Harbor Hickam (JBPHH) in 2010.

Figure 11 is an 1954 Waipahu USGS topographic map showing the project area was formerly located within the Naval Reservation. The map depicts an elevated roadway (berm) extending through the center of the project area from the north, with the roadway connecting to an improved road bordering the west and southwest sides of the project area. The map also shows an unimproved roadway bordering the south side of the project area. No buildings or other structures are shown in the project area at this time.

Figure 12 is an 1962 aerial image showing the elevated roadway extending through the project area from the north and cultivated fields with several agricultural plots. The elevated roadway was likely used to access the planting fields. No other buildings or structures are visible within the project area at this time.

Figure 13 is a 1977 aerial image showing a large building within the central-east portion of the project area. The building corresponds with the Waipahu Incinerator Facility (WIF) which was built by the City and County of Honolulu by the Fasi administration by 1970. The facility burned trash up until 1990 when the H-Power Plant was constructed in Kapolei to burn the islands trash and convert it into energy. Since that time the facility has operated as the City and County of Honolulu Refuse Maintenance Division.

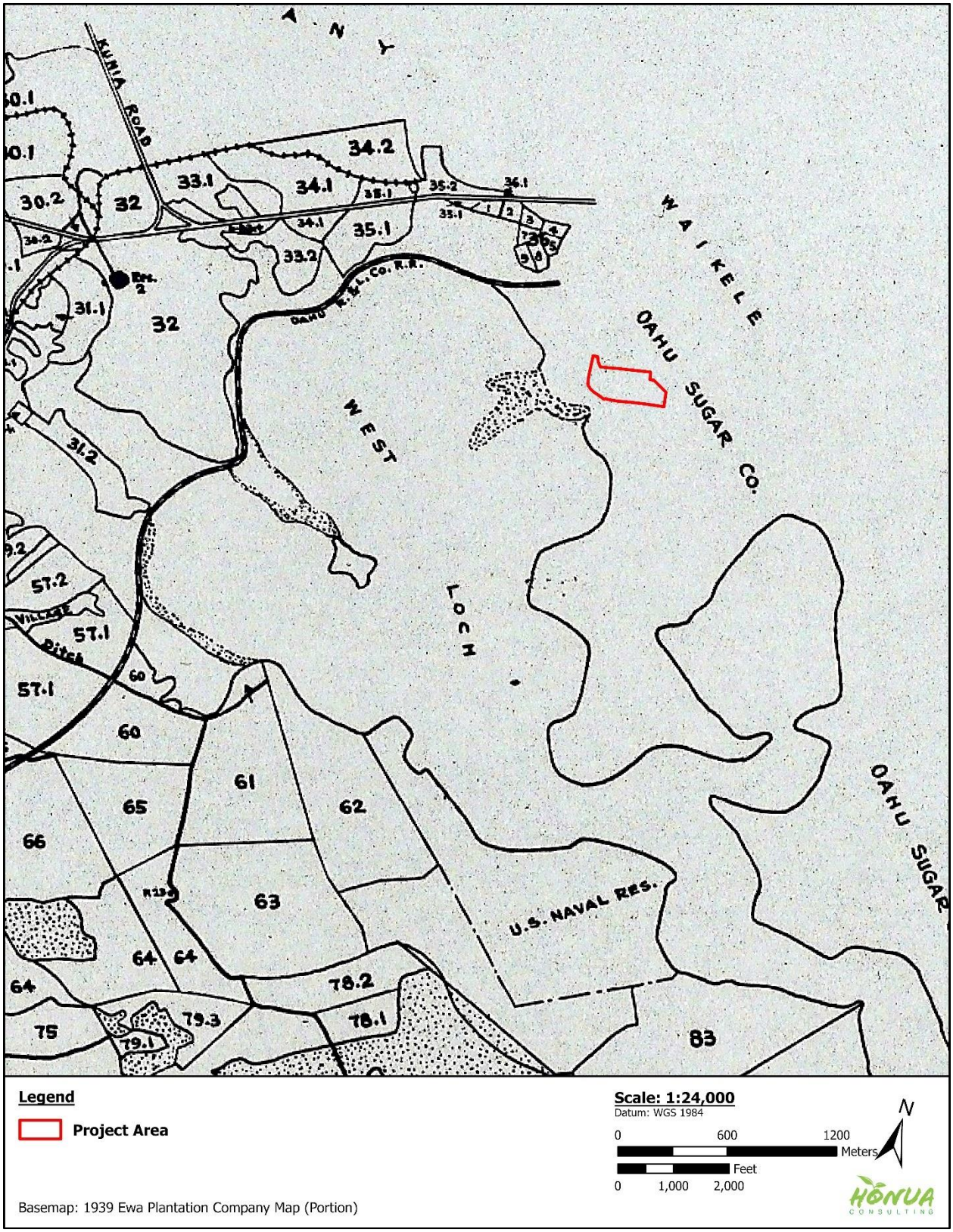


Figure 9. Portion of a 1939 Ewa Plantation Company Map Showing the Location of the Project Area (HCF 2014)

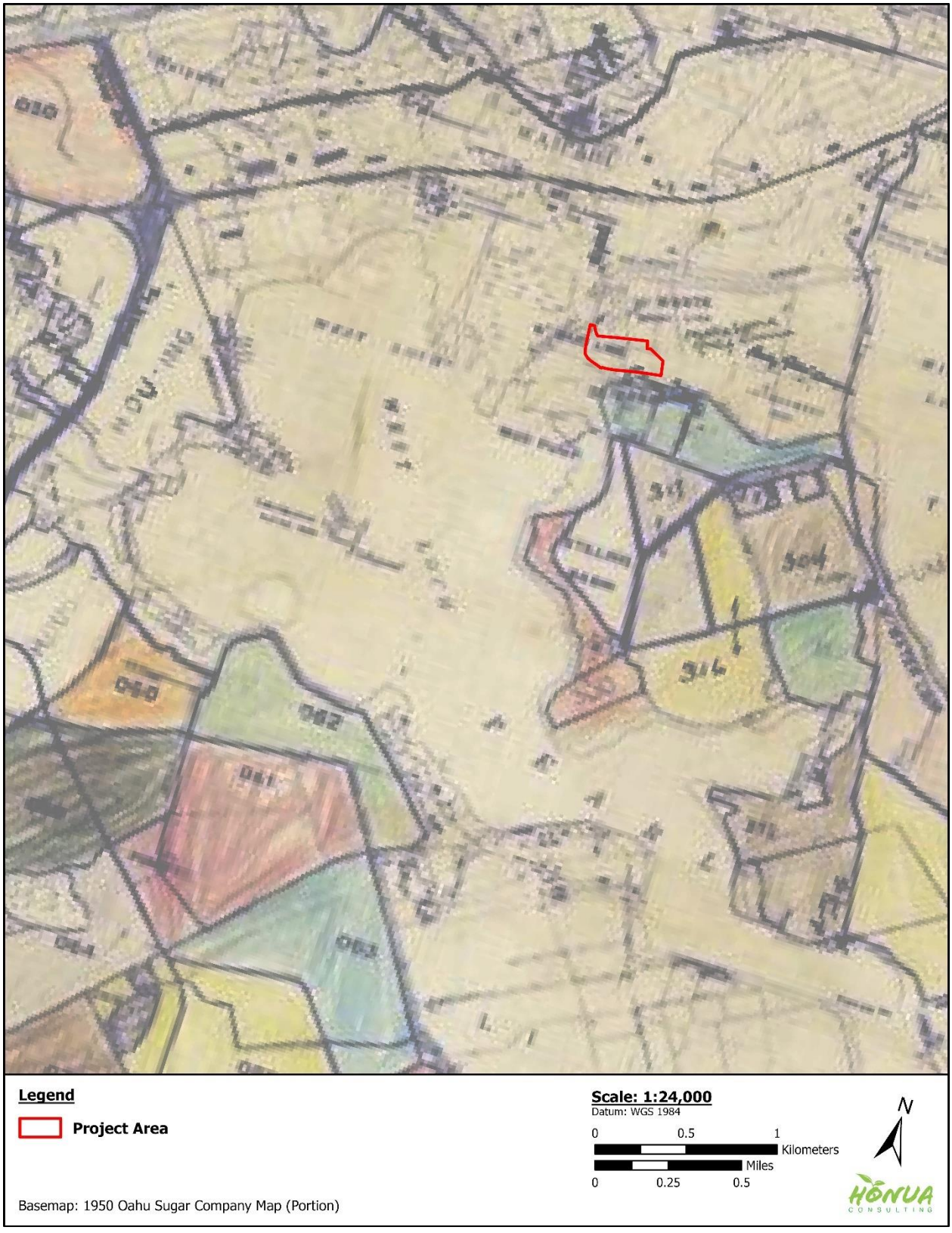


Figure 10. Portion of a 1950 Oahu Sugar Company Map Showing the Extent of Sugar Operations and Location of the Project Area

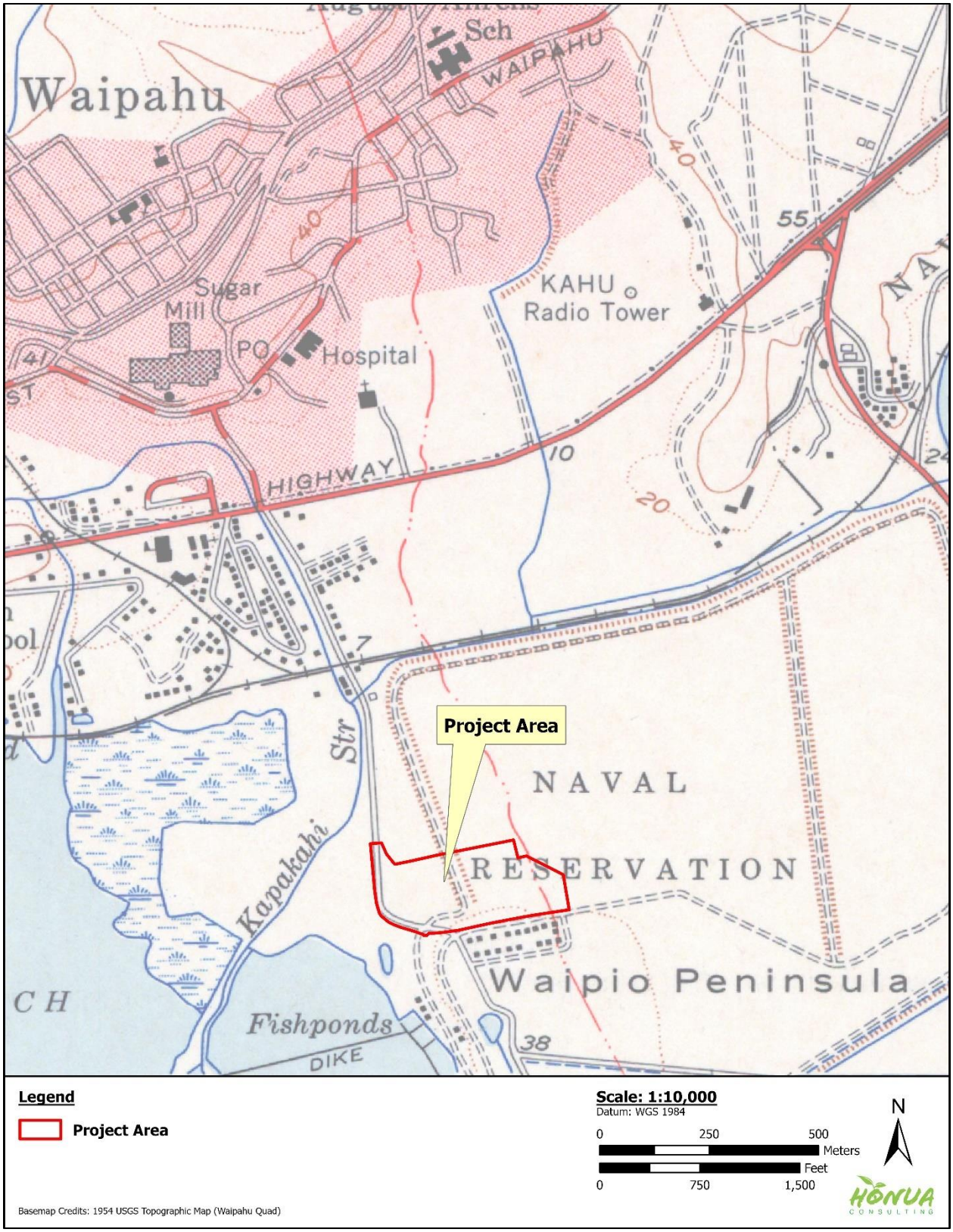


Figure 11. Portion of a 1954 Waipahu USGS Topographic Map Showing the Project Area



Figure 12. Portion of a 1962 Aerial Photo Showing the Project Area (USGS Orthoimage)



Figure 13. Portion of a 1977 Aerial Photo Showing the Project Area (USGS Orthoimage)

Previous Archaeology

Several archaeological studies have been conducted in the general vicinity of the project area, including one within the current project area. The conducted study (Hammatt and Chiogioji 2000b) was an archaeological and cultural assessment of a parcel located on Waipi‘o Peninsula owned by the City and County of Honolulu. The study recorded the presence of an existing land fill and modern building activities. No historic properties were recorded.

While no archaeological sites have been documented within the project area, documented sites throughout the near vicinity include former heiau (traditional places of worship), the Waipahu Spring, petroglyphs, human burials, a subsurface cultural layer and lo‘i (irrigated terrace) deposit as well as historic plantation infrastructure including the Oahu Sugar Mill, plantation camps, an irrigation ditch and water control box, and agricultural experiment substation. The closest sites to the current project area include several Loko (fishponds) and subsurface lo‘i, which one would expect, given the topographically low position of the near coastal property. Previously conducted archaeological studies and documented sites within a 1.5 mile radius of the project area are discussed below and shown on Figure 14 and Figure 15.

3.1 Previous Archaeological Studies in the Vicinity

3.1.1 McAllister 1933

In the early 1930s, the Bishop Museum conducted the first systematic island-wide archaeological survey of the island of O‘ahu. McAllister (1933) documented two sites in the vicinity of the project area: Kaaukuu and Pouhala fishponds, the Kalanamaihiki ko‘a, Laulaunui Fishpond, and the West Loch of Pearl harbor. McAllister’s descriptions are below:

> **Site 140**. Fishpond adjoining Laulaunui Island
>
> The pond is possibly Laulaunui fishpond, and named for the island. It is 4 to 5 acres in extent with a wall approximately 900 feet long, 7 feet wide, and 3-5 feet high. There are no outlet gates (makaha).
>
> **Site 141**. Kaihuopalaai, Ewa.
>
> This name is said to apply to the whole West Loch of Pearl Harbor. Each year, beginning in October or November, large shoals of mullet are said to go from Pearl Harbor east to Makapuu Point and then north and west to Laie or Malaekahana, from which point they return to Pearl Harbor over the same route in March or April. This is a favorite story which one comes across frequently about the island, and the oral versions are as diverse as those written. Kaihuopalaai is the pond from which the mullet come.
>
> The site is named for Kaihuopalaai, said to be the daughter of Konikonia and his wife Hinaaimalama. Fornander writes: “… on Oahu, Kaihuopalaai saw a goodly man by the name of Kapapaapuhi who was living at Honouliuli, Ewa; she fell in love with him and they were united, so Kailuopalaai has remained in Ewa to this day.

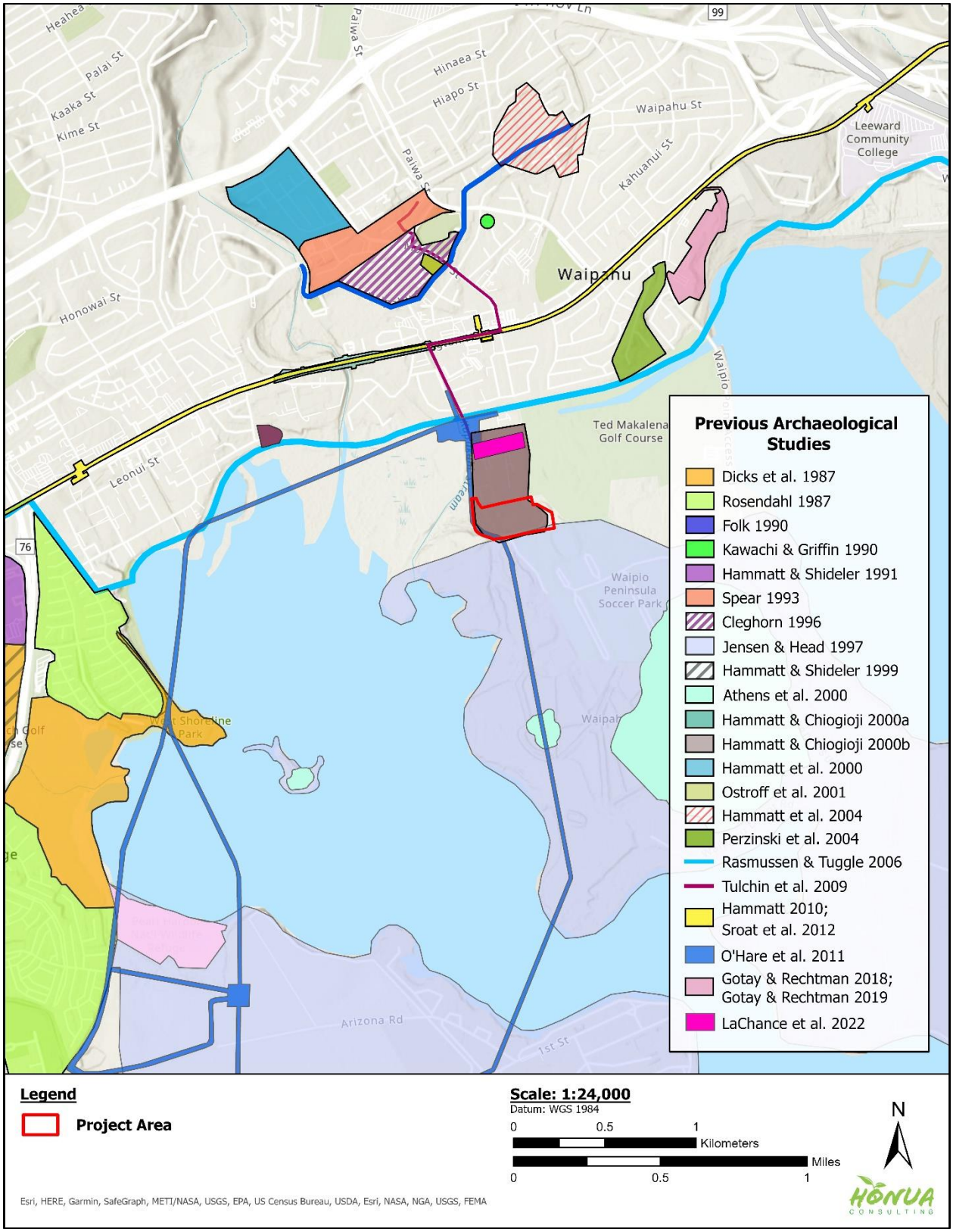


Figure 14.Topographic Map Showing Previous Archaeological Studies Within a 1.5 Mile Radius of the Project Area

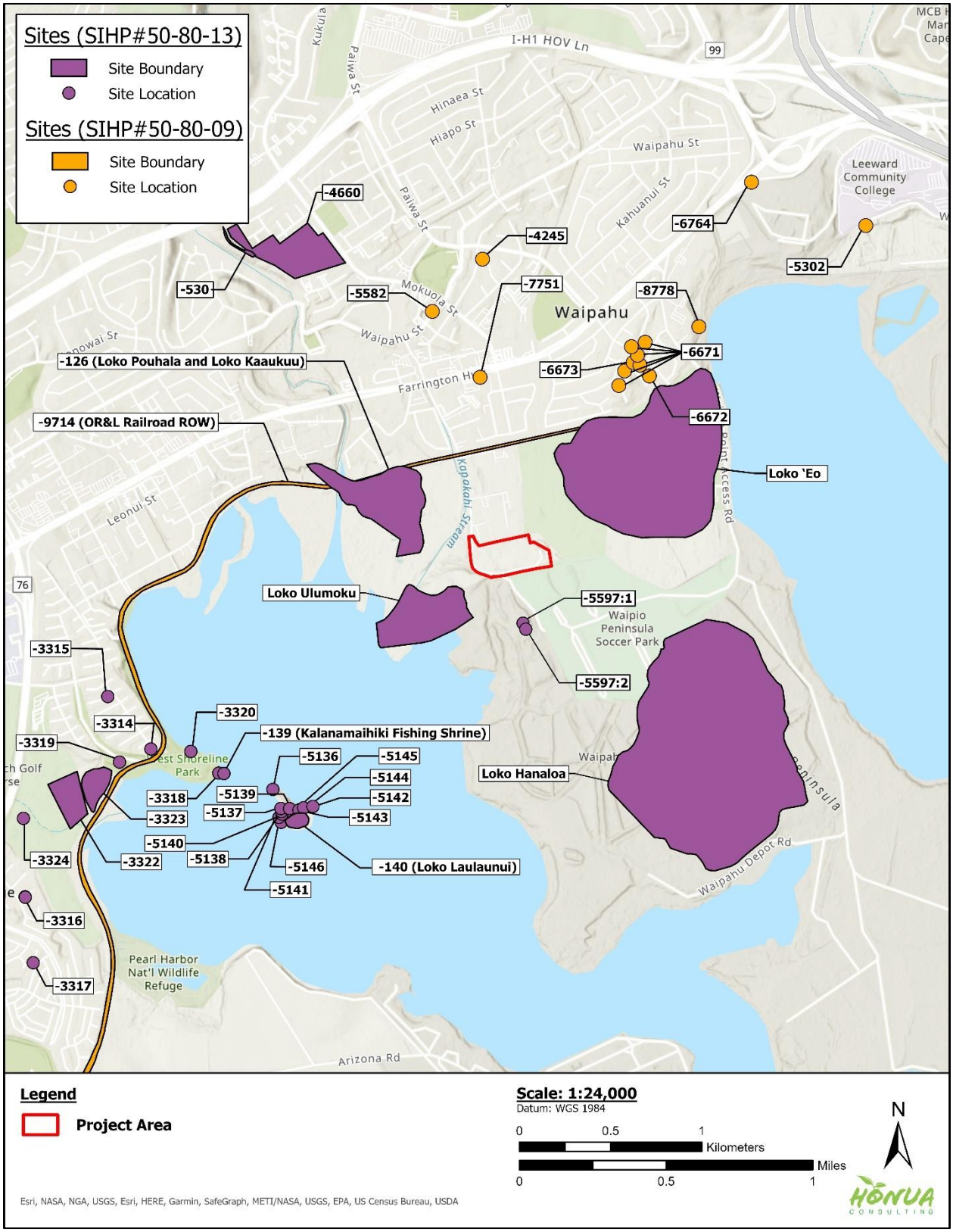


Figure 15. Portion of a 2013 Waipahu USGS Showing Historic Properties Within a 1.5 Mile Radius of the Project Area

Table 3. Table Listing Previous Archaeological Studies in the Vicinity of the Project Area

Author(s)	Type of Study	Location	Findings (SIHP #50-80)
McAllister 1933 (not shown on Figure 14 or Figure 15)	Island-Wide Survey	O‘ahu	4 sites in vicinity, Kalanamaihiki fishing shrine (Site 139), Laulaunui Fishpond (Site 140), Kaihuopalaai, Ewa (West Loch, Pearl Harbor) (Site 141) and the Ewa Plains (Site 146)
Dicks et al. 1987	Archaeological Reconnaissance Survey	West Loch Estates -Golf Course and Parks	Recorded a surface scatter of 19th century historic artifacts (SIHP #50-80-13-3318), a habitation deposit and possible cemetery recorded as SIHP #50-80-13-3319, two habitation deposits recorded as SIHP #50-80-13-3320 and SIHP #50-80-13-3321, a buried fishpond recorded as SIHP #50-80-13-3322, a historic fishpond recorded as SIHP #50-80-13-3323, and a buried pond field system recorded as SIHP #50-80-13-3324
Rosendahl 1987	Archaeological Reconnaissance Survey	Mililani Town Station	No sites recorded
Folk 1990	Archaeological Reconnaissance	Waipahu Street Widening Project (from Amokili Street to August Athens School)	No sites recorded
Kawachi and Griffin 1990	Inadvertent burial discovery	94-1049 Kahuailani, TMK: [1] 9-4-026: 078	Identified one early post-contact human burial (SIHP #50-80-09-4245)
Hammatt and Shideler 1991	Archaeological Inventory Survey (AIS)	St. Francis Medical Center West, TMK: [1] 9-1-017:056	No sites recorded
Spear 1993	Archaeological Reconnaissance	Waikele Industrial Subdivision, TMK: [1] 9-4-002: various	Identified remains of an abandoned plantation camp, no SIHP number assigned

Author(s)	Type of Study	Location	Findings (SIHP #50-80)
Cleghorn 1996	AIS	TMK: [1] 9-4-002: por. 004	Identified remains of Oahu Sugar Mill, no SIHP number assigned
Jensen and Head 1997	Archaeological Reconnaissance Survey	NAVMAG – West Loch	Recorded 281 historic properties, 11 of which are in the vicinity of the project area, they include a concrete slab, (SIHP # 13-5136); a concrete slab and concrete wall recorded as (SIHP # 13-5137); a concrete slab, (SIHP # 13-5138); a concrete slab and gun emplacement, (SIHP # 13-5139); a concrete slab, (SIHP # 13-5140); a concrete basement (SIHP # 13-5141); a metal structure ,(SIHP # 13-5142); a utility, (SIHP # 13-5143); a metal barge/landing, (SIHP # 13-5144); a wall, (SIHP # 13-5145), and a site complex consisting of concrete paving, a concrete slab, a concrete step, and 2 walls, (SIHP # 13-5146)
Hammatt and Shideler 1999	Archaeological Assessment	St. Francis Medical Center West, TMK: [1] 9-1-017:017 & 060	No sites recorded
Athens et al. 2000	Paleoenvironmental Coring	Fishponds of Pearl Harbor	Identified fishpond sediments for 8 of the 21 fishponds tested, dating and chronology of fishponds were inconclusive, provides recommendations for future studies
Hammatt and Chiogioji 2000a	Archaeological Assessment	2,600-foot-long portion of Farrington Highway (from Anini Place to Waipahu Depot Rd)	No sites recorded

Author(s)	Type of Study	Location	Findings (SIHP #50-80)
Hammatt and Chiogioji 2000b	Archaeological and Cultural Assessment	TMK: [1] 9-3-002:009 ***Within Current Project Area***	No sites recorded
Hammatt et al. 2000	AIS	40-acre parcel along Manager's Drive, TMK: [1] 9-4-002: 005	Two historic properties identified: pre-contact petroglyphs (SIHP #50-80-09-530), and remnants of Oahu Sugar Company plantation camp (SIHP # -4660)
Ostroff et al. 2001	Inadvertent burial discovery	Filipino Community Center, TMK: [1] 9-4-161:001	One pre-contact human burial (SIHP #50-80-09-5582)
Hammatt et al. 2004	Archaeological and Cultural Assessment	Waipahu Drainage Improvements, TMK: 9-4-09 and 9-4-59:72, 73, 74	No sites recorded
Perzinski et al. 2004	AIS	Queen Emma Foundation Parcel, TMK: [1] 9-4-038:083 & [1] 9-4-050:059	Three historic properties identified: historic remnants of the Brown Estate (SIHP # -6671), pre- and post-contact cultural layer (SIHP # -6672), and two associated pre-contact burials (SIHP # -6673)
O'Hare et al. 2006	Archaeological Inventory Survey	East Kapolei Project, TMK: [1] 9-1-010:002, 9-1-017:004, 059, 072; 9-1-018:001 & 004; 9-2-001:001	Documented and mapped previously recorded SIHP #s 12–4344 Features A-C (three pipes), 12-4345 (railroad berm), -12-4346 (northern pumping station), 12-4347 (central pumping station), -12-4348 (southern pumping station); Recorded four additional features, Features D through G, of SIHP # 12-4344
Rasmussen and Tuggle 2006	Archaeological Reconnaissance Survey	'Ewa Junction Drum Filling and Fuel Storage Area, various TMK	No sites recorded

Author(s)	Type of Study	Location	Findings (SIHP #50-80)
Tulchin et al. 2009	AIS	574 acres located between Kīpapa Gulch and the H-2 Freeway TMK: [1] 9-4-002:024, 9-4-005: por. 074, 9-4-006: por. 005, 9-4-007, 011, 013, 014, 015, 017, 020, 026, 160, & 9-4-096:149	Irrigation ditch and water control box (SIHP # 50-80-09-6959) found to the northeast of the research extent of this project (not shown in Figure 15)
Hammatt 2010	AIS	Construction Phase I for the Honolulu High Capacity Transit Corridor Project TMK: [1] 9-1, 9-4, 9-6, 9-7 (Various Plats and Parcels)	Subsurface loʻi (SIHP # 50-08-09-7751) recorded
O'Hare 2011	Literature Review and Field Inspection (LRFI)	Honouliuli/Waipahu/Pearl City Wastewater Facilities; TMKs: [1] 9-1, 9-4, 9-6, 9-7, 9-8, 9-9 (various plats and parcels)	No sites recorded
Sroat et al. 2012	AIS	Phase 2 and western portion of Phase 3 of HHCTCP, Waiawa to Hālawa Ahupuaʻa	Subsurface loʻi deposit (SIHP # 50-80-09-7150) recorded (not shown in Figure 15)
Gotyay and Rechtman 2018 and 2019	Cultural Impact Assessment, AIS	Waipahu High School, TMK: [1] 9-4-008:020 and 025 (por.)	HSPA Waipio Experiment Substation (SIHP # 50-80-09-8778)
LaChance et al. 2022- draft	LRFI	HPD Training Academy, TMK: [1] 9-3-002:009	Berm remnant (Honua 01) recorded

According to old Hawaiians, there never was a fishpond by this name. In another version, Ihuopalaai is the brother of a woman living in Laie. As the fish were scarce in Laie, this woman sent her husband to Ihuopalaai, who had the mullet follow her husband on his return trip which was made along the shore around Makapuu Point with the mullet following in the water. Makea tells me that Kaihuopalaai's sister was named Malaekahana. Another story tells of a man who lure the mullet around the island by tossing sweet potatoes into the sea.

Site 146. Ewa coral plains, throughout which are the remains of many sites. The great extent of old stone walls, particularly near the Puuloa Salt Works, belongs to the ranching period of about 75 years ago. It is probable that the holes and pits in the coral were formerly used by the 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. They afford shelter and protection, but I doubt if previous to the time of Cook there was ever a large population here.

Vancouver anchored off the entrance to the West Loch in 1793 and made the following observations:

> The part of the island opposite us was low, or rather only moderately elevated, forming a level country between the mountains that compose the east [Koolau] and west [Waianae] ends of the island. This tract of land was of some extent, but did not seem to be populous, nor to possess any degree of natural fertility; although we were told that, at a little distance from the sea the soil is rich, and all the necessaries of life are abundantly produced. …
>
> Mr. Whitbey observed, that the soil in the neighborhood of the harbor appeared of a loose sandy nature; the country low for some distance, and, from the number of houses within the harbour, it should seem to be very populous; but the very few inhabitants who made their appearance were an indication of the contrary.

The following observations of Mathison and Macrae probably pertained more generally to the region around Aiea and Waiau.

> The adjoining low country is overflowed both naturally and by artificial means, and is well stocked with tarrow-plantations, bananas etc. The land belongs to many different proprietors; and on every estate there is a fishpond surrounded by a stone wall, where the fish are strictly preserved for the use of their rightful owners, or tabooed, as the natives express it. One of particularly large dimensions belongs to the King.
>
> The neighborhood of the Pearl River is very extensive, rising backwards with a gentle slope towards the woods, but is without cultivation, except round the outskirts to about half a mile from the water. The country is divided into separate farms or allotments belonging to the chiefs, and enclosed with walls from four to six feet high, made of a mixture of mud and stone.

3.1.2 Dicks et al. 1987

In 1987, Paul H. Rosendahl PhD. Inc. (PHRI) conducted an archaeological reconnaissance survey for the golf course and parks of West Loch Estates (Dicks et al. 1987). The survey consisted of background research and pedestrian reconnaissance of the project area which documented seven archaeological sites. They include a surface scatter of 19th century historic artifacts recorded as SIHP #50-80-13-3318, a multi-component habitation deposit and possible cemetery recorded as SIHP #-3319, a multi component habitation deposit recorded as SIHP #-3320, a traditional Hawaiian habitation deposit with a human burial recorded as and SIHP #-3321, a buried fishpond recorded as SIHP #50-80-13-3322, a historic fishpond recorded as SIHP #50-80-13-3323, and a buried pond field system recorded as SIHP #50-80-13-3324. Subsurface testing included the excavation of 98 shovel tests, 176 auger tests, and 81 backhoe trenches throughout the project area. A total 181 artifacts were collected, mostly historic in age, and 21 samples were collected and submitted for radiocarbon dating. The results of the radiocarbon dating were interpreted to indicate use of SIHP #-3319 during the early historic period, use of the lower valley between the mid-1100s

and 1600 A.D., use of the upper valley between the 1200s and 1700 A.D. and inconclusive results for use of SIHP #s -3321 and -3323. Following the survey, data recovery excavations guided by a data recovery plan was recommended for SIHP #s -3318, -3320, -3322, and -3324. Data recovery with either preservation "as-is" or proper burial disinterment was recommended for SIHP #s -3319 and -3321 and data recovery and preservation with interpretative development was recommended for SIHP #-3323.

3.1.3 Rosendahl 1987

In 1987, Paul H. Rosendahl Ph.D., Inc. (PHRI) conducted an archaeological reconnaissance survey of a 2.75 acre parcel in Mililani Town, referred to as the Mililani Town Station (Rosendahl 1987). Modern disturbance due to recent construction activities was observed throughout the parcel. No historic properties were observed during the reconnaissance survey and no further archaeological work was recommended.

3.1.4 Kawachi and Griffin 1990

In 1990, SHPD responded to an inadvertent burial (SIHP # -4245) discovered during grading in preparation for construction of a house foundation, located at 94-1049 Kahuailani Street (Kawachi and Griffin 1990, referenced in Tulchin et al. 2009). The burial was in a supine position and was approximately 1 m below the surface. Artifacts in the proximity of the burial consisted of a pair of scissors, a mirror, and over one thousand colored glass beads. Due to the position of the burial and the surrounding artifacts, SHPD determined the burial was not of pre-contact origin, and decided on disinterment as the appropriate mitigation.

3.1.5 Folk 1990

In 1990, CSH conducted an archeological reconnaissance for the proposed Waipahu Street widening project. No surface historic sites were identified; however, it was determined there was a possibility of pre-contact and early post-contact cultural remains being present below the surface. Archaeological monitoring was recommended for any ground disturbance (Folk 1990).

3.1.6 Hammatt and Shideler 1991

In 1991, CSH conducted an archaeological inventory survey for a proposed expansion of Saint Francis Medical Center West on an approximately 24-acre parcel makai of Farrington Highway and west of Fort Weaver Road (Hammatt and Shideler 1991). Based on the survey and research, it was determined that the entire project area was located on a bluff northeast of the Honouliuli Stream flood plain, and that it had been extensively disturbed. No surface cultural remains were observed, and it was determined that subsurface remains were unlikely (Hammatt and Shideler 1991).

