DRAFT ENVIRONMENTAL ASSESSMENT

For

WAIAWA WATER TRANSMISSION MAIN REPLACEMENT

PEARL CITY, O‘AHU, HAWAI‘I

June 2016

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Abstract

Designation:	Environmental Assessment
Title of Proposed Action:	Waiawa Water Transmission Main Replacement
Project Location:	Pearl City, Oʻahu, Hawaiʻi
Lead Agency for the EA:	Department of the Navy
Cooperating Agency:	n/a
Affected Region:	Honolulu, Hawaiʻi
Action Proponent:	Commander, Joint Base Pearl Harbor-Hickam
Point of Contact:	Alan Suwa Naval Facilities Engineering Command, Pacific Building 258 Makalapa Drive, Suite 100 JBPHH, HI 96860-3134 alan.suwa@navy.mil
Date:	June 2016

The Department of the Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality Regulations and Navy regulations for implementing NEPA. The Proposed Action would construct a 42-inch primary water transmission main to serve Joint Base Pearl Harbor-Hickam and military family housing areas with potable, fire protection, and industrial water to replace an existing water transmission main with the same capacity. The Proposed Action also includes the construction of a replacement 16-in secondary water line to serve the Navy's Manana Housing Area. Project implementation is scheduled to occur in 2017, with the water line targeted for operation in 2019. This EA evaluates the potential environmental impacts associated with the two action alternatives—Kamehameha Highway-Oʻahu Urban Garden Center Alternative and Kamehameha Highway-Lehua Avenue Alternative—and the No Action Alternative to the following resource areas: air quality, water resources, geological resources, cultural resources, biological resources, noise, infrastructure, transportation, public health and safety, hazardous materials and waste, and environmental justice. Construction of the 42-inch and 16-inch replacement water lines would require the use of State of Hawaiʻi and City and County of Honolulu lands and/or permits and easements from state and county agencies—which trigger environmental review under Chapter 343, Hawaiʻi Revised Statutes (HRS) and Title II, Chapter 200 of Hawaiʻi Administrative Rules. The City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the level of environmental review of the Proposed Action required under Chapter 343, HRS. By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to Exemption Class 1 Item 5 and Exemption Class 6 Item 2 of its Exemption List (dated August 12, 1981), and that preparation of a Chapter 343, HRS environmental assessment would not be required.

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Executive Summary

Proposed Action

The United States (U.S.) Department of the Navy (DoN) proposes to replace an existing 42-inch (in) diameter primary water transmission main currently serving Joint Base Pearl Harbor-Hickam (JBPHH), the Navy's Manana Housing Area, and the U.S. Army's Aliamanu Housing Area. The Proposed Action is scheduled to take place starting in late 2017 with the beginning of construction, followed by ongoing use of the replacement water line infrastructure when construction is estimated to be completed in late 2019. The existing 2.1-mile (mi) long water line provides JBPHH and military family housing areas with potable, fire protection, and industrial water.

Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide adequate infrastructure to deliver the required level of potable, fire protection, and industrial water service from the DoN's Waiawa Pump Station to JBPHH, Manana Housing Area, and Aliamanu Housing Area. The Proposed Action is needed because the existing 42-in primary water transmission line providing current service has reached the end of its reliable service life. This transmission main serves DoN and U.S. Air Force (USAF) operations and mission support activities at JBPHH, and there is no redundancy for the existing line that was originally installed in 1953. It is now over 60 years old and has reached the end of its service life. Improvements to the existing water transmission system are needed to ensure reliable potable water service for DoN and USAF activities.

Alternatives Considered

Alternatives were developed for analysis based upon the following reasonable alternative screening factors: Minimize disruption to existing water service; maintain existing potable water transmission capacity; utilize existing easements where practical; utilize public rights-of-ways and developed areas where practical; minimize disturbance to natural, undeveloped areas; balance practical life cycle cost with maximizing energy efficiency; cost efficiency, constructability, and ease of maintenance; and minimize risks to public safety by utilizing best practices for construction of subsurface utilities (e.g., avoid construction under major facilities such as parking structures).

The DoN is considering two action alternatives that meet the purpose and need for the Proposed Action and a No Action Alternative. The ***Kamehameha Highway-Oʻahu Urban Garden Center Alternative (Preferred Alternative)*** would replace the existing 42-in primary water main currently serving JBPHH, the DoN's Manana Housing Area, and the U.S. Army's Aliamanu Housing area with a new, approximately 2.7-mi long, 42-in diameter water transmission main. The new water line would extend from the DoN's Waiawa Pump Station, along Waihona Street and Kamehameha Highway, through the University of Hawaiʻi's (UH) Oʻahu Urban Garden Center (OUGC) to an existing 42-in main near the intersection of Lehua Avenue and Second Street in Pearl City, Oʻahu, Hawaiʻi. The new 42-in water main would follow an alignment primarily routed through state- and county-owned rights-of-way (ROW). This alternative also includes an approximately 2,000-ft long 16-in secondary potable water line installed to serve the DoN's Manana Housing Area. Most of the new 16-in water line would be installed within an existing tunnel through which the existing 42-in water line extends. The existing water transmission main would be taken out of service; most of the existing pipeline would be filled and left in place while some sections would be removed.

The ***Kamehameha Highway-Lehua Avenue Alternative*** would also replace the existing water transmission main with a new 42-in transmission line extending from the Waiawa Pump Station to a connection point near the intersection of Lehua Avenue and Second Street. The new 42-in water main would have the same alignment from Waiawa Pump Station to Kamehameha Highway as the Preferred Alternative and terminate at an existing water main near the intersection of Lehua Avenue and Second Street (i.e., similar to the Preferred Alternative). However, at Kamehameha Highway, rather than crossing Kamehameha Highway to the south and entering OUGC opposite Pearl Highlands Center, the water line would continue eastward to Lehua Avenue. From there it would extend south within the Lehua Avenue ROW to its termination point near its intersection with Second Street. This alternative would have a longer construction period within public roadway ROWs.

The No Action Alternative would retain the existing water transmission main and keep it in service. It would continue to age and deteriorate, which would eventually lead to infrastructure failure and disruption to potable and fire suppression water service for DoN and USAF operations and mission support activities. The No Action Alternative would not meet the purpose and need for the Proposed Action; however, as required by the National Environmental Policy Act (NEPA), the No Action Alternative is carried forward for analysis in this Environmental Assessment (EA).

Additional alternatives were considered but not carried forward for detailed analysis as they did not meet the purpose and need for the project and satisfy the reasonable alternative screening factors.

Summary of Environmental Resources Evaluated in the EA

Council on Environmental Quality (CEQ) regulations, NEPA, and DoN instructions for implementing NEPA specify that an EA should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact.

The following resource areas have been addressed in detail in this EA: air quality, water resources, geological resources, cultural resources, biological resources, noise, infrastructure, transportation, public health and safety, hazardous materials and waste, and environmental justice. Because their potential impacts were considered to be negligible or nonexistent, the following resources were not evaluated in this EA: land use, visual resources, air space, infrastructure (wastewater collection, solid waste management, energy, communications, facilities), and socioeconomics.

Summary of Potential Environmental Consequences of the Action Alternatives and Major Mitigating Actions

Air Quality. The No Action Alternative would not impact air quality or air resources. The Preferred Alternative would have insignificant air quality impacts. It would not introduce any new major air emissions sources or stationary air emission sources. Because the State of Hawaiʻi is in attainment of the National Ambient Air Quality Standards, the Proposed Action is not subject to the Clean Air Act's General Conformity Rule. Short-term, temporary air emissions would be generated during the construction period, which would be minor and of short duration at any one location. All construction activities will comply with the provisions of Hawaiʻi Administrative Rules (HAR) 11-60.1-33 (Fugitive Dust). Project-related greenhouse gas emissions are not likely to contribute to global warming to any discernible extent. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts to air quality; however the period of air quality effects would be longer than that of the Preferred Alternative due to its longer construction period.

Water Resources. The No Action Alternative would not impact water resources. The Preferred Alternative would have insignificant impacts to water resources. Predevelopment hydrology would be maintained or restored after construction, as the proposed replacement water lines would be located below grade. The Preferred Alternative would not introduce new sources of pollutants or contaminants into groundwater pathways. Creation and use of construction staging and work areas would involve ground disturbance, which has the potential to result in temporary impacts such as sediments or pollutants being transported to surface waters such as Waiawa Stream and Pearl Harbor. Construction period best management practices (BMPs) and compliance with required permits such as a National Pollutant Discharge Elimination System (NPDES) permit and U.S. Army Corps of Engineers Section 10 Rivers and Harbors Act permit would avoid or minimize potential impacts to offsite stormwater receiving waters, including coastal and marine waters or wetlands. The Preferred Alternative would not result in the destruction or modification of or involve new construction in known wetlands. The Preferred Alternative would not involve the discharge of dredge or fill into known wetlands or other Waters of the United States. The Preferred Alternative will comply with the requirements of Executive Order (EO) 11988 Floodplain Management and EO 13690 Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input. Because the replacement water line segments that are located in the floodplain would be located below grade, there would be no adverse direct or indirect effects to the floodplain. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts to water resources as the Preferred Alternative.

Geological Resources. The No Action Alternative would have no impacts on geological resources. The Preferred Alternative would have insignificant impacts to geological resources. It would not affect unique geological features or landmarks. Fill material with appropriate characteristics would be used to backfill areas excavated during construction. Appropriate foundation support would be provided for the proposed water line and pipe bridge across Waiawa Stream. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts to geological resources similar to the Preferred Alternative.

Cultural Resources. The No Action Alternative would have no impacts on cultural resources. The Preferred Alternative is not expected to significantly impact cultural resources. Previous archaeological surveys indicate that cultural deposits would be unlikely in the vicinity of the Proposed Action. The DoN determined that the Preferred Alternative would have no adverse effect on historic properties eligible for the National Register of Historic Places and conducted consultation under Section 106 of the National Historic Preservation Act (NHPA) with the Hawaiʻi State Historic Preservation Officer (SHPO) and other consulting parties. No objections were received and concurrence was assumed in accordance with 36 CFR 800.5(c) (see NHPA Section 106 correspondence in Appendix B). The Preferred Alternative would not impact traditional Hawaiian (or other ethnic group's) rights related to gathering, access, or other customary activities exercised for subsistence, cultural and religious purposes. The Kamehameha Highway-Lehua Avenue Alternative would have insignificant impacts to cultural resources similar to the Preferred Alternative.

Biological Resources. The No Action Alternative would have no impacts on biological resources. The Preferred Alternative would have insignificant impacts to vegetation, wildlife, and threatened and endangered species. The proposed water line would generally be located within existing roadway ROWs and affect only non-native vegetation or landscape vegetation in these areas. Within the OUGC, the water line construction would disturb a variety of planted trees and shrubs. The Preferred Alternative

alignment was coordinated with UH and OUGC to minimize impacts to the existing plant resources. Construction of the water line and disposition of the existing water line would not impact sensitive wildlife habitats, as the construction and disposition activities would occur on previously disturbed and cleared or developed areas. The non-native species of birds, mammals, and reptiles that may be present are tolerant of urban activities and noise. No permanent loss of habitat would occur under the Preferred Alternative. Habitat removal would be negligible and would not negatively impact habitat used by any threatened or endangered species. Construction activity is unlikely to result in short-term impacts from disturbance to terrestrial wildlife including State of Hawaiʻi-listed threatened and endangered species. There would be no significant impact on threatened and endangered species and no consultation between the DoN and U.S. Fish and Wildlife Service is required. During the operational period, the Preferred Alternative would have no impacts to sensitive wildlife and their habitats because the water line would be below grade and the areas disturbed by construction returned to pre-construction conditions. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts on biological resources as the Preferred Alternative.

Noise. The No Action Alternative would have no impacts on baseline noise levels. The Preferred Alternative would have insignificant short-term, temporary impacts to noise-sensitive receptors such as residential dwellings during the construction period, and no significant impacts during the operational period. Compliance with conditions of the project's State Department of Health's Construction Noise Permit would address construction period noise impacts. The Kamehameha Highway-Lehua Avenue Alternative would have insignificant noise impacts similar to the Preferred Alternative; however, this alternative would have a longer construction duration (with its associated construction noise) along Kamehameha Highway and Lehua Avenue than the Preferred Alternative.

Infrastructure. The No Action Alternative would have insignificant impacts on infrastructure as there would be no change to the existing infrastructure, water pumping system, or storm drainage capacity. The Preferred Alternative would have insignificant impacts on infrastructure, and have the beneficial impact of providing replacement water transmission infrastructure in better condition and having greater ease of maintenance. The Preferred Alternative would not require development of infrastructure facilities and sources beyond those existing or currently planned. It is not expected to affect groundwater withdrawal by the DoN or result in a request for additional allocation from the Waipahu-Waiawa groundwater aquifer. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts on infrastructure as the Preferred Alternative, as well as the same beneficial impact.

Transportation. The No Action Alternative would have no impacts on transportation. The Preferred Alternative would have insignificant short-term impacts on vehicle, pedestrian, bicycle, bus, and paratransit transportation during the construction period due to lane closures and detours on affected roadways, which would cause temporary delays and congestion. Traffic control plans approved by state and county jurisdictional agencies and other permit conditions will be implemented to reduce and manage adverse effects. There would be no operational period impacts, as the replacement lines would be below grade and not affect transportation systems. The Kamehameha Highway-Lehua Avenue Alternative would have insignificant, but greater, temporary construction period impacts than the Preferred Alternative. The Kamehameha Highway-Lehua Avenue Alternative impacts would be of a greater duration and affect more businesses and residents directly or indirectly. This alternative would also have no operational period impacts on transportation.

Public Health and Safety. The No Action Alternative would have insignificant impacts to public health and safety as there would be no changes to demands for fire or police protection, or increase in traffic hazards. The Preferred Alternative may have insignificant construction period impacts due to roadway lane closures and the physical alteration of work area surfaces. It would have the beneficial operational period impact of reducing the potential for public safety risks should the existing aging water line fail. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant and beneficial impacts as the Preferred Alternative.

Hazardous Materials and Waste. The No Action Alternative would have no impacts on hazardous materials and waste. The Preferred Alternative would have insignificant construction and operational period impacts on hazardous materials and waste. The DoN will comply with relevant federal, state, and county regulations for activities that may affect lead containing paint, asbestos, or other hazardous or regulated materials and waste. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts to hazardous materials and waste as the Preferred Alternative.

Environmental Justice. The No Action Alternative would have no impacts on environmental justice. The Preferred Alternative would have insignificant construction and operational period impacts with no disproportionately high and adverse human health or environmental effects on any minority or low-income populations. The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts as the Preferred Alternative.

Table ES-1 provides a tabular summary of the potential impacts to the resources associated with each of the alternative actions analyzed.

Public Involvement

The DoN solicited comments on the proposed project from 38 agencies, organizations, and individuals from February 8, 2016 through February 24, 2016. Comments received during the pre-assessment consultation were considered in preparing the Draft EA. Pre-assessment consultation comments and responses are provided in Appendix A.

Table ES-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Kamehameha Highway-O'ahu Urban Garden Center Alternative (Preferred Alternative)*	*Kamehameha Highway-Lehua Avenue Alternative*
Air Quality	No impact	Insignificant construction period impacts due to construction activities. No operational period direct air quality impacts; insignificant indirect impacts from off-site electrical power generation.	Insignificant construction period impacts, though longer duration than Preferred Alternative due to longer construction period and greater traffic impacts. Same operational period impacts as Preferred Alternative.
Water Resources	No impact	Insignificant construction period impacts due to construction activities, including temporary water service interruptions and ground disturbance and its potential for sediment and pollutant transport to downstream receiving waters. Impacts to jurisdictional wetlands, if any, would be avoided, minimized, or mitigated to insignificant levels. Insignificant operational period impacts as project area would be returned to predevelopment conditions.	Insignificant construction and operational period impacts (similar to Preferred Alternative).
Geological Resources	No impact	Insignificant construction period impacts due to ground disturbance (i.e., trenching, filling, pile driving). No operational period impacts as project area would be returned to predevelopment conditions.	Insignificant impacts similar to Preferred Alternative.
Cultural Resources	No impact	Insignificant impacts, as Preferred Alternative would have no adverse effect on historic properties and would not impact traditional Hawaiian (or other ethnic group's) rights related to gathering, access, or other customary activities exercised for subsistence, cultural and religious purposes.	Insignificant impacts similar to Preferred Alternative.
Biological Resources	No impact	Insignificant impacts to vegetation, wildlife, threatened and endangered species.	Insignificant impacts similar to Preferred Alternative.
Noise	No impact	Insignificant short-term, temporary noise impacts to noise-sensitive receptors. No significant impacts during operational period.	Insignificant construction period and operational period impacts similar to Preferred Alternative.
Infrastructure	No significant impact; potential for adverse water service impacts if the existing aging water line fails or	Insignificant impacts during construction period due to temporary interruptions in water service as interconnections are made with existing water transmission infrastructure. No impacts on water demand or aquifer allocation. Beneficial impact of	Insignificant impacts similar to the Preferred Alternative.

Table ES-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Kamehameha Highway-O'ahu Urban Garden Center Alternative (Preferred Alternative)*	*Kamehameha Highway-Lehua Avenue Alternative*
	requires repair.	providing water transmission infrastructure with greater ease of maintenance. No significant operational period impacts.	
Transportation	No impact	Insignificant temporary impacts on vehicle, pedestrian, bicycle, and bus transportation during the construction period due to lane closures and detours on affected roadways. No operational period impacts.	Insignificant temporary impacts on vehicle, pedestrian, bicycle, and bus transportation during the construction period due to lane closures and detours on affected roadways; impacts would be greater than Preferred Alternative due to the longer construction duration and affected roadway lengths within Kamehameha Highway and Lehua Avenue. No operational period impacts.
Public Health and Safety	No significant impact	Insignificant construction period impacts possible due to roadway lane closures and physical alteration of work area surfaces. Beneficial operational period impact of reducing potential for public safety risks should the existing aging water line fail.	Insignificant and beneficial impacts similar to the Preferred Alternative.
Hazardous Materials and Wastes	No impact	Insignificant construction and operational period impacts.	Insignificant impacts similar to the Preferred Alternative.
Environmental Justice	No impact	Insignificant construction and operational period impacts with no disproportionately high and adverse human health or environmental effects on any minority or low-income populations.	Insignificant impacts similar to the Preferred Alternative.

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Draft Environmental Assessment

Waiawa Water Transmission Main Replacement

Pearl City, O‘ahu, Hawai‘i

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Abbreviations and Acronyms

Acronym	Definition
AC	asphaltic concrete
ALISH	Agricultural Lands of Importance in the State of Hawaiʻi
APE	Area of Potential Effect
BMP	best management practice
BWS	Board of Water Supply
CAA	Clean Air Act
CCH	City and County of Honolulu
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIA	cultural impact assessment
CLSM	controlled low strength material
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
CWRM	Commission on Water Resource Management
CZMA	Coastal Zone Management Act
DA	Department of the Army
dB	decibel
dBA	A-weighted sound level
DBEDT	Department of Business, Economic Development and Tourism
DoD	United States Department of Defense
DOH	Department of Health
DoN	United States Department of the Navy
DOT	Department of Transportation
DP	Development Plan
DPP	Department of Planning and Permitting
DTS	Department of Transportation Services
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS	emergency medical services
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FFRMS	Federal Flood Risk Management Standard
FIRM	Flood Insurance Rate Map
ft	foot, feet
GHG	greenhouse gas
HAR	Hawaiʻi Administrative Rules
HHCTP	Honolulu High Capacity Transit Corridor Project
HRS	Hawaiʻi Revised Statutes
HRTP	Honolulu Rail Transit Project
Hz	hertz
in	inch
JBPHH	Joint Base Pearl Harbor-Hickam
LBP	lead based paint
LCP	lead-containing paint
LF	linear feet
LSB	Land Study Bureau
LOS	level of service
LUO	Land Use Ordinance
m	meter, meters
mgd	million gallons per day
mg/kg	milligrams per kilogram
mi	mile, miles
mm	millimeter, millimeters
mph	miles per hour
MSL	mean sea level
NAAQS	National Ambient Air

Acronym	Definition
	Quality Standards
NASD	Naval Aviation Supply Depot
NAVFAC Pacific	Naval Facilities Engineering Command, Pacific
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
OEQC	Office of Environmental Quality Control
OP	Office of Planning
OPNAV	Office of the Chief of Naval Operations
OUGC	O‘ahu Urban Garden Center
PCB	polychlorinated biphenyl
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
POL	petroleum, oils, and lubricants
PUC	Primary Urban Center
RCRA	Resource, Conservation, and Recovery Act
ROI	Region of Influence
ROW	right-of-way
SHPO	State Historic Preservation Officer
SMA	Special Management Area
SO_2	sulfur dioxide
SOP	standard operating procedure(s)
SWPPP	Storm Water Pollution Prevention Plan
TCLP	toxicity characteristic leaching procedure
TCP	Traditional Cultural Property
TMDL	Total Maximum Daily Load
TPH	Total petroleum hydrocarbons
UH	University of Hawai‘i
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USDOT FTA	U.S. Dept. of Transportation Federal Transit Administration and
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

1 Purpose of and Need for the Proposed Action

1.1 Introduction

The United States (U.S.) Department of the Navy (DoN) proposes to replace an existing 42-inch (in) diameter primary water main currently serving Joint Base Pearl Harbor-Hickam (JBPHH), the DoN's Manana Housing Area, and the U.S. Army's Aliamanu Housing Area. The Proposed Action is scheduled to take place starting in late 2017 with the beginning of construction, followed by ongoing use of the replacement water line infrastructure when construction is estimated for completion in late 2019. The existing 2.1-mile (mi) long water line provides JBPHH and military family housing areas with potable, fire protection, and industrial water. It is now over 60 years old and has reached the end of its service life.

The DoN has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality (CEQ) regulations and DoN regulations for implementing NEPA.

Construction of the 42-in and 16-in replacement water lines would require the use of State of Hawaiʻi and City and County of Honolulu lands and/or permits and easements from state and county agencies—which trigger environmental review under Chapter 343, Hawaiʻi Revised Statutes (HRS) and Title II, Chapter 200 of Hawaiʻi Administrative Rules (HAR). After a consultation process led by the State of Hawaiʻi Office of Environmental Quality Control (OEQC) among the State of Hawaiʻi Department of Transportation, University of Hawaiʻi, City and County of Honolulu (CCH) Department of Budget and Finance, CCH Department of Planning and Permitting (DPP), and CCH Department of Transportation Services, CCH DPP offered to assume the responsibility and authority for the Proposed Action's compliance with HRS Section 343-5. By letter dated April 11, 2016, OEQC affirmed CCH DPP as the agency to assume this responsibility and authority. By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to Exemption Class 1 Item 5 and Exemption Class 6 Item 2 of its Exemption List (dated August 12, 1981), and that it would not require preparation of a Chapter 343, HRS environmental assessment (see Appendix E for DPP determination letter). Prior to CCH DPP assuming the responsibility and authority for determining compliance requirements under Chapter 343, HRS and making its determination that a Chapter 343, HRS EA would not be required, the Navy initiated pre-assessment consultation with relevant agencies, organizations, and individuals. Parties consulted are listed in Chapter 8 and associated comment and response letters are attached as Appendix A. Relevant comments received during the pre-assessment consultation process are addressed in this NEPA Draft EA.

1.2 Location

The project area is located in the community of Pearl City, Island of Oʻahu, State of Hawaiʻi (see Figure 1-1 for Regional Location Map), primarily outside the boundaries of JBPHH. Located within the Hawaiian archipelago on the southern, central and western areas of the island of Oʻahu, JBPHH encompasses approximately 28,000 acres of land and water, and includes significant land holdings at the main base, West Loch Annex, Pearl City Peninsula, Waipiʻo Peninsula, and other outlying areas. In 2010, Naval Station Pearl Harbor joined with Hickam Air Force Base to become JBPHH, combining the two bases into a single joint installation to support both Air Force and DoN missions in the Pacific. JBPHH serves as the home base for U.S. Air Force (USAF) air wings and DoN surface ship and submarine squadrons, and is a regional maintenance center for ships and submarines. The main base is host to Commander U.S. Pacific

Fleet and the Headquarters Pacific Air Forces. In addition, JBPHH hosts over 100 tenant commands that support the DoN, Air Force, and other missions in Hawaii and the Pacific.

The project area includes federal-, state-, and county-owned lands, which are primarily comprised of public roadway rights-of-way on Waihona Street, Kamehameha Highway, and Second Street (see Figure 2-1). A portion of the project area traverses University of Hawaiʻi-owned Oʻahu Urban Garden Center, where a segment of the existing 42-inch water line is also located (see Figure 2-1). The section of the project area that would accommodate a secondary water line to serve Manana Housing Area includes privately-owned lands. Details of the proposed alternative water line alignments are described in Section 2.3.

1.3 Project Summary

Table 1-1 contains a summary of the project.

Table 1-1 Project Summary

Project Name:	Waiawa Water Transmission Main Replacement
Project Proponent/Applicant:	U.S. Navy
Approving Authority (NEPA Finding of No Significant Impact):	Commander, Navy Region Hawaii
EA Contact:	Naval Facilities Engineering Command, Pacific (NAVFAC Pacific) Environmental Planning & Conservation Division 258 Makalapa Drive, Suite 100 JBPHH, HI 96860 Alan Suwa (EV21), NEPA Project Manager Phone: (808) 472-1450
Proposed Action:	Installation of 42-inch and 16-inch water transmission lines to replace outdated infrastructure
Project Location:	Pearl City, Oʻahu, Hawaiʻi
Tax Map Key Parcel:	(1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096
Project Area:	Approximately 3-mile corridor
Existing Uses:	State and County roadways; light industrial (easement through private parcels); University of Hawaiʻi Oʻahu Urban Garden Center (educational)
Landowners:	USA; State of Hawaiʻi; University of Hawaiʻi; City and County of Honolulu; various private owners
State Land Use District:	Urban
Primary Urban Center Development Plan Land Use Map:	Military; Industrial; Preservation; District Commercial; Lower Density Residential; Major Parks/Open Space
City and County of Honolulu Zoning District:	F-1 Military and Federal Preservation; P-2 General Preservation; AG-1 Restricted Agricultural; AG-2 General Agricultural; R-5 Residential; I-1 Limited Industrial
Federal, State and County Permits and Approvals:	See Table 1-2

Figure 1-1 Regional Location Map

1.4 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide adequate infrastructure to deliver the required level of potable, fire protection, and industrial water service from the Navy's Waiawa Pump Station to JBPHH, Manana Housing Area, and Aliamanu Housing Area.

The Proposed Action is needed because the existing 42-in primary water transmission line has reached the end of its reliable service life. Originally installed in 1953, this transmission main provides potable and industrial water transmission for JBPHH. Improvements to the existing water transmission system are needed to continue reliable water service to JBPHH and support areas. Repair and reuse of the existing transmission infrastructure was considered and dismissed because it would require a secondary parallel water line to maintain current capacity as well as a temporary bypass line, which would be expensive and impractical to implement. This approach would also forego the opportunity to improve access for water line maintenance in the future.

1.5 Scope of Environmental Analysis

This EA includes an analysis of potential environmental impacts associated with the action alternatives and the No Action Alternative. The environmental resource areas analyzed in this EA include: air quality, water resources, geological resources, cultural resources, biological resources, noise, infrastructure, transportation, public health and safety, hazardous materials and waste, and environmental justice. The study area for each resource analyzed may differ due to how the Proposed Action interacts with or impacts the resource. For instance, the study area for geological resources may only include the construction footprint of a building whereas the noise study area would expand out to include areas that may be impacted by airborne noise.

1.6 Relevant Laws and Regulations

The DoN has prepared this EA based upon federal and state laws, statutes, regulations, and policies that are pertinent to the implementation of the proposed action, including the following:

- NEPA (42 U.S.C. sections 4321-4370h), which requires an environmental analysis for major federal actions that have the potential to significantly impact the quality of the human environment
- CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500-1508)
- Navy regulations for implementing NEPA (32 CFR part 775), which provides Navy policy for implementing CEQ regulations and NEPA
- Clean Air Act (CAA) (42 U.S.C. section 7401 et seq.)
- Clean Water Act (CWA) (33 U.S.C. section 1251 et seq.)
- Coastal Zone Management Act (CZMA) (16 U.S.C. section 1451 et seq.)
- National Historic Preservation Act (NHPA) (54 U.S.C. section 306108 et seq.)
- Endangered Species Act (ESA) (16 U.S.C. section 1531 et seq.)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. sections 703-712)
- EO 11988, Floodplain Management
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations

- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks
- EO 13690 Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input
- EO 13693, Planning for Federal Sustainability in the Next Decade
- Chapter 343, HRS
- Title 11, Chapter 200 HAR

A description of the Proposed Action's consistency with the relevant laws, policies and regulations, as well as the names of regulatory agencies responsible for their implementation, is presented in Chapter 5 (Table 5-1).

1.7 Public and Agency Participation and Intergovernmental Coordination

Regulations from the CEQ (40 CFR part 1506.6) direct agencies to involve the public in preparing and implementing their NEPA procedures. The DoN solicited public and agency comments during an EA pre-assessment consultation period from February 8, 2016 through February 24, 2016. A list of parties contacted is provided in Chapter 8. Comments provided during the early consultation period were considered in preparing the Draft EA. Written comments received and responses are provided in Appendix A. (Note: Because the level of compliance with Chapter 343, HRS was still undetermined during the early stages of EA preparation, the pre-assessment consultation process followed the requirements of Chapter 343, HRS and Section 11-200-9, HAR. That is, the respective county planning department and other agencies or individuals that might have jurisdiction or expertise with respect to the proposed action were consulted. Subsequently, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to Exemption Class 1 Item 5 and Exemption Class 6, Item 2 of its Exemption List [dated August 12, 1981], and that it would not require a Chapter 343, HRS EA. See Appendix E for DPP determination letter.)

The DoN has consulted with the State Historic Preservation Officer (SHPO) regarding the Preferred Alternative; SHPO concurred with the DoN's determination of no adverse effect on historic properties. A CZMA Consistency Determination was prepared and submitted to the State of Hawaiʻi Department of Business, Economic Development and Tourism (DBEDT) Office of Planning (OP), which determined that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of the Hawaiʻi CZM Program. DBEDT OP concurred with the Navy's determination by letter dated April 8, 2016. CZMA Coastal Consistency Determination correspondence is included in Appendix D.