3.1.7 Spear 1993

In 1993, Scientific Consultant Services (SCS) conducted a reconnaissance survey for the proposed Oahu Sugar Mill rezoning and development project. The remains of an abandoned plantation camp associated with Oahu Sugar Company was observed in the southwestern portion of the project area and included concrete and stone house foundations and historic wall segments. No further archaeological work was recommended due to the absence of significant archeological sites within the project area (Spear 1993).

3.1.8 Cleghorn 1996

In 1996, Pacific Legacy conducted an archaeological inventory survey of 23-acres surrounding and including the Oahu Sugar Mill (Cleghorn 1996). The entire project area contained remnants of Oahu Sugar Company infrastructure, with 60 percent of it associated with the mill, and 40 percent of it associated with Skill Village, which was the residences of the company supervisors. No SIHP number was assigned to the infrastructure and it was considered outside the scope of work of the project (Cleghorn 1996).

3.1.9 Jensen and Head 1997

In 1994 and 1995, the Department of the Navy conducted an archaeological reconnaissance survey for Naval Magazine Lualualei, NAVMAG-West Loch which consisted of unimproved and out-leased/cultivated lands at West Loch, out-leased/cultivated lands on the Waipi‘o peninsula, and the entirety of Laulaunui Island (Jensen and Head 1997). The study consisted of a 25 percent pedestrian survey that documented 281 archaeological sites, 111 of which were interpreted as traditional Hawaiian. The remaining 170 sites were historic in age and primarily represented military construction with a few historic-era ranching and agricultural features. A total of 11 sites were documented in the vicinity of the project area, all of which were located on Laulaunui Island. All of the sites were historic in age and associated with the United States military. The sites include a concrete slab recorded as SIHP #50-80-13-5136, a concrete slab and concrete wall recorded as SIHP #50-80-13-5137, a concrete slab recorded as SIHP #50-80-13-5138, a concrete slab and gun emplacement recorded as SIHP #50-80-13-5139, a concrete slab recorded as SIHP #50-80-13-5140, a concrete basement recorded as SIHP #50-80-13-5141, a metal structure recorded as SIHP #50-80-13-5142, a utility recorded as SIHP #50-80-13-5143, a metal barge/landing recorded as SIHP #50-80-13-5144, a wall recorded as SIHP #50-80-13-5145, and a site complex consisting of concrete paving, a concrete slab, a concrete step, and 2 walls recorded as SIHP #50-80-13-5146. All of the sites were assessed as not significant, and no further work was recommended.

3.1.10 Hammatt and Shideler 1999

In 1999, CSH conducted an archaeological assessment for the second proposed expansion of St. Francis Medical Center West, located makai of Farrington Highway and west of Fort Weaver Road (Hammatt and Shideler 1999). A limited field inspection of the study area identified no historic sites. However, a subsurface cultural layer (SIHP #50-80-13-3321) was discussed as existing to the east of their study area, outside the 1.5 mile radius researched for this project. It was recommended that an archaeological inventory survey be conducted for the portion of their study area closest to the documented site prior to any project ground disturbance (Hammatt and Shideler 1999).

3.1.11 Athens et al. 2000

In 1995, International Archaeological Research Institute Inc. (IARII) conducted sediment coring at 21 former fishponds known to exist around Pearl Harbor (Athens et al. 2000). The study identified fishpond sediments for 8 of the former fishponds and attempted to build a dating chronology for each. A single fishpond, Laulaunui Fishpond (SIHP #-140) was the only fishpond tested in the vicinity of the project and two sediment cores were extracted for analysis. Overall, the test results for Laulaunui fishpond and the other ponds tested were inconclusive. This was due to the mixed environmental origin of the organic material in the sediment samples and the large

standard errors encountered during the radiocarbon dating determinations and Bayesian calibration. Therefore, no reliable chronology could be made for the ponds but recommendations were made to guide future paleoenvironmental studies of fishponds.

3.1.12 Hammatt et al. 2000

In 2000, CSH conducted an archaeological inventory survey of a 40-acre parcel along the western edge of Manager's Drive (Hammatt et al. 2000). Two historic properties were identified, consisting of a pre-contact petroglyph field (SIHP # -530) and the remnants of Higashi Camp (SIHP # -4660), an Oahu Sugar Company plantation camp which included concrete building foundations, stone and mortar walls, and road remnants. It was recommended that the petroglyphs be preserved, while no further work was recommended for the camp remnants (Hammatt et al. 2000).

3.1.13 Hammatt and Chiogioji 2000a

In 2000, CSH conducted an archaeological assessment of an approximately 2,600 ft long portion of Farrington Highway, for proposed improvements between Anini Place and Waipahu Deport Road in Waikele. The project area had been utilized as loʻi (irrigated agricultural plots) until the mid-1800's, when they were replaced by rice fields. During the 1900's, a sugar mill and plantation was developed. OR&L tracks ran through the study area, and several other historic buildings and constructions reside in the study area. However, none of them are listed on the State or National Register of Historic Places. It was found that due to decades of extensive modern development in the area, any pre-contact surface or subsurface archaeology would have been destroyed and removed (Hammatt and Chiogioji 2000).

3.1.14 Hammatt and Chiogioji 2000b

In 2000, CSH conducted an archaeological and cultural assessment of City and County of Honolulu parcel on Waipiʻo Peninsula (Hammatt and Chiogioji 2000b). The study recorded the presence of an existing land fill and modern building activities. No historic properties were recorded.

3.1.15 Ostroff et al. 2001

In 2001, Archaeological Consultants of the Pacific, Inc., conducted archaeological documentation and disinterment of a human burial (SIHP # -5882) inadvertently discovered during the installation of a storm drain at the Filipino Cultural Center (Ostroff et al. 2001). The burial was observed approximately 1 m below the surface. Although the burial was disturbed by construction activities, in situ portions of the burial that were not impacted, indicated a flexed position. The remains were determined to be pre-contact and ethnically Hawaiian due to its flexed position, lack of burial goods, and its place within a stratigraphic layer not associated with historic land use (Ostroff et al. 2001).

3.1.16 Hammatt et al. 2004

In 2004, CSH conducted an archaeological and cultural assessment for the Waipahu Street Drainage Improvements Project. The project area was determined to be vacant of any significant surface sites due to extensive modern developments. The study found that any traditional

subsurface sites would have likely been destroyed in agricultural and residential development of the area. Due to heavy modern development, no sites were identified.

3.1.17 Perzinksi et al. 2004

In 2004, CSH conducted an archaeological inventory survey of a 13-acre at TMK [1] 9-4-038: 083 & [1] 9-4-050:59. Three historic sites were identified, including the remnants of the Brown estate which consisted of concrete and cinder block foundations (SIHP # -6671), a subsurface cultural layer associated with pre- and post-contact land use (SIHP # -6672), and two pre-contact flexed human burials (SIHP # -6673) within a cultural layer associated with both pre- and post-contact history.

3.1.18 O'Hare et al. 2006

In 2006, CSH conducted an archaeological inventory survey of approximately 1,600 acres for the East Kapolei Project, which was previously known as the Hoʻopili Project (O'Hare et al. 2006). The survey consisted of pedestrian survey and the excavation of 19 backhoe trenches focused in four areas of historic interest, the Honouliuli Taro Lands, the Kapalani Catholic Church, the Pipeline Village, and the Drivers/Stable Village. No new sites were identified during the surface and subsurface survey of the area; this was attributed to cattle ranching and commercial sugar cultivation. The study does provide additional documentation and mapping for five sites previously recorded during an archaeological inventory survey for the West Loch Bluffs project (Hammatt and Shideler 1990). The sites included plantation infrastructure consisting of three pipes recorded as Features A through C of SIHP #-4344, a railroad berm recorded as SIHP # -4345, a northern pumping station recorded as SIHP # -4346, a central pumping station recorded as SIHP # -4347, and a southern pumping station recorded as SIHP # -4348. The only newly documented features recorded during the project consisted of four features documented as Features D through G of SIHP # -4344. The feature groupings included two linear walls along the east bank of Honouliuli Stream (D and E), a stone-faced berm perpendicular to the stream (F), and a concrete ditch and masonry catchment basement on the west bank of Honouliuli Gulch (G). Following the survey, it was recommended that on-call/on-site monitoring be conducted within the four areas of historic interest present within the project area.

3.1.19 Rasmussen and Tomomari-Tuggle 2006

In 2004, archaeological monitoring was conducted along the Waiau Fuel Pipeline corridor from the HECO Barbers Point Tank Farm to the Waiai Generating Station (Rasmussen and Tomonari-Tuggle 2006). The project corridor ran along the vicinity of previously identified pre-contact burials (SIHP # -3761 and SIHP # -5302) as well as Loko Kuhialoko (SIHP # -0119) and Loko Moʻo (SIHP # -0120) fishponds, all outside of the 1.5 mile radius researched for the current project. No new historic sites were discovered.

3.1.20 Tulchin et al. 2009

In 2009, CSH conducted an archaeological inventory survey of a trunk sewer alignment for the Koa Ridge Makai Development project. The project area is located between Kīpapa Gulch and the H-2 freeway and is approximately 574 acres in size. One historic property (SIHP # -6959) consisting of an irrigation ditch and a water control box was identified at the northernmost area of the project area, approximately 6 meters southwest of Kamehameha Highway, along the upslope

edge of a road cut. The site is outside the 1.5 mile radius of research for the current project and is not shown on Figure 15. The site is approximately 13 m by 5 m, however it extends indeterminably beyond the project area boundary. The site was documented and no further work for it was recommended, however, archaeological monitoring was recommended for the remainder of the study area.

3.1.21 Hammatt 2010

In 2009 and 2010, CSH conducted an archaeological inventory survey for the Honolulu High Capacity Transit Corridor Project, Construction Phase I. No surface cultural resources were observed during the pedestrian survey. Survey and background research helped in determining several areas to be selected for subsurface testing. A Ground Penetrating Radar Survey (GPR) was conducted to determine the viability of GPR in determining stratigraphy and locating cultural deposits within the project area, however the results were inconclusive. A total of 92 test excavations were distributed throughout the project area in areas planned for ground disturbance. During the test excavations, 4 Stratigraphic Zones were identified, one of which (Stratigraphic Zone 3) was identified as an agricultural deposit and was the only cultural resource recorded during the survey. The subsurface cultural deposit was identified as loʻi sediment and designated as SIHP # -7751. The site was located at the southern portion of the proposed Waipahu Transit Station, adjacent and south of Farrington Highway. According to radiocarbon testing, the sediment dated as far back as 1,000 years.

3.1.22 O'Hare et al. 2011

In 2010, CSH conducted an archaeological literature review and field inspection for the Honouliuli/Waipahu/Pearl City wastewater facilities project which extended from Hālawa to the wastewater pump station in Honouliuli (O'Hare et al.2011). The lack of historic properties identified during the field inspection was attributed to heavy 20th century use of the area. The study indicated that the vicinity of the Waipahu wastewater pump station and much of the project area was close to the water table. However, due to the proximity of Kapakahi Stream and the coastline, initial on-site monitoring was recommended for the project.

3.1.23 Sroat et al. 2012

In 2012, CSH completed an AIS of a 6.5-km (4.1-mile) section of the proposed Honolulu High Capacity Transit Corridor Project (HTTCTCP) in Waiawa, Mānana, Waimano, Waiau, Waimalu, Kalauao, ʻAiea, and Hālawa Ahupuaʻa. Methods of fieldwork included Backhoe-assisted subsurface testing, ground penetrating radar, and a pedestrian survey. One historic property, SIHP # 50-80-09-7150, a subsurface cultural deposit (loʻi sediments) was identified during the AIS.

3.1.24 Gotay and Rechtman 2018 and 2019

In 2018, ASM Affiliates conducted a CIA and AIS in preparation for a development project at Waipahu High School, well east of the current project area (Gotay and Rechtman 2018 and 2019). The project proposed to construct a U-shaped classroom building around pre-existing basketball courts, improve an area adjacent to the basketball courts, and construct two parking areas within the southern end of the study area. Archival research and oral-historical interviews conducted during this CIA revealed no traditional significance to the study area, and no interviewees expressed any cultural concerns with the project. It was thus determined the campus improvement

project would have no cultural impacts (Gotay and Rechtman 2018). The only historic site identified was comprised of remnants of the HSPA Waipio Experimental Agricultural Substation (SIHP # -8778). Site –8778 was documented as being comprised of four features (Features A-D) and multiple sub-features including a series of dry-stacked stone retaining walls (A1, A2, B1, B2, B3, and B4), concrete reinforced stone masonry steps (A3), a combination dry-stacked rock and concrete block retaining wall (C1), a concrete block wall with associated concrete pads and steps (C2), and a large concrete box/vault (D) (Gotay and Rechtman 2019). The site was determined to be associated with the early to middle twentieth century activities of the former HSPA Experiment Station in Waipio. Sufficient research and field work has mitigated any adverse effects to the site, and no further archaeological work was recommended.

3.1.25 LaChance et al. 2022

In 2022, Honua Consulting conducted an LRFI for the HPD Training Academy New Parking and Master Plan Improvements Project (LaChance et al. 2022). The study included background research and a pedestrian survey of traversable portions of the property. A constructed berm remnant (Honua 01) was observed during the survey which originally supported an elevated dirt roadway running roughly parallel to the western boundary of the project area, as shown on historic maps and photographs. The berm was documented with measurements and photographs. No evidence of a former paved road surface was observable on the surface. The constructed berm remnant was found to retain integrity of location, however, it is found to lack significance and is not considered a historic property. No other potentially significant features or artifacts were observed during the survey. Archaeological monitoring was recommended.

Archaeological Field Inspection

Fieldwork for this project was conducted on November 21, 2022, by Nathan DiVito, B.A. under the general supervision of Rosanna Thurman, M.A. (principal investigator), who has a Master's Degree in Applied Archaeology and over 15 years of experience in archaeological field inventories, historic property assessments, and site evaluations in Hawai‘i. The investigation required approximately 8 hours to complete and was performed under the archaeological permit number 22-26, issued to Honua Consulting by the SHPD/DLNR in accordance with HAR Chapter 13-282.

Methodology

The archaeological field inspection consisted of a 100% pedestrian survey of the project area. It included a visual inspection for any constructed surface architecture and observation of the ground surface and soil exposures for artifacts and/or exposed cultural deposits. The pedestrian survey of the project area consisted of the traversal of numerous northwest-southeast trending transects across the property, performed by four individuals spaced at approximately 5 meter intervals (Figure 16).

Digital photographs were taken throughout the project to record the vegetation, topography, and condition of the project area. An associated photo log was maintained, which recorded the subject of the photograph, the direction the camera was pointing, and other information as appropriate. Trimble® Terraflex™ software with an external R2 unit was used to record transects and other points of interest on the site. The R2 external GPS unit maintained an accuracy ranging between 1-3 m (3-10 ft.) and all recorded GIS data was post-processed for sub-meter accuracy.

Survey Results

The project area is located at the end of Waipahu Depot Road on the Waipi‘o Peninsula. The facility on the property was formerly known as the Waipahu Incinerator Facility (WIF) (Figure 17). A plaque at the facility indicates it was built by the City and County of Honolulu by the Fasi administration in 1970 (Figure 18).The facility burned trash up until 1990 when the H-Power Plant was constructed in Kapolei to burn the islands trash and convert it into energy. Since that time the facility has operated as the City and County of Honolulu Refuse Maintenance Division. The property is bound on the north by the Honolulu Police Department Training Facility, on the east by the Ted Makalena Golf Course, on the west by undeveloped lands, and on the south by fenced land containing the ash pile from the incinerator facility, undeveloped land with roads, and a portion of the grounds of the Waipi‘o Soccer Complex.

The layout of the facility consists of a paved loop roadway with the incinerator facility in the middle. Garbage trucks would enter from Waipahu Depot Road and follow the loop around to the south and east (Figure 19). The roadway becomes raised with concreted supports on the northeast side and splits at the top with a weigh station on each side (Figure 20). After the trucks were weighed they continued past the weigh station office and into a covered parking area at the incinerator building where they would back up to dump the trash (Figure 21). The garbage was then dumped into a large two-story tall concrete trough. Two rail cranes are present on each side that would have picked up the trash and dropped it into the incinerator chamber on the south side of the building (Figure 22).

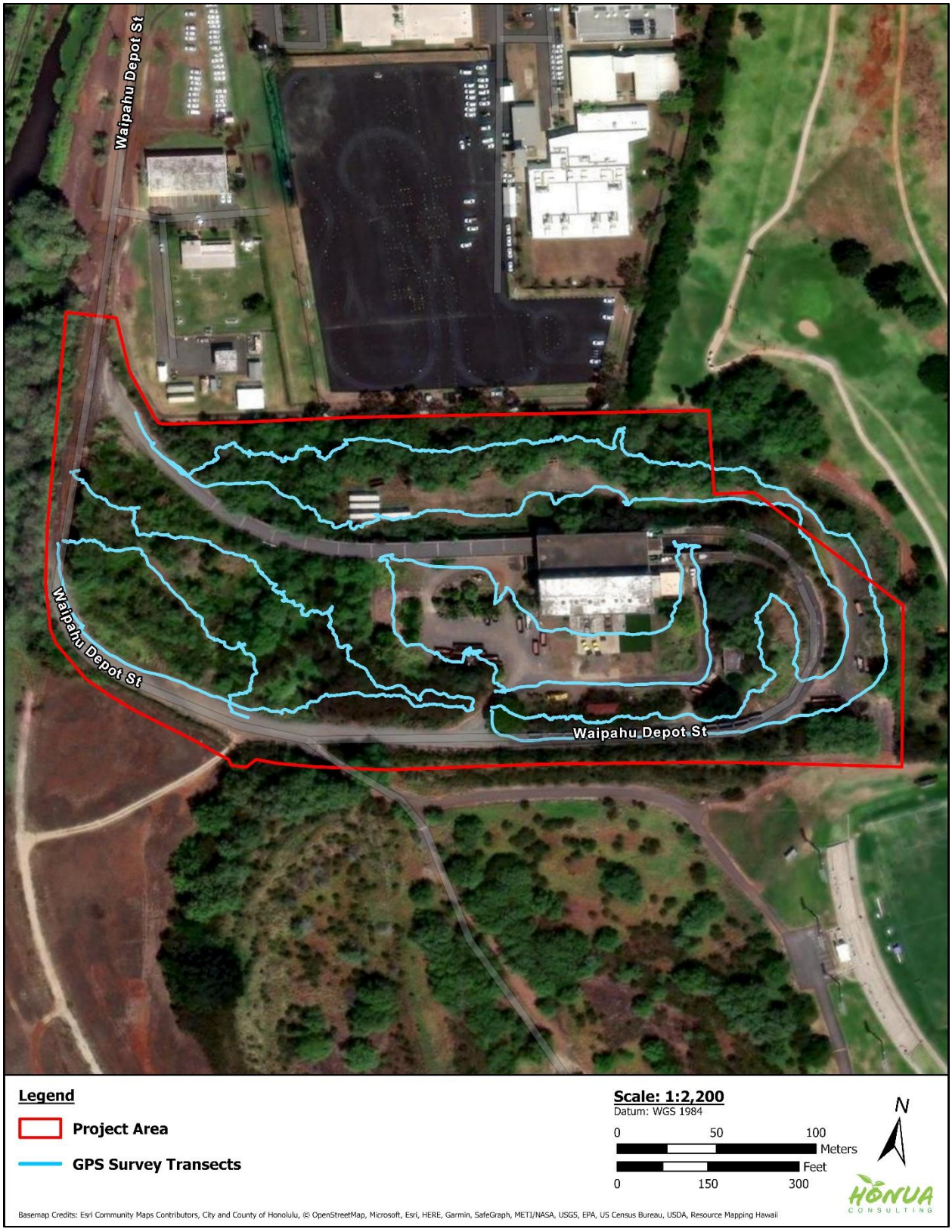


Figure 16. Aerial Photo Showing Pedestrian Survey GPS Tracks



Figure 17. Overview photo of the former Waipahu Incinerator facility, looking east

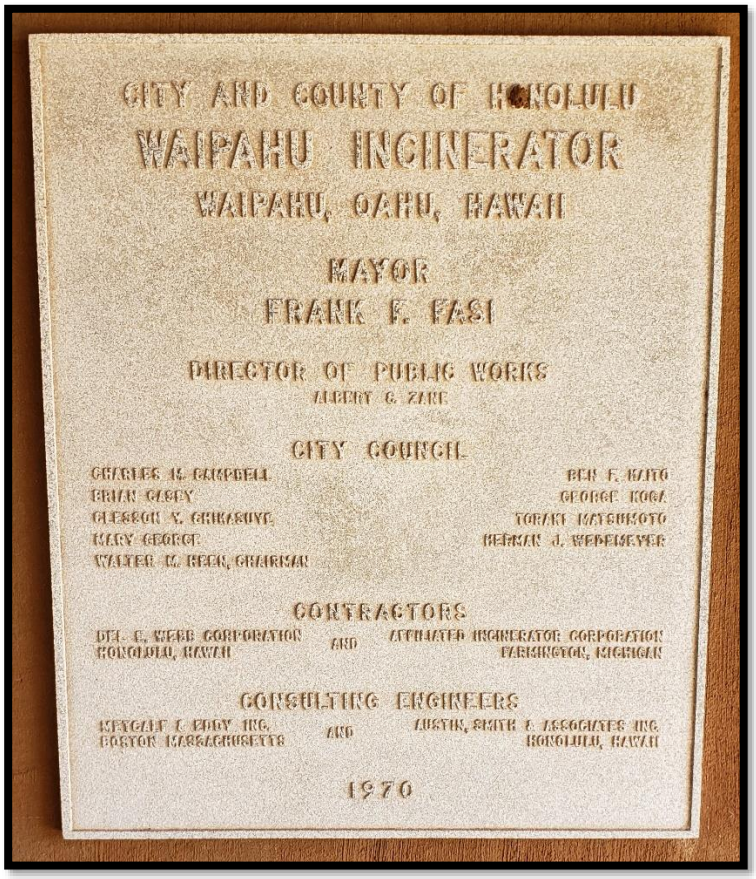


Figure 18. Plaque commerating the construction of the Waipahu Incinererator in 1970



Figure 19. Overview photo of the paved loop road from the entrance to the property (on left) at the end of Waipahu Depot Road (on right), looking south



Figure 20. Overview of the split in the paved loop road in the northeastern portion of the facility for two weigh stations, looking northwest



Figure 21. Overview photo of the covered interior of the incinerator facility showing a garbage trough and rail cranes in the back left of the frame and the former weigh station office in the back right of the frame, looking southeast



Figure 22. Overview photo of the former incineration chamber, looking north

Following incineration, the ash was scooped up with a loader and driven to a lot to the southwest of the property and stockpiled. The parking lot for the facility and a garden are located to the west of the incinerator building (Figure 23). Several fire suppression structures were also present in the vicinity of the incineration chamber. They included a concrete pad with metal infrastructure for water pumps currently heavily overgrown with hale koa (*Leucaena leucocephala*) to the south of the incinerator and a pump station building with an above ground water storage tank to the southeast (Figure 24 and Figure 25). Lastly, on the east side of the main building are offices related to the facility (Figure 26).

The entire fenced area around the building is currently being used by the refuse maintenance division and was graded with roads and occupied buildings. Due to this, nothing of archaeological note was observed in this portion of the project area.

A graded area with an unpaved road is present running outside the loop road on the east and half of the north side of the property. This area is being used by the refuse division as a storage area and several shipping containers were present (Figure 27). A gravel pad with two shipping containers was present on the south side. The boundary of this area with the police training facility in the north and the Ted Makalena Golf Course in the east had a thick growth of koa haole and keawe (*Prosopis pallida*). Several push piles of basalt rocks from clearing the parcel were observed in the wooded area along the northern boundary (Figure 28).

The western half of the property inside the paved loop road was undeveloped and heavily overgrown with secondary vegetation (Figure 29 andFigure 30). The vegetation indicates it was previously cleared and graded. A water valve was present along the road in the western-most portion of this area. Patches were visible in the roadway showing an associated waterline leading to it and another line leading into the property, possibly for electricity. No surface architecture or artifacts were recorded in this area.

While searching under the elevated roadway on the west side, a concrete jacket with 1970s-era artwork etched into the concrete was encountered. The concrete jacket appears to be the same as a concrete jacket documented during a recent survey for additions to the police training facility to the north (LaChance et al. 2022). The artwork includes a date and name inscription reading “July 1975 PICO / VERNON”, an abstract side portrait, the name “COLE”, a rectangular inscription with flowers in the corners reading “Debbie” in cursive script, a side view of a menehune with a small umbrella like inscription above, and a diamond-shaped inscription divided into squares (Figure 31). The artwork was photo documented but was not documented as a historic property as it did not fulfill the age criteria (50 yrs.) nor was it found to retain integrity or significance. The remains of a homeless encampment was also present in another area underneath the elevated roadway but nothing of archaeological importance was encountered.

The lack of artifacts and historic properties documented during the survey can be attributed to clearing and grading of the area for construction of the WIF in the late 1960s, evidence of which is present in the form of rock push piles on the periphery of the north side of the property. It is also possible the project area was modified during military use of Waipi‘o Peninsula during and immediately following World War II.



Figure 23. Overview of gravel parking area located to the west of the main incinerator building, looking east



Figure 24. Overview photo of a concrete pad and metal infrastructure for water tanks located to the south of the incineration chamber, looking south



Figure 25. Overview photo of a pump station building and water storage tank to the southwest of the incineration chamber, looking northeast



Figure 26. Overview photo of the offices on the east side of the incinerator building, looking northwest, note the raised roadway and weighing stations in the background



Figure 27. Overview photo of a graded area with shipping containers on the north side of the proeprty, looking west



Figure 28. Photo of a basalt boulder and cobble push pile along the northern periphery of the property, looking east



Figure 29. Overview photo of the typical vegetation observed in the western undeveloped portion of the property, looking north



Figure 30. Overview photo of the typical vegetation observed in the western undeveloped portion of the property, looking northeast



Figure 31. Overview photo of 1970s-era inscriptions on a concrete jacket crossing through the project area: *top left*: an abstract side portrait, the name "COLE", and a rectangular inscription with flowers in the corners reading "Debbie" in cursive script; *bottom left*: date and name inscription reading "July 1975 PICO / VERNON"; *top right*: a side view of a menehune with a small umbrella like inscription above; *bottom right*: a diamond shaped inscription divided into squares

Summary and Recommendations

This LRFI was conducted for the Proposed Waipahu Convenience Center and Refuse Facility project located in Waikele Ahupua‘a, ‘Ewa District on the island of O‘ahu, TMK: [1] 9-3-002:009. The proposed project area encompasses approximately 15.71 acres. The project area is owned by the City and County of Honolulu.

The ENV plans to relocate the Waipahu Convenience Center from its existing location at 94-9 Waipahu Depot Street to the former Waipahu Incinerator Facility property located within the current project area. The ENV also plans to develop a Refuse Facility east of the new WCC within the project area. Project plans are still being developed and no estimation of potential ground disturbance is currently known.

The purpose of the literature review and field inspection is to determine the land-use history and identify any potential artifacts or historic properties present on the ground surface of the property. This study is not an AIS, however, this report was written using standards outlined within HRS 6E-8 and HAR 13-276 for AIS studies and is intended to assist with historic preservation efforts for the proposed project.

Background research indicates that Waikele Ahupua‘a is rich in cultural traditions. The project area is located just east of the former Kapakahi Stream and was fertile land containing LCA and LG which described springs, loko, kula, and a house lot. Historic maps from the 1950s show the parcel was formerly located within the Naval Reservation Pearl Harbor, with no formal structures other than an elevated roadway (constructed berm) extending through the center of the project area from the north to the southwest. Historic aerial photographs indicate the project area was located within a cultivated field area with many agricultural plots. The Waipahu Incinerator Facility was constructed within the project area by 1970 to burn the islands trash. A review of previous archaeological studies found that a single previous study was conducted within the project area (Hammatt and Chiogioji 2000b). The study was an archaeological and cultural assessment of a parcel located on Waipi‘o Peninsula owned by the City and County of Honolulu. The study recorded the presence of an existing land fill and modern building activities. No historic properties were recorded. No other archaeological studies had been conducted and no sites were previously recorded within the project area.

The archaeological field inspection conducted for the current project included a 100% pedestrian survey. Buildings and infrastructure associated with the late-twentieth century Waipahu Incinerator Facility (WIF) were observed and photographed. Additionally, several inscriptions made in a concrete jacket were photographed and described, but were not determined to be a historic property. No other archaeological materials were observed.

The WIF building, completed in 1970, will need to be assessed by the Architectural Division of the SHPD. It is beyond the scope of the current study to assess the facility for integrity or significance. Due to the presence of the historic incinerator facility it is likely SHPD will determine the project effect as “effect, with agreed upon mitigation commitments”.

As proposed ground disturbance is currently unknown and traditional use of the property is documented through LCA located within the project area, it is currently recommended that the project proceed under an archaeological monitoring program, in accordance with HAR 13-279 (Rules for Archaeological Monitoring Studies and Reports).

References Cited

Awana, T.Y.
1889 Map Showing the Makai Part of the Ahupuaa of Waikele, Ewa, Oahu, Hawaii Territory Survey map, Registered Map 1498. Hawai‘i Land Survey Division, accessed at < http://ags.hawaii.gov/survey/map-search/ >.

Athens, J. Stephen, Dean W. Blinn, Caitlin E. Buck, J. Andres Christen, Robert H. Cowie, Tom Dye, Gail M. Murakami, and Jerome V. Ward
2000 *Ancient Hawaiian Fishponds of Pearl Harbor: Archaeological Studies on U.S. Navy Lands, Hawai‘i*. International Archaeological Research Institute Inc., Honolulu, HI.

Beckwith, Martha Warren
1970 *Hawaiian Mythology*. University of Hawaii Press, Honolulu, Hawai‘i.

Bingham, Hiram
1969 *A Residence of Twenty-One Years in the Sandwich Islands*. Praeger Publishers, New York.

City and County of Honolulu
2023 City and County of Honolulu, Department of Budget and Fiscal Services, Real Property Assessment Division. Accessed at < https://qpublic.schneidercorp.com/Application.aspx?App=HonoluluCountyHI&PageType=Search >.

Cleghorn, Paul L.
1996 *Archaeological Inventory Survey at Waipahu*, Waikele, O‘ahu (TMK: 9-4-2: Por. 4). Pacific Legacy, Inc., Kailua, Hawai‘i.

Dicks, A. Merill, Alan E. Haun, and Paul H. Rosendahl
1987 *Archaeological Reconnaissance Survey for Environmental Impact Statement West Loch Estates – Golf Course and Parks, Land of Honouliuli, Ewa District, Island of Oahu*. Paul H. Rosendahl PhD. Inc., Hilo, Hawai‘i.

Emerson, Joseph F.
1892 *The Lesser Hawaiian Gods*. Bishop Museum Press, Honolulu, Hawai‘i.

Esri
2023 Various maps created using ArcGIS Pro® software, www.esri.com.

Folk, William H. and Hallett H. Hammatt
1990 *Archaeological Reconnaissance for the Proposed Waipahu Street Widening Project*, Waipahu, Waikele, O‘ahu. Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

Foote, Donald E., E. L. Hill, S. Nakamura and F. Stephen
1972 *Soil Survey of the Islands of Kaua‘i, O‘ahu, Maui, Molokai and Lanai, State of Hawaii*. U.S. Department of Agriculture, U.S. Government Printing Office, Washington, D.C.

Fornander, Abraham
1916-1917 *Fornander Collection of Hawaiian Antiquities and Folk-Lore, Memoirs of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History, Volume IV*. Bishop Museum Press, Honolulu, Hawai‘i.

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte

2013 Rainfall Atlas of Hawai‘i, Interactive Map. Geography Department, University of Hawai‘i-Mānoa. Accessed at <http://rainfall.geography.hawaii.edu/interactivemap.html>.

Gotay, Teresa and Robert B. Rechtman

2018 *A Cultural Impact Assessment for Campus Improvements at Waipahu High School*, Waipi‘o, Ahupua‘a, ‘Ewa District, Island of O‘ahu. ASM Affiliates, Honolulu, Hawai‘i.

2019 *An Archaeological Inventory Survey for Campus Improvements at Waipahu High School*, Waipi‘o, Ahupua‘a, ‘Ewa District, Island of O‘ahu. ASM Affiliates, Honolulu, Hawai‘i.

Hammatt, Hallett H.

2010 *Archaeological Inventory Survey of Construction Phase I for the Honolulu High Capacity Transit Corridor Project*, Honouliuli, Hō‘ae‘ae, Waikele, Waipi‘o, Waiawa, and Manana Ahupua‘a, ‘Ewa District, Island of O‘ahu {TMK: [1] 9-1, 9-4, 9-6, 9-7 (Various Plats and Parcels). Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Hammatt, Hallett H. , McDermott, Matthew and Rodney Chiogioji

2000 *Archaeological Inventory Survey of an Approximately 40-Acre Parcel Along Manager’s Drive*, Waipahu Ahupua‘a of Waikele, ‘Ewa District, Island of O‘ahu (TMK 9-4-02:05), Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

Hammatt, Hallett H., and Rodney Chiogioji

2000a *Archaeological Assessment of an Approximately 2,600-ft Portion of Farrington Highway Project between Anini Place and Waipahu Depot Road*, Waikele Ahupua‘a, ‘Ewa District, Island of O‘ahu, (TMK 9-4-11). Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

2000b *Archaeological and Cultural Assessment of a City and County of Honolulu Owned Parcel on Waipi‘o Peninsula in Waikele, O‘ahu (TMK 9-3-02:por. 9).* Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

Hammatt, Hallett H., Sallee Freeman and David W. Shideler

2004 *Archaeological and Cultural Assessment in Support of the Waipahu Drainage Improvements Project,* Waipahu, Waipi‘o Ahupua‘a, ‘Ewa District, O‘ahu (TMK 9-4-09 and 9-4-59:72, 73, 74), Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Hammatt, Hallett H., and David W. Shideler

1991 *Archaeological Inventory Survey for a Proposed Expansion of Saint Francis Medical Center West (TMK 9-1-17: por 56), Honouliuli, ‘Ewa, O‘ahu*. Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

1999 *Archaeological Assessment for a Proposed Expansion of Saint Francis Medical Center West (TMK 9-1-17: por 56), Honouliuli, ‘Ewa, O‘ahu*. Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

Handy, E.S. Craighill

1940 *The Hawaiian Planter*. The Museum, Honolulu, Hawai‘i.

Hawai‘i TMK Service

Tax Map Key [1] 9-3-002. On file at Hawai‘i TMK Service, 222 Vineyard Street, Suite 401, Honolulu, Hawai‘i.

He Moolelo Kaao Hawaii no Keliikau o Kau

1902 He Moolelo Kaao Hawaii no Keliikau o Kau. In *Home Rula Repubalika,* January 6, 1902 pp. 7-8 and March 15, 1902 pp. 7.

Hinnershitz, Stephanie

2021 The Key to the Pacific: The Construction of the Pearl Harbor Naval Base. Accessed at <https://www.nationalww2museum.org/war/articles/construction-pearl-harbor-naval-base>.

Hoakalei Cultural Foundation (HCF)

2014 Map of the Ewa Plantation Fields. Accessed at < http://www.hoakaleifoundation.org/maps/map-ewa-plantation-fields-1939 >.

Honouliuli Boundary Commission

1873 Proceedings of the Boundary Commission. Accessible at Hoakalei Cultural Foundation website < http://www.hoakaleifoundation.org/documents/honouliuli-proceedings-boundary-commission>.

ʻĪʻī, John Papa

1959 *Fragments of Hawaiian History*. Pukui translation. Bernice P. Bishop Museum Press, Honolulu, Hawaiʻi.

Jensen, Peter M. and James Head

1997 *Archaeological Reconnaissance Survey Naval Magazine Lualualei NAVMAG-West Loch Lands of Puʻuloa, Honouliuli, Waikele, and Waipiʻo District of ʻEwa, Island of Oʻahu*. Paul H. Rosendahl PhD. Inc., Hilo, HI.

Kahiolo, S. W.

1861 He Moolelo no Kamapuaa. In *Ka Hae Hawaii*, July 10, August 7, August 14, August 21-28, 1861. Accessible at <www.ulukau.org>.

Ka Loea Kalaiaina

1899-1900 Na Wahi Pana o Ewa i Hoonalowaleia i Keia Wa a Hiki Ole ke Ikeia. In *Ka Loea Kalaiaina*, June 3, 1899 to January 13, 1900.

Ka Nupepa Kuokoa

1893 He Moolelo Hawaii, Mokuna VII. In *Ka Nupepa Kuokoa*, May 20, 1893, pp. 1.

1893-1894 He Kaao Hoonaue Puuwai no Puakaohelo. In *Ka Nupepa Kuokoa*, December 16, 1893 to August 18, 1894.

Kamakau, Samuel M.

1867 Untitled letter. In *Ka Nupepa Kuokoa*, August 10, 1867, pp. 3.

1961 *Ruling Chiefs of Hawaii.* The Kamehameha Schools Press. Honolulu, Hawaiʻi.

1964 *Ka Poʻe Kahiko: The People of Old*. Bishop Museum Press, Honolulu, Hawaiʻi.

1976 *Na Hana a Ka Poʻe Kahiko, the Works of the People of Old*. Bishop Museum Press, Honolulu, Hawaiʻi.

Kanepuu, J.H.

1862 “Ka Hoku o ka Pakipika”. January 1862, pp. 2.

Kaualilinoe, J.W.K.

1870 Ka Moolelo o Kalelealuaka. In *Ka Nupepa Kuokoa*, April 9, 1870 to June 4, 1870.

Kawachi, Carol and Griffin

1990 *Report on Human Skeletal Remains Recovered at 94-1049 Kahuailani Street, Waipahu, O`ahu*. University of Hawai‘i, Honolulu, Hawai‘i.

LaChance, Fredrick, Nathan DiVito, Rosanna Thurman, and Trisha Watson

2022 Draft- *Literature Review and Field Inspection for the Proposed Waipahu Police Training Facility Parking Addition, Waikele Ahupua‘a, ‘Ewa District, Island of O‘ahu, TMK: [1] 9-3-002:009*. Honua Consulting, Honolulu, Hawai‘i.

Lehman Brothers Collection

n.d. AmFac Archives. Harvard Business School, Baker Library | Bloomberg Center, President & Fellows of Harvard College. Boston, MA. Available at: https://www.library.hbs.edu/hc/lehman/Data-Resources/Companies-Deals/AMFAC-Inc.

Lidgate, J.

1873 Map of West Loch and the Penninsula of Pearl River. Registered Map 322. Hawai‘i Land Survey Division, accessed at < http://ags.hawaii.gov/survey/map-search/ >.

Manu, Moses

1894-1895 He Moolelo Kaao Hawaii no Laukaieie. In *Nupepa Ka Oiaio*, January 5, 1894-September 13, 1895.

1895 He Moolelo Kaao Hawaii no ka Puhi o Laumeki, ka Mea i Like me ka Ilio Puapualenalena. In *Nupepa Ka Oiaio*, November 8, 1895 to February 14, 1896.

McAllister, J.G.

1933 *Archaeology of Oahu.* Bernice P. Bishop Museum, Bulletin 104. Bishop Museum Press. Honolulu, Hawai‘i.

Monsarrat, M.D.

1913 Oahu Fisheries, Pearl Lochs Section. Registered Map 2848. Hawai‘i Land Survey Division, accessed at < http://ags.hawaii.gov/survey/map-search/ >.

Na Wahi Pana o Ewa

1899 Na Wahi Pana o Ewa i Hoonalowaleia i Keia Wa a Hiki Ole ke Ikeia. In *Ka Loea Kalaiaina*. June 10, 1899 pp. 4.

Oahu Sugar Company

n.d. Oahu Sugar Company Archives. University of Hawaii at Manoa Library. Accessed at <https://www2.hawaii.edu/~speccoll/p_oahu.html>.

O’Hare, Constance, Hallett H. Hammatt, and D.W. Shideler

2006 *Archaeological Inventory Survey for the East Kapolei Project*, *Honouliuli Ahupua‘a, ‘Ewa District, Island of O‘ahu* (TMK: [1] 9-1-010:002, 9-1-017:004, 059, 072; 9-1-018:001, 004; 9-2-001:001). Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

O’Hare, Constance, Chris Monahan, and Hallett H. Hammatt

2011 *Archaeological Literature Review and Field Inspection for the Honouliuli/Waipahu/Pearl City Wastewater Facilities, Honouliuli, Hō‘ae‘ae, Waikele, Waiawa, Mānana, Waimalu,* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Ostroff, Brad, Moore, James R., and Joseph Kennedy
2001 *A Report Concerning the Inadvertent Discovery of Human Remains at the Filipino Community Center* Located at TMK: 9-4-161:001 in Waikele Ahupua'a, 'Ewa District, Island of O'ahu. Archaeological Consultants of the Pacific. Haleiwa, Hawai'i.

Pacific Commercial Advertiser
1900 "Back From their Tour – Trio of Native Leaders in Honolulu." In *The Pacific Commercial Advertiser*, June 25, 1900.

Perzinski, David, Rodney Chiogioji, Hallett H. Hammatt
2004 *Archaeological Inventory Survey Report for 13.219-Acre Queen Emma Foundation Parcel at Waipio,* 'Ewa, O'ahu (TMK9-4-038:083 and 9-4-050:059). Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

Pukui, Mary Kawena
1943 *Ke Awa Lau o Pu'uloa*. Hawaiian Historical Society 52nd Annual Report. Hawaiian Printing, Co. Ltd., Honolulu, Hawai'i.

1983 *'Olelo No'eau: Hawaiian Proverbs & Poetical Sayings*. Bishop Museum Press, Honolulu, Hawai'i.

Pukui, Mary Kawena, Samuel H. Elbert and Esther T. Mookini
1974 *Place Names of Hawaii*. The University of Hawai'i Press, Honolulu, Hawai'i.

Rasmussen and Tomomari-Tuggle
2006 *Archaeological Monitoring of Waiau Fuel Pipeline, 'Ewa District, Island of O'ahu*. International Archaeological Research Institute, Inc., Honolulu, Hawai'i.

Rosendahl, Margaret L.K.
1987 *Archaeological Reconnaissance Mililani Town Station,* Ewa District, Island of Oahu, Waipio, Paul H Rosendahl, Inc., Hilo, Hawai'i.

Soehren, Lloyd J.
2019 Hawaiian Place Names. Accessed at < http://ulukau.org/cgi-bin/hpn?l=en>.

Spear, Robert
1993 *A Reconnaissance Survey Letter Report of the Waikele Industrial Subdivision*. The Oahu Sugar Mill Project, Waipahu, Hawai'i.

Sroat, Ena, Douglas Thurman, and Matt McDermott
2012 *Archaeological Inventory Survey for Construction Phase 2 of the Honolulu High Capacity Transit Corridor Project, Waiawa, Mānana, Waimano, Waiau, Waimalu, Kalauao, 'Aiea, and Hālawa Ahupua'a, 'Ewa District, Island of O'ahu TMK: [1] 9-7, 9-8, and 9-9 (Various Plats and Parcels)*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

Sterling, Elspeth P. and Catherine C. Summers
1978 *Sites of Oahu*. Bishop Museum Press, Honolulu, Hawai'i.

Thrum, Thomas G.
1906 Tales from the Temples. In *Hawaiian Almanac and Annual for 1907*. Thomas G. Thrum, Honolulu, Hawai'i.

Tulchin, Jon, Whitman Kathryn, Hammatt, Hallett H.

2009 *Archaeological Inventory Survey for a Trunk Sewer Line Alignment as part of Off-Site Improvements for the Proposed Koa Ridge Makai Community Development*, Waipi‘o & Waikele Ahupua‘a, ‘Ewa District, O‘ahu. Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

Uaua

1870-1871 “He Moolelo Kaao no Kaehuikimanaoopuuloa.” In *Ke Au Okoa*, December 1, 1870 to January 5, 1871.

Ulukau

2019 Hawaiian Place Names. Ulukau Hawaiian Electronic Library. Accessed at < https://ulukau.org/cgi-bin/hpn?l=en>.

2020 Hawaiian Dictionaries. Ulukau Hawaiian Electronic Library. Accessed at < https://wehewehe.org/ >.

U.S. Geological Survey (USGS)

1954 U.S. Geological Survey 7.5 minute topographic map, Waipahu Quadrangle. Available at USGS Information Services, Box 25286, Denver, Colorado.

1962 U.S. Geological Survey Orthophoto, Waipahu Quadrangle. Available at USGS Information Services, Box 25286, Denver, Colorado.

1977 U.S. Geological Survey Orthophoto, Waipahu Quadrangle. Available at USGS Information Services, Box 25286, Denver, Colorado.

2013 U.S. Geological Survey 7.5 minute topographic map, Waipahu Quadrangle. Available at USGS Information Services, Box 25286, Denver, Colorado.

Waihona Aina

2023 Waihona Aina. Accessed at < https://waihona.com/>.

Westervelt, W.D.

1937 *Copy of the Journal of E. Loomis (1824-1826)*. Compiled by W.D. Westervelt, assisted by Emil A. Berndt and Lili P. Berndt.

Maps throughout this report were created using ArcGIS Pro® software by Esri. ArcGIS Pro® is the intellectual property of Esri and are used herein under license. Copyright © Esri. All rights reserved. For more information about Esri® software, please visit www.esri.com.

APPENDIX C:

Traffic Impact Assessment Report

Wilson Okamoto Corporation

Traffic Impact Analysis Report

Waipahu Refuse Facility & Convenience Center



Prepared for:
HDR, Inc.

Prepared by:
Wilson Okamoto Corporation

August 2023

TRAFFIC IMPACT REPORT

FOR

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

Prepared for:

HDR, Inc.
1132 Bishop Street, Suite 1200
Honolulu, HI 96813-2822

Prepared by:

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Ref #10751-02

August 2023

TABLE OF CONTENTS

		Page
I.	Introduction	1
	A. Purpose of Study	1
	B. Scope of Study	1
II.	Project Description	1
	A. Location	1
	B. Project Characteristics	3
III.	Existing Traffic Conditions	4
	A. Area Roadway System	4
	B. Multimodal Facilities	4
	C. Traffic Volumes and Conditions	6
	1. General	6
	a. Field Investigations	6
	b. Capacity Analysis Methodology	6
	2. Baseline Peak Hour Traffic	7
	a. General	7
	b. Farrington Highway and Waipahu Depot Street	7
	c. Waipahu Depot Street at the Existing WCC	11
IV.	Projected Traffic Conditions	11
	A. Site-Generated Traffic	11
	1. Trip Generation Methodology	11
	2. Trip Distribution	12
	B. Through-Traffic Forecasting Methodology	12
	C. Other Considerations	14
	1. Keawalau Affordable Housing Community	14
	2. Waipahu Wastewater Pump Station Force Mains Rehabilitation	14
	3. Pearl City/Waipahu Sewer Trunk	15
	4. Waipahu Depot Street Improvements	15
	D. Total Traffic Volumes Without Project	15
	E. Total Traffic Volumes With Project	17
V.	Traffic Impact Analysis	17
VI.	Recommendations	20
VII.	Conclusion	20

LIST OF FIGURES

FIGURE 1	Location Map and Vicinity Map
FIGURE 2	Project Site Plan
FIGURE 3	Existing Lane Configuration
FIGURE 4	Existing Peak Hours of Traffic
FIGURE 5	Distribution of Site-Generated Vehicles
FIGURE 6	Year 2027 Peak Hours of Traffic Without Project
FIGURE 7	Year 2027 Peak Hours of Traffic With Project

LIST OF APPENDICES

APPENDIX A	Existing Traffic Count Data
APPENDIX B	Level of Service Definitions
APPENDIX C	Capacity Analysis Calculations Existing Peak Period Traffic Analysis
APPENDIX D	Capacity Analysis Calculations Projected Year 2027 Peak Period Traffic Analysis Without Project
APPENDIX E	Capacity Analysis Calculations Projected Year 2027 Peak Period Traffic Analysis With Project

I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the proposed development of the Waipahu Refuse Facility and Convenience Center for the City and County of Honolulu Department of Environmental Services (ENV) on the island of Oahu. The proposed multi-use refuse facility is expected to house the relocated Waipahu Convenience Center and the Refuse Rolloff Division Baseyard Facility.

B. Scope of Study

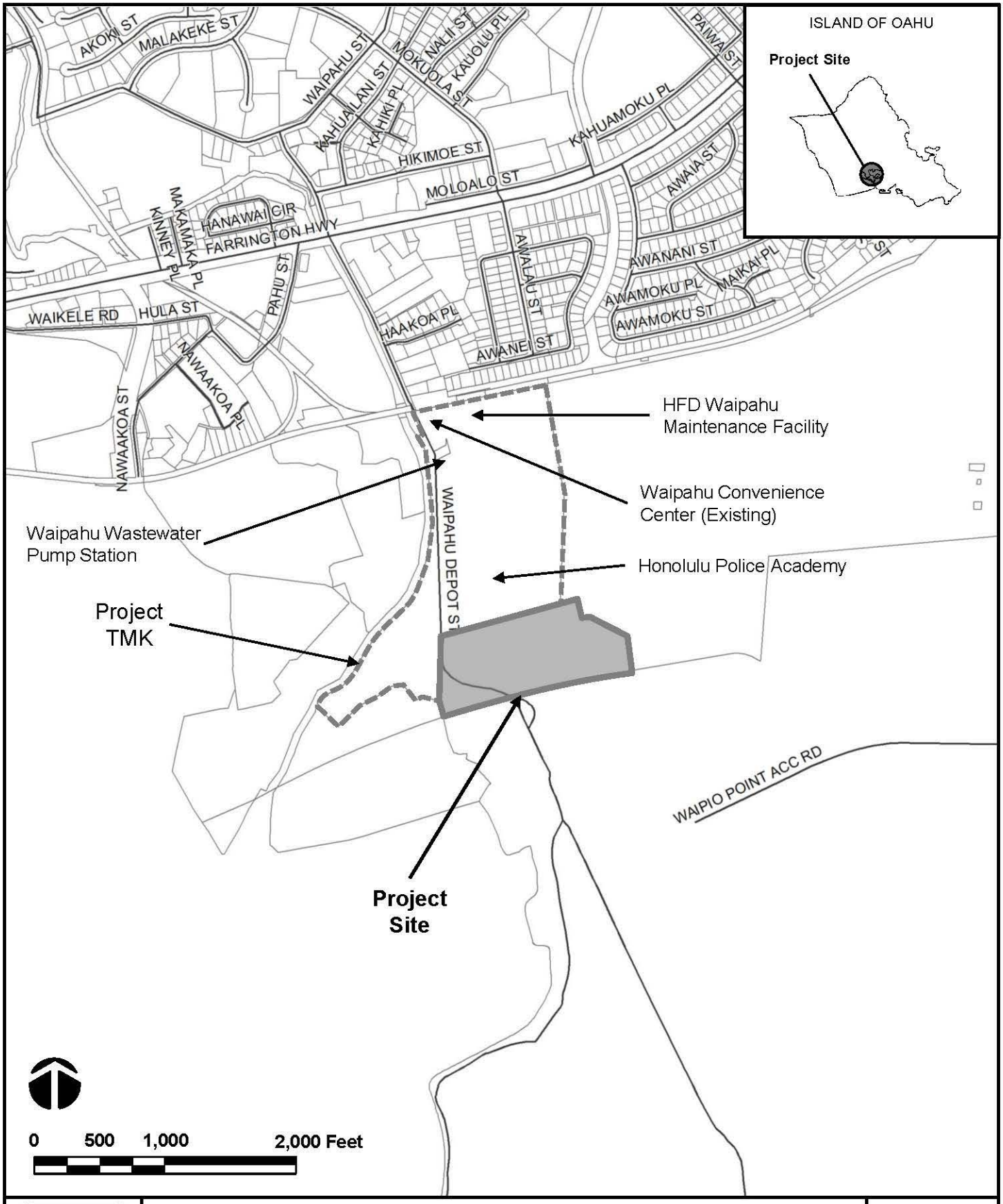
This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposition of site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The project site for the Waipahu Refuse Facility and Convenience Center is located adjacent to Waipahu Depot Street on the island of Oahu (see Figure 1). The project site is bounded by Waipahu Depot Street and the Pouhala Marsh Wildlife Restoration Area to the west, the Ted Makalena Golf Course to the east, the Honolulu Police Academy/Training Facility to the north, and the Waipio Peninsula Soccer Complex/Park to the south. The project site is further identified as Tax Map Key (TMK) [1] 9-3-002:009 (por). Access to the project site will be provided via a new access roadway off Waipahu Depot Street.



WILSON OKAMOTO CORPORATION

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

LOCATION AND VICINITY MAP

FIGURE 1

B. Project Characteristics

The project site for the proposed Waipahu Refuse Facility and Convenience Center (hereafter referred to as "WRFCC") currently houses structures previously occupied by the former Waipahu Incinerator Facility (WIF) that are currently being utilized by ENV's Refuse Rolloff Division for parking and dispatch operations. Access to the existing site is provided via an access roadway off Waipahu Depot Street. It should be noted that access to the segment of Waipahu Depot Street south of the Police Training Facility until its terminus near the Waipio Peninsula Soccer Complex/Park to the south is gated.

The proposed project entails the demolition of the existing structures and development of a multi-use refuse facility that will include two major components: the relocated Waipahu Convenience Center (WCC) on the west portion of the project site and the Refuse Rolloff Division Baseyard Facility on the east portion of the site. The existing WCC is located along Waipahu Depot Street approximately 1,700 feet north of the project site adjacent to the Honolulu Fire Department Maintenance Facility. The existing WCC serves as a drop-off location for municipal solid waste, white goods, and other household inert materials. With the proposed project, the WCC will be relocated to a new expanded facility that is expected to provide similar services. The planned expansion is planned to address operational inefficiencies at the existing site. These following improvements are expected to be incorporated into the new facility:

- Additional proposed waste off-loading locations to allow several users to offload at the same time
- Sufficient area within the facility for the traffic staging and maneuverability
- Strategic location for the facility attendant to direct users and oversee facility activities
- Segregated residential and ENV refuse truck traffic
- White goods and other inert waste material storage areas separated from municipal solid waste off-loading areas

The second component of the new WRFCC entails the development of a two-story building for the Refuse Rolloff Division Baseyard Facility (hereafter referred to as the "Refuse Facility"). As previously mentioned, the Refuse Facility is currently housed within the former WIF structures that accommodate its dispatch operations and

parking for its existing fleet of 9 trucks. The existing structures will be replaced with a new 2-story building to accommodate their existing dispatch operations and other office amenities, ancillary support facilities (truck wash pad and canopy, equipment storage building, etc), and new parking areas to accommodate employees and a slightly larger fleet of 17 total trucks. It should be noted that the site also includes a designated area for a future container repair shop and/or rolloff container storage yard. However, the timeframe for the development of this area is not known at this time and is expected to be addressed separately at a later date.

Access to the project site is expected to be provided via a new access roadway off Waipahu Depot Street. The new access roadway will run along the southern perimeter of the project site, facilitating a one-way counter-clockwise traffic flow for the convenience center and terminating at a controlled gate for the Refuse Facility. The proposed project is anticipated to be completed by Year 2027. See Figure 2 for the proposed site plan.

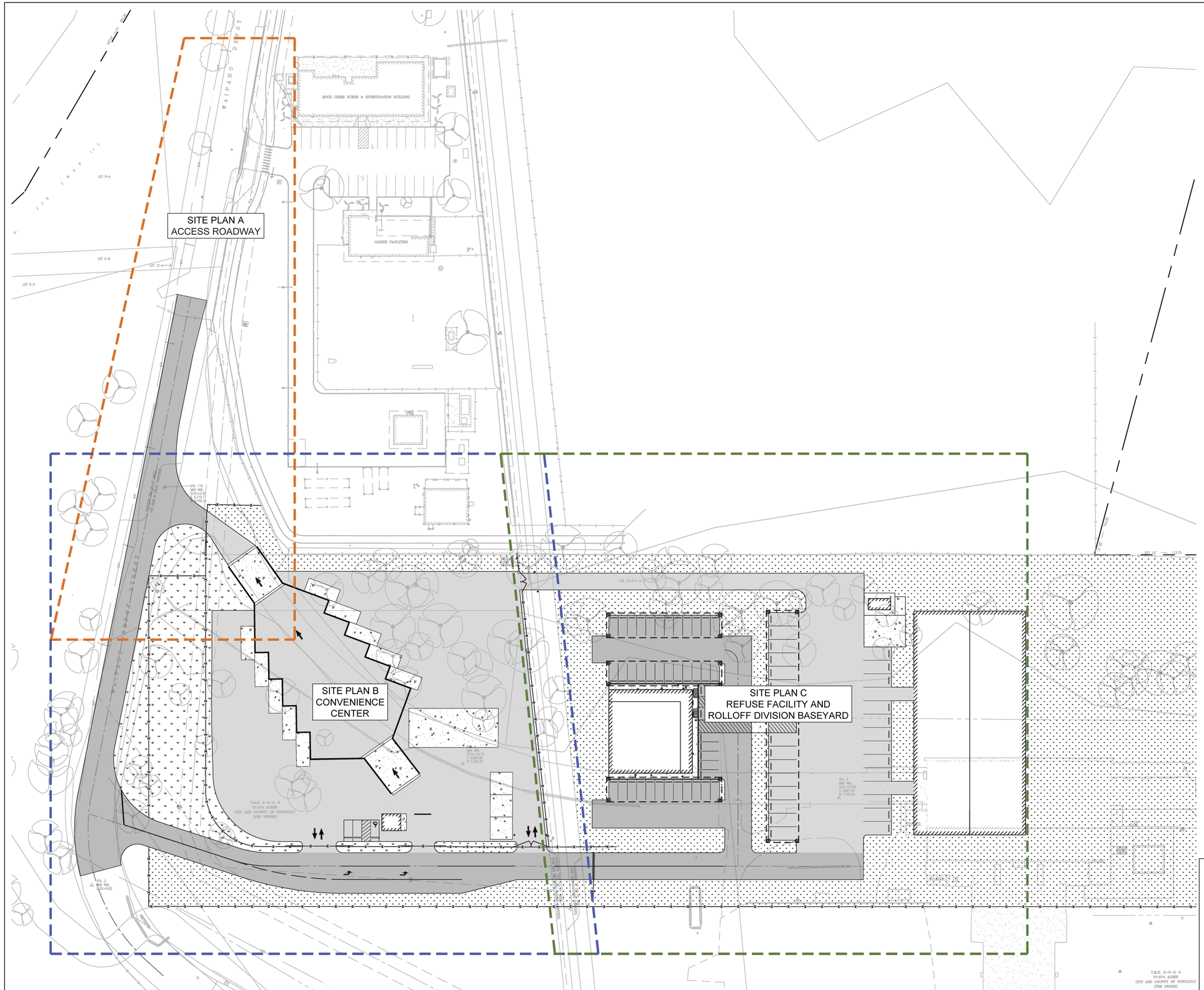
III. EXISTING TRAFFIC CONDITIONS

A. Area Roadway System

In the vicinity of the project, Farrington Highway is a predominantly four-lane, two-way divided State of Hawaii roadway generally oriented in the east-west direction serving as a major thoroughfare through the Leeward region. North of the project site, Farrington Highway intersects Waipahu Depot Street. At this signalized intersection, both approaches of Farrington Highway have an exclusive left-turn lane, one through lane, and a shared through and right-turn lane. Waipahu Depot Street is a predominantly two-lane, two-way City and County of Honolulu roadway generally oriented in the north-south direction that starts at Waipahu Street continues southward until its terminus near the Waipio Peninsula Soccer Park. At the intersection with the highway, both approaches of the roadway have a shared left-turn and through lane, and an exclusive right-turn lane.

B. Multimodal Facilities

The proposed project is located adjacent to Waipahu Depot Street where the surrounding uses are predominantly industrial uses and thereby influences the overall pedestrian environment. There are no sidewalks in the immediate vicinity of the



OVERALL SITE PLAN
SCALE: 1" = 40'

N

NOTES:

1. SEE DWG C-101 FOR EXISTING SITE CONDITIONS.

LEGEND:

- FENCE
- PROPERTY LINE
- PROJECT LIMIT
- EXISTING AC PAVEMENT
- AC PAVEMENT
- CONCRETE
- GRASS VEGETATION
- APPROXIMATE GEOTECHNICAL BORING LOCATION
- RETAINING WALL
- CONCRETE JERSEY BARRIER (K-RAIL)
- METAL GUARD RAIL

GRAPHIC SCALE:

40 0 40 80

SCALE: 1" = 40'

REVISION	DATE	BRIEF	MADE BY	APPROVED

NOT FOR CONSTRUCTION

REFUSE DIVISION
DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU

WAIPAHU REFUSE FACILITY & CONVENIENCE CENTER

93-71 WAIPAHU DEPOT STREET, WAIPAHU, OAHU, HAWAII 96797
TMK: (1) 9-3-002:009 (POR.)

OVERALL SITE PLAN

DESIGNED BY: MK	CHECKED BY: TS	DRAWN BY: PS/SS	DATE: 03/12/2025

HDR Engineering, Inc.
1001 BISHOP STREET,
SUITE 400
HONOLULU, HAWAII
96813 – 3402

DWG. NO. C-102

SHEET X OF ##

JOB NO. 10348825

project except for a small segment on the east side of Waipahu Depot Street along the Servco Auto Waipahu frontage. Bike facilities in the vicinity of the project are also generally limited with the exception of a shared-use path referred to as the "Pearl Harbor Bike Path" north of the project site. The nearest transit facility is located along Farrington Highway more than half a mile north of the project site. Transit service in the project vicinity is provided by "TheBus" which is operated by the Oahu Transit Services (OTS) for the City and County of Honolulu Department of Transportation Services.

C. Traffic Volumes and Conditions

1. General

a. Field Investigation

Field investigations were conducted in April 2022 and consisted of manual turning movement count surveys during the morning peak hours between 6:30 AM and 8:30 AM, and the afternoon peak hours between 3:30 PM and 5:30 PM at the intersection of Farrington Highway and Waipahu Depot Street.

Additional queueing observations were also conducted in the vicinity of the existing WCC on Saturday, October 15, 2022, between 10:30 AM and 2:30 PM with supplemental observations conducted via the City and County of Honolulu Opala program camera livestream over multiple days to observe the distribution of traffic along Waipahu Depot Street throughout the day. Appendix A includes the existing traffic count data.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2016, and the "Synchro" software, developed by Trafficware. The analysis is based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic.

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity. The LOS definitions are included in Appendix B.

2. Baseline Peak Hour Traffic

a. General

Figures 3 and 4 show the existing lane configurations and peak period traffic volumes. The AM peak hour of traffic generally occurs between 7:00 AM and 8:00 AM while the PM peak hour of traffic generally occurs between 3:45 PM and 4:45 PM. The analysis is based on these absolute commuter peak hour time periods to identify the traffic impacts resulting from the proposed project. As previously discussed, field investigations and observations were conducted over multiple days. The analysis contained herein focuses on the weekday since field observations indicate higher site-generated trips during this period. LOS calculations are included in Appendix C.

b. Farrington Highway and Waipahu Depot Street

At the intersection with Waipahu Depot Street, Farrington Highway carries 1,435 vehicles eastbound and 1,015 vehicles westbound during the AM peak hour of traffic. The overall traffic volume is less during the PM peak hour of traffic with 949 vehicles traveling eastbound and 1,270 vehicles traveling westbound. The eastbound approach of the highway operates at LOS "B" during both peak hours while the westbound approach operates at LOS "C" during



WILSON OKAMOTO CORPORATION

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

EXISTING LANE CONFIGURATION

FIGURE 3



WILSON OKAMOTO CORPORATION

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

EXISTING YEAR 2023 PEAK HOURS OF TRAFFIC

FIGURE 4

both peak hours. Traffic queues periodically formed on the Farrington Highway approaches of the intersection with the most significant queues occurring during the AM peak period. Average queues of 10-12 vehicles were observed on the eastbound approach during this peak period, while average queues of 4-6 vehicles were observed on the westbound approach during the same peak period. These queues were observed clearing the intersection after each traffic signal cycle change.

The Waipahu Depot Street approaches of the intersection carry 134 vehicles northbound and 299 vehicles southbound during the AM peak hour of traffic. During the PM peak hour, the overall traffic volume is approximately the same with 176 vehicles traveling northbound and 281 vehicles traveling southbound. The Waipahu Depot Street approaches of the intersection operate at LOS "C" during both peak hours of traffic. Traffic queues occasionally formed on the Waipahu Depot Street approaches of the intersection with the most significant queues occurring on the southbound approach. Average queues of 4-5 vehicles were observed on this approach during both peak periods. These queues were observed clearing the intersection after each traffic signal cycle change.

Crosswalks are provided across all approaches of the intersection. During the AM peak hour, 28 pedestrians and 25 pedestrians were observed crossing the highway on the west and east sides of the intersection, respectively, while 16 pedestrians and 24 pedestrians were observed crossing Waipahu Depot Street on the south and north sides of the intersection, respectively. During the PM peak hour, 10 pedestrians were observed crossing the highway on the west and east sides of the intersection while 16 pedestrians were observed crossing Waipahu Depot Street on the south and north sides of the intersection.

c. Waipahu Depot Street at the Existing WCC

Additional field observations were also conducted along Waipahu Depot Street at the existing WCC project driveways. Due to the current configuration of the off-loading areas on-site, only a limited number of vehicles are able to off-load at once (3 vehicles max). As such, vehicles waiting in queue use the shoulder area along Waipahu Depot Street while on-site personnel stationed near the entrance assist with directing vehicles in queue when it's appropriate to enter the site. Field observations indicate that the peak of the generator occurs during the midday on a weekday with more significant queuing along Waipahu Depot Street occurring approximately between 1:00 PM and 3:00 PM. In addition, traffic data collected along Waipahu Depot Street at the existing WCC driveways indicate that the peak occurs approximately between 2:00 PM and 3:00 PM along this roadway. During the peak period, average queue lengths of 7-8 vehicles were observed along Waipahu Depot Street with a maximum queue length of 13 vehicles, with the maximum back of queue extending up to the Waipahu Recycling facility.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used for the purpose of this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 11th Edition," 2021 and the available programming information for the project. As previously discussed, the new WCC facility will be located approximately 1,700 feet south of the existing WCC along Waipahu Depot Street and is expected to provide similar services with the anticipated improvements primarily addressing operational deficiencies at the existing site. As such, the new WCC is not expected to generate additional new trips in the vicinity since

site-generated trips currently accessing the convenience center are assumed to be encompassed within the existing traffic data.

The new Refuse Facility is only expected to generate additional site-generated trips associated with the expansion of its existing truck fleet since as previously noted, all of the other uses associated with this facility are already housed on-site. As previously discussed, the existing fleet is expected to be increased by approximately 8 trucks. Based on the information provided by ENV, on a typical day, the trucks leave the site at 6:00 AM and return around 4:00 PM with the drivers expected to stay on their respective routes all day. As such, all additional site-generated trips were assumed to exit from the project site during the AM peak and enter during the PM peak. Table 1 summarizes the additional site-generated trips related to the proposed project applied to the AM and PM peak hours of traffic.

Table 1: Additional Peak Hour Trip Generation

WAIPA FACILITY AND CONVENIENCE CENTER		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	0
	EXIT	8
	TOTAL	8
PM PEAK	ENTER	8
	EXIT	0
	TOTAL	8

2. Trip Distribution

Figure 5 shows the distribution of additional site-generated traffic during the AM and PM peak periods. Access to the project site is expected to be provided via driveways off Waipahu Depot Street. All additional site-generated trips are assumed to be traveling to/from Farrington Highway. The directional distribution of all site-generated vehicles at the intersection of Waipahu Depot Street with Farrington Highway was assumed to remain similar to existing conditions.

B. Through Traffic Forecasting Methodology

The travel forecast is based upon historical traffic count data obtained from the State DOT, Highways Division at survey stations in the vicinity of the project site.



WILSON OKAMOTO CORPORATION

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

DISTRIBUTION OF SITE-GENERATED VEHICLES WITH PROJECT

FIGURE 5

Although historical data indicates relatively stable traffic volumes in the project vicinity, a 0.5% growth rate per year was conservatively assumed along Farrington Highway. Using Year 2022 as the Base Year, a growth rate factor of 1.025 was applied to the baseline through traffic demands along that roadway to achieve the projected Year 2027 traffic volumes.

C. Other Considerations

1. Keawalau Affordable Housing Community

The Keawalau Affordable Housing Community development is located adjacent to Hikimoe Street east of Waipahu Depot Street. The proposed project entails the redevelopment of several parcels on the north and south sides of Hikimoe Street to include a new mixed-use community with residential, office, and commercial uses. Access to the project is expected to be provided via driveways off Kahuailani Street, Farrington Highway, Hikimoe Street, and Waipahu Depot Street. Based on the "Traffic Impact Report for Keawalau Affordable Housing Community" dated August 2022, the proposed project site is expected to generate 148 trips during the AM peak period and 113 trips during the PM peak period. The Keawalau Affordable Housing Community is expected to be completed by the Year 2027. As such, the trip associated with the Keawalau Affordable Housing Community development were incorporated into the without project conditions.

2. Waipahu Wastewater Pump Station Force Mains Rehabilitation

There is a sewer easement for the Waipahu Wastewater Pump Station (WWPS) that runs through the project site for the proposed WRFCC. This sewer force main connects the WWPS approximately 1,500 north of the WRFCC to the Honouiliuli Interceptor Sewer line further south. There are currently plans to either rehabilitate or replace the existing sewer line, but the timeline for this work is not known at this time. Since this project traverses through the project site, consideration should be given to coordinating with the points of contact for the WWPS Force Mains Rehabilitation project to minimize any potential conflict with the WRFCC.

3. Pearl City/Waipahu Sewer Trunk

The proposed WRFCC is located within the Honouliuli Sewer Basin Area. The City and County of Honolulu ENV plans to make improvements to the East Interceptor System of the Honouliuli Sewer Basin which includes the areas between the Honouliuli Wastewater Treatment Plan, Waipahu, and Pearl City. The proposed improvements entails the replacement of an existing dual force main that connects the Pearl City and Waipahu Wastewater Pump Stations with a new sewer tunnel. As previously discussed, the WWPS is located approximately 1,500 north of the proposed WRFCC. Details of the construction and timeline for this project are still being determined at this time but given the proximity of this project to the proposed WRFCC, consideration should be given to coordinating with the points of contact for the Pearl City/Waipahu Sewer Trunk project to minimize any potential conflict with the WRFCC.