1.8 List of Permits and Approvals

Table 1-2 lists all federal, state, and county permits and approvals required for the Proposed Action.

Table 1-2 Permits and Approvals Required for the Proposed Action

Agency	*Permit/Approval*
Federal	
U.S. Army Corps of Engineers	Rivers and Harbors Act, Section 10 Permit
State of Hawai'i	
Department of Business, Economic Development and Tourism	CZMA Federal Consistency concurrence
Department of Health	• National Pollutant Discharge Elimination System permit (required for construction and may be required for hydrotesting) • Construction Noise Permit
Department of Land and Natural Resources, State Historic Preservation Officer	NHPA Section 106 concurrence
Department of Transportation	• Permit to Perform Work Upon State Highway • Private Storm Drain Connection and/or State Highways Division Storm Drain System • Permit to Discharge into State Highways Drainage System • Use and Occupancy Agreement/Easement
University of Hawai'i	Easement
City and County of Honolulu	
Department of Planning and Permitting	• Construction Plan approval • Trenching Permit • Grading Permit • Subdivision application to designate the various proposed easements
Department of Transportation Services	Street Usage Permit
Department of Budget and Fiscal Services	Easement

2 Proposed Action and Alternatives

2.1 Proposed Action

The DoN proposes to replace an aging primary water transmission main that serves JBPHH, the DoN's Manana Housing Area, and the U.S. Army's Aliamanu Housing Area with a new water transmission main of the same capacity. Almost the entire existing water main has a diameter of 42 in; a short segment at the north end where it connects to the DoN's Waiawa Pump Station has a diameter of 36 in (see existing water line alignment in Figure 1-1). The replacement infrastructure would transmit potable water from the DoN's Waiawa Pump Station to an existing line approximately 2.7 mi to the south, located near the intersection of Second Street and Lehua Avenue. Currently, potable water service to the DoN's Manana Family Housing Area is provided via an approximately 60-ft long, 12-in secondary line from the existing 42-in water line (location shown in Figure 2-1). The Proposed Action would include replacing the existing 12-in secondary water line with an approximately 2,000-foot (ft) long 16-in branch line, which would connect to the proposed 42-in line approximately midway down Waihona Street. Approximately 1,500 ft of the 16-in line would be located along the same corridor as the original 42-in and 12-in lines. Construction of replacement facilities is scheduled to begin in late 2017, with completion targeted in late 2019.

2.2 Screening Factors for Alternatives

NEPA's implementing regulations provide guidance on the consideration of alternatives to a federally proposed action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and meet the purpose and need require detailed analysis.

Potential alternatives that meet the purpose and need were evaluated against the following screening factors:

- Minimize disruption to existing water service
- Maintain existing potable water transmission capacity
- Utilize existing easements where practical
- Utilize public rights-of-ways and developed areas where practical
- Minimize disturbance to natural, undeveloped areas
- Balance practical life cycle cost with maximizing energy efficiency
- Cost efficiency, constructability, and ease of maintenance
- Minimize risks to public safety by utilizing best practices for construction of subsurface utilities (e.g., avoid construction under major facilities such as parking structures)

2.3 Alternatives Carried Forward for Analysis

Based on the reasonable alternative screening factors and meeting the purpose and need for the Proposed Action, two action alternatives were identified and will be analyzed within this EA: Kamehameha Highway-Oʻahu Urban Garden Center Alternative (Preferred Alternative) and Kamehameha Highway-Lehua Avenue Alternative.

2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. Under the No Action Alternative, the existing 42-in water transmission main would be kept in service and would not be replaced. It would continue to age and deteriorate, which would eventually lead to infrastructure failure and disruption to potable and fire suppression water service for DoN and USAF operations and mission support activities. Depending on the location of the line failure, private commercial development, under which portions of the existing water main run, could sustain major damage, with resulting injury to customers and other members of the general public. The No Action Alternative would not meet the purpose and need for the Proposed Action; however, as required by NEPA, the No Action Alternative is carried forward for analysis in this EA and provides a baseline for measuring the environmental consequences of the action alternatives.

2.3.2 Kamehameha Highway-Oʻahu Urban Garden Center Alternative (Preferred Alternative)

2.3.2.1 General Description

Under this alternative, an existing 42-in primary water main currently serving JBPHH, the DoN's Manana Housing Area, and the U.S. Army's Aliamanu Housing area would be replaced by constructing a new, approximately 2.7-mi long, 42-in diameter water transmission main. (Note: A short segment of the existing water line from its starting point at Waiawa Pump Station to where Waihona Street begins has a diameter of 36 in.) The new water line would extend from the DoN's Waiawa Pump Station, along Waihona Street and Kamehameha Highway, through University of Hawaiʻi's Oʻahu Urban Garden Center (OUGC) to an existing 42-in main near the intersection of Lehua Avenue and Second Street in Pearl City, Oʻahu, Hawaiʻi (Figure 2-1). The new 42-in water main would follow an alignment primarily routed through state- and county-owned rights-of-way (ROW). The Waihona Street, Kamehameha Highway, OUGC, and Second Street segments would be approximately 7,600 ft, 2,900 ft, 2,600 ft, and 500 ft, respectively (i.e., approximately 13,600 ft total, with 11,000 ft within public roadway ROWs).

An approximately 2,000-ft long 16-in secondary potable water line would also be installed to serve the DoN's Manana Housing Area. This line would tie into the new 42-in line approximately midway along Waihona Street. From this tie-in point, it would be routed south to the Manana Housing booster pump station (see Figure 2-1 for routes of both new water transmission lines). Most of the new 16-in water line would be installed within an existing tunnel through which the existing 42-in water line extends.

Key features of this alternative include:

- Approximately 14,000 linear feet (LF) of 42-in main along Waihona Street, Kamehameha Highway, OUGC, and Second Street
- Connection to an existing 36-in water main at Waiawa Pump Station
- Connection to an existing 42-in water main at Second Street and Lehua Avenue
- Pipe bridge supporting the 42-in water main crossing Waiawa Stream near Waiawa Pump Station
- Pile support for a portion of the 42-in water main within OUGC
- 2,000 LF of 16-in water line from the new 42-in Waihona Street water main to the Manana Pump Station
- Approximately 30 LF of 12-in lateral to the Hawaii National Guard Armory on Waihona Street
- Filling of the existing 42-in water line to be left in place with flowable fill material

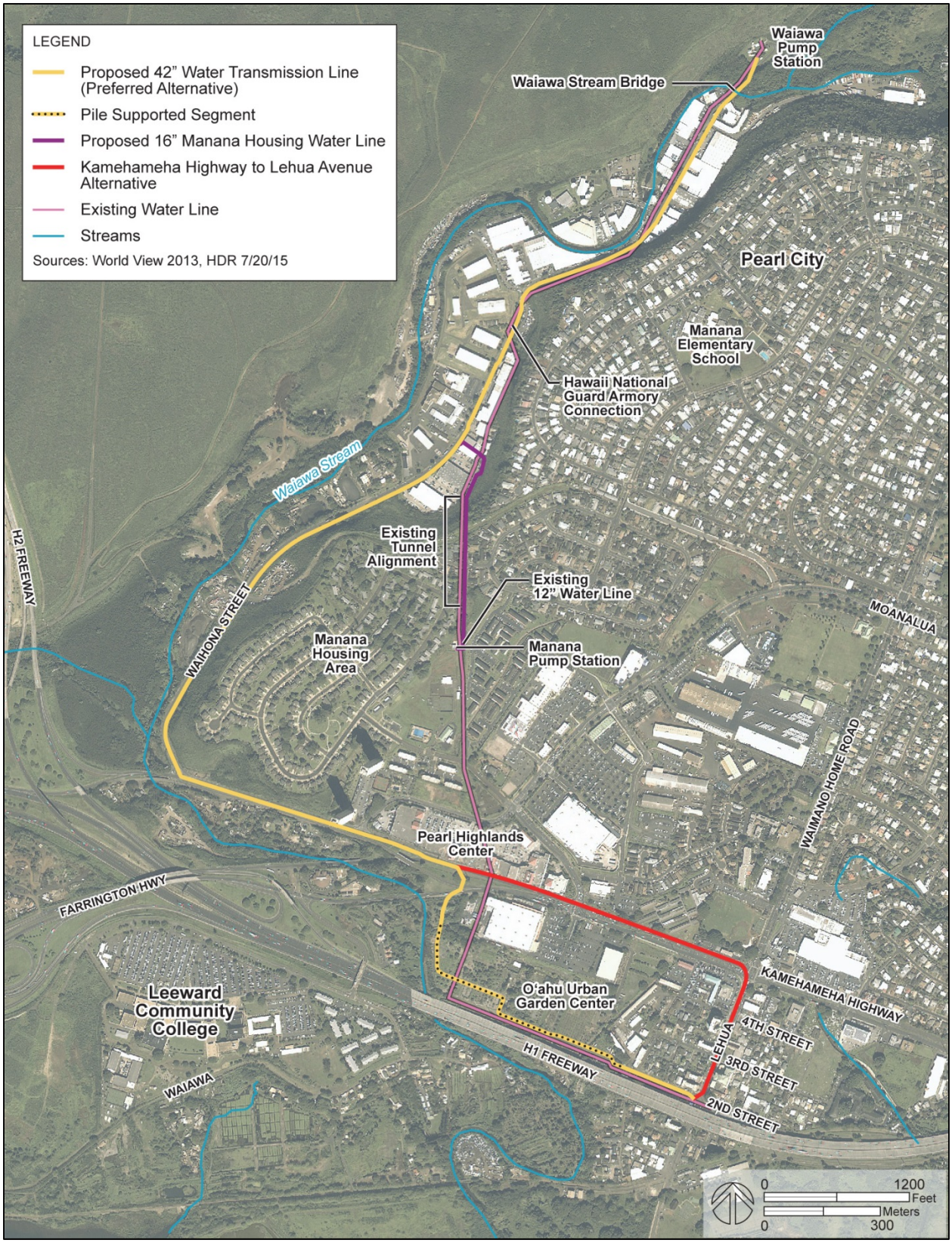

Figure 2-1 Project Location

- Removal of approximately 170 ft of existing 42-in water main on Kamehameha Highway (if removal is required by State Department of Transportation)
- Demolition of eight existing valve vaults
- Installation of four isolation valve vaults and ten air relief valve vaults on the 42-in line and two isolation valve vaults on the 16-in line
- Removal of approximately 1,050 ft of existing 42-in water main inside the existing water main tunnel leading to Manana Pump Station
- Removal of approximately 100 ft of 36-in existing water main supported on the downstream (west) side of Waiawa Stream Bridge

Both new water lines would extend through both public (federal, state, city and county) and private property. The DoN would need to acquire interests in land from public and private landowners along the length of the new 42-in main waterline and the secondary 16-inch waterline for Manana Housing of up to 22 total acres (State: approximately 5 acres, City and County: approximately 14 acres, and private landowners: approximately 3 acres; all estimates are subject to change based on final project design).

2.3.2.2 Alignment

The proposed 2.7-mile long, 42-in replacement line would be routed from the Navy's Waiawa Pump Station, along Waihona Street and Kamehameha Highway, through the University of Hawai'i's OUGC, and along Second Street and tie in to an existing water main near the intersection of Second Street and Lehua Avenue. (See Figures 2-2 and 2-3 for representative photos along the preferred replacement water line route.) A 12-in lateral from the proposed new 42-in line Waihona Street segment would be installed to serve the Hawaii National Guard Armory (also located on Waihona Street), approximately 1,600 ft southwest of its intersection of Waihona Place. This approximately 30-ft long, 12-in lateral would connect to an existing 10-in water line currently serving the National Guard property.

The pipe line segment between Waiawa Pump Station and Waihona Street would cross Waiawa Stream adjacent to the existing Waiawa Stream Bridge (see Photo B in Figure 2-2). Because the loading limit of the existing bridge is unknown, the proposed replacement water line would be supported on a new concrete encased steel pipe bridge, fully independent of the existing bridge. The new, approximately 140-ft pipe bridge would be located on the upstream (east) side of the existing bridge. The single span bridge would be supported on drilled caisson-supported abutments outside (i.e., upslope) of the existing bridge wing walls (see Figure 2-4 for preliminary pipe bridge details). A concrete-encased structural steel truss structure would support the 42-in pipe. The bottom of the pipe bridge would be at the same or higher elevation as the bottom of the existing bridge to avoid reducing or restricting current stream flow at the bridge crossing. No work would take place within the stream and there would be no alteration of the stream banks.

The proposed replacement 16-in secondary water line would extend approximately 2,000 ft from the replacement 42-in line (approximately midway along Waihona Street), subsurface through privately-owned parcels, to the Manana Pump Station. An approximately 700-ft long segment of the 16-in secondary line would be located subsurface within privately-owned parcels, and then be aligned through the tunnel that contains the existing 42-in water main. After exiting the tunnel, the 16-in line would continue below grade to the Manana Pump Station.

A: Waiawa Pump Station

B: Location of new pipe bridge adjacent to Waiawa Stream Bridge (upstream side, facing southwest)

C: Existing water line on Waiawa Stream Bridge to be removed (downstream side, facing southwest)

D: Waihona Street route (facing south)

E: Location of proposed 16-in water line branch off Waihona Street (facing southeast)

F: Waihona Street route (facing northeast)

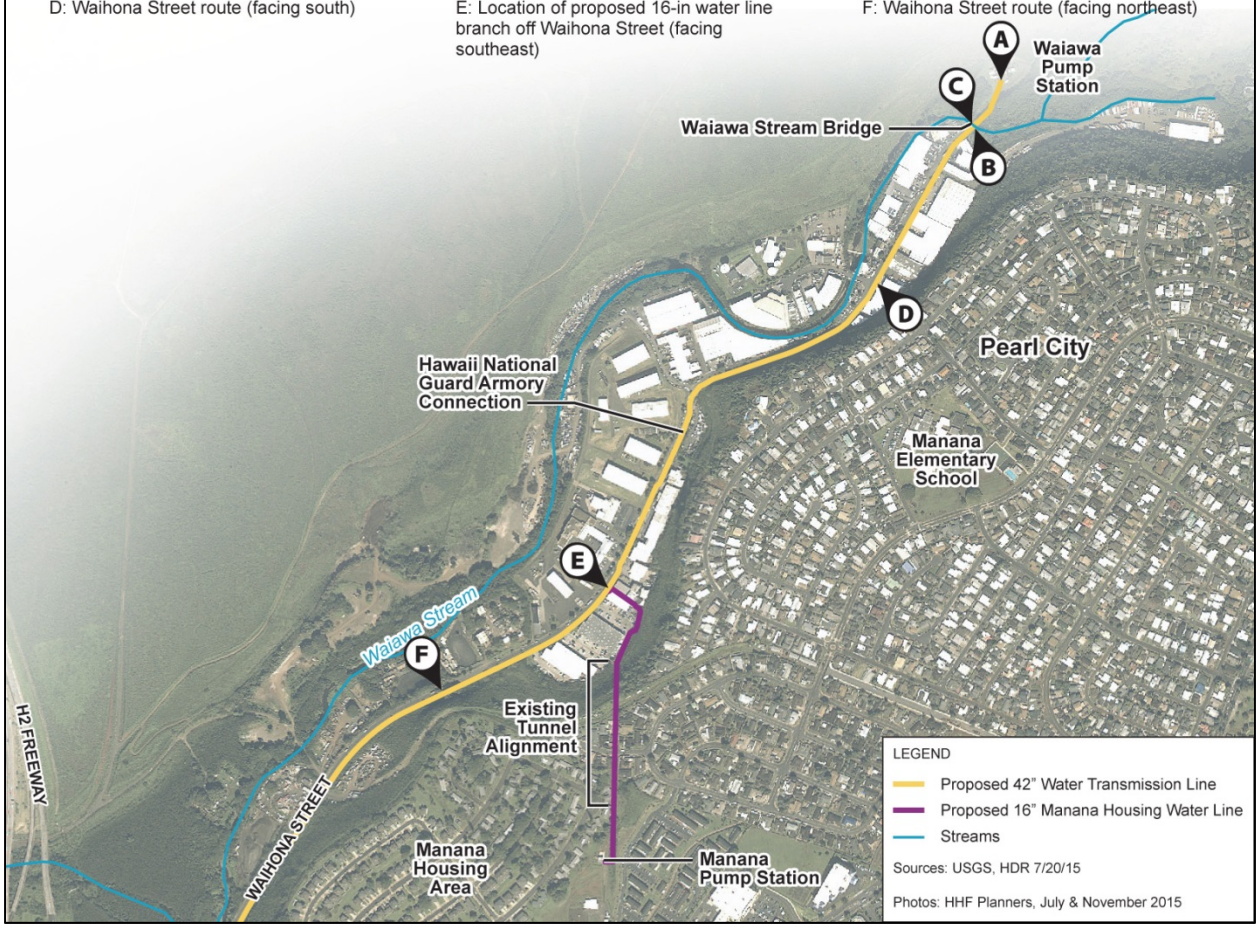

Figure 2-2 Site Photos – North Segment

G: Kamehameha Highway route (facing northwest)

H: Location of Kamehameha Highway crossing (between steel power pole and tree; facing south)

I: Water line route in Urban Garden Center (facing east)

J: Water line route along Urban Garden Center southern boundary (facing west)

K: Water line route on 2nd Street (facing west)

LEGEND

- Proposed 42" Water Transmission Line
- Proposed 16" Manana Housing Water Line
- Kamehameha Highway to Lehua Avenue Alternative
- Streams

Sources: USGS, HDR 7/20/15

Photos: HHF Planners, July & November 2015

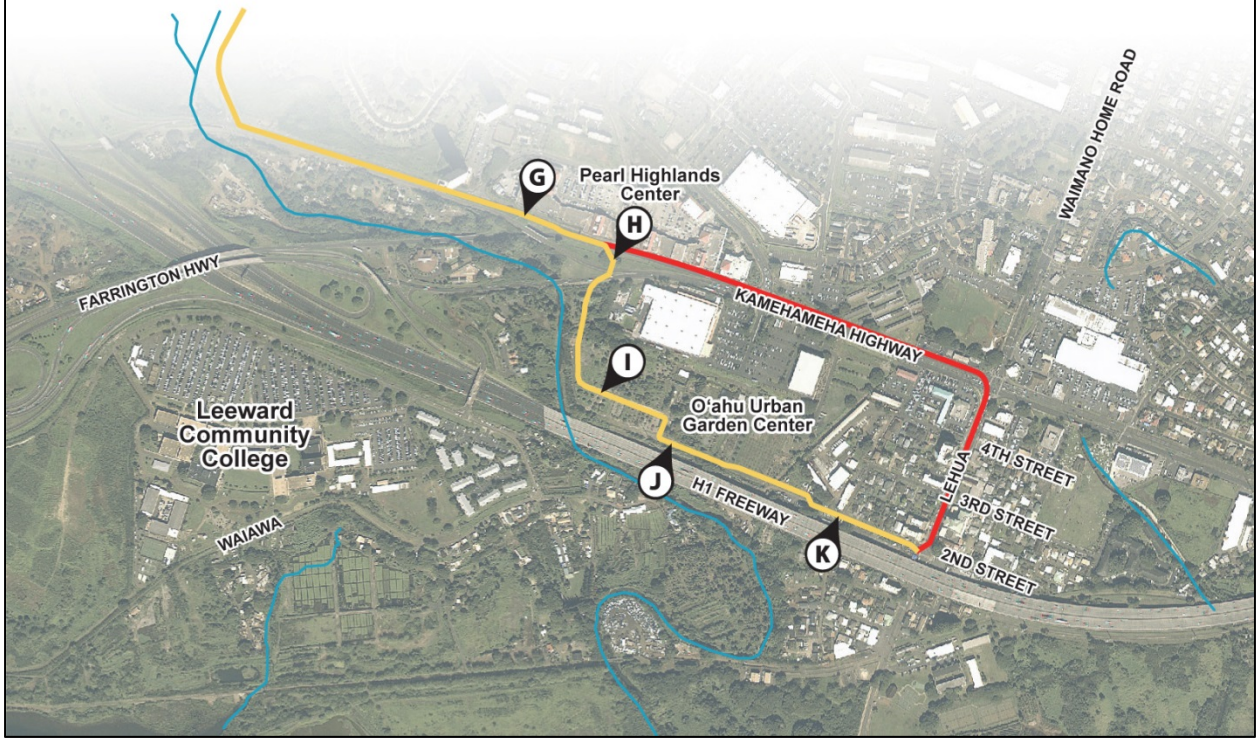

Figure 2-3 Site Photos – South Segment

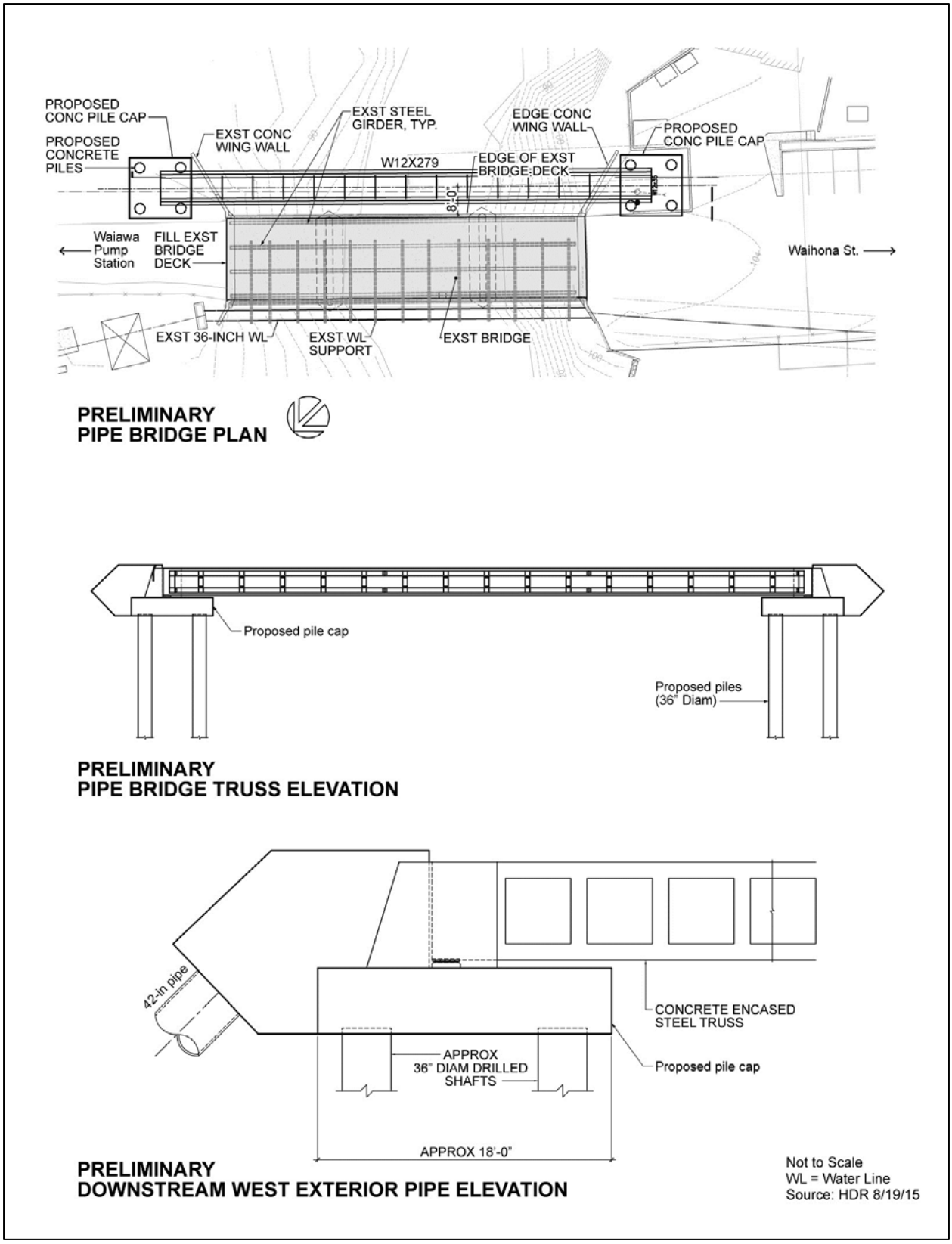

Figure 2-4 Proposed Pipe Bridge at Waiawa Stream

Potential temporary construction staging areas would be within the Kamehameha Highway median and shoulder areas, unplanted areas and the sides of perimeter roads within OUGC, or similar available locations.

2.3.2.3 Removal/Disposition

Most of the existing 2.1-mile-long 42-in water line, totaling approximately 10,000 LF, would be grouted with flowable grout material and left in place. Three sections of the existing 42-inch water line, totaling approximately 1,300 LF, would be removed after the new 42-in water line becomes fully operational. Two of the sections to be removed do not require excavation (i.e., Waiawa Stream Bridge and within existing water line tunnel). The State Department of Transportation requires the removal of the third segment, which is located within the State-controlled Kamehameha Highway ROW. See Figure 2-5 for proposed disposition of existing water lines.

The total volume of grout material is estimated at 3,500 cubic yards. The grout material would consist of controlled low strength material (CLSM) (i.e., flowable fill material) or cellular concrete, which would be pumped into the empty pipeline and harden into a solid mass as the concrete cures. The grout materials to be used are typical materials used in filling abandoned pipes and do not spill or leak after they solidify.

2.3.2.4 Piles

Due to anticipated soil conditions, approximately 2,000 LF of the replacement water line within the OUGC is currently planned to be supported on standard pre-stressed, precast concrete piles. Preliminary engineering investigations indicate that standard 16.5-in octagonal piles could be spaced approximately 18 ft on center, for a total of approximately 100-150 octagonal piles. See Figure 2-1 for approximate location of pile-supported water line segment.

An approximately 100-ft segment at the east end of the replacement water line route within the OUGC property would be located in an area where the use of pile driving equipment is precluded due to the proximity to existing high voltage overhead lines (i.e., there would be insufficient lateral and radial clearance between operation of pile driving equipment and the high voltage lines within this segment). In this area, micropiles would likely be used to support the water line. Micropiles may consist of 5.5-in diameter steel pipe containing a reinforcing bar grouted into the pipe. They would be installed in pairs approximately 9-ft on center (approximately 20 micropiles). See Figure 2-6 for preliminary pile details. (Note: The exact shape, diameter, depth, number, and spacing of both types of piles would be determined prior to construction based on more detailed site specific engineering evaluations.)

2.3.2.5 Construction Methodology

Trench dimensions for the 42-in water line would be a minimum of 6 ft wide, with varying depths (width depends on construction logistics at specific locations). The water line invert (i.e., bottom of inside of pipe) would generally be 10 to 15 ft below grade. At locations where it is necessary to cross under existing utilities or subsurface obstructions, the water line invert may be as deep as 25 ft below grade.

In paved areas, material to backfill the trench would consist of imported subbedding and pipe bedding material (i.e., gravel) or CLSM. In unpaved areas, existing excavated material may be utilized for general backfill if it meets specified soil properties.

Excess or unusable excavated material would generally be disposed of at a construction landfill.