4. Waipahu Depot Street Improvements

There are plans to widen the segment of Waipahu Depot Street north of Farrington Highway to facilitate vehicular access in the vicinity. However, the timeline for these improvements is not known at this time and as such, were not incorporated into projected conditions. In addition, the City and County of Honolulu, Department of Transportation Services (DTS) plans to construct a pedestrian and bicycle shared use path along Waipahu Depot Street to connect the Pearl Harbor Bike Path north of the existing WCC and the Waipahu Transit Center along Hikimoe Street. However, more specific details regarding this improvement and the timeline for this project is also not known at this time. As such, this improvement was not incorporated into projected conditions.

D. Total Traffic Volumes Without Project

The projected Year 2027 AM and PM peak period traffic volumes and operating conditions with the WRFCC are shown in Figure 6 and summarized in Table 2. The analysis incorporates the development of the Keawalau Affordable



WILSON OKAMOTO CORPORATION

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

YEAR 2027 PEAK HOURS OF TRAFFIC
WITHOUT PROJECT

FIGURE
6

Housing Community, as well as ambient growth in traffic. The existing levels of service are provided for comparison purposes. LOS calculations are included in Appendix D.

Table 2: Existing and Projected Year 2027 (Without Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM		PM	
		Exist	Year 2027 w/out Proj	Exist	Year 2027 w/out Proj
Farrington Hwy/ Waipahu Depot St	Eastbound	B	C	B	B
	Westbound	C	C	C	C
	Northbound	C	C	C	C
	Southbound	C	C	C	C

Under Year 2027 without project conditions, traffic operations along Farrington Highway are expected to deteriorate slightly. At the intersection with Waipahu Depot Street, the highway approaches of the intersection are generally expected to continue operating similar to existing conditions during both peak periods with the exception of the eastbound approach which is expected to operate from an LOS "B" to a slightly lower at LOS "C" during the AM peak period. The Waipahu Depot Street approaches of the intersection are also expected to continue operating at LOS "C" during both peak periods.

E. Total Traffic Volumes With Project

Figure 7 shows the Year 2027 cumulative AM and PM peak hour traffic conditions resulting from the WRFCC project. The cumulative volumes consist of site-generated traffic superimposed over Year 2027 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The Year 2027 cumulative AM and PM peak hour traffic conditions with the WRFCC project are summarized in Table 3. The existing and projected Year 2027 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix E.



WILSON OKAMOTO CORPORATION

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

YEAR 2027 PEAK HOURS OF TRAFFIC
WITH PROJECT

FIGURE
7

Table 3: Existing and Projected Year 2027 (Without and With Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM			PM		
		Exist	Year 2027		Exist	Year 2027	
			w/out Proj	w/ Proj		w/out Proj	w/ Proj
Farrington Hwy/ Waipahu Depot St	Eastbound	B	C	C	B	B	B
	Westbound	C	C	C	C	C	C
	Northbound	C	C	C	C	C	C
	Southbound	C	C	C	C	C	C

Under Year 2027 with project conditions, traffic operations in the vicinity are expected to remain similar to without project conditions. The approaches at the intersection of Farrington Highway and Waipahu Depot Street are expected to continue operating at LOS "C" or better during the AM and PM peak periods. As previously discussed, the majority of the trips associated with the proposed project are already encompassed within the existing traffic data. The additional site-generated trips for the project are expected to be relatively low and the addition of these trips to the current volumes along Waipahu Depot Street are expected to represent a minimal increase (less than 1%) in the overall traffic volumes along the highway during both peak periods.

In addition, the proposed project is expected to incorporate on-site improvements to mitigate existing deficiencies at the current WCC site. As previously discussed, average queue lengths of 7-8 vehicles were observed along Waipahu Depot Street during the peak of the generator due to the current configuration of the existing WCC which provides only 3 off-loading stations. The new WCC is planned to include an improved configuration with 10 off-loading stations to allow multiple users at the same time and accommodate the average queues observed at the existing site. The proposed site plan also incorporates queueing areas on-site to further minimize any potential impact to the adjacent roadway. Furthermore, the new WCC site will be located south of the Honolulu Police Academy/Training Facility where any potential conflicts with other uses along Waipahu Depot Street are less since the surrounding area is generally undeveloped.

VI. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are the recommendations of this study to be incorporated in the project design.

1. Provide sufficient sight distance for motorists to safely enter and exit the project driveways.

2. Provide sufficient turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.

3. Provide one-way counter-clockwise traffic flow within the new WCC from the entrance at the south internal driveway to minimize conflicts with vehicles along Waipahu Depot Street.

4. Provide adequate signage to indicate the designation of vehicular access points for the WCC and the Refuse Facility.

5. Consider the preparation of a Construction Management Plan (CMP) given the expected construction activities associated with other projects in the vicinity.

VII. CONCLUSION

The proposed project entails the development of the Waipahu Refuse Facility and Convenience Center (WRFCC) which will house the relocated Waipahu Convenience Center (WCC) and the Refuse Rolloff Division Baseyard Facility. Access to the proposed project will be provided via a new access driveway off Waipahu Depot Street. With the implementation of the aforementioned recommendations, traffic operations in the vicinity of the project are expected to remain similar to without project conditions. The Refuse Facility is an existing use on-site while the WCC is being relocated further south of its existing location along Waipahu Depot Street. As such, the majority of the trips associated with the proposed project are already encompassed within the existing traffic data. In addition, the site-generated trips resulting from the expansion of the Refuse Facility's truck fleet are expected to be relatively low and the addition of these trips are anticipated to represent a minimal increase (less than 1%) in the overall traffic volumes along the highway during both peak periods. As such, the proposed WRFCC is not expected to have a significant impact on traffic operations at the surrounding roadways.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: RV, JB
Counters: TU-0654, TU-0650
Weather: CLEAR

File Name : FarWai AM1
Site Code : 00000003
Start Date : 4/28/2022
Page No : 1

Groups Printed- Unshifted

	Waipahu Depot St Southbound					Farrington Hwy Westbound					Waipahu Depot St Northbound					Farrington Hwy Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	36	15	14	4	69	8	139	21	0	168	5	4	4	4	17	12	309	26	2	349	603
06:45 AM	31	12	17	10	70	15	136	22	12	185	7	2	7	6	22	17	263	35	9	324	601
Total	67	27	31	14	139	23	275	43	12	353	12	6	11	10	39	29	572	61	11	673	1204
07:00 AM	27	6	22	4	59	9	188	16	4	217	9	10	8	1	28	12	281	47	6	346	650
07:15 AM	44	9	34	4	91	16	190	17	12	235	7	10	20	8	45	26	272	58	6	362	733
07:30 AM	48	7	24	11	90	16	222	15	6	259	6	12	19	6	43	23	236	69	12	340	732
07:45 AM	40	6	32	5	83	22	253	22	3	300	13	12	8	1	34	15	236	60	4	315	732
Total	159	28	112	24	323	63	853	70	25	1011	35	44	55	16	150	76	1025	234	28	1363	2847
08:00 AM	40	11	16	5	72	23	183	23	3	232	8	6	16	3	33	25	151	36	5	217	554
08:15 AM	41	8	24	4	77	20	182	22	4	228	0	0	0	0	0	0	0	0	0	0	305
Grand Total	307	74	183	47	611	129	1493	158	44	1824	55	56	82	29	222	130	1748	331	44	2253	4910
Apprch %	50.2	12.1	30	7.7		7.1	81.9	8.7	2.4		24.8	25.2	36.9	13.1		5.8	77.6	14.7	2		
Total %	6.3	1.5	3.7	1	12.4	2.6	30.4	3.2	0.9	37.1	1.1	1.1	1.7	0.6	4.5	2.6	35.6	6.7	0.9	45.9	

	Waipahu Depot St Southbound				Farrington Hwy Westbound				Waipahu Depot St Northbound				Farrington Hwy Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	27	6	22	55	9	188	16	213	9	10	8	27	12	**281**			
07:15 AM	44	**9**	**34**	**87**	16	190	17	223	7	10	**20**	**37**	**26**	272	58	**356**	703
07:30 AM	**48**	7	24	79	16	222	15	253	6	**12**	19	37	23	236	**69**	328	697
07:45 AM	40	6	32	78	**22**	**253**	**22**	**297**	**13**	12	8	33	15	236	60	311	**719**
Total Volume	159	28	112	299	63	853	70	986	35	44	55	134	76	1025	234	1335	2754
% App. Total	53.2	9.4	37.5		6.4	86.5	7.1		26.1	32.8	41		5.7	76.8	17.5		
PHF	.828	.778	.824	.859	.716	.843	.795	.830	.673	.917	.688	.905	.731	.912	.848	.938	.958

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By:RV, JB
Counters:TU-0650, TU-0654
Weather: CLEAR

File Name : FarWai AM-U-Turns ONLY
Site Code : 00000003
Start Date : 4/28/2022
Page No : 1

Groups Printed- Unshifted

	Farrington Hwy Westbound		Farrington Hwy Eastbound		
Start Time	U-Turn	App. Total	Left	App. Total	Int. Total
06:30 AM	3	3	9	9	12
06:45 AM	3	3	6	6	9
Total	6	6	15	15	21
07:00 AM	6	6	15	15	21
07:15 AM	5	5	41	41	46
07:30 AM	12	12	24	24	36
07:45 AM	6	6	20	20	26
Total	29	29	100	100	129
08:00 AM	4	4	12	12	16
08:15 AM	5	5	0	0	5
Grand Total	44	44	127	127	171
Apprch %	100		100		
Total %	25.7	25.7	74.3	74.3	

	Farrington Hwy Westbound		Farrington Hwy Eastbound		
Start Time	U-Turn	App. Total	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:00 AM - Peak 1 of 1					
Peak Hour for Entire Intersection Begins at 07:00 AM					
07:00 AM	6	6	15	15	21
07:15 AM	5	5	**41**	**41**	**46**
07:30 AM	**12**	**12**	24	24	36
07:45 AM	6	6	20	20	26
Total Volume	29	29	100	100	129
% App. Total	100		100		
PHF	.604	.604	.610	.610	.701

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By:RV, GC
Counters: TU-0650, TU-0654
Weather: CLEAR

File Name : FarWai PM1
Site Code : 00000003
Start Date : 4/28/2022
Page No : 1

Groups Printed- Unshifted

	Waipahu Depot St Southbound					Farrington Hwy Westbound					Waipahu Depot St Northbound					Farrington Hwy Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:30 PM	45	5	9	5	64	13	304	11	2	330	39	12	30	0	81	13	174	31	2	220	695
03:45 PM	55	9	17	5	86	4	296	10	6	316	14	8	18	4	44	13	156	28	3	200	646
Total	100	14	26	10	150	17	600	21	8	646	53	20	48	4	125	26	330	59	5	420	1341
04:00 PM	39	8	14	5	66	20	276	5	2	303	28	4	21	2	55	19	153	45	4	221	645
04:15 PM	44	7	11	3	65	10	268	9	2	289	15	7	17	5	44	14	189	24	2	229	627
04:30 PM	49	9	19	3	80	10	316	8	0	334	17	10	17	5	49	14	188	30	1	233	696
04:45 PM	55	5	12	3	75	14	281	5	1	301	11	6	13	2	32	14	156	33	3	206	614
Total	187	29	56	14	286	54	1141	27	5	1227	71	27	68	14	180	61	686	132	10	889	2582
05:00 PM	50	6	25	2	83	7	295	13	2	317	23	6	15	4	48	14	166	20	3	203	651
05:15 PM	53	5	19	3	80	11	288	9	2	310	10	7	14	5	36	8	146	31	1	186	612
Grand Total	390	54	126	29	599	89	2324	70	17	2500	157	60	145	27	389	109	1328	242	19	1698	5186
Apprch %	65.1	9	21	4.8		3.6	93	2.8	0.7		40.4	15.4	37.3	6.9		6.4	78.2	14.3	1.1		
Total %	7.5	1	2.4	0.6	11.6	1.7	44.8	1.3	0.3	48.2	3	1.2	2.8	0.5	7.5	2.1	25.6	4.7	0.4	32.7	

	Waipahu Depot St Southbound				Farrington Hwy Westbound				Waipahu Depot St Northbound				Farrington Hwy Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	**55**	**9**		**81**			**10**										
04:00 PM	39	8	14	61	**20**	276	5	301	**28**	4	**21**	**53**	**19**	153	**45**	217	632
04:15 PM	44	7	11	62	10	268	9	287	15	7	17	39	14	**189**	24	227	615
04:30 PM	49	9	**19**	77	10	**316**	8	**334**	17	**10**	17	44	14	188	30	**232**	**687**
Total Volume	187	33	61	281	44	1156	32	1232	74	29	73	176	60	686	127	873	2562
% App. Total	66.5	11.7	21.7		3.6	93.8	2.6		42	16.5	41.5		6.9	78.6	14.5		
PHF	.850	.917	.803	.867	.550	.915	.800	.922	.661	.725	.869	.830	.789	.907	.706	.941	.932

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By:RV, GC
Counters:TU-0650,TU-0654
Weather:

File Name : FarWai PM-U-Turns ONLY
Site Code : 00000003
Start Date : 4/28/2022
Page No : 1

Groups Printed- Unshifted

	Farrington Hwy Westbound		Farrington Hwy Eastbound		
Start Time	Left	App. Total	U-Turn	App. Total	Int. Total
03:30 PM	10	10	18	18	28
03:45 PM	12	12	16	16	28
Total	22	22	34	34	56
04:00 PM	8	8	12	12	20
04:15 PM	9	9	24	24	33
04:30 PM	9	9	24	24	33
04:45 PM	7	7	14	14	21
Total	33	33	74	74	107
05:00 PM	7	7	15	15	22
05:15 PM	8	8	30	30	38
Grand Total	70	70	153	153	223
Apprch %	100		100		
Total %	31.4	31.4	68.6	68.6	

	Farrington Hwy Westbound		Farrington Hwy Eastbound		
Start Time	Left	App. Total	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1					
Peak Hour for Entire Intersection Begins at 03:45 PM					
03:45 PM	**12**	**12**	16	16	28
04:00 PM	8	8	12	12	20
04:15 PM	9	9	**24**	**24**	**33**
04:30 PM	9	9	24	24	33
Total Volume	38	38	76	76	114
% App. Total	100		100		
PHF	.792	.792	.792	.792	.864

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR AUTOMOBILES AT SIGNALIZED INTERSECTIONS

LOS A describes operations with a control delay of 10s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most Cycles fail to clear the queue.

A lane group can incur a delay less than 80s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicated that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80s/veh represents failure from a delay perspective).

"Highway Capacity Manual," Transportation Research Board, 2016.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK PERIOD TRAFFIC ANALYSIS

HCM 6th Signalized Intersection Summary
3: Waipahu Depot St & Farrington Hwy

07/18/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1025	76	99	853	63	55	44	35	112	28	159
Future Volume (veh/h)	334	1025	76	99	853	63	55	44	35	112	28	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	348	1068	79	103	889	66	57	46	0	117	29	166
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	404	1686	125	135	1179	88	174	121		319	70	362
Arrive On Green	0.23	0.50	0.50	0.08	0.35	0.35	0.23	0.23	0.00	0.23	0.23	0.23
Sat Flow, veh/h	1781	3350	248	1781	3347	248	444	524	1585	1023	304	1564
Grp Volume(v), veh/h	348	566	581	103	472	483	103	0	0	146	0	166
Grp Sat Flow(s),veh/h/ln	1781	1777	1821	1781	1777	1819	968	0	1585	1327	0	1564
Q Serve(g_s), s	14.8	18.4	18.4	4.5	18.5	18.5	3.1	0.0	0.0	0.0	0.0	7.2
Cycle Q Clear(g_c), s	14.8	18.4	18.4	4.5	18.5	18.5	11.0	0.0	0.0	7.9	0.0	7.2
Prop In Lane	1.00		0.14	1.00		0.14	0.55		1.00	0.80		1.00
Lane Grp Cap(c), veh/h	404	894	916	135	626	641	295	0		389	0	362
V/C Ratio(X)	0.86	0.63	0.63	0.77	0.75	0.75	0.35	0.00		0.38	0.00	0.46
Avail Cap(c_a), veh/h	1240	2339	2398	451	1552	1589	701	0		800	0	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	14.3	14.3	35.8	22.6	22.6	27.9	0.0	0.0	26.3	0.0	26.1
Incr Delay (d2), s/veh	5.5	0.7	0.7	8.7	1.9	1.8	0.7	0.0	0.0	0.6	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	6.7	6.8	2.2	7.5	7.6	1.8	0.0	0.0	2.4	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	15.1	15.0	44.5	24.4	24.4	28.6	0.0	0.0	26.9	0.0	27.0
LnGrp LOS	C	B	B	D	C	C	C	A		C	A	C
Approach Vol, veh/h		1495			1058			103			312	
Approach Delay, s/veh		19.7			26.4			28.6			26.9	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	44.8		23.3	22.9	32.8		23.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	20.0	104.0		41.0	55.0	69.0		41.0				
Max Q Clear Time (g_c+I1), s	6.5	20.4		9.9	16.8	20.5		13.0				
Green Ext Time (p_c), s	0.2	10.0		1.5	1.1	7.3		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	686	60	70	1156	44	73	29	74	61	33	187
Future Volume (veh/h)	203	686	60	70	1156	44	73	29	74	61	33	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	216	730	64	74	1230	47	78	31	0	65	35	199
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	1825	160	97	1603	61	222	77		270	131	335
Arrive On Green	0.15	0.55	0.55	0.05	0.46	0.46	0.21	0.21	0.00	0.21	0.21	0.21
Sat Flow, veh/h	1781	3301	289	1781	3487	133	694	358	1585	929	612	1563
Grp Volume(v), veh/h	216	393	401	74	626	651	109	0	0	100	0	199
Grp Sat Flow(s),veh/h/ln	1781	1777	1813	1781	1777	1844	1052	0	1585	1540	0	1563
Q Serve(g_s), s	9.9	10.7	10.7	3.4	24.7	24.8	5.3	0.0	0.0	0.0	0.0	9.6
Cycle Q Clear(g_c), s	9.9	10.7	10.7	3.4	24.7	24.8	9.7	0.0	0.0	4.4	0.0	9.6
Prop In Lane	1.00		0.16	1.00		0.07	0.72		1.00	0.65		1.00
Lane Grp Cap(c), veh/h	263	982	1003	97	817	847	299	0		401	0	335
V/C Ratio(X)	0.82	0.40	0.40	0.77	0.77	0.77	0.36	0.00		0.25	0.00	0.59
Avail Cap(c_a), veh/h	805	2302	2349	360	1859	1928	618	0		776	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.8	10.8	10.8	39.3	19.0	19.0	30.6	0.0	0.0	27.6	0.0	29.7
Incr Delay (d2), s/veh	6.3	0.3	0.3	11.8	1.5	1.5	0.7	0.0	0.0	0.3	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	3.8	3.9	1.8	9.6	9.9	2.0	0.0	0.0	1.7	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	11.1	11.1	51.1	20.5	20.5	31.4	0.0	0.0	27.9	0.0	31.4
LnGrp LOS	D	B	B	D	C	C	C	A		C	A	C
Approach Vol, veh/h		1010			1351			109			299	
Approach Delay, s/veh		17.5			22.2			31.4			30.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	51.5		23.0	17.4	43.7		23.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	109.0		39.0	38.0	88.0		39.0				
Max Q Clear Time (g_c+I1), s	5.4	12.7		11.6	11.9	26.8		11.7				
Green Ext Time (p_c), s	0.1	5.7		1.3	0.6	11.9		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2027 PEAK PERIOD TRAFFIC
ANALYSIS WITHOUT PROJECT

HCM 6th Signalized Intersection Summary
3: Waipahu Depot St & Farrington Hwy

07/18/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	1051	76	99	874	63	55	44	35	134	28	194
Future Volume (veh/h)	349	1051	76	99	874	63	55	44	35	134	28	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	364	1095	79	103	910	66	57	46	0	140	29	202
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	1726	124	134	1191	86	146	100		308	57	364
Arrive On Green	0.23	0.51	0.51	0.08	0.36	0.36	0.23	0.23	0.00	0.23	0.23	0.23
Sat Flow, veh/h	1781	3357	242	1781	3354	243	341	434	1585	995	247	1585
Grp Volume(v), veh/h	364	579	595	103	482	494	103	0	0	169	0	202
Grp Sat Flow(s),veh/h/ln	1781	1777	1822	1781	1777	1820	775	0	1585	1241	0	1585
Q Serve(g_s), s	16.3	19.5	19.5	4.7	19.9	19.9	3.6	0.0	0.0	0.0	0.0	9.3
Cycle Q Clear(g_c), s	16.3	19.5	19.5	4.7	19.9	19.9	14.2	0.0	0.0	10.6	0.0	9.3
Prop In Lane	1.00		0.13	1.00		0.13	0.55		1.00	0.83		1.00
Lane Grp Cap(c), veh/h	417	914	937	134	631	646	246	0		365	0	364
V/C Ratio(X)	0.87	0.63	0.63	0.77	0.76	0.76	0.42	0.00		0.46	0.00	0.55
Avail Cap(c_a), veh/h	1160	2229	2286	387	1457	1492	647	0		774	0	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	14.5	14.5	37.6	23.7	23.7	31.0	0.0	0.0	28.6	0.0	28.2
Incr Delay (d2), s/veh	5.8	0.7	0.7	8.9	2.0	1.9	1.1	0.0	0.0	0.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	7.1	7.3	2.3	8.1	8.3	2.0	0.0	0.0	3.1	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	15.2	15.2	46.6	25.6	25.6	32.1	0.0	0.0	29.5	0.0	29.5
LnGrp LOS	D	B	B	D	C	C	C	A		C	A	C
Approach Vol, veh/h		1538			1079			103			371	
Approach Delay, s/veh		20.2			27.6			32.1			29.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.2	47.6		24.0	24.4	34.4		24.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	18.0	104.0		43.0	54.0	68.0		43.0				
Max Q Clear Time (g_c+I1), s	6.7	21.5		12.6	18.3	21.9		16.2				
Green Ext Time (p_c), s	0.2	10.4		1.8	1.1	7.5		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
3: Waipahu Depot St & Farrington Hwy

07/18/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	703	60	70	1185	44	73	29	74	66	33	200
Future Volume (veh/h)	227	703	60	70	1185	44	73	29	74	66	33	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	241	748	64	74	1261	47	78	31	0	70	35	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	1876	160	96	1609	60	212	74		270	123	337
Arrive On Green	0.16	0.57	0.57	0.05	0.46	0.46	0.22	0.22	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1781	3309	283	1781	3491	130	671	341	1585	950	569	1563
Grp Volume(v), veh/h	241	402	410	74	641	667	109	0	0	105	0	213
Grp Sat Flow(s),veh/h/ln	1781	1777	1815	1781	1777	1844	1012	0	1585	1519	0	1563
Q Serve(g_s), s	12.1	11.6	11.6	3.8	28.0	28.1	6.0	0.0	0.0	0.0	0.0	11.4
Cycle Q Clear(g_c), s	12.1	11.6	11.6	3.8	28.0	28.1	11.2	0.0	0.0	5.2	0.0	11.4
Prop In Lane	1.00		0.16	1.00		0.07	0.72		1.00	0.67		1.00
Lane Grp Cap(c), veh/h	285	1007	1029	96	819	850	286	0		393	0	337
V/C Ratio(X)	0.84	0.40	0.40	0.77	0.78	0.78	0.38	0.00		0.27	0.00	0.63
Avail Cap(c_a), veh/h	755	2144	2190	290	1681	1744	549	0		705	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	11.1	11.1	42.9	20.9	20.9	33.8	0.0	0.0	30.2	0.0	32.7
Incr Delay (d2), s/veh	6.8	0.3	0.3	12.0	1.7	1.6	0.8	0.0	0.0	0.4	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.2	4.3	1.9	11.1	11.5	2.3	0.0	0.0	2.0	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	11.4	11.4	54.9	22.6	22.6	34.7	0.0	0.0	30.6	0.0	34.7
LnGrp LOS	D	B	B	D	C	C	C	A		C	A	C
Approach Vol, veh/h		1053			1382			109			318	
Approach Delay, s/veh		18.9			24.3			34.7			33.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	57.2		24.9	19.7	47.4		24.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	111.0		39.0	39.0	87.0		39.0				
Max Q Clear Time (g_c+I1), s	5.8	13.6		13.4	14.1	30.1		13.2				
Green Ext Time (p_c), s	0.1	5.9		1.4	0.7	12.3		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2027 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT

HCM 6th Signalized Intersection Summary
3: Waipahu Depot St & Farrington Hwy

08/04/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	1051	76	99	874	63	60	44	38	134	28	194
Future Volume (veh/h)	349	1051	76	99	874	63	60	44	38	134	28	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	364	1095	79	103	910	66	62	46	0	140	29	202
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	1724	124	134	1188	86	153	96		313	58	368
Arrive On Green	0.23	0.51	0.51	0.08	0.35	0.35	0.23	0.23	0.00	0.23	0.23	0.23
Sat Flow, veh/h	1781	3357	242	1781	3354	243	367	416	1585	1011	249	1585
Grp Volume(v), veh/h	364	579	595	103	482	494	108	0	0	169	0	202
Grp Sat Flow(s),veh/h/ln	1781	1777	1822	1781	1777	1820	783	0	1585	1260	0	1585
Q Serve(g_s), s	16.4	19.7	19.7	4.7	20.1	20.1	4.2	0.0	0.0	0.0	0.0	9.4
Cycle Q Clear(g_c), s	16.4	19.7	19.7	4.7	20.1	20.1	14.5	0.0	0.0	10.4	0.0	9.4
Prop In Lane	1.00		0.13	1.00		0.13	0.57		1.00	0.83		1.00
Lane Grp Cap(c), veh/h	417	912	936	134	630	645	249	0		371	0	368
V/C Ratio(X)	0.87	0.63	0.64	0.77	0.77	0.77	0.43	0.00		0.46	0.00	0.55
Avail Cap(c_a), veh/h	1173	2234	2291	384	1446	1482	622	0		755	0	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	14.7	14.7	37.9	23.9	23.9	31.5	0.0	0.0	28.5	0.0	28.2
Incr Delay (d2), s/veh	5.8	0.7	0.7	9.0	2.0	1.9	1.2	0.0	0.0	0.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	7.2	7.4	2.3	8.2	8.4	2.1	0.0	0.0	3.1	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	15.4	15.4	46.9	25.9	25.8	32.7	0.0	0.0	29.4	0.0	29.5
LnGrp LOS	D	B	B	D	C	C	C	A		C	A	C
Approach Vol, veh/h		1538			1079			108			371	
Approach Delay, s/veh		20.4			27.9			32.7			29.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	47.9		24.4	24.6	34.6		24.4				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	18.0	105.0		42.0	55.0	68.0		42.0				
Max Q Clear Time (g_c+I1), s	6.7	21.7		12.4	18.4	22.1		16.5				
Green Ext Time (p_c), s	0.2	10.4		1.8	1.1	7.5		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	703	64	74	1185	44	73	29	74	66	33	200
Future Volume (veh/h)	227	703	64	74	1185	44	73	29	74	66	33	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	241	748	68	79	1261	47	78	31	0	70	35	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	1853	168	103	1609	60	212	74		270	123	337
Arrive On Green	0.16	0.56	0.56	0.06	0.46	0.46	0.22	0.22	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1781	3289	299	1781	3491	130	671	341	1585	950	569	1563
Grp Volume(v), veh/h	241	404	412	79	641	667	109	0	0	105	0	213
Grp Sat Flow(s),veh/h/ln	1781	1777	1811	1781	1777	1844	1012	0	1585	1519	0	1563
Q Serve(g_s), s	12.1	11.8	11.8	4.0	28.0	28.1	6.0	0.0	0.0	0.0	0.0	11.4
Cycle Q Clear(g_c), s	12.1	11.8	11.8	4.0	28.0	28.1	11.2	0.0	0.0	5.2	0.0	11.4
Prop In Lane	1.00		0.17	1.00		0.07	0.72		1.00	0.67		1.00
Lane Grp Cap(c), veh/h	285	1001	1021	103	819	850	286	0		393	0	337
V/C Ratio(X)	0.84	0.40	0.40	0.77	0.78	0.78	0.38	0.00		0.27	0.00	0.63
Avail Cap(c_a), veh/h	755	2144	2186	290	1681	1744	549	0		705	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	11.3	11.3	42.7	20.9	20.9	33.8	0.0	0.0	30.2	0.0	32.7
Incr Delay (d2), s/veh	6.8	0.3	0.3	11.4	1.7	1.6	0.8	0.0	0.0	0.4	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.3	4.4	2.1	11.1	11.5	2.3	0.0	0.0	2.0	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	11.6	11.6	54.1	22.6	22.6	34.7	0.0	0.0	30.6	0.0	34.7
LnGrp LOS	D	B	B	D	C	C	C	A		C	A	C
Approach Vol, veh/h		1057			1387			109			318	
Approach Delay, s/veh		19.1			24.4			34.7			33.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	56.8		24.9	19.7	47.4		24.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	111.0		39.0	39.0	87.0		39.0				
Max Q Clear Time (g_c+I1), s	6.0	13.8		13.4	14.1	30.1		13.2				
Green Ext Time (p_c), s	0.1	5.9		1.4	0.7	12.3		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX D:

Early Consultation Comment and

Response Letters

APPENDIX D:

Early Consultation Comment and

Response Letters

BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96843
Phone: (808) 748-5000 • www.boardofwatersupply.com

RICK BLANGIARDI
MAYOR
MEIA

ERNEST Y. W. LAU, P.E.
MANAGER AND CHIEF ENGINEER
MANAKIA A ME KAHU WILIKI

ERWIN KAWATA
DEPUTY MANAGER
HOPE MANAKIA

NA`ALEHU ANTHONY, Chair
KAPUA SPROAT, Vice Chair
BRYAN P. ANDAYA
MAX J. SWORD
JONATHAN KANESHIRO
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

August 7, 2023

Mr. Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
AUG 10 2023
WILSON OKAMOTO CORPORATION

Dear Mr. Cheng:

Subject: Your Letter Dated July 20, 2023 Requesting Comments on the Environmental Assessment Early Consultation for the Waipahu Refuse Facility and Convenience Center off Waipahu Depot Street – Tax Map Key: 9-3-002: 009

Thank you for the opportunity to comment on the proposed Waipahu Convenience Center and Refuse Roll off Division Base Yard Facility project.

The existing water system is adequate to accommodate the proposed development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission, and daily storage.

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The construction drawings should be submitted for our review and the construction schedule should be coordinated to minimize impact to the water system.

The developer should verify that best management practices are established and implemented to ensure that site run-off does not negatively affect nearby coastal shoreline water, surface waters, or groundwaters.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at (808) 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

10751-01
May 23, 2024

Mr. Ernest Lau, P.E.
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI, 96843

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Lau:

Thank you for your letter dated August 7, 2023, regarding the subject Early Consultation Package for the Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.

We acknowledge that the existing water system is adequate to accommodate the Proposed Project. However, the BWS will make a final decision on the availability of water when the building permit application is submitted for approval. Please note that we have taken your comments into consideration in preparing the EA and incorporated them with regards to the water system as it relates to the Proposed Project in Section 3.16.1 of the EA.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

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)23.118

JUL 28 2023

RECEIVED
JUL 31 2023
WILSON OKAMOTO CORPORATION

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

Dear Mr. Cheng:

Subject: Environmental Assessment - Early Consultation
Waipahu Refuse Facility and Convenience Center
Waipahu, Oahu, Hawaii
TMK: (1)9-3-002-009 (por.)

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

If you have any questions, your staff may call Dora Choy of the Public Works Division at (808) 586-0488.

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

DC:mo

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Ms. Christine L. Kinimaka
Department of Accounting and General Services
State of Hawai‘i
P.O. Box 119
Honolulu, HI, 96810-0119

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Ms. Kinimaka:

Thank you for your letter dated July 28, 2023, regarding the subject Early Consultation Package for the Waipahu Refuse Facility and Convenience Center. We acknowledge that the Department of Accounting and General Services does not have any comments at this time and have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.

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’s (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

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 • WEB SITE: www.honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

HAKU MILLES, P.E.
DIRECTOR
PO'O

BRYAN GALLAGHER, P.E.
DEPUTY DIRECTOR
HOPE PO'O

August 11, 2023

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

Subject: Environmental Assessment (EA) Early Consultation for the Waipahu Refuse Facility and Convenience Center Waipahu, Oahu, Hawaii

Thank you for the opportunity to review and comment.

Our Facilities Division has the following comments: With the new facility, will there be improvements to the existing roadway with the increased traffic loads? The roadway is unimproved and subject to flooding in heavy rains.

Should you have any further questions, please contact Clifford Lau, Facilities Division Chief at (808) 768-8483.

Sincerely,

For Haku Milles, P.E., LEED AP
Director

HM:krn (906687)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

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

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Milles:

Thank you for your letter dated August 11, 2023, regarding the subject Early Consultation Package for the Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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, has been produced and is appended to the Draft EA in Appendix D.

We acknowledge that the existing roadway is unimproved and subject to flooding during heavy rains. Please note that we have taken your comments regarding flooding into consideration in preparing for the Draft EA and incorporated them in Section 3.16.3.

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's (ERP) The Environmental Notice.
We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

DEPARTMENT OF FACILITY MAINTENANCE
KA 'OIHANA MĀLAMA HALE
CITY AND COUNTY OF HONOLULU

1000 ULU'OHIA STREET, SUITE 215, KAPOLEI, HAWAI'I 96707
PHONE: (808) 768-3343 • Fax: (808) 768-3381 • WEBSITE: https://www.honolulu.gov/dfm

RICK BLANGIARDI
MAYOR
MEIA

GENE C. ALBANO, P.E.
DIRECTOR AND CHIEF ENGINEER
PO'O A ME LUNA NUI 'ENEKINIA

WARREN K. MAMIZUKA
DEPUTY DIRECTOR
HOPE PO'O

IN REPLY REFER TO:
SWQ 23-199
DART 907038

September 28, 2023

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

RECEIVED
OCT 02 2023

Dear Mr. Cheung:

SUBJECT: Environmental Assessment Early Consultation for the Waipahu Refuse Facility and Convenience Center Waipahu, Oahu, Hawaii

On behalf of the Department of Facility Maintenance (DFM), Storm Water Quality (SWQ) Division, we are pleased to provide comments on the proposed Waipahu Refuse Facility and Convenience Center.

Our comments are set out below:

1. Waipahu Refuse Convenience Center is a City Industrial Facility subject to requirements of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit hereby referred to as "Permit." Under the Permit, a Stormwater Pollution Control Plan (SWPCP) must be prepared for this facility. The DFM-SWQ will need to be provided with the requisite documents and advised well in advance of the completion of the facility in order to prepare the SWPCP. Otherwise, it will be the responsibility of the design team to develop the requisite SWPCP.

2. The Waipahu Refuse Center is a high priority facility with great potential for pollutant discharge and will be subject to annual stormwater monitoring.