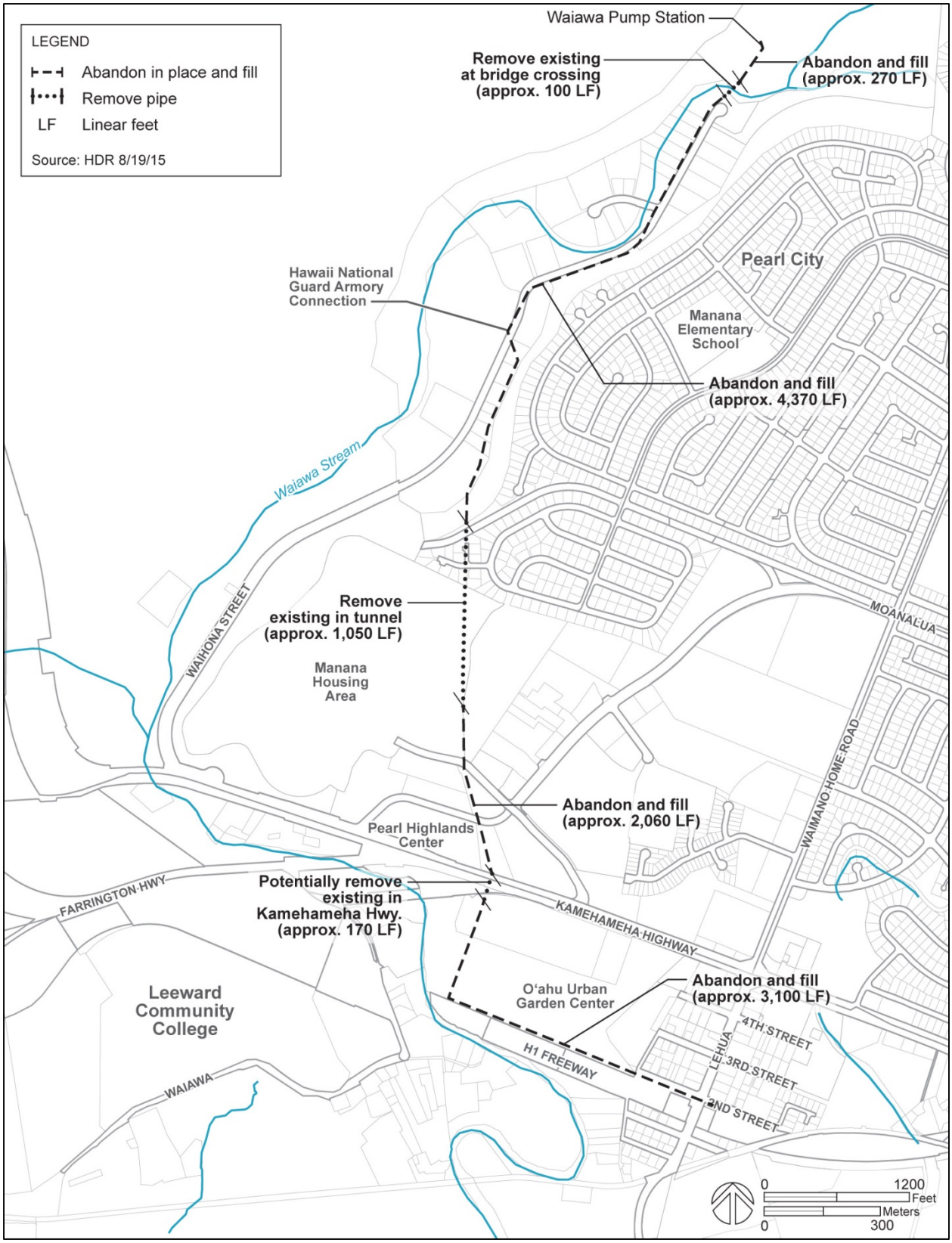

Figure 2-5 Existing Water Line Disposition

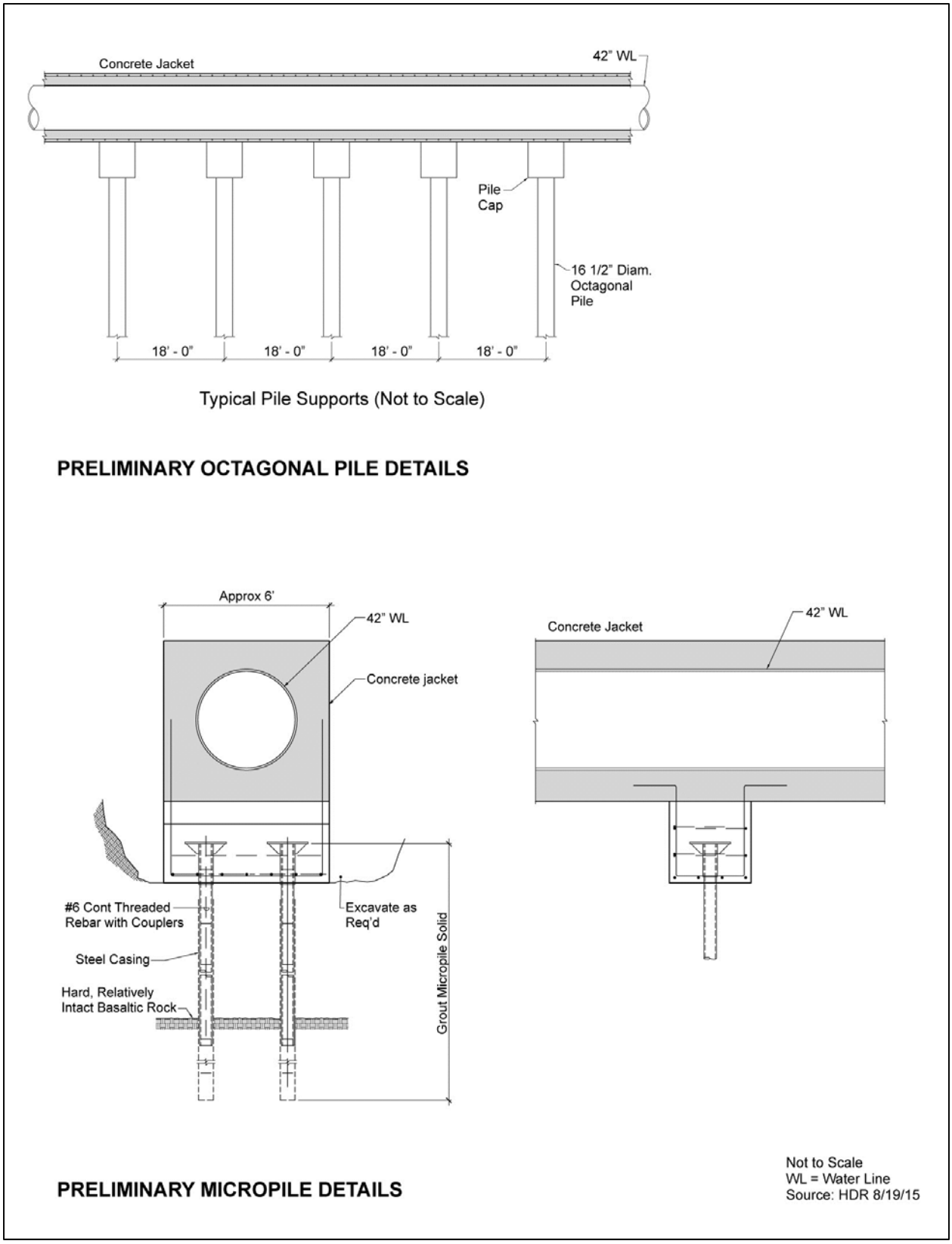

Figure 2-6 Preliminary Pile Details

There are eight valve vaults along the existing water line alignment, ranging in size from 4 ft in diameter to approximately 10 ft by 12 ft (vault heights vary by pipe depth). These vaults would be modified as follows, then left in place after the replacement water lines are installed and operational. The top slabs of the vaults would be removed and the bottom slabs broken up to allow for drainage. They would then be backfilled with gravel or CLSM and the ground surface at each vault restored to generally match the surrounding area.

Final construction methodology would be up to the contractor; however, the following is anticipated to be the general order that the project would follow:

1. Mobilization, conduct preconstruction survey, install best management practices (BMPs), tone utilities.
2. Construct the new 42-in pipeline. The following processes may occur in parallel if the contractor chooses.
    a. Waiawa Stream Pipe Support Bridge – install drilled shaft and bridge abutments, erect steel bridge frame, build forms and pour concrete encasement around steel bridge frame, install piping on pipe support bridge, cast in end blocks to secure pipe vertical bends, replace Waiawa Pump Station perimeter fencing.
    b. Waihona Street, Kamehameha Highway, Second Street – potholing to verify existing utilities, trench excavation, install piping and valve boxes, install concrete jacket (as needed), and backfill.
    c. OUGC – potholing to verify existing utilities, relocation of trees, arborist monitoring as needed, pile driving and testing, trench excavation, install piping & valve boxes, install concrete jacket, backfill.
    d. 16-in waterline to Manana Pump Station – potholing to verify existing utilities, relocate existing drain inlet, trench excavation and install underground piping, install pipe support pedestals in tunnel, install piping in tunnel, install piping up to Manana Booster Station interconnection point (but do not make the connection yet).
    e. Chlorinate and test the pipe segments as they are installed; length of sections to be tested to be determined by the contractor.
    f. Pave and restore site to existing conditions.
3. Interconnections to the existing water transmission line
    a. Take existing 36-in/42-in line out of service; arrange for temporary service to Manana Housing, top off water reservoirs in the water system, close valves, drain waterline.
    b. Install infrastructure to connect new water line to existing Waiawa Pump Station 36-in line
    c. Install infrastructure to connect new water line to existing 42-in line in Second Street.
    d. Connect new piping to existing piping at Manana Pump Station.
    e. Put new 42-in line in service.
4. Demolish/dispose of existing 42-in line

a. Remove existing 36-in piping from the existing Waiawa Stream Bridge and remove existing 42-in piping from tunnel.

b. Remove existing 42-in piping from Kamehameha Highway.

c. Fill portions of existing pipe to be abandoned in place with flowable grout.

d. Demolish existing valve boxes and manholes.

5. Demobilize, final cleanup of disturbed areas, remove temporary BMPs, install permanent BMPs

2.3.2.6 Best Management Practices

Best management practices during construction would be employed to avoid or minimize adverse impacts to the environment. Typical BMPs include:

- Erosion and sediment control measures such as protection of erodible soils; mechanical control of stormwater runoff from the construction site; use of sediment basins; and use of vegetation and mulch on soil exposed by grading.
- Protection of Waiawa Stream waters through use of silt fencing and barriers around excavated and cleared areas; no work within stream waters or stream bed will be allowed.
- Employment of personnel qualified to identify and handle hazardous materials if unexpectedly encountered.
- Use of personal protective equipment (e.g., protective clothing, eye protection, and respirators) during pipe removal activities to protect personnel from lead containing paint. Implementation of appropriate procedures to contain dust and paint chips that may be loosened during pipe removal activities.
- If contaminated soil is suspected, it will be tested, stored and disposed of at an appropriate waste facility.
- Implementation of fugitive dust control measures during the construction period, including during non-working periods. Measures may include sprinkling or treating with dust suppressants the soil at the site, haul roads, and other areas disturbed by operations.
- Preparation and implementation of a dirt and dust control plan that identifies the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.
- Limit pile driving operations to the hours between 8:00 a.m. and 4:00 p.m., Monday through Fridays, exclusive of holidays, unless otherwise specified.

Best management practices will also be identified as conditions of the National Pollutant Discharge Elimination System (NPDES) permit required for the discharge of storm water associated with construction activity, including a Storm Water Pollution Prevention Plan (SWPPP).

2.3.3 Kamehameha Highway-Lehua Avenue Alternative

This action alternative presents an alternate alignment to the Preferred Alternative. It is similar to the Preferred Alternative in the northern/western water line segments; the difference is an alternate alignment for approximately 3,600 LF of pipeline at its eastern/southern end. This alternative meets the purpose and need for the action and was evaluated against the screening factors for alternatives. It was determined to be a reasonable alternative and is carried forward for analysis in this EA.

2.3.3.1 General Description

In this alternative, the new 42-in water main would have the same alignment from Waiawa Pump Station to Kamehameha Highway as the Preferred Alternative and terminate at an existing water main near the intersection of Lehua Avenue and Second Street (i.e., similar to the Preferred Alternative). The total length would be approximately the same as the Preferred Alternative (2.7 mi) and would have the same capacity. At Kamehameha Highway, rather than crossing Kamehameha Highway to the south and entering OUGC opposite Pearl Highlands Center, the water line would continue eastward to Lehua Avenue. From there it would extend south within the Lehua Avenue ROW to its termination point near its intersection of Second Street (see Figure 2-1 for alternative water line alignment).

As in the Preferred Alternative, this alternative would include a pipe bridge crossing Waiawa Stream north of the beginning of Waihona Street. It would also include a 2,000-ft long, 16-in secondary potable water line to serve the Manana Housing Area and a 30-ft long, 12-in lateral to serve the Hawaii National Guard Armory on Waihona Street. Both the 16-in and 12-in water lines would have the same dimensions, locations, and capacities as in the Preferred Alternative.

Lehua Avenue contains many buried utility lines (e.g., natural gas, municipal potable water, sewer, oil), which would make the installation of a new 42-in line technically challenging. In addition, under this alternative, there would be substantially greater traffic impacts on Kamehameha Highway and at its intersection with the Lehua Avenue. There would be considerably more disruption to businesses and commuters along Kamehameha Highway because construction duration on this roadway would be at least twice as long as in the Preferred Alternative. Except for local traffic, Lehua Avenue would likely need to be completely closed during construction, which would impede access to Pearl City Peninsula as well as to the Pearl City Fire Station—along with businesses and residences on Lehua Avenue and on streets for which Lehua Avenue provides linkage to Kamehameha Highway. In this alternative, maintenance and repair of the eastern/southern section of water line would be more difficult than in the Preferred Alternative due to its location within heavily traveled public roadways instead of in the less developed OUGC. Constructability and ease of maintenance were the primary reasons this alternative was not selected as the DoN's Preferred Alternative. Table 2-1 summarizes the public roadway lengths affected by the Preferred Alternative and the Kamehameha Highway-Lehua Avenue Alternative.

Table 2-1 Affected Public Roadway ROW Summary

Alternative	*Overall Length*	*Public Roadway Length*
Preferred Alternative	2.7 mi	11,000 ft
Kamehameha Highway-Lehua Avenue Alternative	2.7 mi	13,600 ft

2.3.3.2 Alignment

In this alternative, the new main would follow the same route as the Preferred Alternative from Waiawa Pump Station, along Waihona Street, and eastward within the Kamehameha Highway ROW. However, in this alternative, instead of crossing Kamehameha Highway and entering OUGC from the north, the water line would continue eastward to Lehua Avenue. In this alternative, approximately 5,000 LF of water line would be located in the Kamehameha Highway ROW, about double that of the Preferred Alternative. At Lehua Avenue, the 42-in line would turn to the south, continue approximately 1,100 ft within the Lehua Avenue ROW, and terminate at the existing water main near the intersection of Lehua Avenue and Second Street (near where the connection would be made in the Preferred Alternative). In total, this

alternative would involve approximately 13,600 ft of construction in existing public ROWs for the 42-in replacement line—or about 0.5 mile more than the Preferred Alternative) (see Table 2-1 for summary of public roadway lengths affected).

2.3.3.3 Removal/Disposition

Same as Preferred Alternative.

2.3.3.4 Piles

This alternative may not require piles to support the 42-in water line, as would be required in portions of the Preferred Alternative alignment through OUGC. This would need to be verified by additional geotechnical investigation.

2.3.3.5 Construction Methodology

The general construction methodology and order for this alternative would be similar to the Preferred Alternative, with the following exceptions:

- Work within OUGC would not be required
- Work within the longer Kamehameha Highway segment and within Lehua Avenue would be similar to the Preferred Alternative work along Waihona Street, Kamehameha Highway, and Second Street (i.e., potholing to verify existing utilities, trench excavation, install piping and valve boxes, install concrete jacket [as needed], and backfill). However, it would involve substantially more utility relocation, which could necessitate construction in two phases—a utility relocation phase and a water line construction phase.

2.3.3.6 Best Management Practices

Same as Preferred Alternative.

2.4 Alternatives Considered but not Carried Forward for Detailed Analysis

The following alternatives were considered, but not carried forward for detailed analysis in this EA as they did not meet the purpose and need for the project and satisfy the reasonable alternative screening factors presented in Section 2.2.

2.4.1 Renovation/Modernization

The Renovation/Modernization Alternative would repair the existing water line with the Cured-in-Place Pipe method within the existing easement, in which tubing would be installed within the full length of the existing water line. This tubing would reduce the inner diameter of the existing 42-in pipe by 6 in and require the installation of a secondary 12-in water line parallel to the existing line to maintain current water transmission capacity. This alternative was considered but is not being carried forward for detailed analysis in the EA because it is not a cost effective alternative and would not address the screening factor issues of constructability and ease of maintenance. Furthermore, reusing the existing water transmission line would not address the screening factor of utilizing best practices for construction of subsurface utilities (i.e., does not avoid construction under major facilities such as the parking structure at Pearl Highlands Center). In order to maintain water service during project construction, this alternative would also require construction of a bypass line from the Waiawa Pump Station to the connection point at the intersection of Second Avenue and Lehua Street. This would result

in essentially constructing a second full length, above grade transmission line, which would be expensive and impractical.

2.4.2 New/Expanded Tunnel Alternative

In this alternative, a new 42-in water line would be installed either in a new tunnel adjacent and similar to the existing tunnel or in a widened passage of the existing tunnel. The segment from the south end of the new or widened tunnel would utilize Acacia Road to avoid running below Pearl Highlands Center. This alternative was considered but is not being carried forward for detailed analysis in the EA because the new 42-in line would be difficult to maintain and there are many utility lines contained within the Acacia Road ROW.

2.4.3 Kamehameha Highway to H-1 Freeway Viaduct Alternative

In this alternative, the proposed 42-in water line would follow the same alignment as the Preferred Alternative from Waiawa Pump Station to Kamehameha Highway. However, instead of extending eastward within the Kamehameha Highway ROW, the water line would proceed across Kamehameha Highway to the H-1 Freeway viaduct ROW. It would then proceed eastward at grade under the viaduct to a connection point near the intersection of Lehua Avenue and Second Street. Soils under the viaduct are poor and would require piles to support the above ground water line. This alternative was considered but is not being carried forward for detailed analysis in the EA because the above ground piping would have a reduced service life due to exposure to the elements and would be subject to vandalism, accidents, terrorist attack, and flooding. Furthermore, the presence of underground utilities (e.g., energy corridor) would conflict with pile driving needed to support the water line above or below ground.

2.4.4 Secondary (16-in) Water Line Alignment Alternatives

The DoN considered four alternative connection points and alignments within private property (owned by Fergus & Company) for the proposed 16-in secondary water line to serve the Manana Housing Area. These alternatives included four different alignments from the proposed 42-in line in Waihona Street traversing southeast through the private parcel at different points. The property owner indicated that the northernmost alignment was preferable and would have the least impact to the property and its tenants (e.g., other alignments would impact tenant parking areas and potential future development areas). The northernmost alignment requires acquiring interests in up to one acre of private property and has been incorporated into the Preferred Alternative. These alternative alignments for the 16-in water line were considered but are not being carried forward for detailed analysis in the EA because their environmental impacts would be similar to or greater than the Preferred Alternative.

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3 Affected Environment and Environmental Consequences

This chapter presents a description of the environmental resources and baseline conditions that could be affected from implementing any of the alternatives and an analysis of the potential direct and indirect effects of each alternative.

All potentially relevant environmental resource areas were initially considered for analysis in this EA. In compliance with NEPA, CEQ, and 32 CFR part 775 guidelines, the discussion of the affected environment (i.e., existing conditions) focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in describing a resource is commensurate with the anticipated level of potential environmental impact.

"Significantly," as used in NEPA, requires considerations of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (e.g., human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant (40 CFR part 1508.27). Intensity refers to the severity or extent of the potential environmental impact, which can be thought of in terms of the potential amount of the likely change. In general, the more sensitive the context, the less intense a potential impact needs to be in order to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be significant.

This section includes air quality, water resources, geological resources, cultural resources, biological resources, noise, infrastructure (water distribution, storm water collection), transportation, public health and safety, hazardous materials and wastes, and environmental justice.

The potential impacts to the following resource areas are considered to be negligible or non-existent so they were not analyzed in detail in this EA:

Land Use: The Proposed Action would not affect existing or planned land uses. The proposed water line replaces an existing water transmission line and would provide the same capacity. After completion of construction, the main infrastructure elements would be located below grade and existing above grade land uses would remain.

Visual Resources: The Proposed Action would have negligible to non-existent impacts on visual resources. The components of the replacement water line would be located below grade or in areas not visible to the general public (i.e., in the existing water line tunnel or within property with access controlled by the Navy).

Airspace: Construction and operation of the Proposed Action does not involve impacts to military or civilian airspace. The proposed infrastructure would be primarily located underground and replaces existing below grade water transmission infrastructure.

Infrastructure (wastewater collection, solid waste management, energy, communications, facilities): Because it replaces existing water transmission infrastructure at the same capacity, the Proposed Action would not increase water usage or demand (resulting in greater wastewater generation). Construction activities would result in construction debris from the removal of sections of water transmission line. It may also result in the disposal of excavated materials that are not suitable to backfill excavated areas; excess or unusable materials would be disposed of at a construction landfill in compliance with federal,

state and local requirements. Operation of the replacement water line would not generate additional solid waste as it would continue existing water transmission operations and not trigger additional development or activities that generate solid waste. Although construction activities would temporarily increase fuel and energy requirements, during the functional period, operation of the proposed replacement water line would have negligible impacts on energy usage. The proposed water line would not involve changes to existing or proposed communications systems or their demand. The Proposed Action would not involve an increase or reduction in facility requirements; Waiawa Pump Station and Manana Pump Station will maintain their current functions.

Socioeconomics: Construction and operation of the Proposed Action would not impact population; employment/industry characteristics; demand for schools, housing, recreational facilities; or demographic, economic, or fiscal conditions of the State of Hawaiʻi or City and County of Honolulu. Economic benefits of construction job creation would be temporary and associated with project construction. The proposed water line would provide the same transmission capacity as the existing water line it would replace; it would not result in secondary impacts related to increasing development capacity or population growth.

3.1 Air Quality

This discussion of air quality includes criteria pollutants, standards, sources, permitting and greenhouse gases. Air quality in a given location is defined by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

Most air pollutants originate from human-made sources, including mobile sources (e.g., cars, trucks, buses) and stationary sources (e.g., factories, refineries, power plants), as well as indoor sources (e.g., some building materials and cleaning solvents). Air pollutants are also released from natural sources such as volcanic eruptions and forest fires.

3.1.1 Regulatory Setting

Criteria Pollutants and National Ambient Air Quality Standards

The principal pollutants defining the air quality, called "criteria pollutants," include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone, suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). CO, SO_2, Pb, and some particulates are emitted directly into the atmosphere from emissions sources. Ozone, NO_2, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes.

Under the Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) (40 CFR part 50) for these pollutants. NAAQS are classified as primary or secondary. Primary standards protect against adverse health effects; secondary standards protect against welfare effects, such as damage to farm crops and vegetation and damage to buildings. Some pollutants have long-term and short-term standards. Short-term standards are designed to protect against acute, or short-term, health effects, while long-term standards were established to protect against chronic health effects.

Areas that are and have historically been in compliance with the NAAQS are designated as attainment areas. Areas that violate a federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment.

The CAA requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans, are developed by state and local air quality management agencies and submitted to USEPA for approval.

General Conformity

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called de minimis levels. De minimis levels (in tons per year) vary by pollutant and also depend on the severity of the nonattainment status for the air quality management area in question.

Permitting

New Source Review (Preconstruction Permit)

New major stationary sources and major modifications at existing major stationary sources are required by the CAA to obtain an air pollution permit before commencing construction. This permitting process for major stationary sources is called New Source Review and is required whether the major source or major modification is planned for nonattainment areas or attainment and unclassifiable areas.

Title V (Operating Permit)

The Title V Operating Permit Program consolidates all CAA requirements applicable to the operation of a source, including requirements from the State Implementation Plans, preconstruction permits, and the air toxics program. It applies to stationary sources of air pollution that exceed the major stationary source emission thresholds, as well as other non-major sources specified in a particular regulation.

Greenhouse Gases (GHG)

GHGs are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

Revised draft guidance from CEQ, dated December 18, 2014, recommends that agencies consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action. The guidance also emphasizes that agency analyses should be commensurate with projected greenhouse gas emissions and climate impacts, and should employ appropriate quantitative or qualitative analytical methods to ensure useful information is available to inform the public and the decision-making process in distinguishing between alternatives and mitigations. It recommends that agencies consider 25,000 metric tons of carbon dioxide equivalent (CO_2e) emissions on an annual basis

as a reference point below which a quantitative analysis of greenhouse gas is not recommended unless it is easily accomplished based on available tools and data.

The USEPA issued the Final *Mandatory Reporting of Greenhouse Gases Rule* on September 22, 2009. GHGs covered under the Final *Mandatory Reporting of Greenhouse Gases Rule* are carbon dioxide (CO_2), methane, nitrogen oxide (NO_x), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other fluorinated gases including nitrogen trifluoride and hydrofluorinated ethers. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. The equivalent CO_2 rate is calculated by multiplying the emissions of each GHG by its global warming potential and adding the results together to produce a single, combined emissions rate representing all GHGs. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of mobile sources and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions as CO_2e are required to submit annual reports to USEPA.

In an effort to reduce energy consumption, reduce GHGs, reduce dependence on petroleum, and increase the use of renewable energy resources the Navy has implemented a number of renewable energy projects. The Navy has established Fiscal Year 2020 GHG emissions reduction targets of 34 percent from a FY 2008 baseline for direct GHG emissions and 13.5 percent for indirect emissions. Examples of Navy-wide GHG reduction projects include energy efficient construction, thermal and photovoltaic solar systems, geothermal power plants, and the generation of electricity with wind energy. The Navy continues to promote and install new renewable energy projects, including on the island of O‘ahu.

3.1.2 Affected Environment

Air quality in the State can be generally characterized as relatively clean and low in pollution. Data from State of Hawai‘i Department of Health air quality monitoring stations indicate that the State was in attainment of all NAAQS in 2014, with the exception of exceedances for SO_2 and $PM_{2.5}$ in communities near the volcano on Hawai‘i Island (State of Hawai‘i 2015) (considered by the U.S. Environmental Protection Agency (USEPA) as a natural, uncontrollable event). Because the State is in attainment of the NAAQS, it is not subject to the Clean Air Act’s General Conformity Rule.

3.1.3 Environmental Consequences

Effects on air quality are based on estimated direct and indirect emissions associated with the action alternatives. The region of influence (ROI) for assessing air quality impacts is the air basin in which the project is located, the State of Hawai‘i.

3.1.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline air quality. Therefore, no impacts to air quality or air resources would occur with implementation of the No Action Alternative.

3.1.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The Preferred Alternative would not introduce any new major air emissions sources or stationary air emissions sources. Short-term, temporary air emissions (e.g., fugitive dust, combustion of fossil fuels) would be generated during the construction period. These potential impacts will be minor and of short

duration at any one location, as the work would gradually progress along the 2.7-mi long alignment over time and the contractor will employ BMPs to minimize particulate emissions during the construction period. All construction activities will comply with the provisions of HAR 11-60.1-33 (Fugitive Dust). During the operational period, the below-grade water line would not cause direct air quality impacts. Because the new water line would provide the same capacity as the existing line, energy usage at the Waiawa Pump Station would be similar to current levels, and indirect impacts of off-site electrical generation would not be significant.

General Conformity

Because the State of Hawai‘i is in attainment of the NAAQS, the Proposed Action is not subject to the Clean Air Act’s General Conformity Rule. The Preferred Alternative would not involve any new major stationary air emissions sources or major modifications to existing stationary sources.

Greenhouse Gases

Implementation of the Preferred Alternative would contribute directly to emissions of GHGs from the combustion of fossil fuels. Demolition, construction, and clearing activities are estimated to generate less than 25,000 metric tons or more per year of GHG emissions as CO_2e. Once the facility is operational, routine activities would generate approximately the same level of CO_2e each year as is currently produced by the existing water line operations. This limited amount of emissions would not likely contribute to global warming to any discernible extent.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to air quality.

3.1.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

This alternative would have similar insignificant impacts as the Preferred Alternative. No new stationary air emissions sources would be required under this alternative. Air emissions sources during construction would be similar to the Preferred Alternative. However, the construction period under this alternative would be longer due to the longer segment within the Kamehameha Highway ROW, additional utility relocations, and more complex traffic control requirements due to construction within two major signalized intersections (i.e., Kamehameha Highway-Acacia Road and Kamehameha Highway-Waimano Home Road/Lehua Avenue). The same BMPs would be employed as in the Preferred Alternative. Similar to the Preferred Alternative, the Kamehameha Highway-Lehua Avenue Alternative would have no direct air quality impacts in the operational period. Indirect impacts (i.e., air emissions due to off-site electrical energy generation) would be comparable to existing levels due to similar energy usage at Waiawa Pump Station.

Therefore, implementation of this action alternative would not result in significant impacts to air quality.

3.2 Water Resources

This discussion of water resources includes groundwater, surface water, marine waters, marine sediments, wetlands, and floodplains. This section discusses the physical characteristics of water resources; wildlife and vegetation are addressed in Section 3.5, Biological Resources.

Groundwater is water that flows or seeps downward and saturates soil or rock, supplying springs and wells.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. A Total Maximum Daily Load (TMDL) is the maximum amount of a substance that can be assimilated by a water body without causing impairment. A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards occur.

Wetlands are jointly defined by USEPA and U.S. Army Corps of Engineers (USACE) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include "swamps, marshes, bogs and similar areas."

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body. Floodplain boundaries are most often defined in terms of frequency of inundation, that is, the 100-year and 500-year flood. Floodplain delineation maps are produced by the Federal Emergency Management Agency (FEMA) and provide a basis for comparing the locale of the Proposed Action to the floodplains.

Sediments are the solid fragments of organic and inorganic matter created from weathering rock transported by water, wind, and ice (glaciers) and deposited at the bottom of bodies of water. Components of sediment range in size from boulders, cobble, and gravel to sand (particles 0.05 to 2.0 millimeters [mm] in diameter), silt (0.002 to 0.05 mm), and clay (less than or equal to 0.002 mm). Sediment deposited on the continental shelf is delivered mostly by rivers but also by local and regional currents and wind. Most sediment in nearshore areas and on the continental shelf is aluminum silicate derived from rocks on land that is deposited at rates of greater than ten centimeters per 1,000 years.

3.2.1 Regulatory Setting

Groundwater quality and quantity are regulated under several statutes and regulations, including the Safe Drinking Water Act.

The CWA establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES) program, on the amounts of specific pollutants that can be discharged into surface waters to restore and maintain the chemical, physical, and biological integrity of the water. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources (i.e., storm water) of water pollution.

Waters of the United States are defined as (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow perennially or have continuous flow at least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries under Section 404 of the CWA, as amended, and are regulated by USEPA and the USACE. The CWA requires that Hawai'i establish a Section 303(d) list to identify impaired waters and establish TMDLs for the sources causing the impairment.

Section 438 of the Energy Independence and Security Act establishes storm water design requirements for development and redevelopment projects. Under these requirements, federal facility projects larger than 5,000 ft^2 must "maintain or restore, to the maximum extent technically feasible, the

predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow."

The Hawai'i NPDES storm water program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more to obtain coverage under an NPDES Construction General Permit for storm water discharges. Construction or demolition that necessitates an individual permit also requires preparation of a Notice of Intent to discharge storm water and a Storm Water Pollution Prevention Plan that is implemented during construction. As part of the 2010 Final Rule for the CWA, titled *Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category*, activities covered by this permit must implement non-numeric erosion and sediment controls and pollution prevention measures.

Wetlands are currently regulated by the USACE under Section 404 of the CWA as a subset of all "Waters of the United States." The term "Waters of the United States" has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats, including wetlands. Jurisdictional Waters of the United States regulated under the CWA include coastal and inland waters, lakes, rivers, ponds, streams, intermittent streams, and "other" waters that, if degraded or destroyed, could affect interstate commerce. The full regulatory definition of Waters of the United States is provided in the Clean Water Act.

Executive Order 11990, *Protection of Wetlands,* requires that federal agencies adopt a policy to avoid, to the extent possible, long- and short-term adverse impacts associated with destruction and modification of wetlands and to avoid the direct and indirect support of new construction in wetlands whenever there is a practicable alternative.

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill into wetlands and other Waters of the United States. Any discharge of dredge or fill into Waters of the United States requires a permit from the USACE.

Section 10 of the Rivers and Harbors Act provides for USACE permit requirements for any in-water construction. USACE and some states require a permit for any in-water construction. Permits are required for construction of piers, wharfs, bulkheads, pilings, marinas, docks, ramps, floats, moorings, and like structures; construction of wires and cables over the water, and pipes, cables, or tunnels under the water; dredging and excavation; any obstruction or alteration of navigable waters; depositing fill and dredged material; filling of wetlands adjacent or contiguous to waters of the U.S.; construction of riprap, revetments, groins, breakwaters, and levees; and transportation of dredged material for dumping into ocean waters.

Executive Order 11988, *Floodplain Management*, requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development unless it is the only practicable alternative. Flood potential of a site is usually determined by the 100-year floodplain, which is defined as the area that has a one percent chance of inundation by a flood event in a given year. The public review period for EAs would satisfy this requirement for projects occurring in floodplains.