3. The project area is in close proximity to the Kapakahi Stream. The stream is on the State of Hawai'i's list of impaired waters under the Clean Water Act (CWA) Section 303 (d). Kapakahi is impaired for, among other things, Nitrogen, Phosphorous, Trash, and Turbidity. The project area is also within the area of West Loch of Pearl Harbor. Therefore, the Department of Health Water Quality Standards §11-54-2 for streams and Pearl Harbor Estuary will need to be taken into account, both in the selection and placement of construction and post-construction Best Management Practices.

4. In the event that the Center houses aboveground oil storage containers with aggregate storage capacity greater than 1,320 gallons, it may be subject to the Environmental Protection Agency's Spill Prevention, Control and Countermeasure rules (40 CFR Part 112) created under the Clean Water Act s. 311 (j)(1)(C). In such a case, a Spill Prevention Control and Countermeasure Plan (SPCCP) will be required. Provisions should be taken into consideration by the design team to develop the necessary SPCCP well in advance and forwarded to the DFM-SWQ for review and acceptance prior to when the facility goes into operation. Upon request, template copies of the SPCCP can be provided to the design team by the DFM-SWQ to aid in developing and finalizing the plan.

5. The City and County of Honolulu, under the Department of Planning and Permitting, has Administrative Rules titled, "Rules Relating to Water Quality" (Title 20 Chapter 3), which regulates all new and redevelopment projects that require a building, trenching, stockpiling, grading and/or grubbing permit.

If you have any questions, please contact Ms. Saani Fong, Planner VII of the SWQ Division by phone at (808) 768-3387 or email at saani.fong@honolulu.gov.

Sincerely,

Digitally signed by Albano, Gene
Date: 2023.09.28 12:05:15-10'00'

Gene C. Albano, P.E.
Director and Chief Engineer

cc: Mr. Bryan Toda, Civil Engineer VI, ENV
(via email: bryan.toda@honolulu.gov)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Gene Albano
Department of Facility Maintenance
City and County of Honolulu
1000 Uluohia St, Suite 215
Kapolei, Hawaii 96707

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Albano:

Thank you for your letter dated September 28, 2023 regarding the subject Early Consultation Package for the Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.
We offer the following in response to the points raised:

- We acknowledge that the Waipahu Refuse Facility and Convenience Center is a City Industrial Facility which is subject to requirements of the National Pollutant Discharge Elimination System (NPDES) and the City and County of Honolulu's Storm Water Quality Rules as noted in Section 4.3 of the DEA.
- We acknowledge that the project area is in close proximity to the Kapakahi Stream. The Waipahu Refuse Facility and Convenience Center shall implement Best Management Practices according to the Department of Health Water Quality Standards §11-54-2.
- The Waipahu Refuse Facility and Convenience Center is not currently anticipated to house houses aboveground oil storage containers with aggregate storage capacity greater than 1,320 gallons. Should this change, we acknowledge that Waipahu Refuse Facility and Convenience Center may be subject to the Environmental Protection Agency's Spill Prevention, Control and Countermeasure rules (40 CFR Part 112) created under the Clean Water Act s. 311 (j)(1)(C).
- We acknowledge that the City and County of Honolulu Under the Department of Planning and Permitting has Administrative Rules titled "Rules Relating to Water Quality" (Title 20 Chapter 3) which regulate all new and redevelopment projects that require a building, trenching, stockpiling, grading and/or grubbing permit.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,



Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

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

August 17, 2023

LD 0067

Keola Cheng
Director-Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400 *Via email: publiccomment@wilsonokamoto.com*
Honolulu, Hawaii 96826

Greetings:

SUBJECT: **Environmental Assessment Early Consultation for the Waipahu Refuse Facility and Convenience Center, Tax Map Key (TMK): (1) 9-3-002:009 (por.), Waipahu, Oahu, Hawaii**

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to DLNR's various divisions for their review and comment.

Enclosed are comments received from our Engineering Division and Office of Conservation & Coastal Lands. Should you have any questions, please feel free to contact Timothy Chee via email at *timothy.chee@hawaii.gov*. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files

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

July 31, 2023

LD 0067

MEMORANDUM

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

__Div. of Aquatic Resources *(via email: kendall.l.tucker@hawaii.gov)*
__Div. of Boating & Ocean Recreation
_X_ Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
_X_ Div. of Forestry & Wildlife *(via email: Rubyrosa.T.Terrago@hawaii.gov)*
__Div. of State Parks
_X_ Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
_X_ Office of Conservation & Coastal Lands *(via email: sharleen.k.kuba@hawaii.gov)*
_X_ Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*
_X_ Aha Moku *(via email: leimana.k.damate@hawaii.gov)*

TO: ~~FROM:~~ Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: **Draft Environmental Assessment Early Consultation Request for Comments Waipahu Refuse Facility and Convenience Center**

LOCATION: Waipahu, Island of Oahu, Hawaii
TMK: (1) 9-3-002:009 (por.)

APPLICANT: **Wilson Okamoto Corporation**

Transmitted for your review and comment is information on the above-referenced project. Please submit any comments to *timothy.chee@hawaii.gov* at the Land Division by the internal deadline of **August 17, 2023**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Timothy Chee at the above email address. Thank you.

BRIEF COMMENTS:

Attachments
Cc: Central Files

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

Signed: *GSC*
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Aug 11, 2023

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji

Ref: Draft Environmental Assessment Early Consultation Request for Comments
Waipahu Refuse Facility and Convenience Center
Location: Waipahu, Island of Oahu, Hawaii
TMK(s): (1) 9-3-002:009 (por.)
Applicant: Wilson Okamoto Corporation

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 to research 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: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: Aug 11, 2023

WILSON OKAMOTO
CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10751-01
July 20, 2023

Ms. Dawn N. S. Chang
State of Hawaii
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, HI 96813

Subject: Environmental Assessment Early Consultation for the Waipahu Refuse Facility and Convenience Center Waipahu, O'ahu, Hawai'i

Dear Ms. Chang:

On behalf of the City and County of Honolulu Department of Environmental Services (ENV) – Refuse Division, Wilson Okamoto Corporation is currently preparing a Draft Environmental Assessment (EA) for the proposed Waipahu Refuse Facility and Convenience Center (Proposed Action) located in Waipahu on the island of O'ahu. The proposed Project Site would be located on the Tax Map Key (TMK) parcel: [1] 9-3-002:009 (por.). The Proposed Action involves use of County lands and funds which requires an EA pursuant to Chapter 343, Hawai'i Revised Statutes.

As part of the EA Early Consultation process, we are soliciting comments you may have on the Proposed Action. A summary of the Proposed Action and associated figures are enclosed for your review. Please submit comments via email to publiccomment@wilsonokamoto.com, or written comments via mail to:

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

We would appreciate your written comments by August 19, 2023. If you have any questions or require additional information, please feel free to call Mr. Dalton Beauprez, or myself, at (808) 946-2277.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

Enclosures

cc:
Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

RECEIVED
LAND DIVISION
2023 JUL 26 PM 2:22
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

Environmental Assessment Early Consultation Package

Waipahu Refuse Station and Convenience Center

Waipahu, O'ahu, HI

City and County of Honolulu –
Department of Environmental Services

July 2023
Wilson Okamoto Corporation

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER ENVIRONMENTAL ASSESSMENT EARLY CONSULTATION PACKAGE

1. ENVIRONMENTAL ASSSESSMENT - EARLY CONSULTATION

On behalf of the City and County of Honolulu (City) Department of Environmental Services (ENV), Refuse Division, Wilson Okamoto Corporation has prepared this Early Consultation Package to notify stakeholders of the commencement of the preparation of an Environmental Assessment for the Proposed Action, as well as to solicit scoping input on the EA process which is outlined below in detail in Section 2.

The purpose of this Early Consultation package is to initiate the first step to comply with the Hawai'i Environmental Review process. ENV is proposing to convert its former Waipahu Incinerator Facility (WIF) into a multi-use Refuse Division Facility (Proposed Action) in Waipahu on the island of O'ahu. As prescribed by § 343-5 (5), Hawai'i Revised Statutes (HRS) actions which, "*Propose the use of state or county lands or the use of state or county funds...*" require an EA. The Proposed Action will utilize public lands and funds, and as such, the forthcoming EA will be prepared in accordance with Chapter 343, HRS, and Chapter 11-200.1, Hawai'i Administrative Rules (HAR). This EA will include an assessment of the potential environmental, social, cultural, and economic impacts associated with the Proposed Project. Pursuant to HRS §343-5(b), the ENV will be the "Approving Agency" and will determine the significance of potential environmental impacts as this is considered an "Agency Action."

2. PROPOSED PROJECT – PROJECT DESCRIPTION

The ENV plans to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to the former WIF property located further south on Waipahu Depot Street and adjacent to the south side of the Honolulu Police Academy / Training Facility (see Figure 1). The WCC provides a location for area residents to drop-off municipal solid waste (MSW), white goods (refrigerators, air conditioners, and other similar appliances), and other household waste materials (e.g., tires, propane tanks, metal, and green waste) as an alternative to drop-off at the Waimānalo Gulch Sanitary Landfill or other solid waste management facility on O'ahu. The existing WCC was constructed in the 1970's and is no longer sized to operate efficiently and accommodate the number of residents utilizing the facility. The new WCC will include the following improvements to reduce operational inefficiencies experienced at the existing WCC:

- Ten proposed waste offloading locations to allow several residents to offload at the same time.
- Sufficient area within the facility for traffic staging and maneuverability.
- Strategic location for the facility attendant to direct residents and oversee facility activities.
- Segregated residential and ENV refuse truck traffic.
- White goods and other waste material storage areas separated from MSW offloading areas.

The ENV also plans to develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) east of the new WCC. The Refuse Division currently houses their Rolloff Division at the former WIF, utilizing existing structures for parking and dispatch operations. Presently, the existing, former WIF accommodates eight drivers, nine trucks, and one supervisor. These remaining WIF structures will be demolished during construction of the new WCC and Refuse Facility. The proposed Refuse Facility will consist of the following major components:

- 2-Story office building with a dispatch office, and locker and break rooms for Rolloff Division employees (14-16 drivers and two supervisors), and offices, and training and public education facilities for Refuse Division employees.
- Parking area for Rolloff and Refuse Division employees.
- Parking area for rolloff trucks (16-17 trucks).
- Truck wash pad and canopy.
- Equipment storage building.

- Designated area for future container repair shop and/or rolloff container storage yard.
- Disposal Operations Office (potential future expansion).

The Proposed Action will be constructed on land owned by the City and County of Honolulu and will utilize funding from the City's Capital Improvement Program (CIP) budget.

2.1. PROJECT LOCATION & SETTING

The Project Site for the Proposed Action sits upon the Waipi'o Peninsula in Waipahu on the island of O'ahu. The Project Site encompasses Tax Map Key (TMK) parcel [1] 9-3-002:009 and is approximately 0.5 miles northeast of the West Loch of Pearl Harbor. The Project Site is bordered by the Honolulu Police Academy / Training Facility to the north, the Ted Makalena Golf Course to the east, the Waipi'o Peninsula Soccer Complex/Park to the south, a closed ash landfill to the southwest, and the Pouhala Marsh Wildlife Restoration Area to the west (See Figure 2). The nearest residential area is located approximately 0.25 miles to the north of the Project Site.

Historically, the Project Site was used for incineration of municipal solid waste (MSW) from approximately 1970 to 1984. The complex consisted of MSW-receiving areas, MSW-handling areas, two identical furnaces that had electrostatic precipitators (ESPs), two stacks, an administration office building, and ancillary outbuildings. Incineration activities at the Project Site terminated in 1984 and the ESPs and associated stacks were removed in 1999. A fenced-in concrete pad that housed a transformer (removed in June 2014) is present in the southern portion of the Project Site. Site features are depicted on the Existing Conditions Site Plan prepared by Wood Environment & Infrastructure Solutions, Inc. (Wood) in 2021 (See Attachment A).

As depicted on the Existing Conditions Site Plan, the perimeter of the Project Site is surrounded by a six-foot-high chain-link fence. The main access to the former WIF is through an entrance gate at Waipahu Depot Street and up a concrete access ramp structure to the remaining incinerator structure. A paved asphalt circular road is present around the facility, with access gates at the southern limits. Areas to the west, south and east of the former incinerator building are also paved with asphalt, with landscaped areas around the perimeter.

2.2 PURPOSE AND NEED

The Proposed Action is intended to provide continued solid waste disposal services to the greater Leeward O'ahu area, and facilitate improvements to ENV solid waste management operations in the region. The WCC and Rolloff Division are integral components of O'ahu's solid waste management system and vital for responsible management of MSW generated on the island.

2.3 PROJECT TIMELINE, REQUIRED PERMITS, AND APPROVALS

Following design and permitting, construction of the WCC is anticipated to start in Q1 of 2025 and completed in Q1 of 2026, and construction of the Refuse Facility to start in Q1 of 2026 and completed in Q3 of 2027.

The Project Site is located within the City and County's Special Management Area (SMA). Development of the Proposed Action will be subject to SMA permitting requirements pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). It is assumed that the Proposed Action will exceed the $500,000.00 threshold for a minor SMA permit and will require approval of a major SMA Use Permit.

Furthermore, the Project Site is situated on land designated within the State's Agricultural land use district. Permissible uses within the agricultural district include public solid waste transfer stations, except for "offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures." (Section 205-4.5[a][7], HRS). The Convenience Center component of the Proposed Action falls under the classification of a public solid waste transfer station and thereby constitutes a permissible use within the agricultural district. However, the Refuse Roll-off Division Baseyard Facility will require the approval of either a Special Permit or State Land Use District Boundary Amendment (SLUDBA).

The forthcoming EA will be used to support the requisite SMA process that would ensue once the EA process has concluded, as well as requisite Special Permit or SLUDBA processes that will follow the SMA process.

3. CONSULTATION

As previously stated, this Early Consultation Package constitutes the first step in the EA process and is intended to notify stakeholders of the commencement of the preparation of an EA for the Proposed Project, as well as to solicit scoping input on the EA process.

This Early Consultation Package has been circulated to the following parties:

Federal Agencies
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
U.S. Department of Agriculture (USDA), Natural Resources Conservation Service
U.S. Department of the Interior, Fish and Wildlife Service

Federal Representatives
Senator Mazie Hirono
Senator Brian Schatz
Representative Jill Tokuda
Representative Ed Case

State Agencies
Department of Accounting and General Services
Department of Business, Economic Development and Tourism (DBEDT)
DBEDT, Hawai'i State Energy Office
DBEDT, Land Use Commission
DBEDT, Office of Planning and Sustainable Development (OPSD)
OPSD, Environmental Quality Control
Department of Defense
Department of Health (DOH)
DOH, Clean Water Branch
DOH, Environmental Management Division
DOH, Hazard Evaluation and Emergency Response Office
DOH, Wastewater Branch
DOH, Safe Drinking Water Branch
Department of Land and Natural Resources (DLNR)
DLNR, Office of Coastal and Conservation Lands
DLNR, Historic Preservation Division
Department of Hawaiian Home Lands
Department of Transportation (DOT)

DOT, Highways Division
DOT, Airports Division
Office of Hawaiian Affairs

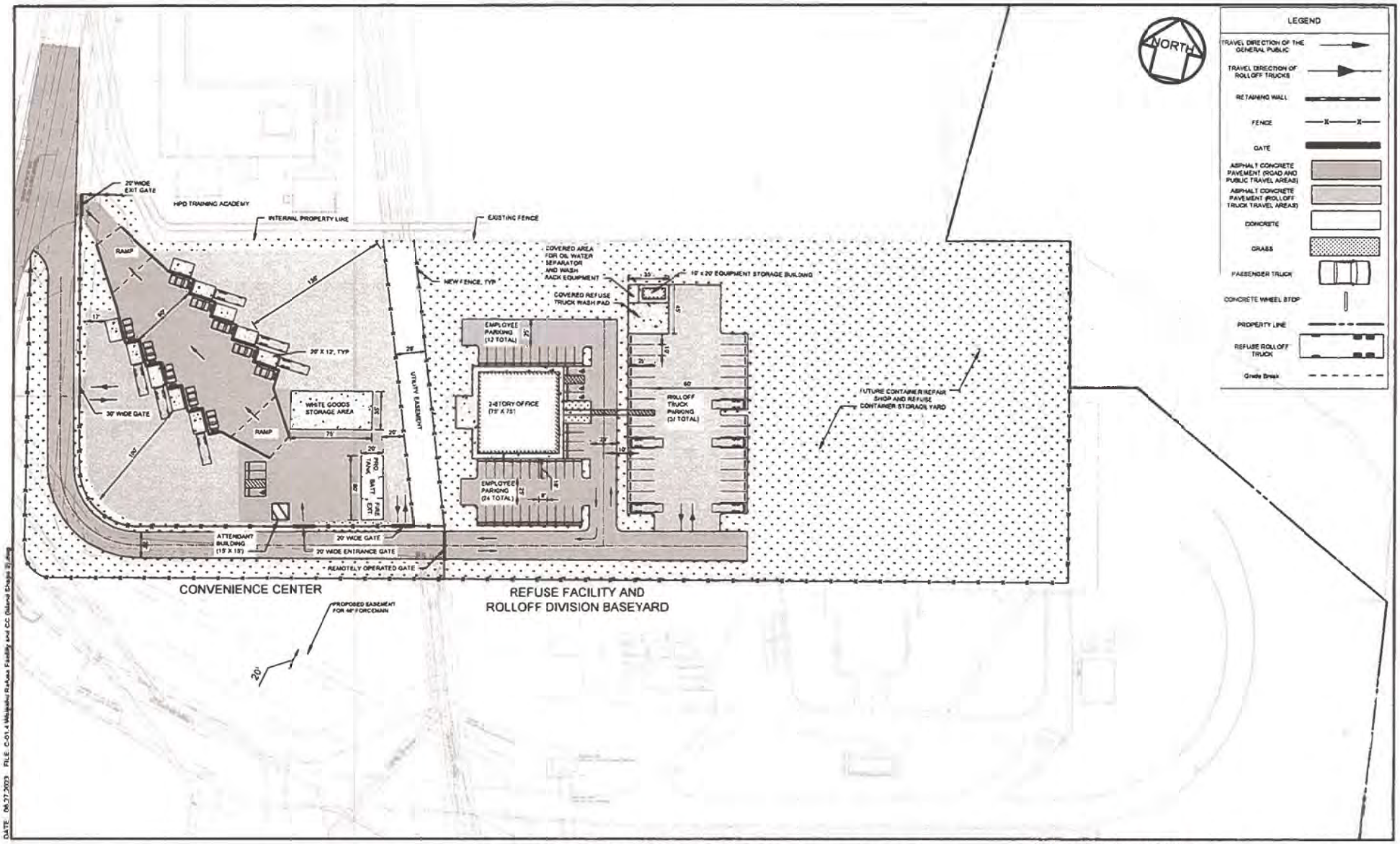
State Representatives
Senator Michelle N. Kidani
Senator Henry Aquino
Representative Cory Chun
Representative Rachele Lamosao
Representative Elijah Pierick

City and County of Honolulu Agencies
Board of Water Supply
Department of Community Services
Department of Design and Construction
Department of Environmental Services
Department of Facility Maintenance
Department of Parks and Recreation
Department of Planning and Permitting
Department of Transportation Services
Honolulu Fire Department
Honolulu Police Department
Office of Climate Change, Sustainability, and Resiliency
Office of the Mayor

City Council
Councilmember Augie Tulba

Utility Companies
Hawai'i Gas
Spectrum Hawai'i
Hawaiian Telcom
Hawaiian Electric Company

Other Interested Parties and Individuals
Hawai'i State Library
Waipahu Public Library
Waipahu Neighborhood Board No. 22



DATE: 04.17.2023 FILE: C-01.4 Waipahu Refuse Facility and CC (Island Chips).dwg

HDR

WAIPAHU REFUSE FACILITY AND CONVENIENCE CENTER

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF ENVIRONMENTAL SERVICES, REFUSE DIVISION
WAIPAHU, OAHU, HAWAII

CONCEPTUAL LAYOUT
OVERALL SITE PLAN

0' 80' 160'
SCALE: 1" = 80'

FIGURE
C-01.4

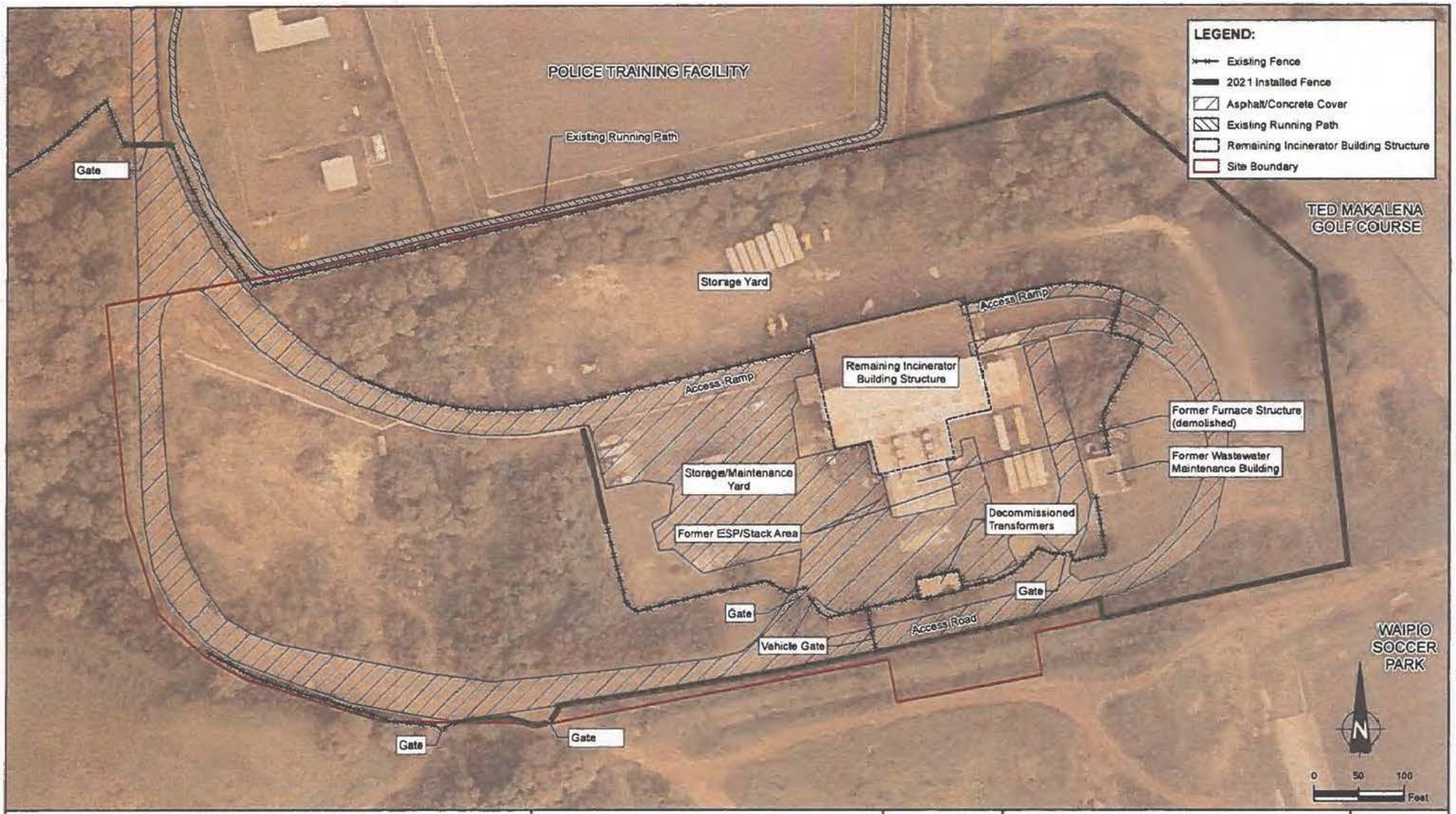


WILSON OKAMOTO CORPORATION

FIGURE 2

Project Location / Surrounding Uses Map

Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i



NOTES:
1. Fence/gate locations were approximated from aerial imagery and documented site conditions in January 2021.

ATTACHMENT A

CITY AND COUNTY OF HONOLULU

Wood Environment & Infrastructure Solutions, Inc.
98-1238 Kaahumanu Street, Suite 400
Pearl City, HI 96782

wood.

FORMER WAIPAHU INCINERATOR FACILITY CLOSURE REPORT

EXISTING CONDITIONS SITE PLAN

DATE: JANUARY 2021
SCALE: 1" = 100'
PROJECT NO.: 9471000017.13
FIGURE: 3

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Carty Chang
Department of Land and Natural Resources – Engineering Division
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Chang:

Thank you for your letter dated July 31, 2023 regarding the subject Early Consultation Package for the Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.

As discussed in Section 3.4.2 of the DEA the project area includes lands within Flood Zones X and AE. We acknowledge that Flood Zone AE is considered a Special Flood Hazard Area in which the rules and regulations of the National Flood Insurance Program are enforced.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

RECEIVED
LAND DIVISION
2023 AUG -4 PM 2:10
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

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

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2023 AUG -1 P 12:13
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

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

July 31, 2023

LD 0067

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources *(via email: kendall.l.tucker@hawaii.gov)*
__Div. of Boating & Ocean Recreation
X Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: Rubyrosa.T.Terrago@hawaii.gov)*
__Div. of State Parks
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
X Office of Conservation & Coastal Lands *(via email: sharleen.k.kuba@hawaii.gov)*
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*
X Aha Moku *(via email: leimana.k.damate@hawaii.gov)*

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: **Draft Environmental Assessment Early Consultation Request for Comments Waipahu Refuse Facility and Convenience Center**
LOCATION: Waipahu, Island of Oahu, Hawaii
TMK: (1) 9-3-002:009 (por.)
APPLICANT: **Wilson Okamoto Corporation**

Transmitted for your review and comment is information on the above-referenced project. Please submit any comments to *timothy.chee@hawaii.gov* at the Land Division by the internal deadline of **August 17, 2023**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Timothy Chee at the above email address. Thank you.

BRIEF COMMENTS:

Attachments
Cc: Central Files

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

Signed: Michael Cain
Print Name: Michael Cain
Division: OCCL
Date: 08-03-23

does not appear to be in C.D.

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Michael Cain
Office of Conservation and Coastal Lands
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Cain:

Thank you for your letter dated August 8, 2023, regarding the subject Early Consultation Package for the proposed Waipahu Refuse Facility and Convenience Center. We acknowledge that the Office of Conservation and Coastal Lands has no comments or objections to the Proposed Project. A record of your letter, along with this response, have been reproduced and are appended to the Draft EA in Appendix D.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

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

August 23, 2023

LD 0067

Keola Cheng
Director-Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400 *Via email: publiccomment@wilsonokamoto.com*
Honolulu, Hawaii 96826

Greetings:

SUBJECT: **Environmental Assessment Early Consultation for the Waipahu Refuse Facility and Convenience Center, Tax Map Key (TMK): (1) 9-3-002:009 (por.), Waipahu, Oahu, Hawaii**

Thank you for the opportunity to review and to comment on the subject project. In addition to previous comments sent to you from the Department of Land and Natural Resources (DLNR), enclosed are comments received from the DLNR's Division of Forestry and Wildlife.

Should you have any questions, please feel free to contact Timothy Chee via email at *timothy.chee@hawaii.gov*. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files

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

July 31, 2023

LD 0067

MEMORANDUM

FROM: **DLNR Agencies:**
__Div. of Aquatic Resources *(via email: kendall.l.tucker@hawaii.gov)*
__Div. of Boating & Ocean Recreation
_X_ Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
_X_ Div. of Forestry & Wildlife *(via email: Rubyrosa.T.Terrago@hawaii.gov)*
__Div. of State Parks
_X_ Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
_X_ Office of Conservation & Coastal Lands *(via email: sharleen.k.kuba@hawaii.gov)*
_X_ Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*
_X_ Aha Moku *(via email: leimana.k.damate@hawaii.gov)*

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: **Draft Environmental Assessment Early Consultation Request for Comments Waipahu Refuse Facility and Convenience Center**
LOCATION: Waipahu, Island of Oahu, Hawaii
TMK: (1) 9-3-002:009 (por.)
APPLICANT: **Wilson Okamoto Corporation**

Transmitted for your review and comment is information on the above-referenced project. Please submit any comments to *timothy.chee@hawaii.gov* at the Land Division by the internal deadline of **August 17, 2023**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Timothy Chee at the above email address. Thank you.

BRIEF COMMENTS:

Attachments

Cc: Central Files

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(☑) Comments are included/attached.

Signed: *Kathryn Stanaway*
Print Name: LAINIE BERRY, Wildlife Program Mgr.
Division: Division of Forestry and Wildlife
Date: Aug 22, 2023

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

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

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

LAURA H.E. KAAKUA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 22, 2023

Log no. 4211

MEMORANDUM

TO: RUSSEL Y. TSUJI, Administrator
Land Division

FROM: LAINIE BERRY, Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: Draft Environmental Assessment Early Consultation Request for Comments Waipahu Refuse Facility and Convenience Center

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments on the Early Consultation Request for the Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center in Waipahu on the island of Oahu; TMK: (1) 9-3-002:009 (por). The Department of Environmental Services (ENV) plans to relocate the Waipahu Convenience Center (WCC) from its existing location to the former Waiphau Incinerator Facility (WIF) property. The proposed new WCC will included ten waste offloading locations, white goods and waste material storage areas, an area for a facility attendant to oversee facility activities, as well as sufficient area for traffic staging and manueverbaility for ENV refuse truck traffic and residential traffic. The ENV also plans to develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) east of the new WCC. The proposed Refuse Facility will include a 2-story office building, a parking area for employees, a parking area for rolloff trucks, a truck wash pad and canopy, and an equipment storage building.

The State listed ʻopeʻapeʻa or Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bats can become ensnared and killed by such fencing material during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with manmade structures or the grounding of birds. For nighttime work that might be

required, DOFAW recommends that all lights used be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15, when young seabirds make their maiden voyage to sea.

If nighttime construction is required during the seabird fledgling season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/#response.

Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated to protect seabird flyways and preserve the night sky. For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai‘i please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

The State threatened manu o kū or White Tern (*Gygis alba*) is known to nest in the vicinity of the proposed project. If tree trimming or removal is planned, DOFAW strongly recommends a qualified biologist survey for the presence of White Terns prior to any action that could disturb the trees. White Tern pairs typically lay their single egg on a tree branch with no nest. Eggs and chicks can be dislodged by construction equipment or workers that contact trees in which White Terns are nesting. As such, a tree protection program should be in place for any mature trees with nesting or roosting White Terns. Please reference the Best Management Practices for tree trimming with Manu o Ku present, produced by Aloha Arborist Association in collaboration with state and federal officials: https://www.whiteterns.org/uploads/8/6/3/2/86323044/mok_tree_care_guidelines_190622.pdf. If a nest is discovered, please notify DOFAW staff for assistance.

State-listed waterbirds such as the ae'o or Hawaiian stilt (*Himantopus mexicanus knudseni*), 'alae ke'oke'o or Hawaiian coot (*Fulica alai*), and ‘alae ‘ula or Hawaiian gallinule (*Gallinula chloropus sandvicensis*) could potentially occur at or in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any of these species are present during construction, all activities within 100 feet (30 meters) should cease and the bird or birds should not be approached. Work may continue after the bird or birds leave the area of their own accord. If a nest is discovered at any point, please contact the O‘ahu Branch DOFAW Office at (808) 973-9778 and establish a buffer zone around the nest.

The State endangered pueo or Hawaiian Short-eared Owl (*Asio flammeus sandwichensis*) could potentially occur in the project vicinity. Pueo are most active during dawn and dusk twilights. Remove and exclude non-native mammals such as mongoose, cats, dogs, and ungulates from the nesting area Minimize habitat alterations and disturbance during pueo breeding season. Before any potentially disturbing activity like clearing vegetation, especially ground-based disturbance, conduct surveys during crepuscular hours and walk line transects through the area to detect any active pueo nests. If a pueo nest is discovered, notify DOFAW staff, minimize time spent at the nest,

and establish a minimum buffer distance of 100 meters from the nest until chicks are capable of flight.

DOFAW recommends using native plant species for landscaping that are appropriate for the area; i.e., plants for which climate conditions are suitable for them to thrive, plants that historically occurred there, etc. Please do not plant invasive species. DOFAW also recommends referring to www.plantpono.org for guidance on the selection and evaluation of landscaping plants and to determine the potential invasiveness of plants proposed for use in the project.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid ʻŌhiʻa Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetles, etc.), or invasive plant parts (e.g., Miconia, Pampas Grass, etc.) that could harm our native species and ecosystems. We recommend consulting the Oʻahu Invasive Species Committee (OISC) at (808) 266-7994 to help plan, design, and

mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

The invasive Coconut Rhinoceros Beetle (CRB) or *Oryctes rhinoceros* is known to occur on the island of Oʻahu. On July 1, 2022, the Hawaiʻi Department of Agriculture (HDOA) approved Plant Quarantine Interim Rule 22-1. This rule restricts the movement of CRB-host material within or to and from the island of Oʻahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes a) entire dead trees, b) mulch, compost, trimmings, fruit and vegetative scraps, and c) decaying stumps. CRB host plants include the live palm plants in the following genera: *Washingtonia*, *Livistona*, and *Pritchardia* (all commonly known as fan palms), *Cocos* (coconut palms), *Phoenix* (date palms), and *Roystonea* (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. For more information regarding CRB, please visit https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/coconut-rhinoceros-beetle/.

DOFAW is concerned about impacts to vulnerable birds from nonnative predators such as cats, rodents, and mongooses. We recommend taking action to minimize predator presence; remove cats, place bait stations for rodents and mongoose, and provide covered trash receptacles.

We recommend that Best Management Practices are employed during and after construction to contain any soils and sediment with the purpose of preventing damage to near-shore waters and marine ecosystems.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible.

If you have any questions, please contact Myrna N. Girald Pérez, Protected Species Habitat Conservation Planning Coordinator at (808) 265-3276 or myrna.girald-perez@hawaii.gov.

Sincerely,

Kathryn Stanaway

LAINIE BERRY
Wildlife Program Manager

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Ms. Lainie Berry
Department of Land and Natural Resources
Division of Forestry and Wildlife
State of Hawai‘i
1151 Punchbowl Street, Room 325
Honolulu, HI 96813

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Ms. Berry:

Thank you for your letter dated August 22, 2023, regarding the subject Early Consultation Package for the proposed Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.

We acknowledge your comments and note that a Natural Resource Assessment has been completed for the project area. The results of the assessment, best management practices, and applicable avoidance and mitigation measures are described in Section 3.5 of the Draft EA.

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’s (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

KENNETH S. HARA
MAJOR GENERAL
ADJUTANT GENERAL
KA 'AKUKANA KENELALA

STEPHEN F. LOGAN
BRIGADIER GENERAL
DEPUTY ADJUTANT GENERAL
KA HOPE 'AKUKANA KENELALA

STATE OF HAWAI'I
KA MOKU'ĀINA O HAWAI'I
DEPARTMENT OF DEFENSE
KA 'OIHANA PILI KAUA
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAI'I 96816-4495

RECEIVED
AUG 07 2023
WILSON OKAMOTO CORPORATION

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

SUBJECT: Early Consultation Environmental Assessment – Waipahu Refuse Facility and Convenience Center,Waipahu, Oahu, Hawaii
TMK (1) 9-3-002:009 (por.)