Executive Order (EO) 11988 was amended by EO 13690 "Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input" on January 30, 2015. The EO amended EO 11988 and established the Federal Flood Risk Management Standard (FFRMS) to improve the nation's resilience to current and future flood risks, which are anticipated to increase over time due to the effects of climate change and other threats. Executive Order 13690 is intended to

reduce impacts of flooding on federal investments in and affecting floodplains by having federal actions meet higher flood risk standards, including different approaches for defining "floodplain." For federally funded projects, agencies must use one of four approaches to determine the vertical flood elevation and corresponding horizontal floodplain for a given action. The four approaches are summarized as follows, and their selection depends on the type of action being proposed.

- *Climate-informed Science Approach* uses the best available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science.
- *Freeboard Value Approach* uses the Base Flood Elevation (or 1-percent-annual-chance flood determined using best available data) and an additional height to calculate the freeboard value. The additional height will depend on whether or not the action is a critical action.
- *The 0.2-percent-annual-chance Flood Approach* uses the 0.2-percent-annual-chance flood elevation (also known as the 500-year flood elevation).
- Any other method identified in an update to the FFRMS.

Section 2(i)(2) of EO 13690 allows for federal agency heads to except agency actions due to national security, where its application is demonstrably inappropriate, or when the action is a mission-critical requirement related to national security. According to EO 13690 Section 3(c), each agency shall issue or amend existing regulations and procedures to comply with the EO (and prescribes a timetable for an implementation plan) after the Water Resources Council issues amended guidelines. New guidelines for implementing EO 11988 and EO 13690 were published on October 8, 2015; however, agencies will continue to comply with the requirements of the 1977 version of EO 11988 until they update their regulations and procedures to incorporate the amendments from EO 13690. EO 11988 states that agencies shall provide opportunity for early public review of any plans or proposals for actions in floodplains.

The Coastal Zone Management Act of 1972 (CZMA) provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs in coastal zones. Section 307 of the CZMA stipulates that where a federal project initiates reasonably foreseeable effects to any coastal use or resource (land or water use, or natural resource), the action must be consistent to the maximum extent practicable with the enforceable policies of the affected state's federally approved coastal management plan. The Hawaiʻi DBEDT OP is the lead agency for coastal management and is responsible for enforcing the State's federally approved coastal management plan. However, federal lands, which are "lands the use of which is by law subject solely to the discretion of…the Federal Government, its officers, or agents," are statutorily excluded from the State's "coastal zone." If, however, the proposed federal activity affects coastal resources or uses beyond the boundaries of the federal property (i.e., has spillover effects), the CZMA Section 307 federal consistency requirement applies. As a federal agency, the DoN is required to determine whether its proposed activities would affect the coastal zone. This takes the form of either a Negative Determination or a Consistency Determination. The Proposed Action's requirements under and compliance with CZMA are discussed in Section 5.1.

3.2.2 Affected Environment

The following discussions provide a description of the existing conditions for each of the categories under water quality resources at the project area.

3.2.2.1 Groundwater

On O‘ahu, groundwater occurs principally as either basal water (a lens of fresh to brackish water that floats on seawater) or high-level water (freshwater that does not rest on seawater). Basal water is the most abundant form of groundwater on O‘ahu (CNRH 2011). The Waiawa Pump Station draws water from the Waiawa Shaft (State Well No. 3-2558-010), which is located in the Waipahu-Waiawa aquifer system. The Commission on Water Resource Management (CWRM) (attached to the State of Hawai‘i’s Department of Land and Natural Resources) regulates the use of water resources in water management areas, including administering permit systems for the construction of wells and water use. (See Section 3.7.1.1 for a discussion of the project-related potable water system.)

3.2.2.2 Surface Water

The project area is located within the Pearl Harbor watershed, a 110-square mile watershed subdivided into nine subwatersheds. These subwatersheds contain the headwaters of nine streams that drain into Pearl Harbor (CNRH 2011). The project area is located within the Waiawa subwatershed of the Pearl Harbor watershed. Waiawa Stream, in the vicinity of the proposed water line route, is a perennial stream that flows into the Pearl Harbor estuary, a coastal area where fresh water from rivers and streams mix with salt water from the ocean. The State of Hawai‘i Department of Health classifies the waters of Pearl Harbor as an inland estuary, Class 2. The objective of Class 2 waters is to protect their use for recreational purposes, propagation of fish and other aquatic life, and agricultural and industrial water supplies, shipping, navigation, and propagation of shellfish. Discharges into Class 2 waters must receive the best degree of treatment or control compatible with the criteria established for this class.

3.2.2.3 Wetlands

The project area does not include critical habitat areas, biologically sensitive areas, or known jurisdictional wetlands. The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory indicates the presence of freshwater emergent wetlands in the oxbow bend of Waiawa Stream approximately 400 feet southwest of the project area’s alignment within OUGC. A 2007 wetlands inventory prepared for DoN property around Pearl Harbor (Wil Chee, Inc. and AECOS 2007) documents the presence of wetlands south of the project area alignment through OUGC (south of H-2 Freeway and within Pearl City Peninsula). As noted in Section 3.3.1.3, soils within the project area closest to off-site wetlands are classified by the U.S. Department of Agriculture Natural Resources Conservation Service as “Kawaihapai clay loam, 0 to 2 percent slopes, MLRA 158,” which are well drained soils with very low runoff found on drainageways on mountain slopes and alluvial fans. Properties of this soil type include occasional frequency of flooding and no frequency of ponding, with moderate available water storage in profile. Its typical profile includes clay loam from 0 to 22 inches and sandy loam from 22 to 54 inches.

The USACE has recommended that the DoN request a Department of the Army (DA) permit determination to confirm the project’s DA permit requirements, and which would include, among other material, a delineated wetland boundary for any USACE-jurisdictional wetlands present within the project boundary. The DoN will confirm the likelihood and/or presence or absence of jurisdictional wetlands located within the project area prior to construction.

The Waiawa Unit of the Pearl Harbor National Wildlife Refuge (NWR) (along the northwest shore of Pearl City Peninsula) provides protected habitats for threatened and endangered waterbirds. This NWR Unit is located approximately 0.5 miles to the southeast of the replacement water line corridor through the OUGC.

3.2.2.4 Floodplains

According to Flood Insurance Rate Map (FIRM) data produced by the Federal Emergency Management Agency (FEMA), sections of the project area are located in areas with different flood hazards (see Figure 3-1). The relevant flood hazard zones area summarized in Table 3-1.

The upper section of the proposed water line (in both action alternatives) within DoN property and along Waihona Street is located in Zone D. Some sections of the proposed water line alignments for both action alternatives located within the Waihona Street and Kamehameha Highway ROWs are located in Zone AE (also known as the "base flood"). A segment on Waihona Street and most of the Preferred Alternative alignment along Kamehameha Highway are located in Zone X. Short segments of the proposed water line alignment on Waihona Street and Kamehameha Highway are located in Zone X/Other Flood Areas (also known as the "500-year flood"). Small sections of the water line alignment in Waihona Street for both action alternatives and much of the Preferred Alternative alignment within the southern section of OUGC are located within Zone AE Floodway. In the Kamehameha Highway-Lehua Avenue Alternative, most of the water line alignment along those two roadways is located in Zone X/Other Flood Areas. A short segment at the intersection of Kamehameha Highway and Lehua Avenue is located in Zone D.

Table 3-1 Flood Zones

Flood Zone & Description	*Figure 3-1 Label*
Zone D: Areas in which flood hazards are undetermined, but possible	Zone D
Zone X: Areas determined to be outside the 0.2 percent annual chance flood	Zone X
Zone X: Other Flood Areas of 0.2 percent annual chance flood; areas of one percent annual chance flood with average depths of less than one ft or with drainage areas less than one square mile; and areas protected by levees from one percent annual chance flood (also known as the "500-year flood")	Zone X/Other Flood Areas
Zone AE: Special flood hazard areas subject to inundation by the one percent annual chance flood, base flood elevations determined" (also known as the "base flood")	Zone AE
Zone AE Floodway: Channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the one percent annual chance flood can be carried without substantial increases in flood heights.	Zone AE Floodway
Source: FEMA 2011	

3.2.3 Environmental Consequences

This analysis focuses on water resources that are important to supporting habitat for wildlife or vegetation or are protected under federal or state law or statute.

3.2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline water resources. Therefore, no impacts to water resources would occur with implementation of the No Action Alternative.

3.2.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

In the Preferred Alternative, the excavated areas would be returned to their pre-development condition. Therefore, the predevelopment hydrology of the affected environment would be maintained or restored

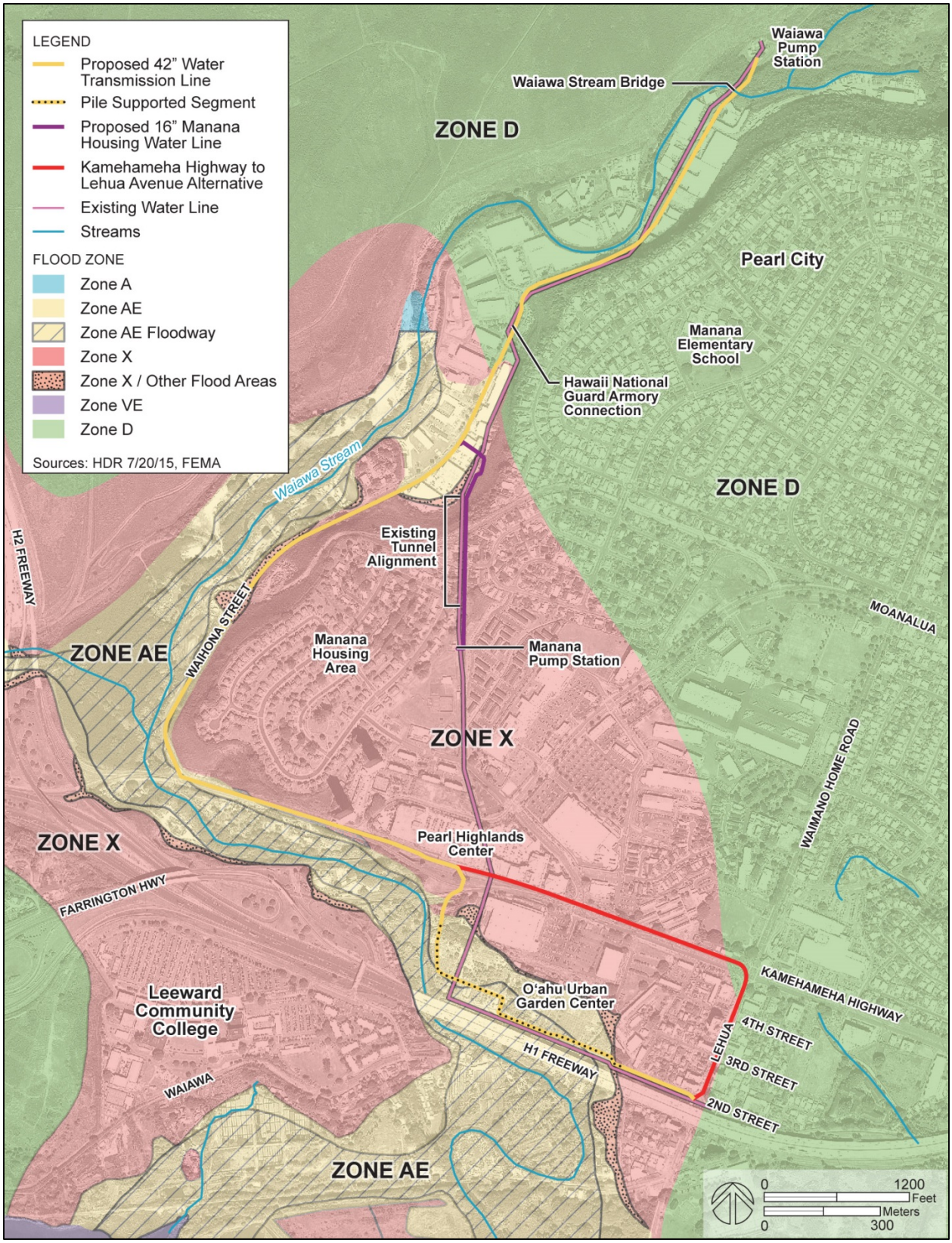


Figure 3-1 Flood Zones

to the maximum extent technically feasible, with regard to the temperature, rate, volume, and duration of flow, and there would be insignificant operational period impacts.

Implementation of the Preferred Alternative would not introduce new sources of pollutants or contaminants into pathways that may migrate to groundwater sources. Creation and use of construction staging and work areas would involve ground disturbance, which has the potential to result in temporary impacts such as sediments or pollutants being transported to surface waters such as Waiawa Stream and Pearl Harbor. Because more than one acre of land is anticipated to be disturbed for construction, an NPDES permit would be required for the construction activities, including a SWPPP. This potential would be minimized by implementing BMPs such as temporary sediment barriers at existing catch basins and drain inlets downstream of open trenches along the pipeline route. Although the project does not include alteration or construction within Waiawa Stream, the proposed pipe bridge over Waiawa Stream would involve construction work over waters of the U.S., and a USACE Rivers and Harbors Act Section 10 Permit would be required. Conditions of the NPDES and USACE permits would be complied with to further reduce the potential for construction period project-related sediments and pollutants to be transported to receiving surface waters, including coastal and marine waters or wetlands.

The Preferred Alternative would not result in the destruction or modification of or new construction in any known wetlands. The Preferred Alternative would not involve the discharge of dredge or fill into any known wetlands or other Waters of the United States. The DoN will confirm the likelihood and/or presence or absence of jurisdictional wetlands located within the project area prior to construction. If any jurisdictional wetlands are identified within the project area, the DoN will coordinate with USACE to avoid, minimize and/or mitigate impacts resulting from the Proposed Action.

Due to its location within the floodplain, the Preferred Alternative is subject to EO 11988 and EO 13690. The EOs require that federal agencies follow a prescribed decision-making process that includes consideration of alternatives to avoid adverse effects and incompatible development in floodplains; minimization of potential harm to or within the floodplain through design or action modifications; and public notification.

Based on the Freeboard Value Approach defined in EO 13690 Section 2(i)(1)(ii) (i.e., using the base flood to determine the horizontal floodplain), the Preferred Alternative is located in a floodplain and must meet the requirements of EO 11988. Specifically, an eight-step decision-making process is required to help agencies evaluate projects that have potential impacts to or within the floodplain and how the impacts can be avoided or minimized. The eight steps are summarized below.

1. Determine if a proposed action is in the base floodplain.
2. Conduct early public review, including public notice.
3. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.
4. Identify impacts of the proposed action.
5. If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain, as appropriate.
6. Reevaluate alternatives.
7. Present the findings and a public explanation.

8. Implement the action.

The EO 11988 eight-step decision-making process will be conducted for the Preferred Alternative. This Draft EA and publication of the notice of its availability serve as Step 2 of the process.

Alternatives to the Preferred Alternative were evaluated to determine if they were practicable, including alternative sites, alternative actions, and no action. The connection points for the replacement water line are fixed at the north and south ends (i.e., Waiawa Pump Station and an existing water line at the intersection of Lehua Avenue and Second Street), so alternative locations would involve different alignments connecting the two connection points. To completely avoid locating the action in the floodplain, a replacement line would have to be constructed in a circuitous route through Pearl City. This would be impractical, as the water line would have to be routed from Waiawa Pump Station to upper Pearl City, significantly increasing its length. This alternative would require alignment through inaccessible areas, which would prevent maintenance activities and hinder emergency access in the event of a water main break. The Kamehameha Highway-Lehua Avenue Alternative that is carried through this EA would reduce but not eliminate the length of replacement water line located in the floodplain (see Section 3.2.3.3). Because both alternative replacement water lines would be located subsurface, neither would affect the floodplain or floodway. As described in Section 2.3.3, there are issues with the constructability and ease of maintenance of the Kamehameha Highway-Lehua Avenue Alternative. Therefore, it is not the Navy's Preferred Alternative and is not considered a practicable alternative to locating in the floodplain.

Alternative actions were also considered, including renovation and modernization of the existing water line. As described in Section 2.4.1, this is not a cost effective alternative due to the need to construct a temporary bypass line as well as an additional permanent 12-in line. It would also be inferior to the Preferred Alternative with respect to constructability and ease of maintenance because it would not avoid construction under major facilities (e.g., Pearl Highlands Center parking structure). Therefore, this alternative action is not considered practicable. No action is not practicable because the existing water line would continue to age and deteriorate, leading to the eventual failure of potable water service to JBPHH and military family housing areas.

The Preferred Alternative would not involve the placement of any permanent above ground structures within the floodplain or floodway and would not result in a modification to the floodplain or floodway. Design plans are being or will be reviewed by pertinent state and city agencies for approval. Because the replacement water line segments that are located in the floodplain would be located underground and provide the same capacity as the exiting line, there would be no adverse direct or indirect effects to the floodplain and no modifications are needed to minimize impacts on the existing floodplain.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to water resources.

3.2.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts to water resources as the Preferred Alternative. This alternative would involve ground disturbance for trenching and staging areas. Conditions of the required NPDES and SWPPP along with project BMPs would minimize potential for sediments or pollutants disturbed by construction to reach surface waters. Similar to the Preferred Alternative, the Kamehameha Highway-Lehua Avenue Alternative would not modify or involve the discharge of dredge or fill into known wetlands or other Waters of the United

States. Jurisdictional wetlands are unlikely to be located in the Kamehameha Highway-Lehua Avenue Alternative project area, as the segments that differ from the Preferred Alternative are located entirely within public roadway ROWs.

In this alternative, portions of the water line would also be located within the floodplain, though to a lesser extent than the Preferred Alternative. Under this alternative, short segments of the water line would be located in Zone AE Floodway areas along Waihona Street and Kamehameha Highway. Similar to the Preferred Alternative, this alternative would have insignificant floodplain impacts. The replacement water line segments that are located in the floodplain in this alternative would be located underground and provide the same capacity as the existing line. Thus, there would be no adverse direct or indirect effects to the floodplain.

Therefore, implementation of this alternative would not result in significant impacts to water resources.

3.3 Geological Resources

This discussion of geological resources includes topography, geology, and soils of a given area. For projects involving in-water demolition or construction, this may also include bathymetry. Topography is typically described with respect to the elevation, slope, and surface features found within a given area. The geology of an area may include bedrock materials, mineral deposits, and fossil remains. The principal geological factors influencing the stability of structures are soil stability and seismic properties. Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility determine the ability for the ground to support structures and facilities. Soils are typically described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular construction activities and types of land use. Bathymetry is described in terms of the topography of the sea floor or river bottoms where the Proposed Action would occur.

3.3.1 Affected Environment

The following discussions provide a description of the existing conditions for each of the categories under geological resources at the project area located in Pearl City and Waiawa, Oʻahu, Hawaiʻi.

3.3.1.1 Topography

The highest at-grade point of the project area is at its connection to Waiawa Pump Station, at an elevation of approximately 120 ft above mean sea level (MSL). The project area slopes down along Waihona Road to Kamehameha Highway, with elevations of approximately 30 to 35 ft, ending at approximately 40 ft above MSL along Second Street near Lehua Avenue. Ground surface elevations along the proposed water line route within the OUGC property range from about 36 ft above MSL at the northwest end, to approximately 12 ft above MSL in the central southern section, to about 23 ft above MSL at the eastern end of the proposed water line route. There are no unique surface features in the project area. The proposed 16-in water line alignment ranges from about 50 to 60 ft above MSL where it branches off from Waihona Street to about 110 ft above MSL near the Manana Pump Station.

3.3.1.2 Geology

Oʻahu was initially formed by two massive, extinct shield volcanoes: Waiʻanae on the west and Koʻolau on the east. These volcanoes are separated by the Schofield Plateau of central Oʻahu, which was formed by the lavas from the Koʻolau Range banking against the older Waiʻanae Range. North and south of the

Schofield Plateau is O‘ahu’s coastal plain, which is composed of marine and terrigenous sediments deposited when the sea stood at a higher level or stand. The geology of the project area at Waiawa Pump Station consists primarily of basaltic volcanic bedrock from the Ko‘olau volcano and volcanic alluvium derived from eroded basalt which was transported by stream and sheet flow to the area (CNRH 2011). Along Waihona Street, the project area is located along the erosional slopes of the Ko‘olau volcano, while along the Kamehameha Highway and OUGC corridors, the geology is generally comprised of fills placed over soft harbor mud underlain by old alluvium and volcanic tuff (City and County of Honolulu 2008). There are no unique geological features or landmarks within the project area; most of the project area lies within developed roadway ROWs, with the balance located in an educational public urban garden setting (i.e., OUGC).

3.3.1.3 Soils

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) classifies the soils within the project area (for both the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative) as shown in Figure 3-2 and described in Table 3-2.

Table 3-2 NRCS Soil Classifications in the Project Area

Map Unit Symbol	*Map Unit Name*	*Description*
FL	Fill land, mixed	Well drained soils with negligible runoff found on flats.
HxA	Honouliuli clay, 0 to 2 percent slopes	Well drained soils with negligible runoff found in alluvial flats with slopes of 0 to 2 percent.
KlA	Kawaihapai clay loam, 0 to 2 percent slopes, MLRA 158	Well drained soils with very low runoff found on drainageways on mountain slopes and alluvial fans.
KlaB	Kawaihapai stony clay loam, 2 to 6 percent slopes, MLRA 158	Well drained soils with very low runoff found on drainageways on alluvial fans and mountain slopes.
KlB	Kawaihapai clay loam, 2 to 6 percent slopes	Well drained soils with very low runoff found on alluvial fans.
MuB	Moloka‘i silty clay loam, 3 to 7 percent slopes	Well drained soils with low runoff found on shoulder landforms.
rRK	Rock land	Well drained soils with very high runoff found on Pahoehoe lava flows.
WzB	Waipahu silty clay, 2 to 6 percent slopes	Well drained soils with low runoff found on terraces.
NRCS Web Soil Survey National Cooperative Soil Survey (accessed December 2015)		

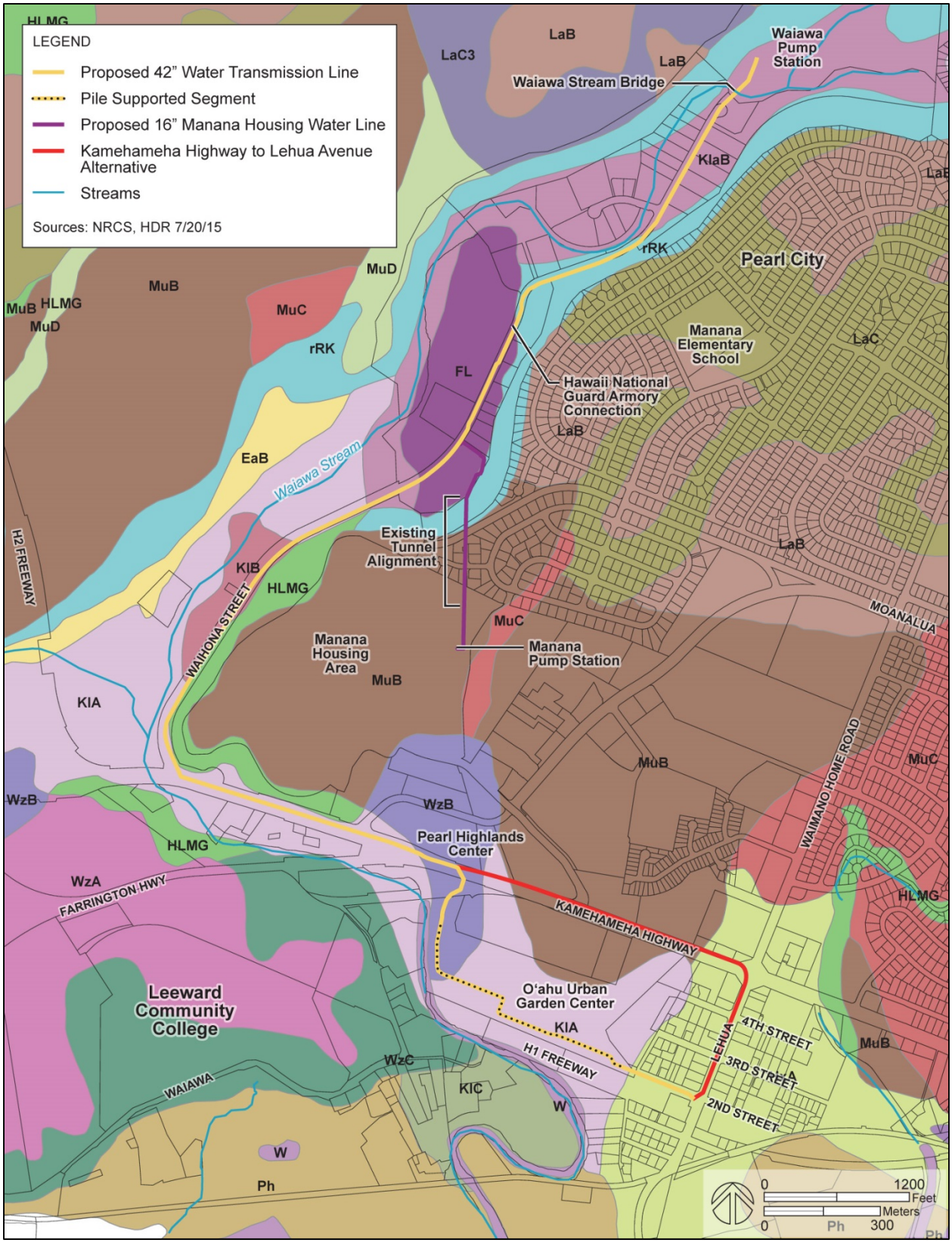


Figure 3-2 NRCS Soil Classifications

The Land Study Bureau (LSB) of the University of Hawaiʻi prepared an inventory and evaluation of the State's land resources during the 1960s and 1970s. The LSB evaluated the quality or productive capacity of certain lands for selected crops and overall suitability for agricultural use. A five-class productivity rating system was established with "A" representing the class of highest productivity and "E" the lowest. The project area for both alternatives along the lower segment of Waihona Street is adjacent to lands classified by LSB as having the highest agricultural productivity rating; the balance of the proposed water line route under both action alternatives is in lands not classified by LSB (see Figure 3-3).

The Agricultural Lands of Importance in the State of Hawaiʻi (ALISH) land classification system was developed by the State Department of Agriculture in 1977. Most of the project area for both action alternatives is located in urbanized lands that are not classified under the ALISH system. The Waiawa Pump Station area is classified as "Other Important Agricultural Land" and the portion of the Preferred Alternative's route within OUGC is classified as "Prime" agricultural land (see Figure 3-4). The OUGC provides horticultural information to the gardening public as a one-stop educational center through programs, demonstrations, and a variety of gardens and plant collections (University of Hawaiʻi 2011).

A geotechnical investigation was conducted in 2015 to assess subsurface conditions along the proposed water line alignment. Twenty soil test borings along the proposed water line alignment were extracted to depths ranging from approximately 30.5 ft to 82.5 ft below existing grades. Subsurface conditions encountered in the borings along Waihona Street, Kamehameha Highway, Second Street, and Manana Housing generally consisted of firm alluvium, colluvium, residual, saprolite, and/or basaltic rock. Subsurface conditions along the proposed water line alignment within the OUGC property generally consisted of variable amounts of fill underlain by weak and compressible estuarine and marsh deposits, which were further underlain by firm alluvium, clinker, and basaltic rock. Highly variable groundwater conditions were encountered in the 2015 borings and in earlier borings by others. The proximity of some of the borings to Waiawa Stream suggests that groundwater levels in this area may be affected by water levels in the stream and rainfall (Pacific Geotechnical Engineers, Inc. 2016).