Dear Mr. Cheng:

Thank you for the opportunity to comment on the above project. The State of Hawaii Department of Defense has no comments to offer relative to the project at this time.

Should there be any questions, please contact Mr. Tad T. Nakayama at 808-369-3490 or tad.t.nakayama@hawaii.gov.

Sincerely,

Shao Yu L. Lee, R.A.
Captain, Hawaii National Guard
Chief Engineering Officer

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Captain Shao Yu Lee
Department of Defense
State of Hawaii
3949 Diamond Head Road
Honolulu, HI 96816

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Captain Lee:

Thank you for your letter dated August 7, 2023, regarding the subject Early Consultation Package for the proposed Waipahu Refuse Facility and Convenience Center. We acknowledge that the Department of Defense has no comments or objections to the Proposed Project. A record of your letter, along with this response, have been reproduced and are appended to the Draft EA in Appendix D.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

August 17, 2023

Mr. Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Re: Environmental Assessment Early Consultation for the
Waipahu Refuse Facility and Convenience Center, Waipahu, Oahu, Hawaii

Dear Mr. Cheng:

Thank you for your letter dated July 20, 2023. Based on the information provided, the proposed project will not impact Hawaii State Department of Education Facilities.

Should you have any questions, please contact Cori China 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
Interim Public Works Manager
Planning Section

RI:ctc

c: Facilities Development Branch

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Roy Ikeda
Department Of Education
State of Hawaii
P.O. Box 2350
Honolulu, HI 96804

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Ikeda:

Thank you for your letter dated August 17, 2023, regarding the subject Early Consultation Package for the proposed Waipahu Refuse Facility and Convenience Center. We acknowledge that the Proposed Project will not impact Hawaii State Department of Education Facilities. A record of your letter, along with this response, have been reproduced and are appended to the Draft EA in Appendix D.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

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

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

RICK BLANGIARDI
MAYOR
MEIA

DAWN TAKEUCHI APUNA
DIRECTOR
PO'O

JIRO A. SUMADA
DEPUTY DIRECTOR
HOPE PO'O

September 5, 2023 2023/ELOG-1378(ST)

Mr. Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
SEP 08 2023
WILSON OKAMOTO CORPORATION

Dear Mr. Cheng:

SUBJECT: Early Consultation on an Environmental Assessment (EA)
Waipahu Refuse Facility and Convenience Center
93-65 Waipahu Depot Street – Waipahu
Tax Map Key 9-3-002: Portion of 009

This responds to your request, received on July 24, 2023, for comments on the forthcoming EA for the Waipahu Convenience Center relocation to the former Waipahu Incinerator Facility (WIF) and for WIF's redevelopment into a multi-use refuse facility including a Roll-Off Division baseyard. We confirm that a State Special Use Permit (SUP) and a Special Management Area (SMA) Use Permit must be obtained.

This 57.874-acre property has a long and extensive permit history, with several SUPs, and numerous SMA and Zoning Waivers dating back to 1976; included are two SMA Use Permits, one for the Pouhala Marsh restoration (No. 2000/SMA-5) and another for the WIF Ash Landfill Closure (No. 2004/SMA-73). We also note that Condition No. 4 of SUP No. 94/SUP-2, for the Honolulu Fire Department and Police Department separate vehicle maintenance facilities, required the area be reclassified to the State Land Use Urban District by November 16, 1999. This area was never reclassified and remains in the State Land Use Agricultural District. Consequently, the EA must chronical the extensive discretionary permit history of the property to provide the proper context to evaluate the continued development of this property within the State Land Use Agricultural District.

Should you have any questions, please contact Steve Tagawa, of our Land Use Approval Branch, at (808) 768-8024 or via email at stagawa@honolulu.gov.

Very truly yours,

for Dawn Takeuchi Apuna
Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

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

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Ms. Takeuchi Apuna:

Thank you for your letter dated September 5, 2023, regarding the subject Early Consultation Package for the proposed Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.

We acknowledge your comments and note that Section 1.3 of the Draft EA provides a chronological permit history of the property.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

JOSH GREEN, M.D.
GOVERNOR

EDWIN H. SNIFFEN
DIRECTOR

Deputy Directors
FORD N. FUCHIGAMI
DREANALEE K. KALILI
TAMMY L. LEE
ROBIN K. SHISHIDO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS
400 RODGERS BOULEVARD, SUITE 700
HONOLULU, HAWAII 96819-1880

IN REPLY REFER TO:

AIR-EP 23.0074

August 10, 2023

RECEIVED
AUG 14 2023
WILSON OKAMOTO CORPORATION

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

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation for the
Waipahu Refuse Facility and Convenience Center
Waipahu, Oahu, Hawaii

Thank you for your letter dated July 20, 2023, requesting the State of Hawaii, Department of Transportation's (HDOT) review and comments for the subject action. The HDOT understands that the City and County of Honolulu, Department of Environmental Services – Refuse Division is proposing to convert its former Waipahu Incinerator Facility (WIF) into a multi-use Refuse Division Facility in Waipahu. The Waipahu Convenience Center will be relocated from its existing location at 94-9 Waipahu Depot Street to the former WIF property and will help to accommodate residents using the facility and operate more efficiently.

The HDOT has the following comments:

1. The proposed project is approximately 4.55 miles from the property boundary of the Daniel K. Inouye International Airport. 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. 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 Planning Section.

3. The proposed project shall not provide landscape, vegetation, and/or operating conditions that will create a wildlife attractant, which can potentially become a hazard to aircraft operations. Please review the FAA Advisory Circular 150/5200-33C, Hazardous Wildlife Attractants On Or Near Airports for guidance. If the project's landscaping or operating conditions creates a wildlife attractant, the developer shall immediately mitigate the hazard upon notification by the HDOT and/or FAA.

If you have any questions, please contact Mr. Raymond Severn, our Airports Planner, at (808) 838-8817 or via email at raymond.s.severn@hawaii.gov.

Sincerely,

Ford Fuchigami

FORD N. FUCHIGAMI
Deputy Director of Transportation for Airports

c: Mr. Gordon K. Wong, Federal Aviation Administration
Mr. Malcom Smith, Oahu District Manager
Mr. Blayne Nikaido, Statewide Transportation Planning Office

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Ford Fuchigami
Department of Transportation – Airports
State of Hawaii
400 Rodgers Boulevard, Suite 700
Honolulu, HI 96819

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Fuchigama:

Thank you for your letter dated August 10, 2023, regarding the subject Early Consultation Package for the proposed Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

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 • WEB: www.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

July 31, 2023

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

RECEIVED
AUG 3 2023

Dear Mr. Cheng:

Subject: Environmental Assessment Early Consultation
Waipahu Refuse Facility and Convenience Center
Waipahu, Hawaii 96797
Tax Map Key: 9-3-002: 009

In response to your letter dated July 20, 2023, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1, as amended.)

   A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2018 Edition, Section 18.2.3.2.1.)

2. Fire department access roads shall be in accordance with NFPA 1; 2018 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; 2018 Edition, Sections 18.3 and 18.4.

4. Submit civil drawings to the City and County of Honolulu's Department of Planning and Permitting (DPP). They will be routed to the HFD as needed by the DPP.

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

Should you have questions, please contact Battalion Chief Jean-Claude Bisch of our Fire Prevention Bureau at 808-723-7151 or jbisch@honolulu.gov.

Sincerely,

CRAIG UCHIMURA
Assistant Chief

CU/MD:bh

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Craig Uchimura
Fire Department
City and County of Honolulu
636 South Street
Honolulu, HI 96813

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Uchimura:

Thank you for your letter dated July 31, 2023, regarding the subject Early Consultation Package for the Waipahu Refuse facility and Convenience Center. We acknowledge your comments which have been considered in the preparation of the Draft 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 D.

1. We acknowledge that HFD access roads will be provided to the Proposed Project as appropriate.

2. We acknowledge that a water supply, approved by the City and County, capable of supplying the required water flow for fire protection shall be provided for the Proposed Project.

3. Civil drawings will be submitted to the FD for review and approval as noted in Section 4.3 of the EA.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

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 · INTERNET: 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-LS

August 11, 2023

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

This is in response to your letter of July 20, 2023, requesting input on the Early Consultation, Draft Environmental Assessment, for the proposed Waipahu Refuse Facility and Convenience Center in Waipahu.

The Honolulu Police Department (HPD) recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project. Additionally, the HPD requests that adequate notification be provided prior to any road closures along Waipahu Depot Street, as it would hinder access for our personnel to and from the HPD's Waipahu Training Academy.

Lastly, the HPD requests to be included in any discussions regarding project start dates, road closures, or any other issues related to Waipahu Depot Street and/or along the project perimeter of the HPD Waipahu Training Academy.

If there are any questions, please call Major Joseph Trinidad of District 3 (Pearl City) at (808) 723-8800.

Sincerely,

GLENN HAYASHI
Assistant Chief of Police
Support Services Bureau

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Glenn Hayashi
Honolulu Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

Subject: Environmental Assessment Early Consultation for the
Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Hayashi:

Thank you for your letter dated August 11, 2023, regarding the subject Early Consultation Package for the Waipahu Refuse Facility and Convenience Center. We acknowledge your comments which have been considered in the preparation of the Draft 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 H.

Please note as discussed in Section 3.12 of the EA that a Construction Management Plan has been recommended to mitigate short-term impacts related to construction work. The Applicant will ensure that this information is conveyed to the contractor for construction.

Moreover, 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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director of Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

STATE OF HAWAIʻI
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
INTERIM DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawaiʻi 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaiʻi 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: https://planning.hawaii.gov/

Coastal Zone Management Program

Environmental Review Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented Development

Statewide Geographic Information System

Statewide Sustainability Branch

DTS 202307251046NA

August 23, 2023

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

Subject: Pre-Consultation for an Environmental Assessment
Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi
TMK: (1) 9-3-002: 009

Thank you for the opportunity to provide comments on your Pre-Consultation request in the development of a Draft Environmental Assessment (Draft EA) on the Waipahu Refuse Facility and Convenience Center proposed by the City and County of Honolulu, Department of Environmental Services (ENV). The notification request for agency comment was sent via memo dated July 20, 2023.

It is our understanding that ENV plans to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to a new location further south on Waipahu Depot Street and adjacent to the south side of the Honolulu Police Academy/Training Facility. The new WCC location will provide area residents a convenient drop-off municipal solid waste option for white goods and other household waste materials.

Additionally, ENV intends to convert its former Waipahu Incinerator Facility (WIF) into a multi-use Refuse Division Facility. The Refuse Division currently houses their Rolloff Division at the former WIF location, utilizing existing structures for parking and dispatch operations. The existing WIF structures will be demolished during construction of the new WCC and Refuse Facility.

The Office of Planning and Sustainable Development (OPSD) has reviewed the transmitted material, and has the following comments to offer:

1. State Land Use Agriculture District
   As acknowledged in the review material, the project site is situated on land designated within the State's Agricultural land use district. Pursuant to HRS § 205-4.5[a][7], Permissible uses within the agricultural district include public solid waste transfer stations, except for "offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures." The Convenience Center component is a permissible use within the agricultural district. However, the Refuse Rolloff Division Baseyard Facility will require the approval of either a Special Permit or State Land Use District Boundary Amendment.

   We concur that the proposed Refuse Rolloff facility is not a permissible use within the agricultural district under sections 205-2 and 205-4.5. The Draft EA should include info on impacts to Agricultural land and uses, especially if any current farming is conducted on site. Furthermore, if the area intended for this proposed action is greater than 15 acres, this would require approval from the State Land Use Commission.

2. State Land Use Conservation District
   We note that the project parcel is classified within the State Land Use Agriculture and Conservation Districts. The review material does not indicate if a Conservation District Use Permit is in place that allows for the WCC and Refuse Rolloff facility to operate from. It is recommended that ENV or its agent consult with the Department of Land and Natural Resources, Office of Conservation and Coastal Lands on proposed land use compatibility with Conservation District Lands and permitting requirements.

3. Title VI and Environmental Justice
   The Environmental Assessment should discuss the potential Title VI and environmental justice impacts to the nearby Waipahu community when it considers alternatives to the proposed action.

4. Coastal Zone Management Act (CZMA) Federal Consistency
   The national CZMA requires that federal actions be consistent with approved state coastal programs enforceable policies. Federal actions include activities performed by a federal agency; activities that require federal permits or approvals; or state and local government projects that receive federal financial assistance.

   We note that the project area is located in close proximity with the Pouhala Marsh Wildlife Sanctuary, as well as the Kapakahi perennial stream that terminates at the West Loch of Pearl Harbor. It is unclear whether this project will require a federal permit, such as a Department of the Army authorization. It is recommended that ENV or its agent should consult with federal agencies, such as the U.S. Army Corps of Engineers on the need for federal approvals. The need for federal permits may subject this project to CZMA federal consistency requirements.

OPSD is the lead state agency with the authority to conduct CZMA federal consistency reviews. If a federal permit is required, we recommend that the ENV or its agent consult with our office on the applicability of CZMA federal consistency requirements.

5. Hawai‘i Coastal Zone Management (CZM) Program
The CZM area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" under HRS § 205A-1.

Pursuant to HRS § 205A-4, in implementing the objectives of the CZM program, agencies, such as ENV, shall consider ecological, cultural, historic, esthetic, recreational, scenic, open space values, coastal hazards, and economic development. The Draft EA should therefore include a discussion on the project's consistency with the policies of the Hawai‘i CZM Program, HRS § 205A-2, as amended.

The objectives and supporting policies of the Hawai‘i CZM Program serve as the foundation of the enforceable policies of the State of Hawai‘i, HRS § 205A-2 as amended. Disclosure of impacts on CZM objectives and supporting policies, as it relates to HRS Chapter 343 requirements, will aid the State in determining impacts to the resources of the coastal zone, and mitigation measures on the subject lands involved for this proposed action.

6. Special Management Area
We note the review material states that the project will require a SMA Use Major permit. The Draft EA should provide a regional location map and include the project site's proximity and relation to the designated SMA boundary. Given that the subject Environmental Assessment (EA) may serve as a supporting document for a SMA Use Permit application, we recommend that the EA specifically discuss compliance with SMA use by consulting with the City and County of Honolulu, Department of Planning and Permitting.

7. Climate Change Adaptation / Sea Level Rise (SLR)
The Waipahu Refuse Facility and Convenience Center and the Waipio Peninsula are well inland of the south shore of O‘ahu. However due to its proximity to the West and Middle Lochs of Pearl Harbor, as well as Kapakahi Stream, the project site may be vulnerable to passive flooding and inundation due to the effects of SLR. To assess potential impacts of SLR and assess the viability of the WCC, we suggest the Draft EA refer to the findings of the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report 2017, accepted by the Hawai‘i Climate Change Mitigation and Adaptation Commission.

The Report, and Hawai‘i Sea Level Rise Viewer at https://www.pacioos.hawaii.edu /shoreline/slr-hawaii/ particularly identifies a 3.2-foot sea level rise exposure area across the main Hawaiian Islands, which may occur in the mid to latter half of the 21st century. The Draft EA should provide a map of 3.2-foot sea level rise exposure area in relation to the project area, and consider site-specific mitigation measures, including setbacks from the

shoreline erosion during the life of the proposed structure, to respond to the potential impacts of 3.2-foot SLR.

8. Stormwater Runoff, Erosion, and Water Resources
Pursuant to Hawai‘i Administrative Rules (HAR) § 11-200.1-18(d)(7) – identification and analysis of impacts and alternatives considered; to ensure that nearshore marine resources of the O‘ahu remain protected, the negative effects of stormwater inundation and sediment loading surrounding the proposed project site should be evaluated.

   Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, potential vulnerability of the Pouhala Marsh Wildlife Sanctuary, impacts to the areas along Middle and West Lochs of Pearl Harbor, and examining any increase of permeable surfaces in the area. Developing mitigation measures for the protection for surface water resources should take this into account, pursuant to HAR § 11-200.1-18(d)(8).

If you have any questions, please contact Aaron Setogawa at (808) 587-2883 on Land Use issues; Joshua Hekekia on EA concerns at (808) 587-2845; and Debra Mendes on CZMA federal consistency at (808) 587-2840.

Sincerely,

Mary Alice Evans

Mary Alice Evans
Interim Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Ms. Mary Alice Evans
Office of Planning and Sustainable Development
State of Hawaii
235 South Beretania Street, 6th Floor
Honolulu, Hawaii 96704

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Ms. Evans:

Thank you for your letter dated August 23, 2023 regarding the subject Early Consultation Package for the Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.
We offer the following in response to the points raised:

- We acknowledge that the project area is designated within the State's Agricultural land use district in which the Convenience Center is a permissible use. We also acknowledge that the Refuse Rolloff Division and Baseyard Facility will require either a Special Permit or State Land Use District Boundary Amendment.
- Pertaining to Title VI and Environmental Justice, Section 3.14 of the Draft EA assesses the socio-economic characteristics of the project area and surrounding community.
- We acknowledge that the project area is in close proximity to the Pouhala Marsh Wildlife Sanctuary as well as the Kapakahi Stream. Section 4.1.4 of the Draft EA discusses the project's compliance with the Coastal Zone Management Act.
- We also acknowledge that the project area is within the Special Management Area and anticipate that a SMA Use Major permit will be required.
- We acknowledge that the project area may be vulnerable to flooding and inundation due to the impact climate change and sea level rise as discussed in Section 3.1 of the Draft EA.
- Pursuant to Hawaii Administrative Rules 11-200.1-18(d)(7) the Draft EA assesses impacts and mitigation measures of coastal, surface, and groundwater resources in Section 3.3.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,



Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

200 Akamainui St. Mililani, HI 96789
(808) 625- 2100

Transmittal

Date: ***08/03/2023***

RE: PROJECT LOCATION/WORK ORDER

To: Keola Cheng
WILSON OKAMOTO CORP.
1907 South Beretania St, Suite 400
Honolulu, HI 96826

Waipahu Refuse Facility &
Convenience Center
Waipahu, O'ahu, Hawai'i

Attention:

We are sending you the following:

- ☐ **Pole / Conduit Application**
- ☐ **Permit Applications**
- ☐ **Copy of Letter**
- ☐ **Preliminary / Final Drawings**
- ☐ **Return Prints**
- ☒ **Other**

Copies	*Sht / Appl. #*	*Description*
1		CHARTER RESPONSE LETTER
1		CATV MAPS
1		CONTRACTOR NOTES

The Above is transmitted:

- ☐ **For Your Approval**
- ☐ **For Review and Comment**
- ☒ **For Your Use / Records**
- ☐ **As Requested**
- ☐ **As Approved**
- ☒ **Other**

Comments / Remarks: **REVIEW AND COMMENT FOR JOB NO. WAIPAHU REFUSE**
IF YOU HAVE ANY COMMENTS OR QUESTIONS, PLEASE CONTACT ME AT:
Chinnough.Colburn@Charter.com or 808-695-3165 808-348-8359 (cell)

cc:

Signed: **Chinnough Colburn**
Printed Engr/Title: **CONSTRUCTON COORDINATOR**

August 3, 2023

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

Attn: Mr. Keola Cheng

Subject: WAIPAHU REFUSE FACILITY & CONVENIENCE CENTER
Tax Map Key: [1] 9-3-002:009

Dear Mr. Cheng,

The locations of existing routes and crossings were shown on the provided plans. The exact locations, and routing of all CATV facilities must be verified in the field due to construction variances. The location of the proposed project may influence Spectrum's existing CATV plant in your work area.

However, if the work or repairs being performed requires special machinery, with a specific height requirement, the contractor performing the work, will be required to notify our office prior to performing any work. Spectrum may need to reattach or move or plant system, if we must relocate our existing plant system, charges may apply.

Currently, Spectrum utilizes both HECO's aerial and the private owned underground infrastructure to provide our CATV services in the area that passes through your project location. Before any digging toning may be required. Call "One Call Center" at 866 423-7287 to set up toning.

This information has been provided to help minimize delays and prevent damage to existing CATV structures within the project area. Should you have any questions or concerns, please feel free to contact me at 808-348-8359, 808-695-3165, or email me via Chinnough.Colburn@charter.com

Sincerely,

Chinnough Colburn

Chinnough Colburn



Construction Coordinator

GENERAL CONTRACTOR'S NOTES:

1. ***THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY AND INCIDENT TO THE DUE AND LAWFULL PROSECUTION OF THE WORK.***

2. ***THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THESE UTILITIES AS A RESULT OF THEIR OPERATIONS. ADJUSTMENTS TO THE NEW DUCTLINE ALIGNMENT, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES.***

3. ***THE CONTRACTOR SHALL BRACE ALL POLES OR LIGHT STANDARDS NEAR THE NEW DUCTLINE, MANHOLE OR HANDHOLE DURING ITS OPERATIONS.***

4. ***THE CONTRACTOR SHALL SAW-CUT A.C. PAVEMENT, CONCRETE GUTTER, AND CONCRETE SIDEWALK WHEREVER NEW MANHOLES, HANDHOLES, PULLBOXES OR DUCTLINES ARE TO BE PLACED AND SHALL RESTORE TO EXISTING CONDITION OR BETTER.***

5. ***THE UNDERGROUND PIPES, CABLES, OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM THEIR SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREAS. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.***

6. ***THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE COST FOR SUPLEMENTARY MEASURES, WHICH WILL BE REQUIRED BY THE CITY AND COUNTY, SHALL BE BORNE BY THE CONTRACTOR.***

7. ***THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE OF HAWAII, DEPARTMENT OF HEALTH.***

8. ***PRIOR TO THE EXCAVATION OF THE DUCTLINE, THE CONTRACTOR SHALL REQUEST THAT SPECTRUM OCEANIC CABLE COMPANY TO LOCATE EXISTING DUCTLINE WHEREVER REQUIRED.***

9. ***THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. ANY WORK INVOLVING EXISTING CABLES OR DUCTS SHALL BE DONE IN THE PRESENCE OF THE SPECTRUM OCEANIC INSPECTOR OR THEIR REPRESENTATIVE. TEMPORARY CABLE AND DUCT SUPPORT SHALL BE PROVIDED WHEREVER NECESSARY.***

10. ***THE CONTRACTOR SHALL NOTIFY THE SPECTRUM OCEANIC INSPECTOR 72 HOURS PRIOR TO THE START OF WORK ON CATV INFRASTRUCTURE, POURING CONCRETE, OR BACKFILLING. SPECTRUM OCEANIC'S INSPECTOR(S): PERRY SAMUELU AT 387-2496 OR PAUL CASPILLO AT 479-1637.***

11. ***WHEREVER CONNECTIONS TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES PRIOR TO EXCAVATION OF THE MAIN TRENCHES TO VERIFY THEIR LOCATIONS AND DEPTHS.***

12. ***CONTRACTOR SHALL PROVIDE ALL MATERIALS AND FURNISH ALL LABOR AND EQUIPMENT NECESSARY TO INSTALL THE DUCTLINE IN PLACE COMPLETE.***

13. ***THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT ALL REQUIRED LINES AND GRADES AND SHALL PRESERVE ALL BENCH MARKS AND WORKING POINTS NECESSARY TO LAY OUT THE WORK CORRECTLY. THE NEW DUCTLINE SHALL BE ADJUSTED BY THE CONTRACTOR TO SUIT THE EXISTING CONDITIONS AND THE DETAILS AS DESCRIBED IN THE PLANS.***

14. ***THE LOCATION OF CATV FACILITIES SHOWN ON PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AS TO ITS ACTUAL FIXED LOCATION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN CLOSE PROXIMITY OF CATV FACILITIES.***

15. ***THE CONTRACTOR SHALL OBTAIN EXCAVATION PERMIT CLEARANCE FROM SPECTRUM OCEANIC'S ENGINEERING SECTION LOCATED AT 200 AKAMAINUI ST., MILILANI TECH PARK.***

16. ***FOR ANY FIELD ASSISTANCE OR VERIFICATION OF CATV FACILITIES, THE CONTRACTOR SHALL CALL SPECTRUM OCEANIC AT 625-2100 AND ASK FOR THE OSP ENGINEERING DEPARTMENT.***

17. ***ANY WORK REQUIRED TO RELOCATE CATV FACILITIES SHALL BE DONE BY SPECTRUM OCEANIC CABLE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIREMENTS AND ASSOCIATED COSTS.***

18. ***ANY DAMAGE TO SPECTRUM OCEANIC'S FACILITIES SHALL BE REPORTED TO SPECTRUM OCEANIC'S TOC DEPARTMENT AT 625-8169.***

19. ***THE CONTRACTOR SHALL TUNNEL UNDER EXISTING CONCRETE CURB AND GUTTER AS NECESSARY TO EXTEND CONDUIT INTO EXISTING CATV PULLBOX AND INTO THE PROPOSED POWER SUPPLY PULLBOX.***

20. ***ALL EXISTING IMPROVEMENTS THAT ARE DISTURBED DURING THE CONSTRUCTION PHASE SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION AT NO COST TO THE CITY IN ACCORDANCE WITH CITY'S STANDARDS.***

21. *AT LOCATIONS WHERE EXISTING CATV PULLBOX REPLACEMENT IS PROPOSED, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTION NOT TO DAMAGE THE EXISTING CABLES IN THE PULLBOX. ALL DAMAGES TO EXISTING CABLES SHALL BE REPAIRED BY SPECTRUM OCEANIC CABLE AND PAID FOR BY THE CONTRACTOR.*

22. *COORDINATE ALL PENETRATION OF TELEPHONE PULLBOXES WITH HAWAIIAN TEL INSPECTOR.*

23. *SMOOTH FINISH INSIDE WALL OF EXISTING PULLBOXES AND HAND-HOLES TO ITS ORIGINAL CONDITION OR BETTER.*

24. *ALL NEW CONCRETE ENCASED CONDUIT SHALL BE PVC PIPE-SCHEDULE 40. ALL NEW DIRECT-BUIRED CONDUIT SHALL BE PVC PIPE-SCHEDULE 80. USE OF ANY OTHER MATERIAL TYPE (GTS, ETC.) SHALL BE LIMITED TO MATCHING EXISTING FACILITES. CONNECTION OF DISSIMILAR MATERIALS TO REQUIRE APPROVAL FROM SPECTRUM OCEANIC INSPECTOR AND ENGINEERING DEPT.*

25. *THE CONTRACTOR SHALL PLACE POLY CORD THROUGH OUT PROJECT, AND SECURE IN MANHOLES, HANDHOLES, AND PULLBOXES.*

26. *FOR 3" CONDUITS OR LARGER, THE CONTRACTOR SHALL INSTALL NEPTCO WP1800 MULETAPE OR APPROVED EQUAL IN ALL DUCTLINES, LEAVE MULETAPE IN PLACE FOR FUTURE USE AS A PULL OR FISH LINE, UNLESS OTHERWISE NOTED. REFERENCE GTE MATERIAL CODE NO. 571154. ALL DUCTS SHALL BE CAPPED TO PREVENT ENTRY OF FOREIGN MATERIAL DURING CONSTRUCTION AND AT COMPLETION OF INSTALLATION. ENDBELLS ARE REQUIRED FOR CONDUITS 2" AND LARGER.*

27. *PENETRATION INTO PULLBOXES IF NECESSARY TO BE FROM FACTORY INSTALLED OPENING OR FROM BRICKS POSITION. PENETRATION FROM PULLBOX WALLS IS NOT ACCEPTABLE.*

28. *BENDS IN THE DUCT ALIGNMENT, DUE TO CHANGES IN GRADE SHALL HAVE A MINIMUM RADIUS OF 20-FEET. ALL 90-DEGREE C-BENDS AT A POLE OR AT THE BUILDING FLOOR SLAB PENETRATION, SHALL HAVE A BEND RADIUS OF 10 TIMES THE DIAMETER OF THE DUCT OR GREATER.*

29. *MINIMUM LENGTH OF CONDUIT USED SHALL NOT BE LESS THAN 5-FEET IN LENGTH. USE OF PARTIAL CONDUIT SECTIONS ALLOWABLE IS AT SPECTRUM OCEANIC INSPECTOR(S) DISCRETION.*

30. *ALL CONDUITS SHALL ENTER THROUGHT THE END "SHORT WALL" OF THE PULL-BOX. ENTRY SHALL BE AT 90 DEGRESS (PERPENDICULAR) TO WALL FACE WITH BENDS NO LESS THAN 12" FROM EXTERIOR WALL.*

31. *A MINIMUM OF (2) PRECAST SECTIONS MUST BE USED ON ALL 2X4 OR 2X6 PULLBOXES.*

32. *ALL NEW CONSTRUCTION SHALL UTILIZE CONCRETE PRECAST BASE UNLESS OTHERWISE APPROVED OR SPECIFIED BY SPECTRUM OCEANIC INSPECTOR(S).*

33. *FOR PULL-BOX LOCATIONS WERE VEHICULAR INTRUSION POSSIBLE, CONCRETE COLLAR REQUIRED PER SPECTRUM OCEANIC STANDARDS AND SPECIFICATIONS MANUAL. EXAMPLES INCLUDE, BUT NOT LIMITED TO, ROLLED/RIBBON CURBS, CURB / HEADERS LESS THAN 5" IN HEIGHT, VEHICLE TRAVELWAYS WITH NO DEFINED CURB / HEADER, ETC.*

    A. *NON SIDEWALK AREAS, SEE FIGURE 18.1c, 19.1c AND 20.1b IN THE SPECTRUM SPECIFICATIONS MANUAL.*

34. *WHEN THREE (3) OR MORE 4" CONDUITS ENTER ONE END WALL OF ANY PULLBOX, ONLY BRICK BASES WILL BE ALLOWED UNLESS OTHERWISE INSTRUCTED/APPROVED BY SPECTRUM OCEANIC INSPECTOR(S).*

35. *TWO MINIMUM LAYERS OF BRICKS TO BE USED LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX. TOP LAYER OF BRICK TO BE FLUSH WITH TOP OF CONDUIT OR HIGHER.*

36. *FOR UPGRADE/REPAIRS TO EXISTING PULL-BOXES, BRICKS MAY BE USED AND SHALL ALWAYS BE AT LEAST TWO LAYERS LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX.*

37. *AT NO TIME SHALL CEMENT MORTAR, WOOD, OR ANY OTHER MATERIAL BE USED BETWEEN PRECAST SECTIONS.*

38. *LEVELING OR RAISING OF BOXES TO GRADE MUST BE DONE:*

    A. *PRE-CAST BASE(S – USING GRAVEL LAYER UNDER BASE (TYPE 3B OR EQUIVALENT APPROVED BY SPECTRUM OCEANIC INSPECTOR)*
    B. *BRICK BASE(S) – ADJUSTMENTS TO BRICKWORK SECTION. THE PERMANENT INSTALLATION OF WOODEN WEDGES TO ACCOMPLISH THIS PURPOSE WILL NOT BE ACCEPTED.*

39. *5/8" x 8' COPPER GROUND RODS SHALL BE PLACED IN ALL PULLBOXES UNLESS OTHERWISE DIRECTED BY SPECTRUM OCEANIC CABLE. GROUND RODS WILL BE PLACED IN THE CORNER 3" TO 4" FROM THE WALL AND AWAY FROM ANY CONDUIT WITH NO MORE THAN 8" STICKING UP ABOVE GROUND.*

40. *TRENCHING TO BE CONDUCTED BY HAND DIGGING NEAR AND ACROSS EXISTING UTILITY LINES.*

41. *MINIMUM CLEARANCE BETWEEN STREET LIGHT STAND AND FIRE HYDRANTS SHALL BE THREE FEET.*

42. *UNDERGROUND UTILITIES SHOWN HEREON IS FOR INFORMATION ONLY. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INSTALLATION.*

43. ***FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE WORKING DAYS ADVANCE NOTICE IS REQUIRED. THREE WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION BY A DESIGNATED REPRESENTATIVE. CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE ANY EXISTING CABLES OR DUCTS. SPECTRUM OCEANIC'S INSPECTOR OR DESIGNATED REPRESENTATIVE IS REQUIRED TO BE AT ANY JOB SITE WHENEVER THERE WILL BE A BREAKAGE INTO OR ENTRY INTO ANY STRUCTURE THAT CONTAIN SPECTRUM OCEANIC'S FACILITIES.***

44. ***CONCRETE STRENGTH SHALL BE 3000 PSI IN 28 DAYS.***

45. ***CURING AND BACKFILLING. MAINTAIN CONCRETE IN A MOIST CONDITION FOR 24 HOURS MINIMUM FOR 3,000 PSI AND 48 HOURS MINIMUM FOR 2,500 PSI BEFORE COMPACTED.***
    BACKFILLING: 72 HOURS MINIMUM BEFORE PERMITTING MOTOR TRAFFIC LOAD ON DUCTLINE. CURING METHOD SHALL MEET SPECTRUM OCEANIC INSPECTOR'S APPROVAL.