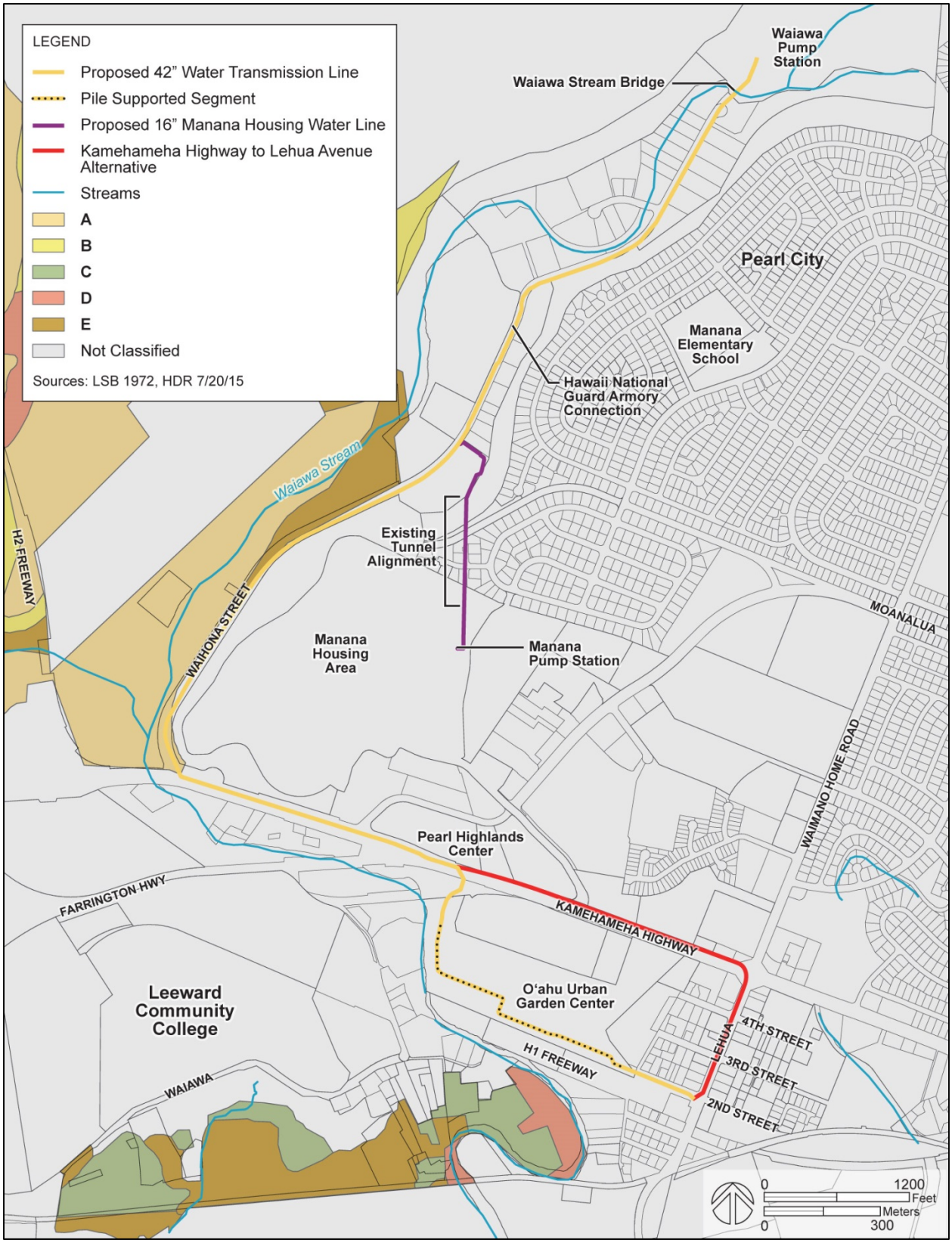


Figure 3-3 Land Study Bureau Soil Ratings

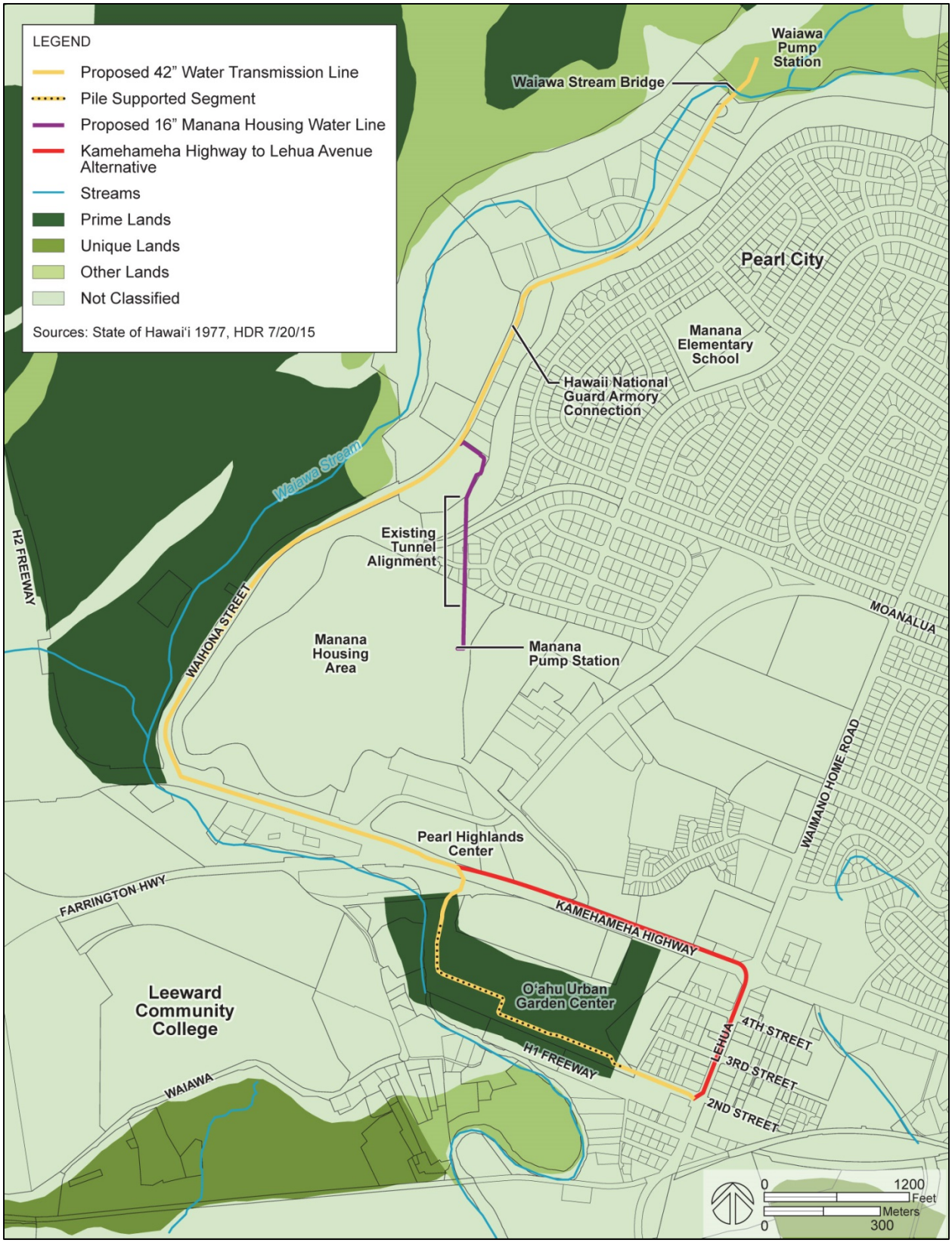


Figure 3-4 Agricultural Lands of Importance to the State of Hawai'i Classifications

3.3.1 Environmental Consequences

This analysis focuses on unique geological resources or landmarks and the continuation of soils suitability for current and planned land uses within the project area.

3.3.1.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline geology, topography, or soils. Therefore, no impacts to geological resources would occur with implementation of the No Action Alternative.

3.3.1.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The study area encompasses the proposed construction and ground disturbance areas related to the Preferred Alternative. During construction, existing soils would be excavated to install the replacement water line and remove short sections of the existing water line. No unique geological features or landmarks would be affected. Where their properties allow, excavated soils would be used as general backfill material for unpaved areas. In paved areas and where the properties of the excavated soils do not meet design specifications for unpaved areas, imported subbedding, pipe bedding, or CLSM would be used as backfill material to provide sufficient bearing capacity.

Subsurface conditions at the OUGC project area would require deep foundation support for the proposed water line due to the potential for differential settlement and water line distress. The deep foundation support may consist of 16.5-in octagonal driven precast/prestressed concrete piles, or other appropriate pile type (see Figure 2-1 for approximate pile-supported segment). The eastern end of the pile supported alignment is anticipated to be supported by drilled and grouted micropiles to accommodate a setback area for overhead electrical power lines. (Note: The exact shape, diameter, depth, number, and spacing of piles would be determined prior to construction based on more detailed site specific engineering evaluations.)

The proposed water line pipe bridge at Waiawa Stream would be constructed with deep foundation support consisting of drilled caisson-supported abutments to address the potential for channel abutment scour and to resist anticipated service, seismic, and flood loads.

To reduce potential vibration-induced ground settlement from construction activities, vibratory hammers and other vibratory equipment would not be used in the Preferred Alternative.

During construction, a geotechnical specialist will be present part-time during excavating, trenching, dewatering, subgrade preparation, and backfilling and compaction for quality control purposes. The geotechnical specialist will be present at the construction site full-time during pile predrilling and installation, pile load testing, and drilled shaft installation and testing for quality control purposes.

During the construction period, some trees and other vegetation would be relocated from the construction route. During the operational period, the Preferred Alternative would not result in permanent changes to uses and activities at the OUGC or to the overall productivity of its soils.

During the operational period, there would be no impacts to geological resources, as the excavated areas would be backfilled and stabilized. Therefore, implementation of this alternative would not result in significant impacts to geological resources.

3.3.1.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

The study area encompasses the proposed construction and ground disturbance areas related to the Kamehameha Highway-Lehua Avenue Alternative. This alternative would have similar insignificant impacts to geological resources as the Preferred Alternative. Where required, deep foundations would be installed to support the proposed water line and the new Waiawa Stream pipe bridge. No unique geological features or landmarks would be affected. Similar to the Preferred Alternative, a geotechnical specialist will be present part-time during excavating, trenching, dewatering, subgrade preparation, and backfilling and compaction for quality control purposes during construction. Areas excavated during construction activities would be backfilled with suitable material and stabilized. In this alternative, the requirement for pile support is undetermined.

Therefore, implementation of this alternative would not result in significant impacts to geological resources.

3.4 Cultural Resources

This discussion of cultural resources includes prehistoric and historic archaeological sites; historic buildings, structures, and districts; and physical entities and human-made or natural features important to a culture, a subculture, or a community for traditional, religious, or other reasons. Cultural resources can be divided into three major categories:

- Archaeological resources (prehistoric and historic) are locations where human activity measurably altered the earth or left deposits of physical remains.
- Architectural resources include standing buildings, structures, landscapes, and other built-environment resources of historic or aesthetic significance.
- Traditional cultural properties may include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture.

3.4.1 Regulatory Setting

Cultural resources are governed by other federal laws and regulations, including the National Historic Preservation Act (NHPA), Archeological and Historic Preservation Act, American Indian Religious Freedom Act, Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1990. Federal agencies' responsibility for protecting historic properties is defined primarily by sections 106 and 110 of the NHPA. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties. Section 110 of the NHPA requires federal agencies to establish—in conjunction with the Secretary of the Interior—historic preservation programs for the identification, evaluation, and protection of historic properties. Cultural resources also may be covered by state, local, and territorial laws.

3.4.2 Affected Environment

Cultural resources that are listed or eligible for listing in the National Register of Historic Places (NRHP) are "historic properties" as defined by the NHPA. The list was established under the NHPA and is administered by the National Park Service on behalf of the Secretary of the Interior. The NRHP includes properties on public and private land. Properties can be determined eligible for listing in the NRHP by the Secretary of the Interior or by a federal agency official with concurrence from the applicable State

Historic Preservation Office (SHPO). A NRHP-eligible property has the same protections as a property listed in the NRHP. The historical properties include archaeological and architectural resources.

The Navy conducted a literature review of cultural resources studies at in the vicinity of the project area to identify historical properties that are listed or potentially eligible for listing in the NRHP.

The area of potential effect (APE) for cultural resources is the geographic area or areas within which an undertaking (project, activity, program or practice) may cause changes in the character or use of any historic properties present. The APE is influenced by the scale and nature of the undertaking and may be different for various kinds of effects caused by the undertaking. By letter dated October 2, 2015, the DoN determined that the Proposed Action is an "undertaking" as defined in CFR 800.16(y) (see Appendix B). The location of the Proposed Action or undertaking for the approximately 2.7-mi, 42-in water line runs from the DoN's Waiawa Pump Station at the end of Waihona Street to the intersection of Lehua Avenue and Second Street, via Waihona Street, Kamehameha Highway, and the OUGC. The Proposed Action also includes approximately 1,000 LF of 16-in water line branching off from Waihona Street through an existing tunnel to the Manana Pump Station. For this Proposed Action, the Navy determined that the APE includes approximately 12.5 acres and includes an area defined as a 5-meter (m) area on either side of the proposed water line to account for unforeseen site conditions.

Previous studies, including archival research on traditional and historic land use, offer an indication as to the types of properties characteristic of the area as well as the likelihood of encountering historic properties during project implementation. The DoN conducted identification efforts consistent with 36 CFR Part 800.4(b)(1) and included Native Hawaiian Organizations in its NHPA Section 106 consultation process to provide an opportunity to comment and assist with the identification of historic properties.

3.4.2.1 Archaeological Resources

A number of archaeological studies and surveys have been conducted in the vicinity of the Proposed Action (see Appendix B NHPA Section 106 Correspondence for map of survey areas and summaries of findings). A review of the previous studies indicated an absence of cultural deposits in the vicinity of the Proposed Action, which is consistent with the intensive land modification associated with development of the Pearl City area.

3.4.2.2 Architectural Resources

Waihona Street was originally constructed by the DoN as an access road to the Naval Aviation Supply Depot (NASD) area, formerly known as U.S.N. Road. Pacific Naval Air Bases contractors constructed the supply depot that extended along Waiawa Stream for two miles and originally contained 50 World War II wooden structures with 20 auxiliary warehouses constructed by the Seabees just south of the Manana Naval Supply Center near Kamehameha Highway. The Waiawa Gulch NASD World War II facilities were not identified as historic resources at the time of their transfer out of Navy ownership.

The Waiawa Pump Station area, within the former World War II naval storage area, was constructed in 1944. The pump station (Facility S71), is located in the northern portion of the APE and was part of the former Waiawa NASD area. The facility was designed in 1949 by the 14th Naval District Public Works and constructed in 1951. The pumping plant and head house are considered historic under NRHP Criteria A and C along with other Navy pumping plants around Pearl Harbor. Facility S71 and its associated period engineering features are considered significant for its association with the post-war urbanization of O'ahu and its municipal civil engineering and architectural design. Photo A of Figure 2-2 is a photograph of the pump station.

A historic water tunnel also associated with the NASD facilities is located in the APE from Waihona Street and traverses underground to the Manana Housing area. The existing 42-in water line (to be removed) runs through the tunnel. While no formal evaluation of the tunnel has been conducted, the Navy is treating the tunnel as an historic property.

The southern NASD area formerly supported warehouses, which were demolished to make way for construction of the Home Depot store on Kamehameha Highway. The only building that exists today in this area is Quonset Hut 33, formerly used as a Galley Storehouse at the center of the small housing encampment. This personnel area during World War II housed segregated African-American sailors who were assigned as stevedores to the various naval supply areas associated with Pearl Harbor. The Quonset Hut is not within the APE for this undertaking.

The Navy-owned Jean Boyle Bridge (1944) (referred to in this EA as Waiawa Stream Bridge) crosses Waiawa Stream on Navy property and is also within the APE for this undertaking. While no formal evaluation of the bridge has been identified, the Navy is treating the bridge as potentially eligible for listing in the NRHP. The Navy's existing 42-in water line that is connected to the bridge and the associated supports are considered secondary equipment and not character-defining features of the bridge. Correspondence with the Hawaiʻi State Historic Preservation Division on Jean Boyle Bridge (Waiawa Stream Bridge) is included in Appendix B.

3.4.2.3 Traditional Cultural Properties

A Traditional Cultural Property (TCPs) is generally one eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (U.S. Department of Interior, 1998). Though the NRHP does not include intangible resources, the identification of TCPs can help preserve the physical properties associated with the intangible aspects of a local community's cultural history.

The 2012 Traditional Cultural Properties Study – Technical Report for Sections 1-3 of the Honolulu High Capacity Transit Corridor Project (HHCTP), completed by Kumu Pono Associates LLC was reviewed to identify any TCPs that may be present within the Waiawa water transmission line APE, as portions of the Kumu Pono (2012) study area overlap with the proposed replacement water line study area. No TCPs were identified within the areas of overlap between the Kumu Pono (2012) study area and the proposed replacement water line APE. The Land Commission Awards for the HHCTP project area do not reference traditional ceremonial sites or religious features (Kumu Pono Associates, LLC, 2012).

A more detailed discussion on the other cultural resources for the project area, including intangible culture, is included in the cultural impact assessment (CIA) prepared for the Proposed Action (see Section 3.4.2.4). The CIA includes information gathered through existing literature, archival documents, historic maps, and oral traditions of the Waiawa and Mānana *ahupuaʻa* (traditional Hawaiian land division usually extending from the uplands to the sea).

3.4.2.4 Cultural Impact Assessment

A CIA was prepared to identify any practices customarily and traditionally exercised for subsistence, cultural and religious purposes associated with the project area, and to address the effects that the Proposed Action may have on these practices. The report was conducted following protocols established by the State of Hawaiʻi OEQC, and this section summarizes the study's findings. The full report is included as Appendix C.

Archival research of secondary source materials, such as historical and anthropological documents, was conducted to understand and identify land use trends over time. This research included the review of historical documents and maps pertaining to the Waiawa and Mānana *ahupuaʻa*, through which the proposed replacement water line alignment traverses. In addition, efforts were made to find community members or kūpuna who have a relationship with the land in the vicinity of the project area. Upwards of 25 individuals or organizations were consulted for the project; however, the consultation process—including follow up efforts—did not yield interviews.

The broad coastal plain surrounding Pearl Harbor and streams that bisect the coastal lowlands provided a favorable environment for taro cultivation. A review of the records of the Māhele (land division) of 1848 for the lands in Waiawa and Mānana *ahupuaʻa* were conducted to understand the land use practices at the time of the Māhele. The records indicate that the primary land uses and features in these areas included agricultural uses such as taro fields, agricultural fields, dry land farming, fishponds, and pasture lands; trails and government roads; and houses and house lots. Records for the land awards in the immediate vicinity of the project area indicate that land in this area (near Waiawa Stream along what is presently Kamehameha Highway) was used for house lots, dryland crops, taro fields (see Appendix C for Land Commission Award information).

Other land uses supplanted wetland taro cultivation during the latter half of the 19th century, with lands converted to livestock grazing, rice cultivation, and plantation sugar cane and pineapple production. Plantation workers immigrated from Japan and the Philippines, and in the early 1900s, plantation camps were established for pineapple cannery workers within the Waiawa *ahupuaʻa*. Sugar cane eventually replaced pineapple in this area, displacing the camps and cannery.

U.S. military acquisition and use of Pearl Harbor and its surrounding lands began in the late 1800s and continued through the early 1900s with the build-up of the naval base and submarine base. A military reservation was established within the Waiawa *ahupuaʻa* (north of the project area), and after the Japanese attack on December 7, 1941, the base at Pearl Harbor underwent a major expansion that included most of Waipiʻo and Pearl City Peninsulas (Tuggle & Tomonari-Tuggle, 2004). Military land use included the NASD that extended along Waiawa Stream for two miles, parallel to the current Waihona Street, which was originally constructed by the Navy to provide access to NASD. The southern NASD area (i.e., area north of the Preferred Alternative alignment through OUGC) once supported warehouses; it now contains the OUGC educational facility and a home improvement retailer. One World War II-era Quonset hut remains within the OUGC property, but is not within the project area.

Although no current traditional practices or resources were identified within the project area, there may be unidentified Native Hawaiian or other cultural practices customarily and traditionally exercised for subsistence, cultural, or religious purposes taking place in nearby Waiawa Stream and Pearl Harbor, which formerly provided resources used in traditional practices (e.g., fishing, fishponds and traps).

3.4.3 Environmental Consequences

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may be the result of physically altering, damaging, or destroying all or part of a resource, altering characteristics of the surrounding environment that contribute to the importance of the resource, introducing visual, atmospheric, or audible elements that are out of character for the period the resource represents (thereby altering the setting), or neglecting the resource to the extent that it deteriorates or is destroyed. Indirect impacts are those impacts caused by the action but are later in time or farther removed in distance, or that may be induced by changes caused by the action.

3.4.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to cultural resources. Therefore, no impacts to cultural resources would occur with implementation of the No Action Alternative.

3.4.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The Proposed Action would not significantly impact cultural resources. The Proposed Action will have no adverse effect on historic properties under Section 106. As defined in the implementing regulations for Section 106 of the NHPA, impacts of an undertaking on significant cultural resources are considered adverse if they “diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association” (36 CFR § 800.5(a)(1)).

In accordance with Section 106 of the NHPA, the DoN consulted with the Hawaiʻi SHPO, National Park Service, Advisory Council on Historic Preservation, Historic Hawaiʻi Foundation, National Trust for Historic Preservation, Office of Hawaiian Affairs, Oʻahu Council of Hawaiian Civic Clubs, and ʻAiea Hawaiian Civic Club regarding the undertaking (see correspondence in Appendix B). Because the work to install the new water main and tie-ins would not affect the Waiawa Pump Station or water transmission tunnel, the DoN determined that the proposed undertaking would have no adverse effect on any historic properties within the APE. The DoN also determined that proposed undertaking would have no adverse effect on the nearby Pearl Harbor National Historic Landmark. Because they are considered secondary equipment and not character-defining features of the bridge, removal of the existing 42-in water line and supports from the Jean Boyle Bridge (Waiawa Stream Bridge) would not have an adverse effect on the bridge. In addition, the absence of cultural deposits from previous archaeological studies in the vicinity is consistent with intensive land modification associated with the development of the Pearl City area and supports the finding of effect.

In accordance with Section 106 of the NHPA, the Navy consulted with SHPO and other consulting parties regarding a finding of "no adverse effect" to historic properties for the Proposed Action. No objections were received and concurrence was assumed in accordance with 36 CFR 800.5(c) (see Appendix B for correspondence). In the event that there are inadvertent discoveries of cultural resources during the project, work must cease to allow the find to be assessed by DoN archaeologists. If the resource is determined to be significant, the DoN will initiate Section 106 consultation.

Based on its historical and current land use, there are no Native Hawaiian or other ethnic group’s cultural customs and traditions exercised for subsistence, cultural or religious purposes known to be practiced within the project area at this time. The Preferred Alternative would not impact traditional Hawaiian, or other ethnic group’s, rights related to gathering, access, or other customary activities exercised for subsistence, cultural and religious purposes because construction activities would take place generally in public roadways and DoN-controlled limited access areas. Coordination with OUGC would limit potential impacts to horticultural and educational activities during construction. During the operational period, the disturbed area would return to pre-construction conditions. When completed, the subsurface water lines would not impact above-ground activities or practices.

In addition to the standard operating procedures (SOPs) cited above regarding inadvertent discoveries of cultural resources during any project-related activity, the DoN will comply with BMPs associated with the project’s required NPDES permit and SWPPP to avoid or minimize potential construction period impacts on water quality of downstream receiving waters (e.g., Waiawa Stream and Pearl Harbor). This

would prevent or reduce the likelihood of impacts on any unidentified traditional practices involving the use of resources in these water bodies.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to cultural resources.

3.4.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

Similar to the Preferred Alternative, the Kamehameha Highway-Lehua Avenue Alternative would have insignificant impacts to cultural resources during project construction or operation. The DoN determined that there would be no adverse effect to historic properties common to both alternatives (i.e., Waiawa Pump Station, water tunnel associated with NASD facilities, and Waiawa Stream Bridge) and no objections to this determination were received from the Hawaiʻi SHPO or other consulting parties. The absence of cultural deposits from previous archaeological studies in the vicinity and the alternative water line alignment through roadway ROWs containing numerous underground utilities indicate that the Kamehameha Highway-Lehua Avenue Alternative is unlikely to impact subsurface archaeological resources.

The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts to Native Hawaiian or other ethnic group's cultural customs and traditions exercised for subsistence, cultural or religious purposes as the Preferred Alternative. In this alternative, the segment that diverges from the Preferred Alternative alignment is fully within existing public roadway ROWs, where there are no known Native Hawaiian or other cultural traditions and practices that take place in these ROWs.

Therefore, implementation of this action alternative would not result in significant impacts to cultural resources.

3.5 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

Within this EA, biological resources are divided into two major categories: (1) terrestrial vegetation and (2) terrestrial wildlife. Threatened, endangered, and other special status species—if any—are discussed in their respective categories. Table 3-3 lists all special status species that are potentially present.

3.5.1 Regulatory Setting

Special-status species, which for the purposes of this EA are those species listed as threatened or endangered under the Endangered Species Act (ESA), and species afforded federal protection under the Marine Mammal Protection Act or the Migratory Bird Treaty Act (MBTA).

The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of the ESA requires action proponents to consult with the USFWS or National Oceanic and Atmospheric Administration (NOAA) Fisheries to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of designated critical habitat. Critical habitat cannot be designated on any areas owned, controlled, or designated for use by the DoD where an Integrated Natural Resources Management Plan has been developed that, as

determined by the Department of Interior or Department of Commerce Secretary, provides a benefit to the species subject to critical habitat designation.

Birds, both migratory and most native-resident bird species, are protected under the MBTA, and their conservation by federal agencies is mandated by EO 13186 (Migratory Bird Conservation). Under the MBTA it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds or their nests or eggs at any time, unless permitted by regulation. The 2003 National Defense Authorization Act gave the Secretary of the Interior authority to prescribe regulations to exempt the Armed Forces from the incidental taking of migratory birds during authorized military readiness activities. The final rule authorizing the DoD to take migratory birds in such cases include a requirement that the Armed Forces must confer with the USFWS to develop and implement appropriate conservation measures to minimize or mitigate adverse effects of the Proposed Action if the action will have a significant negative effect on the sustainability of a population of a migratory bird species.

The Magnuson-Stevens Fishery Conservation and Management Act provides for the conservation and management of the fisheries. Under the Magnuson-Stevens Fishery Conservation and Management Act, essential fish habitat consists of the waters and substrate needed by fish to spawn, breed, feed, or grow to maturity.

The Coastal Zone Management Act establishes a federal-state partnership to provide for the comprehensive management of coastal resources. Coastal states and territories develop management programs based on enforceable policies and mechanisms to balance resource protection and coastal development needs. Actions implemented on federal lands must ensure consistency with these plans and programs to the maximum extent practicable.

3.5.2 Affected Environment

The following discussions provide a description of the existing conditions for each of the categories under biological resources at the project area in the Waiawa and Pearl City communities. As seen in Figure 1-1, at its closest point, the project is located approximately 0.5 miles northwest of Pearl Harbor Middle Loch. Pearl Harbor is located on the south central coastal plain of Oʻahu, Hawaiʻi, between the Koʻolau and Waiʻanae mountain ranges. The surrounding coastal plain is about 4 miles long and 3 miles wide, with elevations from sea level to about 30 feet at the bases of three surrounding volcanic craters (Makalapa, Āliamanu, and Āliapaʻakai [Salt Lake]) to the east. Pearl Harbor is the largest estuary in Hawaiʻi, and encompasses about 8 square miles (mi^2) of surface water, an average depth of 28 ft, and includes approximately 36 mi of shoreline. The harbor is divided by Waipiʻo Peninsula and Pearl City Peninsula into three main lochs: West Loch, Middle Loch and East Loch. Pearl City and Waiawa comprise an urban area containing buildings, facilities, and pavement. The water line path is located primarily within developed areas and vegetation and wildlife habitats within or adjacent to the project area are limited. Wildlife and vegetation species present are those typical of human-disturbed environments.

3.5.2.1 Terrestrial Vegetation

Vegetation includes terrestrial plant communities and constituent plant species.

Pearl City and Waiawa—the communities in which the replacement water line would be located—are highly developed urban areas. The proposed water line route is located primarily in developed and paved areas with open spaces and vegetation consisting of a mix of alien grasses and non-native species.

The following describes the vegetation found along the 42-in and 16-in water line routes of the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative.

The route from Waiawa Pump Station to Waiawa Stream Bridge includes a variety of low growing non-native grasses. Vegetation and a variety of non-native trees grow along the banks of Waiawa Stream.

In the upper segments of the proposed 42-in water line on Waihona Street (i.e., the industrial park area along the north end of Waihona Street), most of the native vegetation present has been planted for landscaping. Vegetation along Waihona Street and Kamehameha Highway is highly disturbed and consists of non-native species. The Oʻahu Urban Garden Center segment (i.e., Preferred Alternative) consists of a variety of cultivated trees such as candle nut trees, a variety of palms, native dryland plants, mango trees, a variety of plum trees, plumeria, and others. The Kamehameha Highway-Lehua Avenue Alternative water line route within the Kamehameha Highway and Lehua Avenue ROWs is highly urbanized and built up with impermeable surfaces, with surrounding vegetation consisting of managed landscape vegetation.

Along its final segment within Second Street, vegetation along and adjacent to the project area consists of weedy, non-native vegetation.

The proposed 16-in secondary water line branch (under both the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative) from the 42-in water line about mid-way along Waihona Street, proceeds to the east and south traversing through a highly urban industrial area with warehouses, roadways and hard surfaces. The only natural vegetation in this area is located behind the warehouses on the valley cliffs. The vegetation there is predominantly non-native of koa haole (*Leucaena leucocephala*), Chinese violet (*Asystasia gangetica*), night blooming cereus (*Epiphyllum oxypetalum*), Java plum (*Syzgium cumini*) and various grass species. One native species kou (*Cordia subcordata*) was observed but appeared to be planted for landscaping.

None of the plant species in the project area are listed as state or federal threatened or endangered species.

3.5.2.2 Terrestrial Wildlife

Wildlife includes all animal species (i.e. insects and other invertebrates, fish, amphibians, reptiles, birds, and mammals) focusing on the species and habitat features of greatest importance or interest. Birds that tolerate urban areas are the most common species within the project area. The majority of these species are not native to Hawaiʻi and are introduced species. Common mammals found within the project area include cats (*Felis cattus*), Mongooses (*Herpetes auropunctatus*), and rodents, including the black rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), and house mouse (*Mus musculus*). Common reptiles including the green anole lizard (*Anois carolinensis*), bullfrog (*Rana catesbeiana*), cane toad (*Bufo marinus*), house gecko (*Hemidactylus frenatus*), and garden skink (*Lampropholis guichenoti*) are likely present in the project area.

No threatened and endangered species are likely to occur within the study area of the Preferred Alternative or Kamehameha Highway-Lehua Avenue Alternative. Though not observed by a Navy biologist during a 2015 survey, two bird species listed by the State of Hawaiʻi (but not the federal government) may be found within the project area: the threatened white tern (*Gygis alba rothschildi*) or manu o ku, and the endangered Hawaiian short-eared owl (*Asio flammeus sandwichensis*) or pueo (see Table 3-3). No shoreline or wetland habitat that could support endangered water birds exists within the project area. The Pacific Golden Plover, a migratory bird, may be present in the project area but favors

open grasslands and is only present in Hawai'i during the winter. The primary breeding and nesting area for the Pacific Golden Plover is in western Alaska.

Table 3-3 Threatened and Endangered Species Known to Occur or Potentially Occurring in the ROI and Critical Habitat Present in ROI

Common Name	*Scientific Name*	*Federal Listing Status*	*State Listing Status*	*Critical Habitat Present?*
White tern	Gygis alba rothschildi	NL	ST	no
Hawaiian short-eared owl	Asio flammeus sandwichensis	NL	SE	no

Selections for Listing Status Column include: C = candidate species for federal ESA listing; FE = federal endangered; FT = federal threatened NL = not listed; SE = State endangered SSC = Species of Special Concern (State designation); ST = State threatened; SAT = Listed due to similarity of appearance to threatened species (These species are not biologically threatened or endangered and are not subject to ESA section 7 consultation.); X = present.

3.5.3 Environmental Consequences

This analysis focuses on wildlife or vegetation types that are important to the function of the ecosystem or are protected under federal or state law or statute.

3.5.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to biological resources. Therefore, no impacts to biological resources would occur with implementation of the No Action Alternative.

3.5.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The study area for the analysis of effects to biological resources associated with the Preferred Alternative includes the new water line route and the sections of the existing water line route that would be removed or filled.

Vegetation

From Waiawa Pump Station to Kamehameha Highway, the new water line would generally be located within roadway ROWs. In this segment, trenching or other construction or disposition activities that take place in undeveloped areas would only affect non-native vegetation or landscape vegetation. The water line would be supported by a new pipe bridge structure adjacent to the upstream side of the existing Waiawa Stream Bridge. No part of the new pipe bridge would be located within the stream bed or stream waters; therefore, no impact to stream vegetation is anticipated.

Along the Kamehameha Highway section of the proposed water line route to its OUGC entry point, the Preferred Alternative would not impact any natural resources, as this section is highly disturbed and contains only non-native plant species.

The water line construction would disturb a variety of trees and shrubs at the OUGC, starting from the point of entry. The Navy is coordinating with UH to relocate the affected plants, which may include candle nut trees, a variety of palms, native dryland plants, mango trees, a variety of plum trees, and

plumeria trees. The Preferred Alternative alignment was coordinated with UH and OUGC to minimize impacts to the existing plant resources.

Along its route within Second Street, construction of the proposed water line would not impact natural resources, as construction would be within the roadway ROW and there is no native vegetation within or adjacent to the project area.

The proposed 16-in secondary water line serving Manana Housing Area would traverse developed areas or areas without natural or native vegetation, and not impact natural resources.

Disposition of the existing water line would consist of either removal of the water line or abandoning segments in place and grouting with a fillable flow material. The areas where the water line would be removed or filled are in existing developed areas and would require minimal ground disturbance. Vegetation in these areas is generally non-native or landscape vegetation.

Terrestrial Wildlife

Construction of the water line and disposition of the existing water line would not impact sensitive wildlife habitats, as most of the construction and disposition activities would occur within developed areas. The non-native species of birds, mammals, and reptiles that may be present are tolerant of urban activities and noise. During the operational period, the Preferred Alternative would have no impacts to sensitive wildlife and their habitats because the water line would be below grade and the areas disturbed by construction returned to pre-construction conditions.

Threatened and Endangered Species

No threatened and endangered species are likely to occur within the study area of the Preferred Alternative. No federally-listed threatened or endangered plant species would be impacted by the water line construction or operation, or by the disposition activities for the existing water line.

State of Hawaiʻi listed threatened and endangered terrestrial species within the urbanized areas of Pearl City and Waiawa are already habituated to high levels of noise associated with vehicular traffic and other construction activities such as the City and County of Honolulu's rail project construction. Increases in noise levels from construction activities to the ambient noise environment would be negligible and temporary, as the construction location would move as segments of the water line are completed. Construction would occur on previously disturbed and cleared or developed areas. No permanent loss of habitat would occur under the Preferred Alternative. Therefore, habitat removal would be negligible and would not negatively impact habitat use by any threatened or endangered species. Construction activity is unlikely to result in short-term impacts from disturbance to terrestrial wildlife including State of Hawaiʻi-listed threatened and endangered species. Additionally, installation personnel would continue to manage habitats according to the Installation Natural Resources Management Plan (INRMP), which is designed to protect and benefit threatened and endangered species. According to the INRMP, the DoN has a variety of management actions in place to protect white terns and to enhance their habitat within its installation boundaries. They include: (1) resource agency coordination; (2) cooperative agreements; (3) SOPs; (4) project reviews and consultations; (5) bird surveys; (6) inreach and community outreach; and (7) mitigation measures during training (CNRH 2011).

There would be no significant impact on threatened and endangered species and no consultation between the DoN and USFWS is required. Therefore, implementation of the Preferred Alternative would not result in significant impacts to biological resources.

3.5.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

The study area for the analysis of effects to biological resources associated with the Kamehameha Highway-Lehua Avenue Alternative water line route and the sections of the existing water line route that would be removed or filled. Because this the water line route under this alternative differs from the Preferred Alternative in only the eastern-southern segment, the impact analysis focuses on the area of difference.

Vegetation

The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant impacts to vegetation as the Preferred Alternative. The same insignificant impacts would result for the segment of water line that is common under both alternatives (i.e., Waiawa Pump Station to Kamehameha Highway where the Preferred Alternative diverges into OUGC property, 16-in secondary line to Manana Pump Station, disposition of existing water line). Under this alternative, the segment that continues within the Kamehameha Highway ROW to Lehua Avenue and the final segment within Lehua Avenue would have insignificant impacts to vegetation, as the area is highly urbanized with impermeable surfaces and contains no natural vegetation.

Terrestrial Wildlife

Similar to the Preferred Alternative, construction of the water line under the Kamehameha Highway-Lehua Avenue Alternative would not impact sensitive wildlife and their habitats, as construction and disposition activities would occur within developed areas. The non-native species of birds, mammals, and reptiles that may be present are tolerant of urban activities and noise such as that associated with project construction. Similar to the Preferred Alternative, this alternative would have no impacts to sensitive wildlife and their habitats wildlife during the operational period, the water line would be below grade and the areas disturbed by construction returned to pre-construction conditions.

Threatened and Endangered Species

As in the Preferred Alternative, no threatened or endangered species occur or are likely to occur within the study area of the Kamehameha Highway-Lehua Avenue Alternative. No federally-listed threatened or endangered plant species would be impacted by the water line construction or operation along Kamehameha Highway or Lehua Avenue, or by the disposition activities for the existing water line. Similar to the Preferred Alternative, construction would occur on previously disturbed and cleared or developed areas and there would be no permanent loss of habitat would occur under this alternative. Therefore, habitat removal would be negligible and would not negatively impact habitat use by any threatened or endangered species. Construction activity is unlikely to result in short-term impacts from disturbance to terrestrial wildlife including State of Hawaiʻi-listed threatened and endangered species.

Therefore, implementation of this action alternative would not result in significant impacts to biological resources.

3.6 Noise

This discussion of noise includes the types or sources of noise and the associated sensitive receptors in the human environment. Noise in relation to biological resources and wildlife species is discussed in the Biological Resources section.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound is all around us. The perception and evaluation of sound involves three basic physical characteristics:

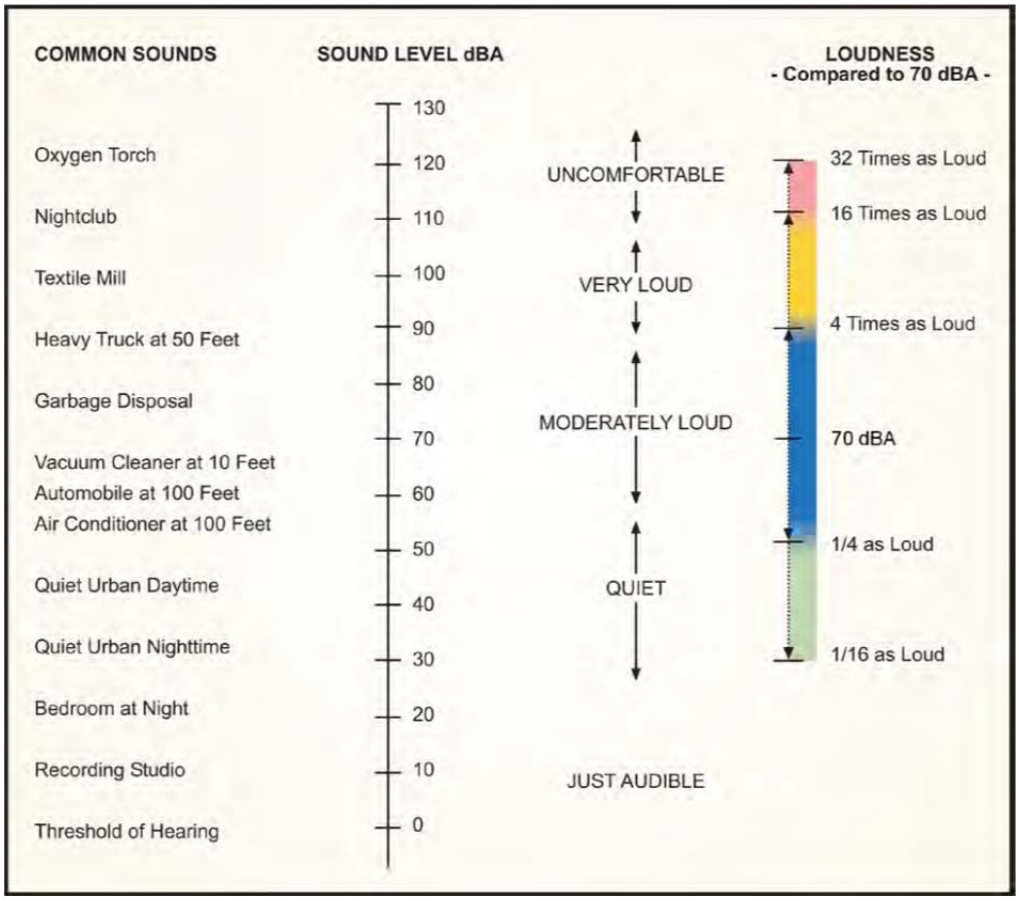
- Intensity – the acoustic energy, which is expressed in terms of sound pressure, in decibels (dB)
- Frequency – the number of cycles per second the air vibrates, in Hertz (Hz)
- Duration – the length of time the sound can be detected

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although continuous and extended exposure to high noise levels (e.g., through occupational exposure) can cause hearing loss, the principal human response to noise is annoyance. The response of different individuals to similar noise events is diverse and is influenced by the type of noise, perceived importance of the noise, its appropriateness in the setting, time of day, type of activity during which the noise occurs, and sensitivity of the individual.

3.6.1 Basics of Sound and A-weighted Sound Level

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. This vast range means that using a linear scale to represent sound intensity is not feasible. The dB is a logarithmic unit used to represent the intensity of a sound, also referred to as the sound level. All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second or Hz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements are usually on an "A-weighted" scale that filters out very low and very high frequencies in order to replicate human sensitivity. It is common to add the "A" to the measurement unit in order to identify that the measurement has been made with this filtering process (dBA). In this document, the dB unit refers to A-weighted sound levels. Table 3.2-1 provides a comparison of how the human ear perceives changes in loudness on the logarithmic scale.

Figure 3.5 provides a chart of A-weighted sound levels from typical noise sources. Some noise sources (e.g., air conditioner, vacuum cleaner) are continuous sounds that maintain a constant sound level for some period of time. Other sources (e.g., automobile, heavy truck) are the maximum sound produced during an event like a vehicle pass-by. Other sounds (e.g., urban daytime, urban nighttime) are averages taken over extended periods of time.



Sources: Derived from Harris (1979) and Federal Interagency Committee on Aviation Noise (1997).

Figure 3-5 A-Weighted Sound Levels from Typical Sources

3.6.2 Affected Environment

Many components may generate noise and warrant analysis as contributors to the total noise impact. The predominant noise sources in the project area consist of traffic noise associated with Waihona Street, Kamehameha Highway, and H-1 Freeway. Other components such as ongoing rail transit guideway construction on Kamehameha Highway produce noise, but such noise generally represents a transitory and negligible contribution to the average noise level environment. The federal government supports conditions free from noise that threaten human health and welfare and the environment. Response to noise varies, depending on the type and characteristics of the noise, distance between the noise source and whoever hears it (the receptor), receptor sensitivity, and time of day. A noise sensitive receptor is defined as a land use where people involved in indoor or outdoor activities may be subject to stress or considerable interference from noise. Such locations or facilities often include residential dwellings, hospitals, nursing homes, educational facilities, and libraries. Sensitive receptors may also include noise-sensitive cultural practices, some domestic animals, or certain wildlife species.

For the Preferred Alternative, the nearest sensitive receptors are high-rise residential building at the corner of Kuala Street and Kamehameha Highway (approximately 50 ft north of the water line corridor) and residential uses along Second Street (approximately 30 ft from the water line corridor).

For the Kamehameha Highway-Lehua Avenue Alternative, the nearest sensitive receptors are the same high-rise residential tower at the Kuala Street-Kamehameha Highway intersection; Pearl City Elementary School on the north side of Kamehameha Highway; Pearl City Nursing Home on the east side of Lehua Avenue; and single-family, low- and mid-rise residential properties on both sides of Lehua Avenue.

3.6.3 Environmental Consequences

Analysis of potential noise impacts includes estimating likely noise levels from the Proposed Action and determining potential effects to the nearest sensitive receptor sites.

3.6.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline noise levels. Therefore, no impacts to the noise environment would occur with implementation of the No Action Alternative.

3.6.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The study area for noise for the Preferred Alternative includes areas in the vicinity of the Preferred Alternative route that include noise sensitive receptors such as residential uses, nursing homes, places of worship, educational facilities, and libraries. This includes the residential areas along the water line corridor and OUGC.

During project construction, there would be short-term, temporary noise impacts to noise-sensitive receptors. The greatest noise impacts would be to residential dwellings on Second Avenue, where there are six detached dwellings and a low-rise, 21-unit apartment building on the north side of the street. Temporary noise impacts would also affect activities at OUGC.

A planning level general assessment of construction noise impacts was conducted for the Preferred Alternative to estimate impacts to residences on Second Street and on OUGC. The dominant noise sources during construction in this area would be from the pile driving associated with installing pile supports for the new water line. The pile driving activity is expected to occur over a period of a few months. The pile driving location would gradually progress through the water line alignment in the OUGC. The pile installation work is expected to be conducted Monday through Friday during normal daytime working hours.

Typical noise emission levels of impact pile drivers are reported in Federal Highways Administration construction noise level guidance at 101 dBA at a reference distance of 50 ft (15.2 m) (U.S. DOT 2006, Table 12-1). For each doubling of distance from the source, there is a 6 dB decrease in sound level. A calculation of the reduction in atmospheric sound level from reference distance to the nearest noise sensitive receptors indicated that noise from the pile driving would be attenuated to about 91 dB at the single family dwelling on Second Street nearest the easternmost pile driving location. (Note: The following formula was used in the sound loss calculation $L^2 = L^1 - (20\text{Log}(r^2/r^1))$; where L^1= sound level in dB at reference distance, L^2= sound level at received distance, r^1=reference distance, r^2=received distance.) Although construction activities would occur during daytime hours, as shown in Figure 3-5, this noise level is generally perceived as “very loud.” Typical sound level reductions of buildings are estimated at 24 dB in warm climates with closed windows (USEPA 1978). Using the USEPA typical sound level reductions of buildings (i.e., 24 dB), the pile driving noise levels would be reduced to about 67 dB at the nearest detached dwelling on Second Street, which could be perceived as “moderately loud.”

O‘ahu Urban Garden Center is open for public visitation Monday through Friday from 9:00 a.m. to 2:00 p.m. Special events or tours may extend later into the afternoon. Indoor activities at OUGC take place in classrooms and offices approximately 400 ft to the north of the nearest pile driving locations. At this distance, pile driving noise levels are estimated to be about 83 dB. With 24 dB attenuation due to the office and classroom building, interior noise levels would be approximately 59 dB, which, according to Figure 3-5, could be perceived as “quiet” to “moderately loud.” Outdoor activities such as tours, volunteers tending to plants, and special events may be impacted, rescheduled, relocated, or curtailed during project construction, especially in areas close to the construction work zone. O‘ahu Urban Garden Center conducts approximately 2-hour long, docent-guided tours on weekdays throughout the year. These occur at least once a week, and during the spring, there may be up to five guided tours in one week. Self-guided tours can occur at any time during the day. There are two outdoor classrooms used during tours, meetings, and volunteer events. Special events for the public are generally held on weekends, which would avoid construction noise impacts. In general, OUGC staff believe the construction activities would not necessitate cancellation of tours. Volunteers may adjust their schedules to avoid exposure to construction noise. The construction contractor will be required to coordinate the construction schedule with OUGC, as well as all other affected land owners.

A Construction Noise Permit would be obtained from the State of Hawai‘i Department of Health (DOH) for project implementation, which will include project specific conditions and requirements. The contractor would comply with provisions of the Construction Noise Permit, including any mitigation and scheduling requirements. A DOH Noise Variance may be required if construction occurs during nighttime hours.

During the operational period, the proposed water line would not generate additional noise above existing levels, as it would be located below grade and replace existing water line infrastructure. Therefore, implementation of the Preferred Alternative would not result in significant impacts to the noise environment.

3.6.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

A planning level general assessment of construction noise impacts was conducted for the Kamehameha Highway-Lehua Avenue Alternative to estimate impacts to residences on Kamehameha Highway and Lehua Avenue and to Pearl City Elementary School. The dominant noise source during construction in this area would be from construction equipment installing the new water line. The construction activity is expected to occur over several weeks at any one location within the alternative water line alignment. The construction location would gradually progress within the Kamehameha Highway and Lehua Avenue ROWs. The work is expected to be conducted Monday through Friday during normal daytime working hours. The overall construction duration (and associated construction noise) within the Kamehameha Highway and Lehua Avenue segments would be longer than that of the Preferred Alternative due to the numerous underground utility lines within these roadways.

Large construction trucks would be some of the loudest noise sources during the construction period. Typical noise emission levels of trucks are reported in Federal Highways Administration construction noise level guidance at 89 dBA at a reference distance of 50 ft (15.2 m) (U.S. DOT 2006, Table 12-1). Using the same formula to calculate sound loss as in the Preferred Alternative, the noise level from construction vehicles is estimated at about 92 dB at a distance of 30 ft from the noise source—“very loud” according to the chart in Figure 3-5. This is the approximate distance of the noise sensitive receptors closest to the construction noise source (i.e., Pearl City Elementary School classroom building,

Pearl City Nursing Home, and the residential properties along Lehua Avenue). Applying the typical sound level reductions afforded by building structures, the interior noise levels would be reduced to about 68 dB at these noise sensitive receptors. According to Figure 3-5, this noise level is perceived as "moderately loud." As in the Preferred Alternative, a State of Hawai'i Department of Transportation (DOT) Construction Noise Permit would be obtained for project implementation, which will include project specific conditions and requirements. The contractor would comply with provisions of the Construction Noise Permit, including any mitigation and scheduling requirements. A DOH Noise Variance may be required if construction occurs during nighttime hours.

During the operational period, the proposed water line in this alternative would not generate additional noise above existing levels, as it would be located below grade and replace existing water line infrastructure. Therefore, implementation of this action alternative would not result in significant impacts to the noise environment.

3.7 Infrastructure

This section discusses infrastructure including utilities (including water distribution and storm water collection). Transportation systems and traffic are addressed separately in Section 3.8.

3.7.1 Affected Environment

The following discussions provide a description of the existing conditions for each of the categories under infrastructure along the project area (proposed water line alternative routes).

3.7.1.1 Utilities

This section describes utility systems that may be impacted by the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative during construction or operation of the proposed replacement water line.

Potable Water

The existing water system at JBPHH is comprised of three potable groundwater sources and pumping stations, two 6-million gallon storage tanks, and a network of transmission and distribution mains, including the 42-in transmission main from Waiawa Pump Station proposed for replacement. There are three booster pump stations that serve higher elevation service areas, including the Manana Housing Area. The JBPHH water system also supplies water to the Camp Smith, Red Hill Coast Guard Housing, and Aliamanu Army Housing distribution systems through booster pumps.

The JBPHH water system is supplied by three groundwater sources: Waiawa Shaft, Red Hill Shaft, and Halawa Shaft. Waiawa Shaft (State Well No. 3-2558-010) is the primary potable water source for JBPHH, with Waiawa Pump Station producing approximately 73 percent of JBPHH's water supply from May 2010 to May 2013 (DoN 2015). During the same period, Red Hill Pump Station produced approximately 26 percent and Halawa Pump Station producing less than one percent of JBPHH's water supply. (Halawa Pump Station serves as a backup to Waiawa Pump Station and Red Hill Pump Station.) As noted in Section 3.2.2.1, the Waiawa Shaft is located in the Waipahu-Waiawa aquifer system.

Transmission mains convey water from the three water pumping stations and storage tanks to the various service areas. With the exception of the transmission mains from the source and storage facilities), most of the major transmission mains in the water system are interconnected so that water can be conveyed through an alternate route in the event of a transmission main failure. The 42-in

transmission line from Waiawa Pump Station is one of the exceptions for which there is no redundant infrastructure. Originally constructed in 1953, the 42-in transmission line extends from Waiawa Pump Station, through public and private property to a connection point near the intersection of Lehua Avenue and Second Street. Approximately 400 LF of the water line lies below a major commercial/retail center (Pearl Highlands Center) and is difficult to repair and maintain.

The Manana Housing Area includes both Marine Corps and Navy family housing. Due to its elevation, the Manana Booster Pump Station is needed to increase the water pressure in this area.

Storm Water

Storm water facilities within the project area consist of a series of inlets and outlets, catch basins, manholes, and underground storm drain conduits. Storm water is conveyed to outlet points at Waiawa Stream and eventually into Pearl Harbor.

3.7.2 Environmental Consequences

This section analyzes the magnitude of anticipated increases or decreases in public works infrastructure demands considering historic levels, existing management practices, and storage capacity, and evaluates potential impacts to public works infrastructure associated with implementation of the alternatives. Impacts are evaluated by whether they would result in the use of a substantial proportion of the remaining system capacity, reach or exceed the current capacity of the system, or require development of facilities and sources beyond those existing or currently planned.

3.7.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to the existing infrastructure and would not affect system water pumping or storm drainage capacity. Therefore, no significant impacts to utilities would occur with implementation of the No Action Alternative. If the existing 42-in water transmission line fails or requires repair, service to JBPHH would be adversely affected, as the repair area may be difficult to access and sufficient transmission redundancy does not exist in the existing water system. In this event, temporary measures to provide adequate potable and firefighting water supply would be activated, and emergency water conservation measures employed.

3.7.2.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The infrastructure study area for the Preferred Alternative is the proposed water line route.

During construction, there would be temporary interruptions in JBPHH water service when interconnections to the existing water transmission facilities are made at the Waiawa and Manana Pump Stations, and at Second Street, and when existing water lines are rerouted. Prior to these procedures, JBPHH water reservoirs will be topped off and temporary water service would be provided to the Manana Housing area through an existing City and County Board of Water Supply (BWS) emergency connection. Affected JBPHH areas would be serviced by other Navy pump stations and storage tanks, and notifications may be issued to limit water usage to essential tasks during the outage period. Interruptions (if any) to BWS customers would be for short durations and customers will be notified in advance of the shut-off. The DoN will coordinate the project's construction schedule with the BWS. During the operational period, because it would replace the existing water line with infrastructure of the same capacity, the Preferred Alternative would not result in the use of a substantial proportion of the remaining JBPHH water system capacity, or reach or exceed the current capacity. Replacement of

the existing line with the Preferred Alternative would not require development of facilities and sources beyond those existing or currently planned. The Preferred Alternative is not expected to affect groundwater withdrawal by the DoN or result in a request by the Navy to the State of Hawaiʻi CWRM for additional allocation from the Waipahu-Waiawa groundwater aquifer. The Preferred Alternative would have the beneficial impact of allowing for greater ease of maintenance than the existing water line, which extends below a major commercial development (i.e., Pearl Highlands Center).

The Preferred Alternative would require crossings with some existing storm drain facilities. At crossings below existing storm drain infrastructure, the void space between the storm drain and proposed water line would be backfilled with CLSM to prevent settlement due to poorly compacted fill. Under the Preferred Alternative, areas disturbed during construction would be returned to their pre-construction conditions. It would not introduce additional impervious surfaces that increase storm water runoff.

The Preferred Alternative will respect existing utility easements within the project area. During the operational period, there would be no significant impacts to infrastructure as the new water lines would continue potable and firefighting water service at the same capacity as the existing system and operate independently from other utility systems within the common ROWs. The Preferred Alternative will comply with HAR Title 11, Chapter 20, Rules Relating to Public Water Systems. The Navy is in compliance with relevant State of Hawaiʻi DOH and USEPA regulations for drinking water and continually performs the required testing, with results submitted to the Department of Health's Safe Drinking Water Branch.

Therefore, implementation of the Preferred Alternative would not result in significant impacts to infrastructure.

3.7.2.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

The infrastructure study area for the Kamehameha Highway-Lehua Avenue Alternative is the proposed water line route. Construction period impacts to potable water service would be similar to the Preferred Alternative, with temporary interruptions in service when interconnections are made to existing water transmission facilities. These impacts would be minimized through temporary water service and the topping off of reservoirs. Similar to the Preferred Alternative, the Kamehameha Highway-Lehua Avenue Alternative would not result in the use of a substantial proportion of the remaining JBPHH water system capacity, or reach or exceed the current capacity, and would not require development of facilities and sources beyond those existing or currently planned. The Kamehameha Highway-Lehua Avenue Alternative is not expected to affect groundwater withdrawal by the DoN or result in a request by the Navy to the State of Hawaiʻi CWRM for additional allocation from the Waipahu-Waiawa groundwater aquifer.

As in the Preferred Alternative, the Kamehameha Highway-Lehua Avenue Alternative would not introduce additional impervious surfaces that increase storm water runoff. The alternative water line alignment along Kamehameha Highway and Lehua Avenue would be located in areas with existing impervious surfaces, which would be returned to their pre-construction conditions. This alternative would also provide the same transmission capacity as the existing water transmission infrastructure and have the same beneficial impact of greater ease of maintenance.

Therefore, implementation of this action alternative would not result in significant impacts to infrastructure during the construction or operational periods.

3.8 Transportation

This discussion of transportation includes all of the air, land, and sea routes with the means of moving passengers and goods. A transportation system can consist of any or all of the following: roadways, bus routes, railways, subways, bikeways, trails, airports, and taxis, and can be looked at on a local or regional scale. For the Proposed Action, the following transportation systems are relevant and discussed below: roadways, bus routes, railways, and bikeways.

3.8.1 Affected Environment

3.8.1.1 Roadways

The Proposed Action would occur within state and county roadway ROWs, including Kamehameha Highway, Waihona Street, and Second Street. The Kamehameha Highway-Lehua Avenue Alternative also includes the Lehua Avenue ROW from Kamehameha Highway to Second Street.

Kamehameha Highway (portions of State Routes 80, 83, and 99) is a principal arterial with a 130-ft ROW that runs from Middle Street in urban Honolulu, through Pearl City and Central Oʻahu, and around Oʻahu's North Shore and Windward Coast. In the area affected by the Proposed Action, Kamehameha Highway provides four westbound travel lanes and one westbound lane for vehicles entering and exiting the Pearl Highlands Center parking structure. From north to south, the westbound travel lanes provide access to northbound H-2 Freeway, westbound H-1 Freeway, northbound Kamehameha Highway (State Route 99), and westbound Route 7101 (toward Waipahu). The east and westbound lanes are separated by a median. Approximately 700 ft east of where the water line would cross Kamehameha Highway and enter OUGC, eastbound lanes of Farrington Highway merge with eastbound Kamehameha Highway.

Vehicle volume data obtained for preparation of the Honolulu High-Capacity Transit EIS (USDOT FTA and City and County of Honolulu DTS 2010) indicate that Kamehameha Highway operated at Level of Service (LOS) C in the westbound direction (970 vehicles per hour observed) and LOS F in the eastbound direction (2,520 vehicles per hour observed) during the morning peak hour. ("LOS" qualitatively describes operating conditions of a roadway, using designations A through F, where A represents the excellent or free-flowing conditions and F representing worst conditions.) During the afternoon peak hour, Kamehameha Highway operated at LOS D in the westbound direction (2,110 vehicles per hour) and LOS C in the eastbound direction (1,500 vehicles per hour).

Waihona Street is a City and County of Honolulu collector road with a 60-ft ROW that provides access to Kamehameha Highway. It is striped to provide one travel lane in each direction. The approximately 1.5-mile long roadway is paved with asphaltic concrete (AC) and lined with concrete curbs, gutters, driveway entrances, and landscape planter strips. Traffic volumes are generally low- to moderate, primarily related to employee, business vehicle, and customer trips to Pearl City Industrial Park, located along the northern half of the road. On-street parking is generally allowed, and well-utilized, along both sides of Waihona Street, with some signed exceptions. The posted speed limit is 25 miles per hour (mph). At its north end, Waihona Street terminates in a cul-de-sac, through which access is gained to the Navy-owned access road to Waiawa Pump Station. On site visits in July and November 2015, several large tractor trailers (including trailers parked alone) and other industrial vehicles were observed parked along Waihona Street.

Second Street is a City and County of Honolulu local road with a 60-ft ROW that provides one travel lane in each direction. It is paved with AC, and, in the segment that would be affected by the Preferred

Alternative, it is bordered by single family homes and a low-rise apartment building on the north, and vacant land/H-1 Freeway viaduct to the south. There are no curbs, gutters, or sidewalks along this section of Second Street, with the exception of a short segment of sidewalk fronting the apartment building on the north side.

Lehua Avenue is a City and County of Honolulu collector road with an 80-ft ROW that provides two travel lanes in each direction with a posted speed limit of 25 mph. On-street parallel parking is allowed on both sides of the road. In the Lehua Avenue segment between Kamehameha Highway and Fourth Street, the north- and south-bound lanes are separated by a landscaped median. The intersection with Kamehameha Highway is signalized; at the other intersections along the Kamehameha Highway-Lehua Avenue Alternative alignment, the cross-streets are STOP sign controlled, with through movement on Lehua Avenue. This road provides access to Pearl City Peninsula to the south. Along the Kamehameha Highway-Lehua Avenue Alternative segment, Lehua Avenue is bordered by retail and commercial uses, low- and mid-rise residential properties, a church, nursing home, and a few single-family dwellings.

3.8.1.2 Bus Routes

TheBus is the City and County of Honolulu's public bus transportation service. It includes a fleet of 519 fixed route buses serving approximately 100 fixed routes throughout the island.

There are no bus routes serving Waihona Street. There are several TheBus routes serving Kamehameha Highway in the vicinity of the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative alignments, listed below. For the Kamehameha Highway-Lehua Avenue Alternative, there are several bus stops along Kamehameha Highway (see Figure 3-6); there are no Kamehameha Highway bus stops within the Preferred Alternative alignment. Except as noted, each route runs on weekdays and weekends, at varying frequencies. Route 73 also serves Lehua Avenue.

- "A" CityExpress Waipahu/Kalihi/UH (limited stops on Kamehameha Highway)
- 40 Honolulu/Mākaha
- 42 Waikīkī/Honolulu/'Ewa Beach
- 62 Honolulu/Wahiawā
- 53 Honolulu/Pacific Palisades (transits Kamehameha Highway; does not stop at all bus stops shown in Figure 3-6)
- 73 Leeward Community College (weekdays only)
- 88A North Shore Express (weekdays only)
- 420 Pearlridge-Waipahu-Waipio

3.8.1.3 Railways

There is currently no railway or fixed rail transit service within the project area. Currently under construction, the Honolulu Rail Transit Project will provide high-capacity rapid transit in the corridor between Kapolei and urban Honolulu. It includes construction and operation of a 20-mile elevated fixed guideway rail system featuring 21 stations. It is intended to provide corridor mobility, transit reliability, and service equity, and improve access to Honolulu's "second city" of Kapolei in West O'ahu. The entire system is projected to be operational by 2021. The Pearl Highlands Station will be located at the intersection of Kamehameha Highway and Kuala Street, on the south side of the Kamehameha Highway ROW (see station location and guideway route in Figure 3-6).