46. ***INSTALL 8-MIL. THICK ORANGE COLOR WARNING TAPE 4-INCH WIDE ENTIRE LENGTH OF TRENCH WHEN PLACING CATV CONDUITS. TAPE SHOULD READ "CAUTION BURIED CABLE LINE BELOW". MANUFACTURED BY HARRIS INDUSTRIES, INC. CATALOG NUMBER UT-43 OR EQUIVALENT TAPE. TAPE TO BE INSTALLED 12-INCHES BELOW GRADE.***

47. ***AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL WITH A SQUARE FRONT NOT LESS THAN 12-INCH LONG AND HAVING A DIAMETER OF ¼-INCH LESS THAN THE INSIDE DIAMETER OF DUCT, SHALL BE PULLED THROUGH EACH DUCT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH TO MAKE CERTAIN THAT NO PARTICLES OF EARTH, SAND, OR GRAVEL HAVE BEEN LEFT INSIDE. DUCTS SHALL BE COMPLETELY DRY AND CLEAN.***

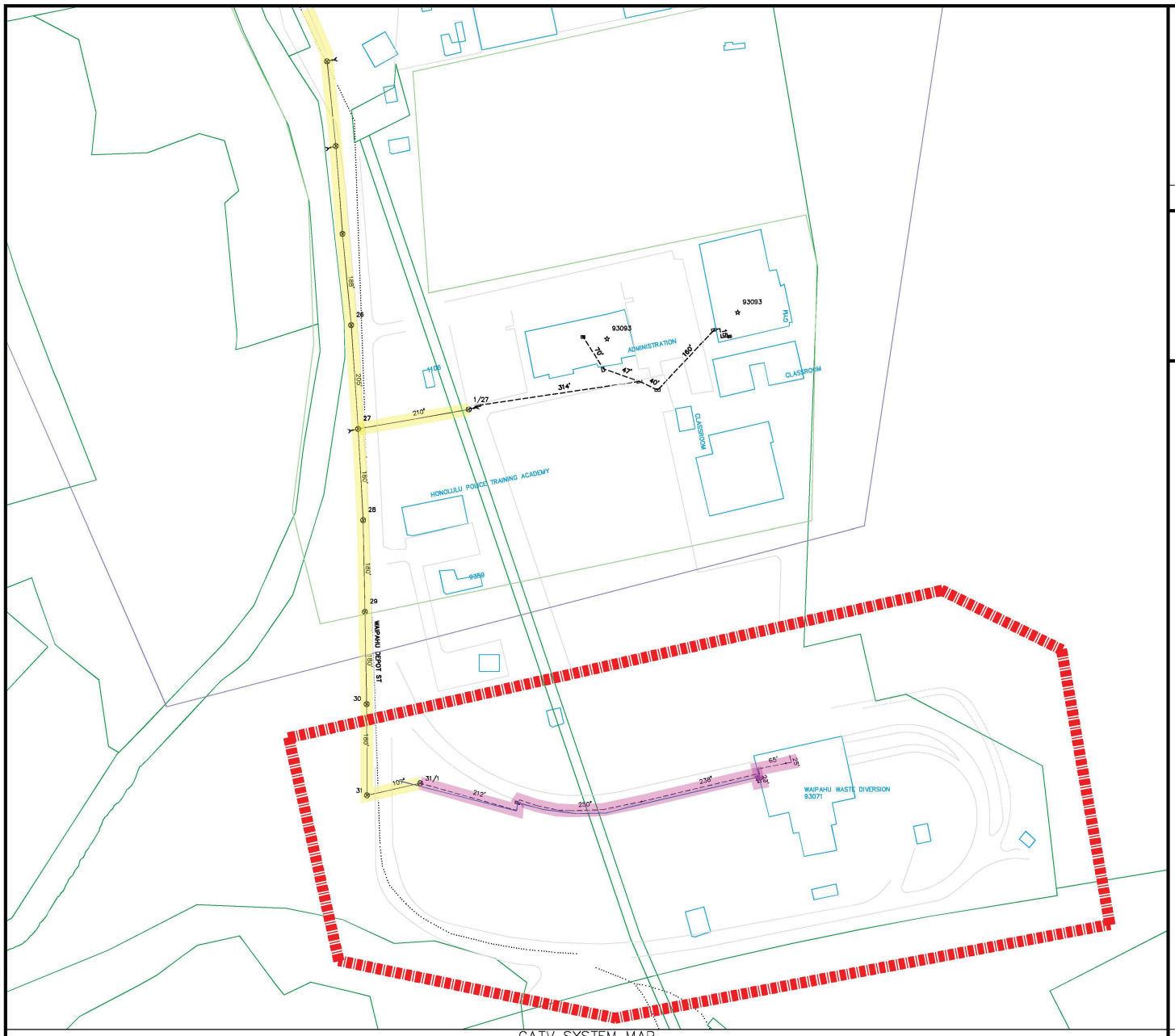
48. ***METALLIC ENTRANCE CONDUITS SHALL BE GROUNDED.***

49. ***ALL CONDUITS WITHIN A BUILDING SHALL:***

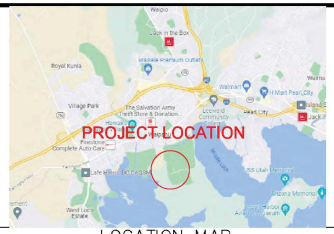
A) BE INSTALLED IN THE SHORTEST AND STRAIGHTEST POSSIBLE RUN.
B) HAVE NO SECTION LONGER THAN 100-FEET NOR CONTAIN MORE THAN TWO 90-DEGREE BENDS. AN APPROVED SIZED JUNCTION BOX OR GUTTER BOX SHALL BE PLACED IF THIS IS EXCEEDED.
C) ALL BENDS SHALL BE LONG SWEEP-RADIUS BENDS BUT THE INSIDE RADIUS OF THE BEND MUST NEVER BE LESS THAN TEN TIMES THE DIAMETER OF THE CONDUIT.

50. ***ALL CONSTRUCTION MUST BE INSPECTED AND APPROVED BY SPECTRUM OCEANIC PRIOR TO THE INSTALLATION OF ANY OF ITS FACILITIES AND THE ENERGIZING OF ITS SYSTEM.***

51. ***CONTRACTOR AND/OR CUSTOMER SHALL PROVIDE SPECTRUM OCEANIC WITH SUFFICIENT INSTALLATION TIME IN THEIR OCCUPANCY TIME TABLE.***



CATV SYSTEM MAP
SCALE: NOT TO SCALE



LOCATION MAP
BRYAN'S MAP 90, C3

ENGINEERING: C. COLBURN TEL #695-3165, CELL #348-8359

PROJECT NUMBER	DATE TO CONSTRUCTION XX-XX-XX	ESTIMATED HOURS	DATE	DATE	DATE
N/A					
TOTAL COAX FOOTAGE: XXXX					
TOTAL FIBER FOOTAGE: XXXX					

CONSTRUCTION NOTES:

AT THIS TIME SPECTRUM UTILIZE BOTH HECO AERIAL & THE PRIVATE OWNED U/G INFRASTRUCTURES IN THE AREA OF YOUR PROJECT LOCATION

AREA HIGHLIGHTED IN YELLOW (AERIAL)

AREA HIGHLIGHTED IN MAGENTA (U/G)

Charter Spectrum
200 AKAMAINUI STREET
MILILANI, HI 96789-3999
PHONE # (808) 625-2100

WAIPAHU REFUSE FACILITY

WAIPAHU DEPOT ROAD
WAIPAHU HI, 96797

TITLE:
LOCATION MAP
NOTES
CATV SYSTEM MAP

DATE:

SCALE:
NOT TO SCALE

DES. BY	DR. BY	CHK. BY
CC	CC	

PROJECT NO:

SHEET NO:
1
1 OF 1 SHEETS

FILENAME : XXXX.DWG
PLOT SCALE: NOT TO SCALE

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Chinnough Colburn
Spectrum Construction Coordinator
200 Akamainui Street
Mililani, Hawai‘i 96789

Subject: Environmental Assessment Early Consultation for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Chinnough Colburn:

Thank you for your email dated August 3, 2023, regarding the subject Early Consultation Package for the Wahiawā Center for Workforce Excellence. We acknowledge your comments which have been considered in the preparation of the Draft 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 D.

Thank you for providing notice and information regarding existing SPECTRUM facilities within the project area. The design team will coordinate with your office on resolving / avoiding potential design and construction conflicts.

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’s (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

From: Justin Medeiros <justin.medeiros@hawaiiantel.com>
Sent: Monday, August 28, 2023 2:52 PM
To: Public Comment
Cc: HT-Plan Reviews; Sean Cross; Greg Kawachi
Subject: RE: Draft EA - Waipahu Refuse Facility and Convenience Center
Attachments: Waipahu Refuse Facility and Convenience Center Doc.pdf

Hello Wilson Okamoto Corporation,

I have taken a look at the preliminary EA for Waipahu Refuse Facility and Convenience Center site, and would like to inform you that Hawaiian Telcom has underground, direct buried, and aerial facilities in the project area (including the Incinerating Building). Please be sure to contact One Call before any digging commences, and please submit the project plans for review when they are available.

Thank you,

Justin Medeiros
OSP Engineer I
Hawaiian Telcom
C: 808.888.1509
Email: justin.medeiros@hawaiiantel.com



WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Mr. Justin Medeiros
Telcom OSP Engineer
Justin.medeiros@hawaiiantel.com

Subject: Environmental Assessment Early Consultation for the
Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Mr. Medeiros

Thank you for your email dated August 28, 2023, regarding the subject Early Consultation Package for the Wahiawā Center for Workforce Excellence. We acknowledge your comments which have been considered in the preparation of the Draft 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 D.

We acknowledge that Hawaiian Telcom has facilities in the project area and will be contacted before any digging condescendence.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

In Reply Refer To:
2023-0109021-S7-001

July 31, 2023

Mr. Keola Cheng
Director - Planning
Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawai‘i 96826

Subject: Technical Assistance for the Proposed Waipahu Refuse Facility and Convenience Center Project, O‘ahu

Dear Mr. Cheng:

Thank you for your July 20, 2023 letter, requesting technical assistance for the proposed Waipahu Refuse Facility and Convenience Center Project located in Waipahu, on the island of O‘ahu [TMK: (1) 9-3-002:009 (portion)]. The City and County of Honolulu Department of Environmental Services (ENV) Refuse Division plans to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to the former Waipahu Incinerator Facility (WIF) property located further south on Waipahu Depot Street and adjacent to the south side of the Honolulu Police Academy/Training Facility. The WCC provides a location for area residents to drop-off municipal solid waste (MSW), white goods (refrigerators, air conditioners, and other similar appliances), and other household waste materials (e.g., tires, propane tanks, metal, and green waste) as an alternative to drop-off at the Waimānalo Gulch Sanitary Landfill or other solid waste management facility of O‘ahu. The existing WCC was constructed in the 1970’s and is no longer sized to operate efficiently and accommodate the number of residents utilizing the facility.

The new WCC will include the following improvements to reduce operational inefficiencies experienced at the existing WCC:

- Ten proposed waste offloading locations to allow several residents to offload at the same time.
- Sufficient area within the facility for traffic staging and maneuverability.
- Strategic location for the facility attendant to direct residents and oversee facility activities.

- Segregated residential and ENV refuse truck traffic.
- White goods and other waste material storage areas separated from MSW offloading areas.

The ENV also plans to develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) east of the new WCC. The Refuse Division currently houses their Rolloff Division at the former WIF, utilizing existing structures for parking and dispatch operations. Presently, the existing, former WIF accommodates eight drivers, nine trucks, and one supervisor. These remaining WIF structures will be demolished during construction of the new WCC and Refuse Facility. The proposed Refuse Facility will consist of the following major components:

- A 2-story office building with a dispatch office, locker and break rooms for Rolloff Division employees (14-16 drivers and two supervisors), offices, and training and public education facilities for Refuse Division employees.
- A parking area for Rolloff and Refuse Division employees.
- A parking area for Rolloff trucks (16-17 trucks).
- A truck wash pad and canopy.
- An equipment storage building.
- A designated area for a future container repair shop and/or rolloff container storage yard.
- A disposal operations office (potential future expansion).

The proposed project will be constructed on land owned by the City and County of Honolulu and will utilize funding from the City's Capital Improvement Program (CIP) budget.

Our letter has been prepared under the authority of and in accordance with provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended (ESA). We have reviewed the information you provided and pertinent information in our files, as it pertains to federally listed species in accordance with section 7 of the ESA. Our data indicate the following species may occur or transit through the vicinity of the proposed project area: the endangered ʻōpeʻapeʻa (Hawaiian hoary bat, *Lasiurus cinereus semotus*); endangered ʻuaʻu (Hawaiian petrel, *Pterodroma sandwichensis*), endangered Hawaiʻi distinct population segment of the ʻakēʻakē (band-rumped storm-petrel, *Hydrobates castro*), and threatened ʻaʻo (Newell's shearwater, *Puffinus newelli*) (hereafter collectively referred to as Hawaiian seabirds). We provide the following to assist you in preparation for your project.

ʻŌpeʻapeʻa

ʻŌpeʻapeʻa roosts in woody vegetation across all islands and will leave their young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, June 1 through September 15, there is a risk that young bats could inadvertently be harmed or killed, since they are too young to fly or move away from disturbance. ʻŌpeʻapeʻa forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize potential project impacts to the endangered ʻōpeʻapeʻa, we recommend you incorporate the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the birthing and pup rearing season for ʻōpeʻapeʻa, June 1 through September 15.

- Do not use barbed wire for fencing.

Hawaiian Seabirds

Hawaiian seabirds may traverse the project area at night during the breeding, nesting, and fledging seasons, March 1 through December 15. Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable to light attraction.

To avoid and minimize potential project impacts to Hawaiian seabirds we recommend you incorporate the following measures into your project description:

- Fully shielded all outdoor lights so the bulb can only be seen from below.
- Install automatic motion sensor switches and controls on all outdoor lights or turned off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then that agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats, and defines measures to minimize and mitigate those adverse effects.

We appreciate your efforts to conserve protected species. If you have questions regarding this response, please contact Charmian Dang, Fish and Wildlife Biologist (phone 808-792-9400, email: Charmian_Dang@fws.gov). When referring to this project please include this reference number: 2023-0109021-S7-001.

Sincerely,

Acting Island Team Manager
O‘ahu, Kaua‘i, Northwest Hawaiian Islands and
American Samoa

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 23, 2024

Ms. Jiny Kim
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

Subject: Environmental Assessment Early Consultation Package for the Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi

Dear Ms. Kim:

Thank you for your letter dated July 31, 2023, regarding the subject Early Consultation Package for the proposed Waipahu Refuse Facility and Convenience Center. We acknowledge your comments and they have been considered in the preparation of the Draft 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 produced and are appended to the Draft EA in Appendix D.

We acknowledge your comments and note that a Natural Resource Assessment has been completed for the project area. The results of the assessment and best management practices are described in Section 3.5 of the Draft EA.

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's (ERP) The Environmental Notice.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

APPENDIX E:

Draft EA Comment and

Response Letters

APPENDIX E:

Draft Environmental Assessment

Comment and Response Letters

BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET • HONOLULU, HAWAI'I 96843
Phone: (808) 748-5000 • www.boardofwatersupply.com

RICK BLANGIARDI
MAYOR
MEIA

ERNEST Y. W. LAU, P.E.
MANAGER AND CHIEF ENGINEER
MANAKIA A ME KAHU WILIKĪ

ERWIN KAWATA
DEPUTY MANAGER
HOPE MANAKIA

NĀ'ĀLEHU ANTHONY, Chair
KAPUA SPROAT, Vice Chair
BRYAN P. ANDAYA
JONATHAN KANESHIRO
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

June 10, 2024

RECEIVED
JUN 10 2024
WILSON OKAMOTO CORPORATION

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

Dear Mr. Cheng:

Subject: Your Letter Dated May 23, 2024 Requesting Comments on the Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center off Waipahu Depot Road - Tax Map Key: 9-3-002: 009

Thank you for your letter regarding the proposed convenience center and refuse facility project.

The existing water system is adequate to accommodate the proposed development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission, and daily storage.

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The construction drawings should be submitted for our approval, and the construction schedule should be coordinated to minimize impact to the water system.

The developer should verify that best management practices are established and implemented to ensure that site run-off does not negatively impact nearby coastal shoreline water, surface water, or groundwaters.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Daniel Koge, Project Review Branch of our Water Resources Division at (808) 748-5444.

Very truly yours,

for ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Mr. Ernest Lau, P.E.
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Mr. Lau:

Thank you for your letter dated June 10, 2024, in response to the subject Draft EA – Waipahu Refuse Facility and Convenience Center published in the Environmental Review Program's May 23, 2024, issue of *The Environmental Notice*. Your participation in the EA process & review of EA documentation is welcomed and most appreciated.

We acknowledge your comments and concerns which have been considered in the preparation of the Draft 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 Second Draft EA in Appendix E. We offer the following in response to your comments:

1. It is acknowledged that Board Water Supply (BWS) has indicated that currently the existing water system is adequate to accommodate the Proposed Project but are aware that the BWS has the final decision on water availability at the building permit stage.

2. We acknowledge that water conservation measures are required for all new construction projects. This is discussed in Section 3.16.1 of the EA.

3. We acknowledge that the applicant will be required to pay the BWS' Water System Facilities Charges when water is made available for the Proposed Project. It is also acknowledged that the Proposed Project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

4. Please note that construction drawings will be provided to the BWS when available.

5. It is acknowledged that the applicant will coordinate with the Fire Department regarding on-site fire protection requirements.

Please note that the Second Draft EA has been published and made available for downloading, review and comment in the current issue of the State of Hawai'i's Environmental Review Program's (ERP) *The Environmental Notice*.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director of Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

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

BRYAN GALLAGHER, P.E.
DEPUTY DIRECTOR
HOPE PO'O

June 20, 2024

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

Subject: Notice of Availability
Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center
Waipahu, 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,

~~For~~ Haku Milles, P.E., LEED AP
Director

HM:krn (922549)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

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

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Mr. Milles:

Thank you for your letter dated June 20, 2024, regarding the subject Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s May 23, 2024 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that the City and County of Honolulu Department of Design and Construction does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

JOSH GREEN, M.D.
GOVERNOR
KE KIAʻĀINA

KENNETH S. HARA
MAJOR GENERAL
ADJUTANT GENERAL
KA ʻAKUKANA KENELALA

STEPHEN F. LOGAN
BRIGADIER GENERAL
DEPUTY ADJUTANT GENERAL
KA HOPE ʻAKUKANA KENELALA

STATE OF HAWAIʻI

DEPARTMENT OF DEFENSE
KA IHANA PILI KAUA
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAIʻI 96816-4495

June 17, 2024

Harlee Meyers

1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Email: publiccomment@wilsonokamoto.com

SUBJECT: Draft Environmental Assessment – Waipahu Refuse Facility and Convenience Center,Waipahu, Oahu, Hawaii
TMK (1) 9-3-002:009 (por.)

Dear Ms. Meyers:

Thank you for the opportunity to comment on the above project. The State of Hawaii Department of Defense has no comments to offer relative to the project at this time.

Should there be any questions, please contact Captain Randall Duldulao at 808-369-3487 or randall.s.duldulao@hawaii.gov.

Sincerely,

Shao Yu L. Lee, R.A.
Major, Hawaii National Guard
Chief Engineering Officer

cc: Mr. Rodolfo Borja, City and County of Honolulu

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Major Shao Yu L. Lee
Department of Defense
State of Hawaii
3949 Diamond Head Road
Honolulu, HI 96816

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Major Lee:

Thank you for your letter dated June 17. 2024, regarding the subject Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s May 23, 2024 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that the State of Hawaii Department of Defense does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

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 27, 2024

Mr. Keola Cheng
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Re: Notice of Availability, Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center, Waipahu, Oahu, Hawaii

Dear Mr. Cheng:

Thank you for your letter dated May 23, 2024. The Hawaii State Department of Education previously provided comments, dated August 17, 2023, and has no additional comments.

Should you have any questions, please contact Cori China 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
Interim Public Works Manager
Planning Section

RI:ctc
c: Facilities Development Branch

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Mr. Roy Ikeda
Department of Education
State of Hawaii
1390 Miller St.
Honolulu, HI 96813

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Mr. Ikeda:

Thank you for your letter dated June 27, 2024, regarding the subject Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s May 23, 2024 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that the State of Hawaii Department of Education does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

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

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAI'I 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

July 2, 2024

2024/ELOG-1025

Mr. Keola Cheng
Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JUL 05 2024
WILSON OKAMOTO CORPORATION

Dear Mr. Cheng:

SUBJECT: Draft Environmental Assessment (DEA)
Waipahu Refuse Facility and Convenience Center
93-71 Waipahu Depot Street – Waipio
Tax Map Key 9-3-002: Portion of 009

We have reviewed the DEA, submitted on May 28, 2024, for the above-reference Project which has been prepared for a forthcoming State Land Use District Boundary Amendment and the subsequent application for a Special Management Area Major Permit. The Department of Planning and Permitting has the following comments:

Section 1.3 Permit History: Table 1:1 should be reorganized into chronological order, from oldest to the most recent approval. The permits approved for a single project via a single City Council Resolution, such as a SMA Major Permit and Shoreline Setback Variance, should be grouped into single permit listing (e.g., The Waipahu Ash Landfill closure involved both application Nos. 2004/SMA-73 and 2004/SV-19, which were approved by Resolution No. 04-391). There are also inconsistencies in the listings under the "Type of Permit" column; some of the SMA approvals are listed as "Land Permit Application." We also suggest that the "Status" be simplified (i.e., approved, approved with conditions, denied, etc.).

Section 2.2 Proposed Action: The description of the proposed projects must be described in greater detail. The propose ash recycling facility at this location must be thoroughly described. Explain what facilities need to be constructed to accommodate this recycling program and where they will be constructed. This new effort needs to be more fully described in the context of what is the current and ongoing process and procedure for dealing with ash generated from the H-Power plant.

This section must also be expanded to provide a more complete description of actual facilities to be constructed, including plans or illustrations of improvements for the proposed new Convenience Center. In order understand the new facility, the existing Convenience Center should be described and a Location Map must be provided to illustrate where the existing facility is located. The size, as in the height and overall dimensions and design of the proposed new ramp must be provided. Elevations should be provided as well as all proposed improvements, including the service ramp, gates, fencing and walkway, landscaping, lighting, etc. The anticipated volume of municipal solid waste (MSW) to be received at the new facility must be compared to the current convenience center. Similarly, more background should be provided on what is the existing Rolloff Division of Department of Environmental Services (ENV). Explain what the current duties and services provide at these facilities at the former Waipahu Incinerator Facility (WIF). The Final EA should describe the current City ENV Rolloff fleet, and where is this fleet currently housed. This section mentions the future removal of the WIF, which was substantial facility. As such, a much more robust and comprehensive discussion on its demolition and removal, and the potential impact of the release of hazardous materials must be provided.

Section 3.2.2 Soils: The Final EA should provide approximate grading and embankment estimates for each of the construction elements, the new Convenience Center, the removal of the WIF, and the construction of the new Rolloff Division, office and baseyard. The section must be expanded to greater detail on type foundation for the proposed construction, and its implication on the about of earthwork necessary. The anticipated sea level rise at three feet is indicate to affect the access to this revised facility. Beyond locating an alternate routes to access the new facility, the EA should address the alternative to elevate the existing facilities as a possible mitigation measure. Some estimate of what such mitigation would require, should be explored for a more complete discussion of mitigation than alternative access routes.

Section 3.4.1 Sea Level Rise (SLR): The discussion on SLR is inadequate. It is not the responsibility of the Climate Change Commission to rectify site-specific sea level rise impacts from a proposed project. The Applicant must determine how a proposed facility can operate safely and effectively outside of the SLR exposer area before becoming operational. Other sections mention that alternative access points. The Final EA should disclose what specific mitigative actions will be taken to address the projected impacts. One particular concern is what actions will be undertaken to mitigate access that is occasionally obstructed from flooding, and that will continue to be obstructed with greater frequency.

Section 3.8 Land Use: The EA should cite relevant state law when applicable. For example, on page 3-36, identify Hawaii Revised Statutes, Section 205-4.5(a)(7) when

stating that waste transfer facilities are permissible within the State Land Use Agricultural District.

We note that a DEA for the immediately adjacent Honolulu Police Department (HPD) Training Academy and Parking Lot, located within the same property, was published at the same time as the proposed project. While the HPD DEA referenced the proposed improvements included in this DEA, this DEA did not describe the improvements that are being proposed on the same property, though outside the project area. Both applicants (DDC and ENV) should coordinate proposals and permits required to determine if there are complimentary efforts, cumulative impacts, or conflicting information. There are studies, which pertain to both projects that were published in the HPD DEA that could be referenced in the Final EA.

While the certain proposed actions may be permitted in the State Land Use Agricultural District, they would also be appropriate within the State Land Use Urban District.

Section 2.4 and Section 4.1.3 identify that the Refuse Roll-off Division and Baseyard requires a State Land Use District Boundary Amendment, but these sections only discuss the transfer station and does not disclose the need for a boundary amendment for the baseyard. In fact, much of narrative in Sections 3 and 4 only mentions the improvements to the Convenience Center and not the Rolloff baseyard. The proposed baseyard will certainly have adverse impacts on lands designated for agriculture, contrary to the findings in Section 3.8, which is why a boundary amendment is required. The FEA should be expanded accordingly to include a State Land Use District Boundary Amendment in Section 4.3.

Section 4.4.1 The Oahu General Plan:

VI.A. numbers 4 and 7 need to be addressed.

VII.A.9: "Locate community facilities on sites that will be convenient to the people they are intended to serve," this is imperative of a transfer facility, not "N/A" as stated in the DEA, which is why mitigating access obstructions is essential to effective operations.

VII.B., as stated above, not enough consideration has been provided on how the facility will address frequent disruptions cause by SLR.

VIII.B. The Project site, and its access road, also contain Flood Zones X and AE. This is not disclosed or addressed in this part of the discussion.

Section 4.2.2 Central Oahu Sustainable Communities Plan (COSCP): For the COSCP:

Section 3.1.3.1. Overhead lighting is a concern for birds that fly in proximity of the Project site. The FEA should reflect that and propose mitigative measures.

The Pearl Harbor Historic Trail passes directly to the north of the existing convenience center. The FEA must include a discussion on the impacts to the trail of the relocation of the facility, and what mitigative efforts will be taken to ensure continued access through the area during the relocation.

The Department of Design and Construction HPD DEA mentions potential improvements to the drainage gulch at the entrance of their site, along the roadway. Similar discussions should be provided in the FEA. We appreciate the opportunity to provide comments and find that it sufficiently discloses and addresses all respective issues, with the exception of Section 3.1.5 Geotechnical. The FEA must be expanded to provide actual estimates for all excavation and grading activities to construct both the parking lots and the modular buildings. We also suggest that planning and permitting efforts for the HPD facility be coordinated, to the extent practicable, with those of the proposed Waipahu Refuse Facility and Convenience Center.

Should you have any questions, please contact Steve Tagawa, of our Land Use Approval Branch, at (808) 768-8024.

Very truly yours,

for Dawn Takeuchi Apuna
Director

cc: Environmental Review Program - Mary Alice Evans

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

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

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Ms. Apuna:

Thank you for your letter dated June 6, 2024, regarding the subject, Draft Environmental Assessment Comments- Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program's May 23, 2024 issue of the *Environmental Notice.* We acknowledge your comments on the DEA and offer the following in response:

- Table 1.1 in Section 1.3 - Permit History of the DEA has been reorganized into chronological order and revised to address inconsistencies in the listings language.

- We have revised Section 2.2 - Proposed Action to offer a description of the proposed improvements in greater detail. It should be noted that the Proposed Action does not include an ash recycling facility and the project description has been revised to clarify this. Figure 1-1 Project Location / Surrounding Uses illustrates the Project Area in relation to the existing WCC, while Figure 1-2 Existing Conditions Site Plan illustrates the on-site existing conditions at the Project Area. Regarding the existing WCC, we note that it is located on approximately one-half acre of land and includes a horse-shoe shaped elevated offloading platform which allows residents to offload waste into refuse rolloff containers staged at the perimeter of the elevated platform. Currently, approximately 12,800 tons per year (35 tons per day) of waste is managed at the facility and the future quantity of waste is estimated to increase 0.35% per year (13,725 tons per year in 2040). As such, the Proposed Action aims to accommodate the future needs of the surrounding region. As stated in the EA, the Proposed Action shall require the demolition of some of the remaining Waipahu Incinerator Facility (WIF). ENV is currently contracting services of a demolition contractor to complete demolition of all remaining structures at the WIF.

- Regarding Section 3.2.2 – Soils, we note that the final developed grade elevations across the site will range from approximately 3.0 feet to 10.0 feet MSL depending on final developed design parameters to address permitting requirements (e.g., solid waste and water quality rules and special management area [SMA] permitting), remediation of ash deposits located on the site, required grade separation at the offloading platform; and adequate site drainage, including addressing sea level rise exposure and differing flood zones present on the site. During the design phase, the Proposed Action shall explore alternatives which provide alternative access routes and the potential for elevated structures.

- We acknowledge that there is a concern of frequent flooding at the Project Area during heavy rains. As noted in the FEA, drainage and road conditions at the entrance area of the Project Area and HPD Training Academy will be evaluated during the design phase to develop measures to eliminate or reduce flooding at that location. To the extent feasible, the road elevation at the southern gate of the HDP Training Academy and the Project Area entrance will be raised to help direct stormwater runoff to the shoulder of the road, and swales and detention basins located on the Project Area and HPD Training Academy. Other areas of the Project Area will incorporate fills (elevated) as necessary to direct stormwater runoff to onsite treatment swales and detention basins. We anticipate that the final designs shall be incorporated into the various entitlements requirements to fully address these concerns.

- We acknowledge your comments regarding the State Land Use Boundary (SLUD). We recognize that the subject parcel is split-designated between the Agricultural and Conservation District. However, we acknowledge that the Project Site is situated entirely within the Agricultural District and does not involve the use of conservation lands. Furthermore, while it is anticipated that a District Boundary Amendment (DBA) shall be prepared and processed to reclassify the subject property from the Agricultural District to Urban District, we note that note that the DBA will not involve the reclassification of any lands currently designated within the Conservation District. We also note that the need for a DBA is triggered by the Refuse Facility component of the Proposed Action and that the FEA has been revised to reflect this. Further, relevant state laws have been cited throughout the FEA as appropriate.

- Regarding your comments on Section 4.4.1 – The Oahu General Plan, we make the assumption that these comments were made in reference to the DEA Section 4.1.4 - The City and County of Honolulu General Plan. We have revised this section, as appropriate, to address these comments regarding VI.A., VII.A.9., VII.B., and VIII.B. Drainage and road conditions at the entrance area of the Project Area and HPD Training Academy will be evaluated during the design phase to develop measures to eliminate or reduce flooding at that location. To the extent feasible, the elevation of structures shall be considered during the design phase and permitting phase to further address concerns due to flooding and sea level rise.

- Regarding your comments on Section 4.2.2 - Central O‘ahu Sustainable Communities Plan, we note that the DEA does include recommendations to mitigate impacts for birds that fly in proximity to the Project Site. It is recommended that all overhead lights installed be shielded downward to prevent casting light beams directly into the sky to mitigate long-term impacts on nearby avian species that may result due to operation of the Proposed Action. We also note that the Pearl Harbor Historic Trail is accessed via a paved driveway that runs to the north of the existing WCC. This driveway is utilized to access the trail as well as the Honolulu Fire Department Waipahu Maintenance Facility. Any construction and demolition activities associated with the Proposed Action are not anticipated to prevent access to these areas.

We appreciate your participation in the EA review process. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA in Appendix E.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

DEPARTMENT OF PARKS AND RECREATION
KA 'OIHANA MĀLAMA PĀKA A ME NĀ HANA HO'ONANEA
CITY AND COUNTY OF HONOLULU

1000 ULU'ŌHI'A STREET, SUITE 309 • KAPOLEI, HAWAI'I 96707
PHONE: (808) 768-3003 • FAX: (808) 768-3053 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

LAURA H THIELEN
DIRECTOR
PO'O

KEHAULANI R PUU
DEPUTY DIRECTOR
HOPE PO'O

June 7, 2024

RECEIVED
JUN 12 2024
WILSON OKAMOTO CORPORATION

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

Dear Mr. Cheng:

SUBJECT: Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

The Department of Parks and Recreation (DPR) has reviewed the above subject Draft Environmental Assessment (DEA). Please note that the Waipi'o Peninsula Soccer Park is operated by the City and County of Honolulu, on land leased by the United States Navy. It is not owned by the State of Hawai'i, as stated in the DEA.

As it appears that the Waipahu Refuse Facility and Convenience Center will have no impact to the Waipi'o Peninsula Soccer Park, DPR has no comments at this time.

Should you have any questions, please contact Planner VI Ms. Jennifer Barra at jennifer.barra@honolulu.gov.

Sincerely,

Laura H. Thielen
Director

cc: Carrie Leong, Central O'ahu District Manager
Christine Ching, PMRS Administrator

LHT:jb
(906716)

WILSON OKAMOTO
CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

24 MAY 28 P3:10

DEPT. OF PARKS
& RECREATION
C & C OF HONOLULU

10751-01
May 23, 2024

Ms. Laura Thielen
City and County of Honolulu
Department Parks and Recreation
1000 Uluohia Street Suite 309
Kapolei, HI 96707

Subject: Notice of Availability
Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center
Waipahu, Oahu, Hawai'i

Dear Ms. Thielen:

This is the notice of the availability for the Draft Environmental Assessment (DEA) pertaining to the proposed Waipahu Refuse Facility and Convenience Center (Proposed Project) which is published on December 23, 2023, issue of the Environmental Review Program's *The Environmental Notice*. Written comments received in response to this DEA will be considered in the preparation of the Final Environmental Assessment (FEA). The deadline for comments is June 22, 2024. Please submit comments via email to publiccomment@wilsonokamoto.com, or written comments via mail to:

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

All comment letters must be post-marked, or email received, by the deadline date to be included in the DEA.

The DEA is available for review on the ERP Website at the following URL address:

https://files.hawaii.gov/dbedt/erp/Doc_Library/2024-05-23-OA-DEA-Waipahu-Refuse-Facility-and-Convenience-Center.pdf

We appreciate your interest and participation in this environmental review process.

Sincerely,

Keola Cheng

Keola Cheng
Director of Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Ms. Laura Thielen
City and County of Honolulu
Department Parks and recreation
1000 Uluohia Street Suite 309
Kapolei, HI 96707

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Ms. Thielen:

Thank you for your letter dated June 7, 2024, regarding the subject Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s May 23, 2024 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that the State of Hawaii Department of Parks and Recreation does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

DEPARTMENT OF TRANSPORTATION SERVICES
KA 'OIHANA LAWELAWE 'ŌHUA
CITY AND COUNTY OF HONOLULU
711 KAPI'OLANI BOULEVARD, SUITE 1600
HONOLULU, HAWAI'I 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Website: honolulu.gov/transportation

RICK BLANGIARDI
MAYOR
MEIA

J. ROGER MORTON
DIRECTOR
PO'O

JON Y. NOUCHI
DEPUTY DIRECTOR
HOPE PO'O

TP6/24-907411

June 24, 2024

MEMORANDUM

TO: Roger W. Babcock, Director
Department of Environmental Services

ATTENTION: Rodolfo Borja, Civil Engineer
Refuse Division

FROM: J. Roger Morton, Director
Department of Transportation Services

SUBJECT: Waipahu Refuse Facility and Convenience Center Draft Environmental Assessment (Anticipated Finding of No Significant Impact)

Thank you for the opportunity to provide written comments regarding the Waipahu Refuse Facility and Convenience Center Draft Environmental Assessment (Anticipated Finding of No Significant Impact). We have the following comments.

1. Traffic Impact Report (TIR). The Applicant shall revise the TIR to address the impacts of the proposed Honolulu Police Academy New Parking Lot and Master Plan Improvements Project adjacent to the north side of the existing Honolulu Police Academy / Training Facility, located north of the proposed Waipahu Refuse Facility Project site.

   The Applicant shall submit all native files (e.g., Synchro, Excel, etc.) for the raw multi-modal counts (in the format specified at https://geocounts.com/api/format/ and the example file at https://bit.ly/DTS-count-sample) and accompanying analyses to the Department of Transportation Services Regional Planning Branch (RPB) at dtsplanningdiv@honolulu.gov. Please refer to the Department of Transportation Services (DTS) Transportation Impact Assessment (TIA) Guide for multimodal assessment tools and recommended analyses. The TIA

Guide can be found at
http://www4.honolulu.gov/docushare/dsweb/View/Collection-7723.

2. Neighborhood Impacts. The area representatives, neighborhood board, as well as the area guests, businesses, emergency personnel (fire, ambulance, and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details and status throughout the project and the impacts that the project may have on the adjoining local street area network.

3. Disability and Communication Access Board (DCAB). Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.

Should you have any questions, please contact Greg Tsugawa, of my staff, at (808) 768-6683.

cc: Harlee Meyers, Project Manager
Wilson Okamoto Corporation

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Mr. Roger Morton
Director
Department of Transportation Services
711 Kapiolani Boulevard, Suite 1600
Honolulu, HI 96813

Subject: Draft Environmental Assessment (EA) for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Mr. Morton:

Thank you for your letter received June 24, 2024 subject Draft EA – Waipahu Refuse Facility and Convenience Center published in the Environmental Review Program's May 23, 2024, issue of *The Environmental Notice*. Your participation in the EA process & review of EA documentation is welcomed and most appreciated.