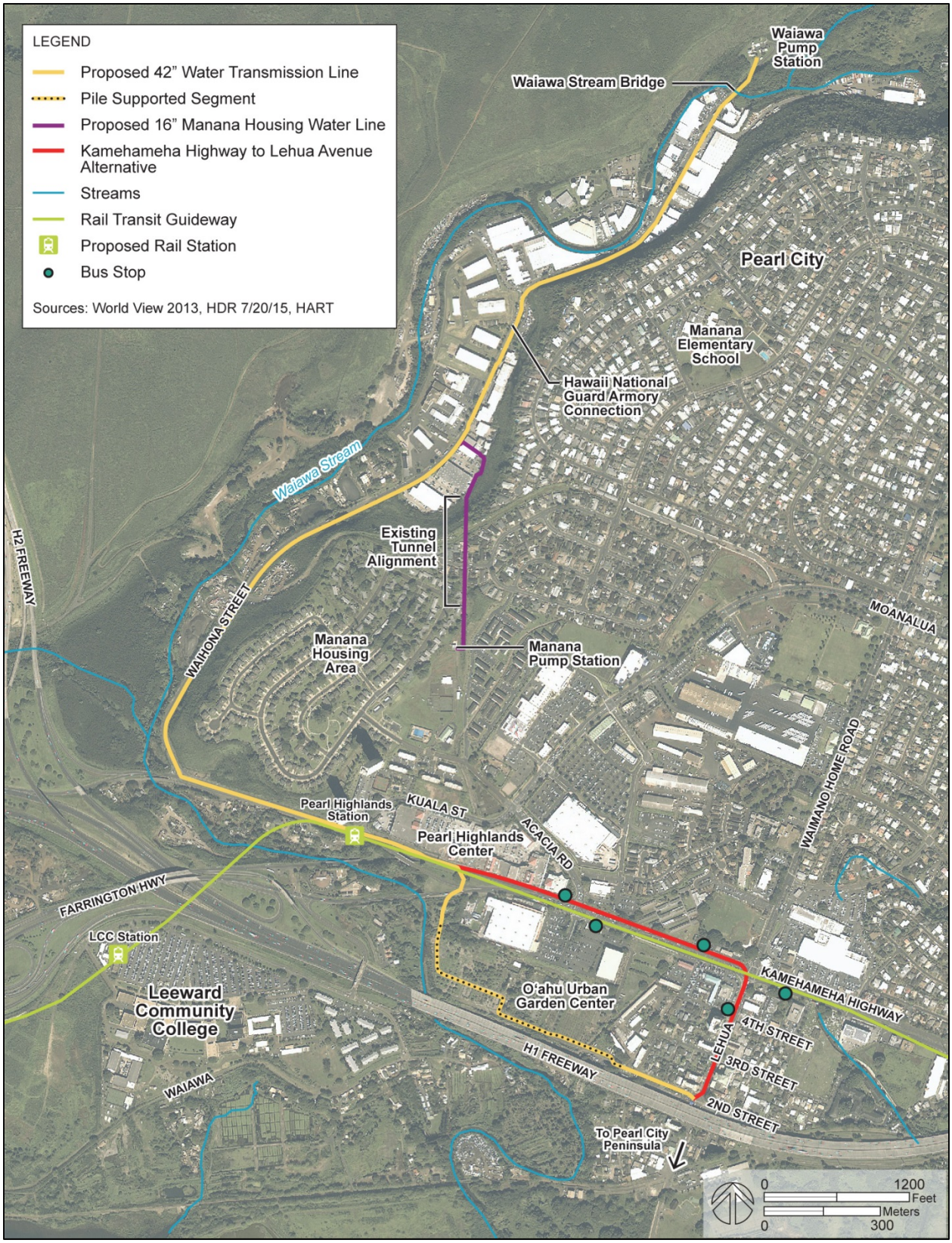


Figure 3-6 Transportation Systems

Construction within the Kamehameha Highway corridor near the proposed water line alignment is ongoing, with construction of the columns and guideway structures scheduled to be completed in 2016. Related civil work in this area (e.g., paving, lighting, drainage, traffic modifications, etc.) is projected to extend through 2017. Construction of the Pearl Highlands Station (south of the Kamehameha Highway ROW opposite Kuala Street) is scheduled to be completed in 2018.

3.8.1.4 Bikeways

Bikeway facilities include three major types of facilities: paths, lanes, and routes. A bike path is a completely separated ROW for the exclusive use of bicycles (and pedestrians, if it is a shared use path). A bike lane provides a striped lane for one-way bike travel on a street or highway. A bike route provides for shared use with motor vehicle traffic, typically on lower volume roadways. There are no existing bikeway facilities within the project area in Waihona Street, Kamehameha Highway, Second Street, or Lehua Avenue. Despite the lack of formal bikeway facilities, bicyclists may use these roadway facilities; however, it is likely that there are low volumes of riders on some of these roadways due to:

- Very low vehicle and pedestrian activity on Second Street, a local street that serves generally low-density residential uses
- Substantial grade change along Waihona Street with poor connections to existing long-haul bike facilities
- High motor vehicle speeds and volumes on Kamehameha Highway and an alternate east-west route on the Pearl Harbor Bike Path to the south

There are several bicycle facilities proposed within or near the project area (see Table 3-4 for details).

Table 3-4 Planned Bikeway Facilities

Location	*Planned Bikeway Facility/Description*	*Jurisdiction*
Waihona Street (lower)	Lane from planned Waipahu Cane Haul Road Bike Path to Kamehameha Highway Bike Lanes	County
Kamehameha Highway	Lane from Waihona Street to Arizona Memorial	State
Lehua Avenue	Lane from Kamehameha Highway to Pearl Harbor Bike Path	County
Farrington Highway (at Leeward Community College)	Lane from Kamehameha Highway to Farrington Highway	State

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to transportation. Therefore, no impacts would occur with implementation of the No Action Alternative.

3.8.2.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The transportation study area for the Preferred Alternative is Waihona Street, Kamehameha Highway, and Second Street.

Roadways

During the construction period there would be temporary impacts to traffic flow in the vicinity of the project area as vehicle travel lanes are taken out of service for trenching and installation of the new water line. Construction duration at any one location would vary depending on site conditions and the complexity of the work to be conducted, but is likely to be in the range of a few weeks to several weeks. Traffic control plans for each segment of work in the public ROW have been submitted for approval by the relevant jurisdictional agencies (i.e., City Department of Planning and Permitting and State Department of Transportation) and agency comments on the plans have been resolved. The traffic control plans identify traffic coning plans, signage type and locations, and temporary pedestrian and handicap accessibility routes. Lane closures (maximum one lane) and temporary detours would be required under permit conditions issued by state and county transportation agencies. Construction activities within roadway ROWs would increase traffic congestion and travel times in affected and upstream roadways, and would be perceived as an annoyance by the traveling public.

Impacts to roadways, traffic, pedestrian access, and bus routes would be temporary and traffic control measures will be implemented to minimize impacts to the general public. In the operational period, there would be no impacts to transportation systems as the water line infrastructure would be below grade and above grade transportation facilities, services, and operations would return to pre-construction conditions or to current City standards.

Bus Routes

During the construction period there will be temporary impacts to bus operations, routes, stops, and para-transit operations along Kamehameha Highway in the vicinity of the project area as vehicle travel lanes are taken out of service for construction of the new water line. The construction contractor will notify the City and County of Honolulu Department of Transportation Services Public Transit Division and Oʻahu Transit Services of the scope of work, location, detour, proposed closure of any street, traffic lane, sidewalk, or bus stop and duration of the project at least two weeks prior to construction. During the operational period, the Preferred Alternative would not impose in obstructions or alterations to traffic flow on Kamehameha Highway that would affect TheBus or para-transit operations.

Railways

Construction of the water line in the Kamehameha Highway corridor (late 2017 or later) would occur after completion of the rail transit columns and guideway in this area (anticipated in 2016). Related civil work (including paving, lighting, drainage, traffic modifications, etc.) is projected to extend through 2017. Construction of the Pearl Highlands Station is anticipated to be completed in 2018, though the final construction schedule is still being determined. It is likely that the construction period of the Preferred Alternative water line would overlap with construction of the rail guideway civil work and Pearl Highlands Station. Construction timing and sequencing of the 2.7-mi long water line would be coordinated with city and state jurisdictional agencies through the construction permit process to avoid conflicts in construction activities and concurrent impacts within the same corridor (including Kamehameha Highway operations). During its operational period, the water line would be below grade and would not affect rail transit operations.

Bikeways

During the construction period there would be no impacts to bike facilities on Waihona Street, Kamehameha Highway, or Second Street, as there are currently no bike facilities on these roadways.

However, bicyclists who use these roadways may be temporarily impacted in the vicinity of the project work areas when vehicle travel lanes are taken out of service for project construction. Bicyclists would be detoured around work zones along with motor vehicle traffic. During the operational period, roadways would return to pre-construction conditions, with the water line infrastructure located below grade in these roadways.

Based on the preceding analyses of the Preferred Alternative's likely effects on relevant transportation systems, implementation of the Preferred Alternative would not result in significant impacts to transportation.

3.8.2.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

The transportation study area for this alternative is the same as the Preferred Alternative's study area along Waihona Street and Kamehameha Highway. It does not include OUGC and Second Street, but instead includes an additional approximately 2,500 LF of Kamehameha Highway (about double the length affected in the Preferred Alternative), as well as approximately 1,100 LF of Lehua Avenue.

Roadways

This alternative would have greater adverse construction period impacts to traffic flow on multiple public roadways due to the longer construction period and greater number of businesses and residences affected. The construction duration on Kamehameha Highway would be at least twice as long as for the Preferred Alternative and involve subsurface construction at a key intersection with multi-phased signalization (Kamehameha Highway and Waimano Home Road/Lehua Avenue). Similar to the Preferred Alternative, there would be lane closures, detours, and potential re-routing of TheBus routes, though the duration and affected roadway segments would substantially increase. Along Lehua Avenue, this alternative would likely involve relocation of existing subsurface utilities in one phase, with installation of the water line following in a second phase. The in-road construction activities would adversely affect businesses, community facilities, and residences along Lehua Avenue. Because it is a narrow roadway with many existing subsurface utilities, it is likely that Lehua Avenue would have to be closed to all but local traffic during construction.

This alternative would have additional indirect effects to areas surrounding Lehua Avenue because Lehua Avenue is the primary access to cross-streets south of Kamehameha Highway (e.g., Second, Third and Fourth Streets) and to areas further south (e.g., Pearl City Peninsula). To reduce length of roadway to be closed at any one time, it is likely that only short lengths of trench would be able to be opened at one time; this would prolong the Lehua Avenue construction period. Similar to the Preferred Alternative, impacts to roadways under this alternative, though inconvenient to the traveling public, would be temporary as the work gradually proceeds through the water line alignment.

Similar to the Preferred Alternative, impacts to roadways, traffic, pedestrian access, and bus routes, would be temporary and traffic control measures will be implemented to minimize impacts to the general public. In the operational period, there would be no impacts to transportation systems as the water line infrastructure would be below grade and above grade transportation facilities, services, and operations would return to without-project conditions.

Bus Routes

Similar to the Preferred Alternative, during the construction period this alternative would result in temporary impacts to bus operations, routes, stops, and para-transit operations along Kamehameha

Highway and Lehua Avenue in the vicinity of the project area. The construction contractor will notify the relevant City and County of Honolulu agencies of the scope of work, location, detour, proposed closure of any street, traffic lane, sidewalk, or bus stop and duration of the project at least two weeks prior to construction. During the operational period, the Kamehameha Highway-Lehua Avenue Alternative would not impose in obstructions or alterations to traffic flow on Kamehameha Highway or Lehua Avenue that would affect TheBus or para-transit operations.

Railways

The Kamehameha Highway-Lehua Avenue Alternative would have a longer construction period within the Kamehameha Highway ROW and may also overlap with the construction of the Pearl Highlands Station. Similar to the Preferred Alternative, water line construction timing and sequencing would be coordinated with city and state permitting agencies to avoid conflicts in construction activities and concurrent impacts to Kamehameha Highway operations. Like the Preferred Alternative, during its operational period, the water line would be below grade and would not affect rail transit operations.

Bikeways

Similar to the Preferred Alternative, this alternative would not impact bike facilities on Waihona Street, Kamehameha Highway, or Lehua Avenue, as there are currently no bike facilities on these roadways. Bicyclists who use these roadways may be temporarily impacted in the vicinity of the project work areas when vehicle travel lanes are taken out of service for project construction. Bicyclists would be detoured around work zones along with motor vehicle traffic. During the operational period, roadways would return to pre-construction conditions, with the water line infrastructure located below grade in these roadways.

Based on the preceding analyses, the Kamehameha Highway-Lehua Avenue Alternative would not result in significant impacts to transportation.

3.9 Public Health and Safety

This discussion of public health and safety includes consideration for any activities, occurrences, or operations that have the potential to affect the safety, well-being, or health of members of the public. The primary goal is to identify and prevent potential accidents or impacts on the general public.

A safe environment is one in which there is no, or optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses public safety during construction, demolition, and renovation activities; and during subsequent operations of those facilities. Various stressors in the environment can adversely affect human health and safety. Identification and control or elimination of these stressors can reduce risks to health and safety to acceptable levels or eliminate risk entirely.

Emergency services are organizations which ensure public safety and health by addressing different emergencies. The three main emergency service functions include police, fire and rescue service, and emergency medical service.

Environmental health and safety risks to children are defined as those that are attributable to products or substances a child is likely to come into contact with or ingest, such as air, food, water, soil, and products that children use or to which they are exposed.

3.9.1 Regulatory Setting

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires federal agencies to "make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

3.9.2 Affected Environment

The project area is located in Sector 2 of Honolulu Police Department's Patrol District 3 (Pearl City), which covers Pearl City and Pacific Palisades. The nearest police station to the project area is the Pearl City District Station, located on Waimano Home Road, less than 0.5 miles north of the proposed water line termination point on Lehua Avenue. Honolulu Fire Department provides fire suppression, emergency medical service, and response to hazardous materials incidents, motor vehicle accidents, and natural disasters that occur within the project area. Pearl City Fire Station is the closest fire station to the project area (approximately 400 ft south of the replacement water line terminus at Second Street and Lehua Avenue). Waikele Fire Station is approximately 1.4 miles to the west and Waiau Fire Station is approximately 2.5 miles to the northeast of the project area, respectively. The City and County of Honolulu has 20 emergency medical services (EMS) advance life support ambulance units located throughout the community. The EMS unit closest to the project area is located at the Kaiser Clinic in Waipio, approximately 2.5 miles to the northwest. An EMS unit is also located at the Waipahu Fire Station, about 3.5 miles to the southwest of the project area. A new EMS facility in Central Oʻahu is under construction in Waipiʻo, approximately two miles northwest of the proposed water line project area.

3.9.3 Environmental Consequences

The safety and environmental health analysis contained in the respective sections addresses issues related to the health and well-being of military personnel and civilians living on or in the vicinity of the project area. Specifically, this section provides information on hazards associated with the installation and operation of the proposed water line. Additionally, this section addresses the environmental health and safety risks to children.

3.9.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to public health and safety. Therefore, no significant impacts would occur with implementation of the No Action Alternative.

3.9.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The study area for the Preferred Alternative is the proposed water line route. During construction, roadway lane closures and the physical alteration of work area surfaces would pose the greatest hazard to public safety. Motorists, pedestrians, and bicyclists would need to exercise greater caution when navigating around work zones and merging in traffic. These hazards would be minimized through appropriate roadway signage, adequate marking of work zones and merging lanes with traffic cones, provision of safe vehicle detour routes, provision of alternate pedestrian and accessible routes and ramps, employment of special duty HPD officers to assist in traffic control, and covering any open work areas at the end of each work day. Traffic Control Plans have been submitted to appropriate City and

County of Honolulu oversight agencies and State of Hawaii Department of Transportation for review and approval. Approved Traffic Control Plans are required prior to approval of construction plans.

During the operational period, the Preferred Alternative is not expected to increase fire hazards, medical emergencies, or the need for police protection or response as the replacement water line would not increase population or affect activities of the general public. Honolulu Police Department indicated that the project should have no significant impact on its services or operations (see pre-assessment consultation comment letter dated February 22, 2016 in Appendix A). Honolulu Fire Department stated that the project would have no significant impact to its services (see pre-assessment consultation comment letter dated February 23, 2016 in Appendix A). The Preferred Alternative would not have disproportionate environmental health and safety effects to children. The Preferred Alternative would have the beneficial impact of decreasing public safety risks associated with failure of the existing aged water line. Therefore, implementation of the Preferred Alternative would not result in significant impacts to public health and safety.

3.9.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

This alternative would have similar insignificant impacts to public health and safety as the Preferred Alternative. Under this alternative, the duration of construction activities along Kamehameha Highway would be at least twice as long as in the Preferred Alternative. Approved Traffic Control Plans would be implemented to minimize public safety hazards to pedestrians, bicyclists, and motorists traveling on this roadway during the longer construction period. Appropriate Traffic Control Plans would also be implemented for the intersection of Kamehameha Highway and Lehua Avenue, and for the work within the Lehua Avenue ROW. Similar to the Preferred Alternative, because it would replace an existing water line with the same capacity, the Kamehameha Highway-Lehua Avenue Alternative would not increase fire hazards, medical emergencies, or the need for police protection, or have disproportionate environmental health and safety effects to children. It would also have the beneficial impact of reducing the potential for public safety risks should the existing water line fail.

Therefore, implementation of this action alternative would not result in significant impacts to public health and safety.

3.10 Hazardous Materials and Wastes

This section discusses hazardous materials, hazardous waste, toxic substances, and contaminated sites.

3.10.1 Regulatory Setting

Hazardous materials are defined by 49 CFR section 171.8 as “hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table, and materials that meet the defining criteria for hazard classes and divisions” in 49 CFR part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments, as: “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise

managed." Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR part 273. Four types of waste are currently covered under the universal wastes regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material (ACM), polychlorinated biphenyls (PCBs), and lead-based paint (LBP). The USEPA is given authority to regulate special hazard substances by the Toxic Substances Control Act. Asbestos is also regulated by USEPA under the Clean Air Act, and the Comprehensive Environmental Response, Compensation, and Liability Act.

3.10.2 Affected Environment

The DoN has implemented a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. These programs are governed DoN-wide by applicable OPNAV instructions and at the installation by specific instructions issued by the Base Commander. The DoN continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes.

3.10.2.1 Hazardous Materials

Under the Preferred Alternative, the proposed 42-in transmission main crosses an abandoned Hickam petroleum, oils, and lubricants (POL) pipeline at three locations: Kamehameha Highway fronting Home Depot, OUGC, and the intersection of Second Street and Lehua Avenue. Environmental sampling of soil cuttings was conducted to determine how soil cuttings from geotechnical boring studies for the proposed project should be disposed. The sampling and analysis results also provide an indication of potential contamination that may be encountered during construction. The toxicity characteristic leaching procedure (TCLP) results for the soil samples are below the respective RCRA threshold levels. It is anticipated that soil drill cuttings resulting from project construction can be disposed of at an on-island, non-RCRA permitted landfill. Total petroleum hydrocarbons (TPH) results indicate that the soil from the borings are not "heavily contaminated." There is a low risk of encountering petroleum contaminated soil along the proposed 42-in waterline alignment.

Under the Kamehameha Highway-Lehua Avenue Alternative, the alternative alignment would likely run parallel to the abandoned Hickam POL pipeline within the Kamehameha Highway ROW, but cross it at the Lehua Avenue intersection. A branch of the abandoned POL pipeline extends south from Kamehameha Highway within the Lehua Avenue ROW.

3.10.2.2 Hazardous Waste

There are no hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, or hazardous waste lamps known to be present in the existing pipe line infrastructure and no hazardous waste is anticipated to be generated in the construction of the replacement pipe line under either action alternative.

3.10.2.3 Special Hazards (Asbestos Containing Materials, Lead Based Paint, Polychlorinated Biphenyls)

A lead paint survey was conducted for the existing pipeline at Waiawa Stream Bridge and within the existing tunnel. Results were compared to standard presence/absence criteria for lead, i.e., paint containing more than 0.5% lead by weight, or more than 5,000 milligrams per kilogram (mg/kg) total lead, were considered lead-based paint (LBP). Paint with any detectable amount of lead up to 0.5% lead by weight or up to 5,000 mg/kg are considered lead-containing paint (LCP). Both LBP and LCP are worker protection issues. The existing pipeline at both sampled locations was found to contain LCP. In addition, the rubber gaskets at pipe joint connections (which could not be sampled during the lead paint survey) may contain asbestos.

3.10.3 Environmental Consequences

The hazardous materials and wastes analysis contained in the respective sections addresses issues related to the use and management of hazardous materials and wastes as well as the presence and management of specific cleanup sites at the project area.

3.10.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change associated with hazardous materials and wastes. Therefore, no impacts would occur with implementation of the No Action Alternative.

3.10.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The study area for the Preferred Alternative is the proposed water line route and the existing water transmission main. Lead-containing paint in poor condition was identified on portions of the existing pipeline planned for removal and rubber gaskets at pipe joint connections may contain asbestos. There is a low risk that the project would encounter petroleum contaminated soil along the proposed alignment. The project will comply with relevant federal, state, and county regulations for activities that may affect lead containing paint, asbestos, or other hazardous or regulated materials and waste. Appropriate worker protection measures will be taken during demolition and construction. TPH and TCLP testing of the excess soil that will be generated during construction will be properly characterized prior to reuse or disposal when working within areas identified as potentially contaminated. A Phase I Environmental Site Assessment will be conducted for the Preferred Alternative to identify recognized environmental conditions—if any—at the project site and, based on its findings, recommendations will be included in the conclusion of the report.

During the operational period, the new water transmission infrastructure would not involve the use of hazardous materials and wastes. Therefore, implementation of the Preferred Alternative would not result in significant impacts with hazardous materials and wastes.

3.10.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

The study area for this alternative is the proposed water line route and the existing water transmission main. This alternative would have similar insignificant hazardous materials and waste impacts. There is a low risk that petroleum-contaminated soil would be encountered in this alternative. As in the Preferred Alternative, project-related activities that may affect LCP or asbestos will be conducted according to federal, state, and local regulations. If encountered, potentially contaminated soils will be properly

tested and characterized prior to reuse or disposal according to applicable federal, state, and county regulations.

Therefore, implementation of this action alternative would not result in significant impacts with hazardous materials and wastes.

3.11 Environmental Justice

The USEPA defines environmental justice as 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 (USEPA 2016).

3.11.1 Regulatory Setting

Consistent with EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), the Navy's policy is to identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority and low-income populations.

3.11.2 Affected Environment

The proposed project area is primarily located within existing roadway ROWs in industrial and commercial areas. The Preferred Alternative alignment also traverses through a public educational urban garden (OUGC), and for a 500-ft segment, is adjacent to a residential area with six detached dwellings and a low-rise, 21-unit apartment building. Members of the public—from pre-school students to retirees—visit or volunteer at OUGC on a regular basis.

About 75 percent of the Kamehameha Highway-Lehua Avenue Alternative alignment is the same as the Preferred Alternative. The final 25 percent of the alternate alignment (i.e., the eastern- and southernmost segment) diverges from the Preferred Alternative alignment by continuing eastward on Kamehameha Highway where it is located adjacent to a public elementary school (Pearl City Elementary). On its Lehua Avenue segment, the Kamehameha Highway-Lehua Avenue Alternative alignment is directly adjacent to commercial businesses, single-family and low- and mid-rise residential properties, a church, and a nursing home. Lehua Avenue also provides vehicular access to other businesses, government service facilities, places of worship, a cemetery, and residential dwellings (including senior citizen apartments) on cross-streets along the water line alignment, and is the primary access to DoD operational and support facilities on Pearl City Peninsula. Local vehicular access along Lehua Avenue would be maintained to the extent possible; however, there may be limited times where there would be no access. The contractor would notify all those affected by the access limitations in advance of any construction activity that causes limited access. Any "no access" time frames would be limited to active construction hours, and steel plates or other measures would be employed to restore partial access, at a minimum, when construction activity is not actively occurring.

3.11.3 Environmental Consequences

This analysis focuses on the potential for a disproportionate and adverse exposure of specific off-base population groups to the projected adverse consequences discussed in the previous sections of this chapter.

3.11.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no affect to Environmental Justice. Therefore, no significant impacts would occur with the implementation of the No Action Alternative.

3.11.3.2 Kamehameha Highway-OUGC Alternative (Preferred Alternative) Potential Impacts

The study area for environmental justice analysis for the Preferred Alternative is defined as the proposed water line route (i.e., project area). The project area is located within public roadway ROWs and in an educational urban garden facility (i.e., Oahu Urban Garden Center). The affected public ROWs are primarily adjacent to industrial and commercial land uses, with a short segment adjacent to single-family and low-rise apartment dwellings (Second Street). During construction, there would be temporary noise impacts to noise-sensitive land uses, including residences on Second Street during pile driving activities and construction on Second Street. Construction is planned to take place during the daytime, avoiding impacts during nighttime hours. If the construction contractor chooses to do night work in certain portions of the project, they will obtain necessary permits and approvals. Conditions of the project's DOH Construction Noise Permit would be complied with to minimize adverse effects on noise sensitive receptors. Implementation of the Preferred Alternative would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations.

3.11.3.3 Kamehameha Highway-Lehua Avenue Alternative Potential Impacts

The study area for environmental justice analysis for the Kamehameha Highway-Lehua Avenue Alternative is defined as the proposed water line route and the areas for which Lehua Avenue provides primary or sole vehicular access from Kamehameha Highway. This alternative has the same study area as the Preferred Alternative from the Waiawa Pump Station to the point along Kamehameha Highway where the alternative alignments diverge. Similar to the Preferred Alternative, during construction, there would be temporary noise impacts to noise-sensitive land uses, including to residences on Lehua Avenue during when construction activities are conducted in close vicinity. Although there would be traffic impacts to affected roadways (e.g., delays, detours, and congestion), vehicular access would be maintained at all times along Kamehameha Highway for residents and businesses. Along Lehua Avenue, there may be periods where there would be no access, even to local traffic. Any "no access" time frames would be limited to active construction hours, and steel plates or other measures would be employed to restore partial access, at a minimum, when construction activity is not actively occurring.

Similar to the Preferred Alternative, construction would likely take place during the daytime, avoiding impacts during nighttime hours. If the construction contractor chooses to do night work in certain portions of the project, they will obtain necessary permits and approvals. Conditions of the project's DOH Construction Noise Permit would be complied with to minimize adverse effects on noise sensitive receptors. Implementation of this alternative would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations.

3.12 Summary of Potential Impacts to Resources and Impact Avoidance and Impact Avoidance and Minimization

A summary of the potential impacts associated with each of the action alternatives and the No Action Alternative and impact avoidance and minimization measures are presented in Tables 3-5 and 3-6,

respectively. Table 3-6 provides a comprehensive list of avoidance and minimization measures associated with the Proposed Action.

Table 3-5 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Kamehameha Highway-OUGC Alternative (Preferred Alternative)*	*Kamehameha Highway-Lehua Avenue Action Alternative*
Air Quality	No impact	Insignificant construction period impacts due to construction activities. No operational period direct air quality impacts; insignificant indirect impacts from off-site electrical power generation.	Insignificant construction period impacts, though longer duration than Preferred Alternative due to longer construction period and greater traffic impacts. Same operational period impacts as Preferred Alternative.
Water Resources	No impact	Insignificant construction period impacts due to construction activities, including temporary water service interruptions and ground disturbance and its potential for sediment and pollutant transport to downstream receiving waters. Impacts to jurisdictional wetlands, if any, would be avoided, minimized or mitigated to insignificant levels. Insignificant operational period impacts as project area would be returned to predevelopment conditions.	Insignificant construction and operational period impacts (similar to Preferred Alternative).
Geological Resources	No impact	Insignificant construction period impacts due to ground disturbance (i.e., trenching, filling, pile driving). No operational period impacts as project area would be returned to predevelopment conditions.	Insignificant impacts similar to Preferred Alternative.
Cultural Resources	No impact	Insignificant impacts, as Preferred Alternative would have no adverse effect on historic properties and would not impact traditional Hawaiian (or other ethnic group's) rights related to gathering, access, or other customary activities exercised for subsistence, cultural and religious purposes.	Insignificant impacts similar to Preferred Alternative.
Biological Resources	No impact	Insignificant impacts to vegetation, wildlife, threatened and endangered species.	Insignificant impacts similar to Preferred Alternative.
Noise	No impact	Insignificant short-term, temporary noise impacts to noise-sensitive receptors. No significant impacts during operational period.	Insignificant construction period and operational period impacts similar to Preferred Alternative.
Infrastructure	No significant impact; potential for adverse water service impacts if the existing aging water line fails or	Insignificant impacts during construction period due to temporary interruptions in water service as interconnections are made with existing water transmission infrastructure. No impacts on water demand or aquifer allocation. Beneficial impact of	Insignificant impacts similar to the Preferred Alternative.

Table 3-5 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Kamehameha Highway-OUGC Alternative (Preferred Alternative)*	*Kamehameha Highway-Lehua Avenue Action Alternative*
	requires repair.	providing water transmission infrastructure with greater ease of maintenance. No significant operational period impacts.	
Transportation	No impact	Insignificant temporary impacts on vehicle, pedestrian, bicycle, and bus transportation during the construction period due to lane closures and detours on affected roadways. No operational period impacts.	Insignificant temporary impacts on vehicle, pedestrian, bicycle, and bus transportation during the construction period due to lane closures and detours on affected roadways; impacts would be greater than Preferred Alternative due to the longer construction duration and affected roadway lengths within Kamehameha Highway and Lehua Avenue. No operational period impacts.
Public Health and Safety	No significant impact	Insignificant construction period impacts possible due to roadway lane closures and physical alteration of work area surfaces. Beneficial operational period impact of reducing potential for public safety risks should the existing aging water line fail.	Insignificant and beneficial impacts similar to the Preferred Alternative.
Hazardous Materials and Wastes	No impact	Insignificant construction and operational period impacts.	Insignificant impacts similar to the Preferred Alternative.
Environmental Justice	No impact	Insignificant construction and operational period impacts with no disproportionately high and adverse human health or environmental effects on any minority or low-income populations.	Insignificant impacts similar to the Preferred Alternative.