We acknowledge your comments and concerns which have been considered in the preparation of the Draft 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 Second Draft EA in Appendix E. We offer the following in response to your comments:

1. We have considered your request to revise the TIAR in accordance with the adjacent HPD Training Academy project. After reviewing the Mobility Analysis Report (MAR) and considering its implications, we provide justification for why a revision of the TIAR is not necessary. Our TIAR, completed in August 2023, concluded that the Proposed Action would not generate significant additional trips beyond what was accounted for in the existing traffic data. The MAR, completed in October 2023, indicates that the adjacent project will generate 75 net new vehicle trips during the AM peak hour (47 inbound/28 outbound) and 67 net new vehicle trips during the PM peak hour (20 inbound/47 outbound).

   The Proposed Action's additional trips are primarily associated with the expansion of the Refuse Rolloff Division's truck fleet, which operates between 6:00 AM and 4:00 PM. The MAR indicates peak trip generation for the adjacent project occurs at different times than the truck fleet's operational hours providing a temporal separation of traffic peaks, thus minimizing the likelihood of overlapping traffic peaks that could cause congestion or impact the findings of the TIAR. Further, The truck fleet's trips are expected to travel in the opposite direction of the traffic generated by the adjacent project. This directionality means that the Proposed Action's truck trips will not directly conflict with or exacerbate the traffic generated by the adjacent project.

   The TIAR accounted for all existing traffic conditions and site-generated trips, including those associated with the current convenience center. Since the adjacent project's net new trips are accounted for in the MAR and expected to not significantly overlap with the Proposed Action's trips, the existing traffic data remains sufficient.

Based on the analysis, the traffic impacts from the adjacent project do not necessitate a revision of the TIAR. The temporal and directional separation of traffic patterns, combined with the existing traffic data coverage, supports the conclusion that the Proposed Action's traffic impacts remain consistent with the original assessment.

2. Relating to neighborhood impacts, the details and status shall be shared with local stakeholders through the EA process as well as the subsequent entitlements processes.

3. As the project enters the design phase, project plans shall be reviewed and approved by all applicable entities to ensure compliance with various building codes and requirements.

Please note that the Final EA has been published and made available for downloading, review and comment in the current issue of the State of Hawai'i's Environmental Review Program's (ERP) *The Environmental Notice*.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director of Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HO'OKELE

Deputy Directors
Nā Hope Luna Ho'okele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF TRANSPORTATION | KA 'OIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

DIR 0000514
STP 8.3767

June 18, 2024

VIA EMAIL: publiccomment@wilsonokamoto.com

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

Dear Mr. Cheng:

Subject: Draft Environmental Assessment (DEA)
Waipahu Refuse Facility and Convenience Center
Waipahu, Oahu, Hawaii
Tax Map Key: (1) 9-3-002: 009 (portion)

Thank you for your letter, dated February 1, 2024, requesting the Hawaii Department of Transportation's (HDOT) review and comments on the subject DEA. HDOT understands the City and County of Honolulu Department of Environmental Services is proposing to relocate the Waipahu Convenience Center from its current location at 94-9 Waipahu Depot Street to a new facility to be constructed at the former Waipahu Incinerator Facility property located to the south on Waipahu Depot Street adjacent to the Honolulu Police Academy/Training Facility.

The HDOT comments provided during early consultation in letter AIR-EP 23.0074 dated August 10, 2023, which is included in the DEA, remains valid and applicable to the proposed project. Further, the Federal Aviation Administration Form 7460-1 Notice of Proposed Construction or Alteration should be listed in the DEA under Section 4.3. Permits and Approvals.

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

10751-01
December 23, 2025

Mr. Edwin Sniffen
Director
Department of Transportation
State of Hawai'i
869 Punchbowl Street
Honolulu, HI 96813

Subject: Draft Environmental Assessment (EA) for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Mr. Sniffen:

Thank you for your letter received June 18 2024 subject Draft EA – Waipahu Refuse Facility and Convenience Center published in the Environmental Review Program's May 23, 2024, issue of *The Environmental Notice*. Your participation in the EA process & review of EA documentation is welcomed and most appreciated.

We acknowledge your comments and concerns which have been considered in the preparation of the Draft 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 Second Draft EA in Appendix E. We offer the following in response to your comments:

1. Regarding your comments given during the early consultation period dated July 20,2023, they have been addressed and considered thoroughly.
    a. Since our proposed project is within 5 miles of Daniel K. Inouye International Airport, the Technical Assistance Memorandum (TAM) has been addressed and understood.
    b. Please note that the proposed project is not within 20,000 feet of an airport runway, therefore a FAA Form 7460-1 Notice of Proposed Construction will not be necessary.
    c. The importance of not creating a wildlife attractant is understood and a high priority.

2. As noted above, the proposed project is not within 20,000 feet of an airport runway, therefore a FAA Form 7460-1 Notice of Proposed Construction will not be necessary to put in Section 4.3 Permits and Approvals.
3. Any subsequent land use entitlement related requests for review or correspondence will be sent to the email address

Please note that a Second Draft EA has been published and made available for downloading, review and comment in the current issue of the State of Hawai'i's Environmental Review Program's (ERP) *The Environmental Notice*.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director of Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

Harlee Meyers

From: Nagata, Sarah <Sarah.Nagata@hawaiianelectric.com>
Sent: Thursday, June 6, 2024 5:17 PM
To: Public Comment
Cc: Liu, Rouen
Subject: Notice of Availability Draft Environmental Assessment - Waipahu Refuse Facility and Convenience Center

Aloha Mr. Cheng,

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

Mahalo,
Sarah

Sarah Nagata
Permits Engineer, Transmission & Distribution
Hawaiian Electric
PO Box 2750 / Honolulu, HI 96840

O: 808.543.7046
M: 808.772.3281
E: sarah.nagata@hawaiianelectric.com

CONFIDENTIALITY NOTICE: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and/or privileged information. Any unauthorized review, use, copying, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender immediately by reply e-mail and destroy the original message and all copies.

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Ms. Sarah Nagata
Permits Engineer
Hawaiian Electric Company
PO Box 2750
Honolulu, HI 96840

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Ms. Nagata:

Thank you for your email correspondence dated June 6, 2024, regarding the subject, Notice of Availability Draft Environmental Assessment- Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s May 23, 2024 issue of the *Environmental Notice*.Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that Hawaiian Electric Company does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

June 14, 2024

RECEIVED
JUN 20 2024
WILSON OKAMOTO CORPORATION

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

Dear Mr. Cheng:

Subject: Notice of Availability
Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center
Waipahu, Oahu, Hawaii
Plan Review and Comment

In response to your letter dated May 23, 2024, it has been determined that the area is currently clear of utility gas facilities.

Thank you for the opportunity to review the Draft Environmental Assessment. Should there be any questions, or if additional information is desired, please feel free to call Kevin Foster at 808-583-2444.

Sincerely,

Hawaii Gas

Keith K. Yamamoto
Manager, Engineering

KKY:krs

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Keith K. Yamamoto
Engineering Manager
Hawaii Gas Company
PO Box 3000
Honolulu, HI 96802

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Mr. Yamamoto:

Thank you for your letter dated June 14, 2024, regarding the subject, Notice of Availability Draft Environmental Assessment- Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s May 23, 2024 issue of the *Environmental Notice*.Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that Hawaii Gas Company does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Second Draftl EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

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

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
Office of Conservation and Coastal Lands
P.O. BOX 621
HONOLULU, HAWAII 96809

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

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:AA

Correspondence: OA 24-178

Jun 6, 2024

RECEIVED
JUN 10 2024
WILSON OKAMOTO CORPORATION

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

SUBJECT: Draft Environmental Assessment (DEA) Comments for Waipahu Refuse Facility and Convenience Center Located at Waipi'o, 'Ewa, O'ahu, TMK: (1) 9-3-002:009

Dear Keola Cheng:

The Office of Conservation and Coastal Lands (OCCL) has reviewed your correspondence and related materials regarding the subject matter. According to your letter, Wilson Okamoto Corporation is requesting comments for the DEA pertaining to the Waipahu Refuse Facility and Convenience Center project

City and County of Honolulu, Department of Environmental Services (ENV) is proposing to relocate the Waipahu Convenience Center (WCC) from its existing location to the former Waipahu Incinerator facility property located further south. The new facility will include improvements to reduce operational inefficiencies experienced at the existing WCC. ENV also plans to develop a Refuse Facility east of the new WCC.

The proposed area of work does not appear to lie within the State Land Use Conservation District. However, based on the information provided, the applicant may want to consider consulting with the State of Hawai'i Land Use Commission ((808) 587-3822) regarding the Agricultural and Conservation District boundary in this area and the potential need for a Boundary Interpretation as this will identify jurisdictional boundaries and ensure the project does not lie within the Conservation District.

A waste facility shall not be located in the Conservation District, according to Hawai'i Revised Statutes (HRS) §183C-4 Zoning; amendments. (b) *...provided that no waste or disposal facility shall be located in a conservation district except in emergency circumstances where it may be necessary to mitigate significant risks to public safety and health; provided further that emergency circumstances shall not exceed three years. No use except a nonconforming use as defined in section 183C-5, shall be made within the conservation district unless the use is in accordance with a zoning rule.*

Should you have any questions, contact Alyssa Accardo of the Office of Conservation and Coastal Lands at alyssa.m.accardo@hawaii.gov or at (808) 587-0048.

Sincerely,

(for) Michael Cain, Administrator
Office of Conservation and Coastal Lands

CC: *Land Use Commission*
O'ahu Land Division Office
City and County of Honolulu, Department of Planning and Permitting

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Mr. Michael Cain
Administrator
Office of Conservation and Coastal Lands
1151 Punchbowl Street. Room 131
Honolulu, HI 96813

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Mr Cain:

Thank you for your letter dated June 6, 2024, regarding the subject, Draft Environmental Assessment Comments- Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program's May 23, 2024 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge your comments regarding the State Land Use Boundary (SLUD). We recognize that the subject parcel is split-designated between the Agricultural and Conservation District. However, we acknowledge that the Project Site is situated entirely within the Agricultural District and does not involve the use of conservation lands. Furthermore, while it is anticipated that a District Boundary Amendment (DBA) shall be prepared and process to reclassify the subject property from the Agricultural District to Urban District, we that the DBA will not involve the reclassification of any lands currently designated within the Conservation District.

We appreciate your thoughts and concerns. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

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

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: https://planning.hawaii.gov/

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
DIRECTOR

DTS 202405281117NA

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 Program

June 18, 2024

Mr. Keola Cheng
Director of Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaiʻi 96826

Subject: Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center
Waipahu, Oʻahu, Hawaiʻi
Tax Map Key: (1) 9-3-002: 009 (por)

Thank you for the opportunity to provide comments for the Draft Environmental Assessment (Draft EA) on the proposed relocation of the Waipahu Refuse Facility and Convenience Center. The notification request was received by our office via memo on May 23, 2024.

It is our understanding City and County of Honolulu, Department of Environmental Services (ENV) intends to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to the former Waipahu Incinerator Facility property located further south on Waipahu Depot Street and adjacent to the south side of the Honolulu Police Academy/Training Facility.

The WCC provides a convenient service for area residents to drop-off municipal solid waste, white goods, and other household waste materials as an alternative to drop-off at the Waimānalo Gulch Sanitary Landfill or other solid waste management facilities on Oʻahu. The existing WCC was constructed in the 1970's and is no longer sized to operate efficiently and accommodate the number of residents utilizing the facility. The new WCC will include improvements to increase operational efficiency at the existing WCC. ENV also plans to develop a Refuse Rolloff Division Baseyard Facility (Refuse Facility) east of the new WCC.

The Office of Planning and Sustainable Development (OPSD) has reviewed the submitted material and has the following comments to offer:

1. Previous Comments
   We acknowledge that the Draft EA has addressed many of our comments submitted in our early consultation response letter, DTS 202307251046NA, dated August 23, 2023.

These include Hawai‘i Revised Statutes (HRS) § 205A (the objectives and supporting policies of the Hawai‘i Coastal Zone Management Program); assessing the project site's vulnerability to Climate Change induced and Sea Level Rise impacts; stormwater runoff management and mitigation; and includes best management practices that incorporate low impact development strategies. Furthermore, we acknowledge that the Draft EA does contain appropriate analysis on the project's alignment with the Hawai‘i State Planning Act, HRS Chapter 226.

2. Coastal Zone Management Act (CZMA), Federal Consistency
As listed as a potential approval in our early consultation response letter, DTS 202307251046NA, we acknowledge that this project is not subject to CZMA federal consistency.

3. Special Management Area (SMA)
We note that in Appendix D of the Draft EA contains correspondence between the City and County of Honolulu, Department of Planning and Permitting (DPP) and Wilson Okamoto Corporation (the consultant on this project). In a letter from DPP, 2023/ELOG-1378(ST), dated September 5, 2023, it states "We confirm that a State Special Use Permit (SUP) and a SMA Use permit must be obtained."

OPSD acknowledge that ENV has chosen the District Boundary Amendment (DBA) process in lieu of a SUP, however there is no further information on SMA Use requirements, nor any additional consultation with DPP on this matter.

We recognize that Section 1.3, Table 1:1, pages 1-2 to 1-5 does include a complete history of Permit Application and Approvals of the subject parcel. This list does not include an historical SMA Use permit involving this proposed action by ENV. Furthermore, Section 4.3, page 4-88 of the Draft EA, does not include SMA Use Permitting in the needed Permits and Approvals. We recommend that DPP be consulted on SMA Use permitting and the Final Environmental Assessment includes further information on SMA Use and verifying with DPP on the SMA Use process and permitting, if applicable.

4. Waipahu Refuse Facility and Convenience Center

   a. As required by condition No. 4 of the 94/SUP-2 Decision & Order, the City and County of Honolulu intends to prepare and submit a petition for a State Land Use District Boundary Amendment (DBA) following completion of the EA process. The Draft EA mentions the DBA will include a petition area encompassing the Honolulu Police Training Academy, the Honolulu Fire Department maintenance facility, and the Proposed Action. Of importance is the difference between the anticipated DBA petition area and the 5.2-acre project site of the subject Draft EA. Ideally, the analysis provided in the subject EA would have included the uses and study area expected to be involved in the DBA. Should the Land Use Commission (LUC) determine the DBA triggers HRS Chapter 343 environmental review (e.g. the petition area contains lands in the State Conservation District), a supplementary document covering the entire DBA petition area

will need to be published. It is recommended that the Department of Design and Construction partner with ENV to consolidate and submit a comprehensive DBA petition to the LUC.

b. The parcel boundaries do not appear to align with the State Land Use boundaries. Consultation with the LUC is recommended to determine the appropriate DBA petition area, and the exact location of the State Land Use District boundaries along the western portion of TMK (1) 9-3-002:009. It is likely a formal boundary interpretation from the LUC will be needed prior to submitting the DBA petition.

For any questions regarding Environmental Assessment concerns as they apply to this comment letter, please contact Joshua Hekekia at (808) 587-2845 or by email to Joshua.K.Hekekia@hawaii.gov. For questions related to State land use or DBA policy and procedures, please contact Brandon Soo at (808) 587-2888 or by email to Brandon.A.Soo@hawaii.gov. If you wish to respond to this comment letter, please include DTS 202405281117NA in the subject line.

Sincerely,

Mary Alice Evans

Mary Alice Evans
Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
December 23, 2025

Mary Alice Evans
Director
Office of Planning and Sustainable Development
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

Subject: Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Ms. Evans:

Thank you for your letter dated June 18, 2024, regarding the subject Draft Environmental Assessment Comments- Waipahu Refuse Facility and Convenience Center as published in the Environmental Review Program's May 23, 2024 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge your recognition that the Draft EA has addressed many of the points raised in your early consultation response letter (DTS 202307251046NA). This includes incorporating an analysis on:

- Climate change and sea level rise impacts
- Stormwater runoff management and mitigation using low-impact development strategies
- Project alignment with the Hawaii State Planning Act (HRS Chapter 226)
- Project alignment with the Coastal Zone Management (CZM) objectives and policies **(**HRS Chapter 205A**)**

Coastal Zone Management Act (CZMA) Federal Consistency:

We acknowledge your confirmation that this project is not subject to CZMA federal consistency review.

Special Management Area (SMA) Use Permit:

We acknowledge your comments regarding the Special Management Area Use Permit and acknowledge that an SMA Use Permit (Major) is anticipated for the Proposed Action. We anticipate coordinating with the Department of Planning and Permitting (DPP) to evaluate the requirements if compliance with the SMA Use Permit. Section 1.3 (Permit Application and Approvals) and Section 4.3 (Permits and Approvals) of the FEA have been updated accordingly.

Waipahu Refuse Facility and Convenience Center - DBA Petition Area:

We acknowledge your comments regarding the State Land Use Boundary (SLUD) and District Boundary Amendment (DBA) We note that it has been confirmed through correspondence with the Department of Coastal and Conservation Lands (OCCL) during the early consultation and DEA process that the Project Site is situated entirely within the Agricultural District and does not involve the use of conservation lands. We also note, however, that the subject parcel is split-designated between the Agricultural and Conservation District.

As stated in the FEA. it is understood that a DBA will be prepared and processed for the subject parcel by the Department of Design and Construction (DDC). The DBA will encompass the Proposed Action as well as anticipated improvements to the Honolulu Police Department (HPD) Training Academy and existing Waipahu Convenience Center located on the subject parcel. We note that the DBA will not involve the reclassification of any lands currently designated within the Conservation District.

We appreciate your thoughts and concerns. A record of your comments, along with this response, have been reproduced and are appended to the Second Draft EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

APPENDIX F:

Second Draft EA Comment and

Response Letters

APPENDIX F:

Second Draft Environmental Assessment

Comment and Response Letters

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

January 8, 2026

SENT VIA EMAIL

Mr. Keola Cheng
publiccomment@wilsonokamoto.com

Dear Mr. Cheng:

Subject: Notice of Availability
Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center
Waipahu, 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 (949088)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 8, 2026

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

Subject: Second Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Mr. Milles:

Thank you for your letter dated January 8, 2026, regarding the subject Second Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program's December 23, 2025 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that the City and County of Honolulu Department of Design and Construction does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Final EA in Appendix F.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

DEPARTMENT OF FACILITY MAINTENANCE
KA 'OIHANA MĀLAMA HALE
CITY AND COUNTY OF HONOLULU

1000 ULU'ŌHI'A STREET, SUITE 215, KAPOLEI, HAWAI'I 96707
PHONE: (808) 768-3343 • Fax: (808) 768-3381 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

GENE C. ALBANO, P.E.
DIRECTOR AND CHIEF ENGINEER
PO'O A ME LUNA NUI 'ENEKINIA

WARREN K. MAMIZUKA
DEPUTY DIRECTOR
HOPE PO'O

IN REPLY REFER TO:
DRM 26-003

January 5, 2026

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

RECEIVED
JAN 08 2026
WILSON OKAMOTO CORPORATION

Dear Mr. Cheng:

Subject: Notice of Availability
Draft Environmental Assessment
Waipahu Refuse Facility and Convenience Center

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

We have no comments to offer at this time.

If you have any questions, please call Mr. Ray Jyo of the Division of Road Maintenance at (808) 768-8397.

Sincerely,

Gene C. Albano, P.E.
Director and Chief Engineer

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 8, 2026

Mr. Gene Albano
Department of Design and Construction
State of Hawaii
City and County of Honolulu
1000 Ulu‘ōhi‘a Street, Suite 215
Kapolei, Hawaii 96707

Subject: Second Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Mr. Albano:

Thank you for your letter dated January 5, 2026, regarding the subject Second Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s December 23, 2025 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that the City and County of Honolulu Department of Facility Mainentance does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Final EA in Appendix F.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

JOSH GREEN, M.D.
GOVERNOR
KE KIAʻĀINA

STEPHEN F. LOGAN
MAJOR GENERAL
ADJUTANT GENERAL
KA ʻAKUKANA KENELALA

PHILLIP L. MALLORY III
BRIGADIER GENERAL
DEPUTY ADJUTANT GENERAL
KA HOPE ʻAKUKANA KENELALA

STATE OF HAWAIʻI
KA MOKUʻĀINA O HAWAIʻI
DEPARTMENT OF DEFENSE
KA ʻOIHANA PILI KAUA
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAIʻI 96816-4495

January 21, 2026

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826
Attn: Keola Cheng

SUBJECT: Draft Environmental Assessment for
Waipahu Refuse Facility and Convenience Center
TMK: (1) 9-3-002:009 (por.)
Waipahu, Oahu, Hawaiʻi

Aloha Mr. Cheng:

Thank you for your letter dated December 23, 2025, regarding the above subject project. The State of Hawaiʻi, Department of Defense has no comments to offer at this time.

Should there be any questions, please contact Major Randall Duldulao at 808-369-3487 or randall.s.duldulao@hawaii.gov.

Best Wishes,

Shao Yu Lee, R.A.
Major, Hawaiʻi National Guard
Chief Engineering Officer

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 8, 2026

Major Shao Yu L. Lee
Department of Defense
State of Hawaii
3949 Diamond Head Road
Honolulu, HI 96816

Subject: Second Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Major Lee:

Thank you for your letter dated January 21, 2026, regarding the subject Second Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s December 23, 2025 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge that the City and County of Honolulu Department of Design and Construction does not have any comments to offer at this time as the Proposed Project does not impact any of their facilities. A record of your comments, along with this response, have been reproduced and are appended to the Final EA in Appendix F.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

Outlook

CAB Comments: Waipahu Refuse Facility and Convenience Center – 2nd Draft EA (AFNSI)

From DOH.CABPASS <DOH.CABPASS@doh.hawaii.gov>
Date Wed 12/24/2025 11:07 AM
To publiccomment@honolulu.gov <publiccomment@honolulu.gov>; Harlee Meyers <hmeyers@wilsonokamoto.com>

You don't often get email from doh.cabpass@doh.hawaii.gov. Learn why this is important

Aloha Harlee Meyers, Wilson Okamoto Corporation,
& City and County of Honolulu, Department of Environmental Services,

Thank you for the opportunity to review the Waipahu Refuse Facility and Convenience Center Second Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) published in the December 23, 2025, edition of The Environmental Notice. Please visit the Clean Air Branch (CAB) website to download and reference our Standard Comments for Land Use Reviews. The link is provided below.

https://health.hawaii.gov/cab/clean-air-branch/standard-comments-for-land-use-reviews/

Mahalo,

Katt

Katt Marshall | she/*her*
Planner I | Clean Air Branch | Planning & Administrative Support Staff (PASS)
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road #130 | Pearl City, Hawaii 96782
Office: (808) 586-4200

CONFIDENTIALITY NOTICE: This mail message (and attachments) is for the sole use of the intended recipient(s). It may contain confidential and/or privileged information. It might also be protected from disclosure under the Hawaii Uniform Information Practice Act (UIPA) or other laws and regulations. Review, use, disclosure, or distribution by unintended recipients is prohibited. If you are not the intended recipient, please contact the sender immediately in a separate e-mail and destroy the original message and any copies.

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 8, 2026

Ms. Katt Marshall
Hawai'i State Department of Health
Clean Air Branch
2827 Waimano Home Road, Suite 130
Pearl City, Hawai'i 96782

Subject: Second Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Ms. Marshall:

Thank you for your email dated December 24, 2025, regarding the subject Second Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program's December 23, 2025 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge receipt of the Clean Water Branch's standard comments. The comments have been reviewed and considered as part of the environmental review process. . A record of your comments, along with this response, have been reproduced and are appended to the Final EA in Appendix F.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director – Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

Outlook

Waipahu Refuse Facility and Convenience Center

From Thirugnanam, Jeyan <jeyan.thirugnanam@hawaii.gov>
Date Tue 1/13/2026 12:57 AM
To publiccomment@honolulu.gov <publiccomment@honolulu.gov>; Public Comment <publiccomment@wilsonokamoto.com>
Cc Nikaido, Blayne H <blayne.h.nikaido@hawaii.gov>

You don't often get email from jeyan.thirugnanam@hawaii.gov. Learn why this is important

Aloha,

HDOT Highways has no comments on the DEA.

Mahalo,
Jeyan Thirugnanam
HDOT Highways Land Use Permits Review

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 8, 2026

Mr. Jeyan Thirugnanam
State of Hawai'i
Department of Transportation Highways
Land Use Permits Review
jeyan.thirugnanam@hawaii.gov

Subject: Second Draft Environmental Assessment (EA) for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Mr. Thirugnanam:

Thank you for your email received on January 13, 2026, regarding the Draft Environmental Assessment (DEA) for the Waipahu Refuse Facility and Convenience Center, as published in the Environmental Review Program's December 23, 2025 issue of *The Environmental Notice*. Your participation in the environmental review process is appreciated.

We acknowledge that the Hawai'i Department of Transportation (HDOT) Highways Land Use Permits Review Section indicated that it has no comments on the DEA at this time. A record of HDOT's comments, along with this response, has been reproduced and is included in the Final EA as Appendix F.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director of Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HO'OKELE

Deputy Directors
Nā Hope Luna Ho'okele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF TRANSPORTATION | KA 'OIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

DIR0003087
STP 8.4024

January 20, 2026

VIA EMAIL: publiccomment@wilsonokamoto.com

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

Dear Mr. Cheng:

Subject: Second Draft Environmental Assessment (EA)
Waipahu Refuse Facility and Convenience Center
Waipahu, Oahu, Hawaii
Tax Map Key: (1) 9-3-002: 009 (portion)

Thank you for your letter, dated December 23, 2025, requesting the Hawaii Department of Transportation's (HDOT) review and comments on the subject Second Draft EA. The HDOT understands that the Second Draft EA includes updates to the new facility's design, as well as various modifications along Waipahu Depot Street.

The HDOT has the following comment related to Airports:

1. The HDOT comments provided for the original Draft EA, in letter STP 8.3767, dated June 18, 2024, remains valid and applicable to the proposed project. Please include a copy of the HDOT's comments and appropriate responses in the Final EA.

Please submit any 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

10751-01
May 8, 2026

Mr. Edwin Sniffen
Director
Department of Transportation
State of Hawai'i
869 Punchbowl Street
Honolulu, HI 96813

Subject: Draft Environmental Assessment (EA) for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Mr. Sniffen:

Thank you for your letter dated January 20, 2026, regarding the Draft Environmental Assessment (DEA) for the Waipahu Refuse Facility and Convenience Center, as published in the Environmental Review Program's May 23, 2024 issue of *The Environmental Notice*. Your participation in the environmental review process is appreciated.

We acknowledges that the comments previously provided by the Hawai'i Department of Transportation (HDOT) remain valid and applicable to the Proposed Action. These comments have been reviewed and considered as part of the preparation of the Final Environmental Assessment (FEA). A record of HDOT's comments, along with this response, has been reproduced and is included in the Final EA as Appendix F.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director of Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

The HPD welcomes the opportunity to work collaboratively with the ENV to support the successful competition of this project.

Should you have any questions, please call Major Manuel Hernandez of District 3 (Pearl City) at (808) 723-8800 or Major Andre Peters of the HPD's Training Academy at (808) 723-8300.

Sincerely,

BRADON OGATA
Acting Assistant Chief of Police
Support Services Bureau

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 8, 2026

Mr. Bradon Ogata
Acting Assistant Chief of Police
Honolulu Police Department
801 South Beretania Street
Honolulu, HI 96813

Subject: Second Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O‘ahu, Hawai‘i

Dear Mr. Ogata:

Thank you for your letter dated January 20, 2026, regarding the subject Second Draft Environmental Assessment for the Waipahu Refuse Facility and Convenience Center Published in the Environmental Review Program’s December 23, 2025 issue of the *Environmental Notice.*Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge the comments provided by the Honolulu Police Department (HPD). These comments have been reviewed and considered as part of the preparation of the Final Environmental Assessment (FEA), and the FEA has been updated accordingly.

HPD’s letter expressed concerns regarding continued accessibility to the HPD Training Academy during construction, including maintaining access routes and coordinating on construction-related traffic and security. In response, the City and County of Honolulu Department of Environmental Services (ENV) confirms that construction activities associated with the Proposed Action will not restrict or impede access to the HPD Training Academy, and access will be maintained throughout construction.

During final design and construction planning, ENV will coordinate with HPD (including the Support Services Bureau and Training Academy staff, as appropriate) as construction commences to confirm access requirements and ensure that construction phasing, staging, and any temporary traffic control measures do not interfere with HPD operations. Potential construction-related traffic impacts will be addressed through the implementation of construction staging and traffic management plans, and coordination regarding site security and use of adjacent areas will be undertaken as needed.

A record of your comments, along with this response, have been reproduced and are appended to the Final EA in Appendix F.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

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

DTS202512301437MO

January 20, 2026

Mr. Keola Cheng
Director of Planning
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaiʻi 96826

Dear Mr. Cheng:

Subject: Draft Environmental Assessment and Anticipated Finding of No Significant Impact for Waipahu Refuse Facility and Convenience Center, Waipahu, Oʻahu; Tax Map Key: (1) 9-3-002: 009

The Office of Planning and Sustainable Development (OPSD) is in receipt of your review request, received December 24, 2025, for the second Draft Environmental Assessment (EA) for the Waipahu Refuse Facility and Convenience Center Project, Waipahu, Oʻahu.

The City and County of Honolulu, Department of Environmental Services (ENV) proposes to relocate the Waipahu Convenience Center (WCC) from its existing location at 94-9 Waipahu Depot Street to a new facility at the former Waipahu Incinerator Facility (WIF) property located approximately 0.5 miles south on Waipahu Depot Street and adjacent to the south side of the Honolulu Police Academy/Training Facility. In addition, the project will convert the former WIF into a multi-use Refuse Division Facility, which will encompass 4.2 acres of the project site, and will include a 5,625-square-foot, 25-foot-tall single-story office building, a truck wash pad with 27-foot-tall pre-engineered metal canopy, and a single-story, 200-square-foot storage building. The existing WIF structures will be demolished during construction of the new WCC and Refuse Division Facility.

The proposed project is located on the Waipiʻo Peninsula in Central Oʻahu, approximately 0.5 miles northeast of the West Loch of Pearl Harbor. The project area is approximately 7.2 acres, and is in the State's Agricultural Land District, and within the P-1 and P-2 Preservation Districts classified by the City and County of Honolulu's Land Use Ordinance.

This second Draft EA incorporates design updates with a revised single-story administration building, improved employee and visitor parking with solar

canopies, a reconfigured rolloff truck parking area and wash bay with a new connector road, a 20,000-square-foot open-sided refuse cart storage structure, and turning-radius improvements and a new bypass lane to reduce congestion at the WCC entrance.

The project is anticipated to begin in early 2026, starting with construction of the WCC, followed by construction of the Refuse Facility, with completion of both anticipated by Quarter 3 of 2028. The cost of the project is estimated at $28.5 million.

The OPSD has reviewed the subject Draft EA and has the following comments to offer:

- Construction activities associated with the proposed WCC project may result in soil erosion from clearing, grubbing, grading, excavation, and infilling of soil. OPSD concurs that a National Pollutant Discharge Elimination System Permit for stormwater runoff from construction activities would be required if the proposed action disturbs one acre or more of land or involves dewatering effluent. Site-specific erosion control measures should be implemented to reduce loss of soil and prevent runoff, sediment, soil and debris potentially resulting from associated construction activities from adversely impacting coastal ecosystem, the Kapakahi Stream, and other State waters as specified in Hawai'i Administrative Rules Chapter 11-54.

- The proposed action is located below the Underground Injection Control Line and the Board of Water Supply's No Pass Zone Line, both of which demarcate areas where wastewater disposal facilities would potentially adversely affect potable water supplies in the underlying aquifers. OPSD suggests that the Final EA elaborate the approach of on-site reinfiltration of groundwater recommended by the Draft Environmental Hazard Management Plan (EHMP) to ensure no adverse effects on groundwater resources from the proposed action.

- It is noted that areas adjacent to the project area were previously utilized to landfill ash, causing ash deposit to settle within the project area. The Final EA may attach the Final EHMP as a supporting document if it is available.

- There are duplicate items listed in Table 1-1 under **1.3 Permit History**. Table 1-1 should be corrected by deleting the duplicate items for the Final EA.

- The Draft EA states that following design and permitting, construction of the WCC is anticipated to start in Q1 of 2026 and be completed in Q1 of 2027, and construction of the Refuse Facility to start in Q1 of 2027 and be completed in Q3 of 2028. The Final EA may update **2.4 Development Schedule** given the time

required to obtain all permits and approvals for the proposed WCC project after the publication of the Final EA.

If you respond to this comment letter, please include DTS202512301437MO in the subject line. For any questions regarding this letter, please contact Lisa Webster of our office at (808) 587-2800 or by email at lisa.e.webster@hawaii.gov.

Sincerely,

Mary Alice Evans

Mary Alice Evans
Director

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10751-01
May 8, 2026

Mary Alice Evans
Director
Office of Planning and Sustainable Development
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

Subject: Second Draft Environmental Assessment for the
Waipahu Refuse Facility and Convenience Center
Waipahu, O'ahu, Hawai'i

Dear Ms. Evans:

Thank you for your letter dated January 20, 2026, regarding the subject Second Draft Environmental Assessment Comments- Waipahu Refuse Facility and Convenience Center as published in the Environmental Review Program's May 23, 2024 issue of the *Environmental Notice*.Your Participation in the EA process & review EA documentation is welcomed and most appreciated.

We acknowledge the comments provided by the Office of Planning and Sustainable Development (OPSD). The comments have been reviewed and considered as part of the preparation of the Final Environmental Assessment (FEA). As appropriate, the Final EA has been updated to clarify construction-related erosion and sediment control measures, groundwater protection considerations, site conditions, permit history, and project scheduling assumptions.

The Final EA identifies that construction activities will be subject to applicable State and County permitting requirements. If construction activities disturb one acre or more of land or involve dewatering effluent, coverage under the NPDES Construction General Permit will be obtained prior to construction. Site-specific best management practices (BMPs), including erosion and sediment control measures consistent with HAR Chapter 11-54, will be implemented during construction to minimize soil erosion and prevent sediment, runoff, and debris from entering Kapakahi Stream or other State waters.

The Final EA has been updated to further describe the approach to groundwater management and on-site reinfiltration, consistent with recommendations provided in the Draft EHMP. These measures are intended to avoid adverse effects on groundwater resources and comply with applicable DOH and Board of Water Supply requirements.

The Final EA acknowledges the presence of historic ash fill within and adjacent to the project area. A Draft EHMP prepared by Wood Environment & Infrastructure Solutions, Inc. (2022) for closure of the former Waipahu Incinerator Facility will serve as the basis for the Proposed Action and will be updated and finalized to address site conditions associated with development of the new facility. A Construction EHMP (C-EHMP) will also be prepared to manage contaminated soils and other potential hazards during construction in accordance with Hawai'i Department of Health guidance. Following construction, a Final EHMP will be completed to document post-construction conditions and incorporate additional sampling results, and environmental restrictive covenants will be recorded as applicable (including pursuant to HRS Chapter 508C, if appropriate) to ensure long-term management measures remain enforceable.

Table 1-1 has been reviewed and revised in the Final EA to remove duplicate entries and ensure accuracy.

Section 2.4, Development Schedule, has been updated in the Final EA to clarify that construction timelines are preliminary and subject to completion of final design, permitting, and required approvals.

A record of your comments, along with this response, have been reproduced and are appended to the Final EA in Appendix E.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng

Keola Cheng
Director - Planning

cc: Mr. Bryan Toda, City and County of Honolulu
Mr. Rodolfo Borja, City and County of Honolulu
Mr. Michael Kaiser, HDR Inc.

Accessible Document