Table 3-6 Impact Avoidance and Minimization Measures

Avoidance/Minimization Measure	*Anticipated Benefit*	*Resource Areas Affected*	*Preferred Alternative*	*Kamehameha Highway-Lehua Avenue Alternative*
Implement construction period air emissions BMPs; compliance with HAR 11-60.1-33 (Fugitive Dust)	Reduce fugitive dust and other particulate emissions	Air Quality	x	x
Implement construction period storm water quality BMPs, SWPPP, USACE, and NPDES permit conditions	Avoid and minimize storm water transport of sediments and pollutants to receiving waters	Water Resources, Cultural Resources	x	x
No use of vibratory hammers or equipment	Avoids vibration-induced ground settlement	Geological Resources	x	x
On-site geotechnical specialist during relevant construction activities	Quality control during excavating, trenching, dewatering, subgrade preparation, compaction, pile predrilling/installation, drilled shaft installation and testing	Geological Resources	x	x
SOPs for inadvertent discoveries of cultural resources	Minimize adverse impacts to cultural resources	Cultural Resources	x	x
Coordinate construction with OUGC	Minimize impacts to existing plant resources	Biological Resources, Noise	x	
Comply with conditions of DOH Construction Noise Permit	Minimize noise impacts to noise-sensitive receptors and uses	Noise	x	x
Obtain DOH Noise Variance if required due to nighttime construction	Minimize noise impacts to noise-sensitive receptors and uses	Noise	x	x
Limit roadway lane closures to one lane	Minimize traffic congestion impacts	Transportation	x	not applicable as full closure of Lehua Avenue may be required during construction
Coordinate Kamehameha Highway activities and timing	Minimize traffic congestion impacts	Transportation	x	x

Table 3-6 Impact Avoidance and Minimization Measures

Avoidance/Minimization Measure	*Anticipated Benefit*	*Resource Areas Affected*	*Preferred Alternative*	*Kamehameha Highway-Lehua Avenue Alternative*
construction with HART				
Comply with approved traffic control plans	Minimize traffic congestion impacts	Transportation	x	x
Comply with relevant federal, state, and county regulations for activities that may affect LCP, asbestos, or hazardous or regulated materials and waste	Avoid or minimize worker or public exposure to hazardous materials and wastes	Hazardous Materials and Wastes	x	x
Conduct Phase I Environmental Site Assessment	Avoid or minimize worker or public exposure to hazardous materials and wastes	Hazardous Materials and Wastes	x	x
TPH and TCLP testing of the excess soil prior to reuse or disposal when working within areas identified as potentially contaminated	Avoid or minimize worker or public exposure to hazardous materials and wastes	Hazardous Materials and Wastes	x	x
Appropriate worker protection measures during construction	Avoid or minimize worker or public exposure to hazardous materials and wastes	Hazardous Materials and Wastes	x	x

4 Cumulative Impacts

This section 1) defines cumulative impacts, 2) describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts, 3) analyzes the incremental interaction the Proposed Action may have with other actions, and 4) evaluates cumulative impacts potentially resulting from these interactions.

4.1 Definition of Cumulative Impacts

The approach taken in the analysis of cumulative impacts follows the objectives of NEPA, CEQ regulations, and CEQ guidance. Cumulative impacts are defined in 40 CFR section 1508.7 as:

The impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

In addition, CEQ and USEPA have published guidance addressing implementation of cumulative impact analyses—Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (CEQ 2005) and Consideration of Cumulative Impacts in EPA Review of NEPA Documents (USEPA 1999). CEQ guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) states that cumulative impact analyses should

"…determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts…[and]…focus on truly meaningful impacts."

Cumulative impacts are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis needs to address the following three fundamental questions.

- Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
- If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

4.2 Scope of Cumulative Impacts Analysis

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, the study area delimits the geographic extent of the cumulative impacts analysis. In general, the study area will include those areas previously identified in Chapter 3 for the respective resource areas. The time frame for cumulative impacts centers on the timing of the Proposed Action.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. Beyond determining that the geographic scope and time frame for the actions interrelate to the proposed action, the analysis employs the measure of "reasonably foreseeable" to include or exclude other actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for EISs and EAs, management plans, land use plans, and other planning related studies.

4.3 Past, Present, and Reasonably Foreseeable Actions

This section will focus on past, present, and reasonably foreseeable future projects at and near the proposed water line alignment. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the past, present, or reasonably foreseeable action. Specifically, using the first fundamental question included in Section 4.1, it was determined if a relationship exist such that the affected resource areas of the proposed action (included in this EA) might interact with the affected resource area of a past, present, or reasonably foreseeable action. If no such potential relationship exists, the project was not carried forward into the cumulative impacts analysis. In accordance with CEQ guidance (CEQ 2005), these actions considered but excluded from further cumulative effects analysis are not catalogued here as the intent is to focus the analysis on the meaningful actions relevant to inform decision-making. Projects included in this cumulative impacts analysis are listed in Table 4-1 and briefly described in the following subsections.

Table 4-1 Cumulative Action Evaluation

Action	***Level of NEPA Analysis Completed***
Present and Reasonably Foreseeable Future Actions	
Honolulu Rail Transit Project	Final EIS, Final Supplemental EIS Section 4(f) Evaluation and Amended Record of Decision

4.3.1 Present and Reasonably Foreseeable Actions

As described in Section 3.8.1.3, the Honolulu Rail Transit Project (HRTP) is an elevated guideway in support of a new high-capacity transit service in the corridor between East Kapolei and Ala Moana Center. The project includes the guideway, transit stations, park-and-ride facilities, maintenance and storage facility, and other ancillary facilities to support the transit system. The project, currently under construction, includes construction and operation of a 20-mile elevated fixed guideway rail system with 21 stations. The entire 20-mile system is projected to be operational by 2021. A section of the rail guideway infrastructure will be located in the same segment of the Kamehameha Highway ROW as the Proposed Action. The Pearl Highlands Station and Traction Power Substation #10 will be located at the intersection of Kamehameha Highway and Kuala Street, on the south side of the Kamehameha Highway ROW—i.e., just south of the proposed water line alignment (see station location and guideway route in Figure 3-6).

Construction of the Kamehameha Highway guideway near Pearl Highlands Center (i.e., in the vicinity of the proposed water line alignment) is scheduled to be completed in 2016. Related civil work in this area (e.g., paving, lighting, drainage, traffic modifications, etc.) is projected to extend through 2017, with construction of the Pearl Highlands Station scheduled to be completed in 2018.

Although the Pearl Highlands Station will be located south of the proposed water line alignment, construction activities (including a pedestrian bridge to Pearl Highlands Center) would involve work within the Kamehameha Highway ROW in the same lateral extent as the water line. Construction activities for the guideway civil work and Pearl Highlands Station may overlap with the Proposed Action construction period (anticipated from late 2017 to late 2019). Because the Proposed Action involves a 2.7-mile long project area, construction activities will be coordinated with the rail station construction to avoid concurrent and cumulative construction period impacts with the HRTP. The DoN will work closely with HART's ROW planners and guideway engineers to coordinate use of ROW, easements, and construction schedules, as well as design plans along the segment of Kamehameha Highway common to both projects. Work within the state ROW must be approved by the State DOT.

4.4 Cumulative Impact Analysis

The following analysis of cumulative impacts is organized by resource area in the same order presented in Chapter 3. Only the resource areas that have the potential to have cumulative impacts resulting from the incremental effects of the Preferred Alternative or Kamehameha Highway-Lehua Avenue Alternative are addressed. Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data are not available and a qualitative analysis was undertaken. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative impacts related to this EA where possible. The analytical methodology presented in Chapter 3, which was used to determine potential impacts to the various resources analyzed in this document, was also used to determine cumulative impacts. The analyses show that, when considered with relevant past, present and reasonably foreseeable projects, the incremental effects of the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative would not contribute to cumulative impacts on pertinent resource areas. Because it would not contribute any incremental effects, the No Action Alternative would not result in cumulative impacts on the relevant resource areas during the construction or operational periods.

4.4.1 Air Quality

4.4.1.1 Description of Geographic Study Area

The ROI for assessing air quality impacts is the State of Hawai‘i.

4.4.1.2 Relevant Past, Present, and Future Actions

The HRTP may interact with Proposed Action's air quality resource area if construction of both projects occurs concurrently in the same area. However, this is improbable due to the timing of the projects and the likelihood that the project schedules would be coordinated to avoid concurrent construction in or near Kamehameha Highway.

4.4.1.3 Cumulative Impact Analysis

Cumulative air quality impacts from past, present, and future actions within the ROI would be less than significant because both projects would occur in NAAQS attainment areas. Construction period air quality impacts from construction equipment would be temporary and not likely to occur during the same time or at the same location. Therefore, implementation of the Preferred Alternative or

Kamehameha Highway-Lehua Avenue Alternative combined with the past, present, and reasonably foreseeable future projects, would not result in significant air quality impacts within the ROI.

4.4.2 Water Resources

4.4.2.1 Description of Geographic Study Area

The ROI for assessing water resources impacts are Waiawa Stream and Pearl Harbor Middle Loch.

4.4.2.2 Relevant Past, Present, and Future Actions

The HRTP may interact with Proposed Action's water quality resource area.

4.4.2.3 Cumulative Impact Analysis

Cumulative water resources impacts from past, present, and future actions within the ROI would be less than significant because both the HRTP and DoN replacement water line projects would comply with their respective permit conditions. In the case of the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative, BMPs and conditions of the project's USACE Section 10 and NPDES permits would reduce the likelihood of sediments and land-based pollutants from entering Waiawa Stream (i.e., waters of the U.S.) or storm waters and subsequently being transported to Waiawa Stream, Pearl Harbor, or other coastal resources. A SWPPP will be prepared for the project under both action alternatives, and its conditions and recommendations will be met. The DoN will confirm the likelihood and/or presence or absence of jurisdictional wetlands located within the project area prior to construction. If any jurisdictional wetlands are identified within the project area, the DoN will coordinate with USACE to avoid, minimize and/or mitigate impacts resulting from the Proposed Action to insignificant levels.

Construction period water resources impacts from both projects due to ground disturbance would be temporary and not likely to occur during the same time or at the same location. During the operational period, land disturbed by construction of the Preferred Alternative and Kamehameha Highway-Lehua Avenue Alternative would be returned to pre-construction conditions. Neither alternative would result in an increase in impervious surfaces.

Because it would replace existing aging water transmission infrastructure of the same capacity (which would subsequently be decommissioned), the Proposed Action is not expected to increase demand for water from the Waipahu-Waiawa aquifer system or affect groundwater withdrawals and have no incremental interaction with the HRTP with respect to groundwater.

Therefore, implementation of the Preferred Alternative or Kamehameha Highway-Lehua Avenue Alternative combined with the past, present, and reasonably foreseeable future projects, would not result in significant water resources impacts, including to coastal and marine waters, within the ROI.

4.4.3 Cultural Resources

4.4.3.1 Description of Geographic Study Area

The ROI for cultural resources cumulative impacts for the Proposed Action is equivalent to the undertaking's APE described in Section 3.4 (proposed water line alignment plus a 5-m area on each side).

4.4.3.2 Relevant Past, Present, and Future Actions

The HRTP may interact with Proposed Action's impacts on cultural resources because the two project areas overlap on a segment of Kamehameha Highway between Waihona Street and Home Depot.

4.4.3.3 Cumulative Impact Analysis

Cumulative impacts to cultural resources from past, present, and future actions within the ROI would be less than significant because no cultural deposits in the area of project overlap along Kamehameha Highway were identified in earlier studies and none are anticipated to be affected by the Proposed Action. Generally, the stratigraphy of Kamehameha Highway from Waihona Street to just west of Lehua Avenue consists of fill layers overlying naturally deposited alluvial sediment. The DoN determined that the proposed undertaking would have no adverse effect on the nearby Pearl Harbor National Historic Landmark or any historic properties within the APE; SHPO concurrence is assumed per the provisions of 36 CFR 800.5(c)(1). The Proposed Action would not impact any known traditional Hawaiian, or other ethnic group's, rights related to gathering, access, or other customary activities exercised for subsistence, cultural and religious purposes and would have no incremental interaction with the HRTP's effects. By complying with BMPs and other conditions of required USACE and DOH permits, the Proposed Action will avoid or minimize potential construction period indirect surface water quality impacts to storm water receiving waters (e.g., Waiawa Stream and Pearl Harbor), where subsistence fishing and other traditional or cultural practices may occur.

The Kamehameha Highway-Lehua Avenue Alternative would have similar insignificant effects on cultural resources as the Preferred Alternative. Therefore, implementation of the Preferred Alternative or Kamehameha Highway-Lehua Avenue Alternative—or if they are combined with the past, present, and reasonably foreseeable future projects—would not result in significant cumulative impacts cultural impacts within the ROI.

4.4.4 Noise

4.4.4.1 Description of Geographic Study Area

The ROI for cumulative noise impacts is the area that contains noise sensitive receptors closest to the project area.

4.4.4.2 Relevant Past, Present, and Future Actions

The HRTP may interact with Proposed Action's noise impacts if construction of both projects occurs concurrently in the same area. However, this is improbable due to the timing of the projects and the likelihood that the project schedules would be coordinated to avoid concurrent construction in or near Kamehameha Highway.

4.4.4.3 Cumulative Impact Analysis

Cumulative noise impacts from past, present, and future actions within the ROI would be less than significant because concurrent construction of both projects along the same segment of (or in close proximity to) Kamehameha Highway is unlikely to occur. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant noise impacts within the ROI. Cumulative noise impacts from past, present, and future actions within the ROI would be less than significant because during the operational period of the Proposed Action, the water line would function below grade near noise sensitive areas and would not

result in ambient noise impacts to noise sensitive uses. Therefore, implementation of the Preferred Alternative or Kamehameha Highway-Lehua Avenue Alternative combined with the past, present, and reasonably foreseeable future projects, would not result in significant cumulative noise impacts within the ROI.

4.4.5 Transportation

4.4.5.1 Description of Geographic Study Area

The ROI for transportation includes Waihona Street, Kamehameha Highway (from Waihona Street to Lehua Avenue), Second Street, and Lehua Avenue between Kamehameha Highway and Second Street.

4.4.5.2 Relevant Past, Present, and Future Actions

The HRTP may interact with Proposed Action's traffic impacts if construction of both projects occurs concurrently in the same area. However, this is improbable due to the timing of the projects and the likelihood that the project schedules would be coordinated to avoid concurrent construction in or near Kamehameha Highway.

4.4.5.3 Cumulative Impact Analysis

Cumulative transportation impacts from past, present, and future actions within the ROI would be less than significant because concurrent construction of both projects along the same segment of (or in close proximity to) Kamehameha Highway is unlikely to occur. The rail column and guideway structures within the Kamehameha Highway ROW will be completed prior to start of Preferred Alternative or Kamehameha Highway-Lehua Avenue Alternative construction. The related rail guideway civil work is expected to be completed in 2017. Although the Pearl Highlands Station will not be located over Kamehameha Highway, it may include a pedestrian bridge connection to Pearl Highlands Center that crosses over Kamehameha Highway. This will require Kamehameha Highway lane closures during construction. If both projects require Kamehameha Highway lane closures during the same period, there would be cumulative impacts on the transportation system. However, it is likely that concurrent construction would not be approved by oversight agencies to avoid these cumulative effects on the local transportation system. Therefore, implementation of the Preferred Alternative or Kamehameha Highway-Lehua Avenue Alternative, combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

5 Other Considerations Required by NEPA

5.1 Consistency with Other Federal, State, and Local Laws, Plans, Policies, and Regulations

In accordance with 40 CFR section 1502.16(c), analysis of environmental consequences shall include discussion of possible conflicts between the Proposed Action and the objectives of federal, regional, state and local land use plans, policies, and controls. Table 5-1 identifies the principal federal and state laws and regulations that are applicable to the Proposed Action, and describes briefly how compliance with these laws and regulations would be accomplished.

Table 5-1 Principal Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	*Status of Compliance*
National Environmental Policy Act; CEQ NEPA implementing regulations; Navy procedures for Implementing NEPA	EA in progress
Rivers and Harbors Act, Section 10	Permit to be obtained
Clean Air Act	Proposed Action in attainment area
Clean Water Act	NPDES permit to be obtained
Coastal Zone Management Act	Federal consistency review concluded (DBEDT concurrence)
National Historic Preservation Act	Consultation concluded (SHPO concurrence)
Endangered Species Act	No effect; no consultation required
Executive Order 11988, Floodplain Management	Eight-step decision-making process to be conducted prior to project implementation
Executive Order 11990, Protection of Wetlands	Wetland investigation in progress
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations	EA conclusion of no significant effects
Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks	EA conclusion of no significant effects
Chapter 343, Hawaiʻi Revised Statutes	Determined by CCH DPP to be an exempt class of action; no Chapter 343, HRS EA required

Coastal Zone Management

The federal Coastal Zone Management Act (CZMA) of 1972 establishes a federal-state partnership to provide for the comprehensive management of coastal resources. Coastal states and territories develop site-specific coastal management programs based on enforceable policies and mechanisms to balance resource protection and coastal development needs. The Hawaiʻi Coastal Zone Management Program lays out the policy to guide the use, protection, and development of land and ocean resources within the state's coastal zone. Under the Act, federal activity in, or affecting, a coastal zone requires preparation of a Coastal Zone Consistency Determination or a Negative Determination. In other words, any federal agency proposing to conduct or support an activity within or outside the coastal zone that will affect any land or water use or natural resource of the coastal zone is required to do so in a manner consistent with the CZMA or applicable state coastal zone program to the maximum extent practicable. However, federal lands, which are "lands the use of which is by law subject solely to the discretion of…the Federal Government, its officers, or agents," are statutorily excluded from the State's "coastal zone." If, however, the proposed federal activity affects coastal resources or uses beyond the

boundaries of the federal property (i.e., has spillover effects), the CZMA Section 307 federal consistency requirement applies. As a federal agency, the DoN is required to determine whether its proposed activities would affect the coastal zone. This takes the form of either a Negative Determination or a Consistency Determination.

Potential impacts to applicable resources that are subject to the State's program have been addressed in the respective Environmental Consequences sections of this document. An individual CZM federal consistency review is required for the project. According to 15 CFR Section 930.33(5)(b), "federal agencies shall consider all development projects within the coastal zone to be activities affecting any coastal use or resource." Because the project will not occur exclusively on federal land, a CZM review is required. A CZM Consistency Determination was prepared and found that the Proposed Action would be consistent with the enforceable policies of the Hawai'i Coastal Zone Management Program to the maximum extent practicable; DBEDT OP concurred with this determination by letter dated April 8, 2016. CZMA correspondence is attached as Appendix D.

5.1.1 State of Hawai'i

5.1.1.1 Chapter 343, Hawai'i Revised Statutes

Environmental review under Chapter 343, HRS is required for any program or project that proposes one or more of eight land uses or administrative acts, including use of State or County lands or funds other than for feasibility studies or the purchase of raw land. As described in Section 1.1, because the Proposed Action involves the use of state and county lands (i.e., use of state and county roadway ROWs and state-owned lands at the OUGC), it is subject to review under Chapter 343, HRS. However, by letter dated May 11, 2016, the agency that assumed the responsibility and authority for the Proposed Action's compliance with Chapter 343, HRS (i.e., CCH DPP) determined that the Proposed Action is an exempt class of action pursuant to Exemption Class 1 Item 5 and Exemption Class 6, Item 2 of its Exemption List (dated August 12, 1981), and that it would not require a Chapter 343, HRS EA (see Appendix E for DPP determination letter).

5.1.1.2 Hawai'i State Plan

The Hawai'i State Plan, codified under Chapter 226, HRS, serves as a guide for the future long-range development of the State. The State Plan provides a basis for determining priorities, allocating limited resources, and improving coordination of State and County plans, policies, programs, projects, and regulatory activities. The plan is divided into three parts: Part I identifies the State's theme, goals, objectives, and policies; Part II establishes a statewide planning system which guides the coordination and implementation of the Plan; and Part III establishes priority guidelines to address areas of statewide concern.

The following objectives and policies of the Hawai'i State Plan may be relevant to the Proposed Action. A discussion of the project's consistency with the applicable State Plan goals, objectives, and policies is provided in this section.

Section 226-9 Objectives and policies for the economy – federal expenditures

(b)(2) Promote Hawai'i's supportive role in national defense.

Discussion: The Proposed Action will support necessary infrastructure updates to an existing water transmission system in support of national defense. The existing 42-inch primary water transmission line

that provides current service is now over 60 years old and has reached the end of its reliable service life. It is required for DoN and USAF operations and mission support activities at JBPHH. The improvements are needed to ensure continuation of essential services.

Section 226-16 Objectives and policies for facility systems – water

(b)(1) Coordinate development of land use activities with existing and potential water supply.

(b)(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.

(b)(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.

(b)(5) Support water supply services to areas experiencing critical water problems.

Discussion: The Proposed Action is to provide adequate infrastructure in order to deliver the required level of potable, fire protection, and industrial water service from the DoN's Waiawa Pump Station to JBPHH, Manana Housing Area, and Aliamanu Housing Area. The existing 42-in primary water transmission line currently provides service for DoN and USAF operations, as well as mission support activities at JBPHH. The transmission line has reached the end of its reliable service life, and a replacement of this line is needed. In order to maintain an adequate level of service, replacement of the existing water transmission system is needed.

5.1.1.3 State Land Use Law

The State Land Use Law, Chapter 205, HRS, establishes a statewide zoning framework for land use management by classifying all lands in the State into four land use districts: Urban, Agricultural, Conservation, and Rural. This law was developed in response to a lack of adequate controls which resulted in widespread development of Hawai'i's limited and valuable land. The State Land Use Commission (LUC), the governing body who administers this statewide zoning law, is responsible for preserving and protecting the lands in the State, and encouraging those uses to which lands are best suited. The project area is located in the State Urban District, as shown in the State Land Use Districts Map (Figure 5-1). The proposed use of the property is consistent with Urban District provisions.

5.1.1.4 Hawai'i Coastal Zone Management Program

The National Coastal Zone Management Program was created through passage of the Coastal Zone Management Act of 1972. Hawai'i's CZM Program, adopted as Chapter 205A, HRS, provides a basis for protecting, restoring and responsibly developing coastal communities and resources. The objectives and policies of the Hawai'i CZM Program encompass broad concerns such as impact on recreational resources, historic and archaeological resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development. A discussion of the project's consistency with the objectives and policies of the CZM Program follows.

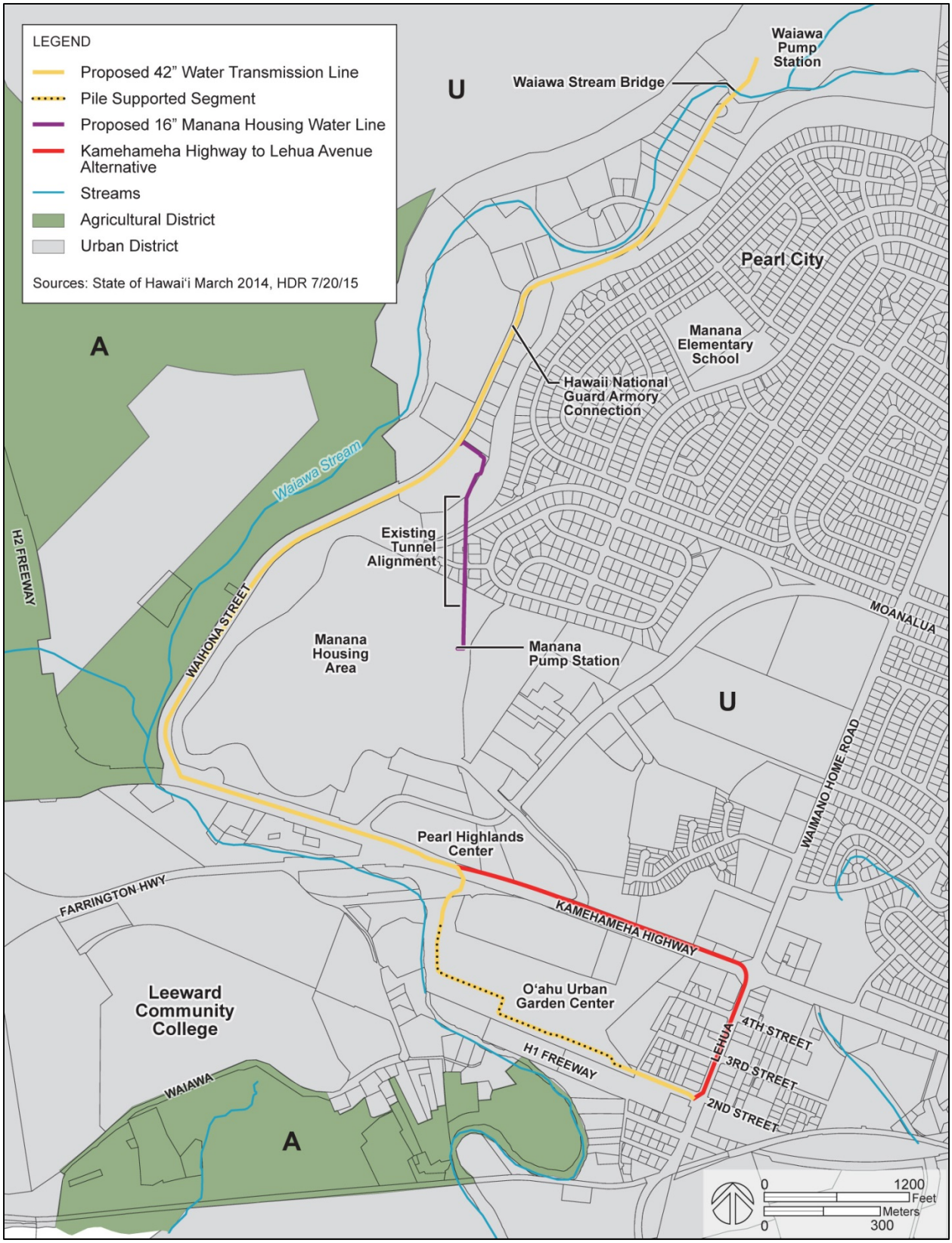


Figure 5-1 State Land Use Districts

(1) Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

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

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

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

(ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;

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

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

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

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

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

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

Discussion: The Proposed Action would not impact coastal recreational resources or opportunities accessible to the public. It would replace the infrastructure and function of an existing primary water main with a new water main located in non-recreational areas. Construction period BMPs would minimize and reduce the potential for sediments or other pollutants to reach shoreline areas.

(2) Historic Resources

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

Policies:

(A) Identify and analyze significant archaeological resources;

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

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Discussion: The DoN determined that the Preferred Alternative would have no adverse effect on historic properties and SHPO concurrence is assumed per 36 CFR Part 800.5(c) (see discussion in Section 3.4.3.2). The proposed development will not adversely impact cultural resources. If during the performance of the project, historic properties, including archaeological sites and TCPs, are discovered or unanticipated effects are found, the DoN will follow inadvertent discovery procedures.

(3) 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;

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

(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

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

Discussion: The Proposed Action would not affect scenic and open space resources in shoreline or other areas. All components of the proposed water line that are in areas accessible to the public would be located below grade. The above-ground components (i.e., Waiawa Stream crossing and segment of pipeline in existing tunnel) would be located in DoN-controlled areas not accessible or visible to the general public.

(4) 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;

(B) Improve the technical basis for natural resource management;

(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion: The Proposed Action would not degrade coastal ecosystems or surface waters that flow into marine waters. During construction, BMPs would be implemented to avoid or minimize sediment flows into stormwater drains or surface waters. The project would require an NPDES permit and SWPPP; conditions of these permits would further reduce potential impacts to coastal water ecosystems. During the operational period, the subsurface water line would not have the potential to impact coastal ecosystems, and would have the beneficial impact of reducing the risk of failure of the existing 42-in water transmission main, which could result in transporting sediments into coastal waters.

(5) 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;

(B) Ensure that coastal dependent developments such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

(iii) The development is important to the State's economy.

Discussion: The Proposed Action is not a coastal dependent use, but would support existing coastal dependent uses at JBPHH, which has a significant role in the State's economy.

(6) Coastal Hazards

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

Policies:

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

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

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

(D) Prevent coastal flooding from inland projects.

Discussion: The Proposed Action is not located within a tsunami evacuation zone. Results of geotechnical investigations and other studies for the project will be used in the project design to reduce hazards to the proposed infrastructure from storm waves, stream flooding, erosion, subsidence, and pollution; these coastal hazards are not anticipated to affect the proposed infrastructure. Though portions of the Proposed Action would be located in a floodplain and floodway, those segments of the water line would be located below grade and would not affect or be affected by the extents of those flood zones. The DoN will comply with the requirements of EO 11988 in implementing the Proposed Action.

(7) Managing Development

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

Policies:

(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

(B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and

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

Discussion: The Proposed Action would replace an existing water transmission line and does not represent a significant new coastal development. The existing water line would be taken out of service upon completion of the Proposed Action. Relevant state and county agencies were notified of the project at an early stage and coordination among DoN and the permitting agencies is ongoing. There will be a public review period for the NEPA EA.

(8) Public Participation

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

Policies:

(A) Promote public involvement in coastal zone management processes;

(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

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

Discussion: As noted above, there will be a public review period for the NEPA EA. Early consultation for the EA was also conducted in February 2016, in which 38 agencies, organizations and individuals were contacted for input on the scope of the EA. In addition, the CZM Consistency Determination concurrence process included a public notification and comment period. See Section 5.1 for a discussion of the Proposed Action's CZM Consistency Determination. A DoN representative will keep the Pearl City Neighborhood Board informed of progress on the water line replacement project.

(9) Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

(D) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and

(E) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor;

Discussion: The Proposed Action is not located near any public beach or shoreline; it does not include any above ground structures near any shoreline setback. It would not introduce any vegetation or erosion-control structures in any shoreline area, nor would it affect any beach transit corridor.

(10) Marine Resources

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

Policies:

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The Proposed Action would not involve the use or development of marine or coastal resources and, because it would be generally located below grade and in upland areas, is not likely to affect marine resources (including marine life) through sediment or pollutant transport.

5.1.2 City and County of Honolulu

5.1.2.1 General Plan

The General Plan for the City and County of Honolulu, adopted in 1977 and last amended in 2002, identifies long term objectives and policies along with the strategies and actions to achieve them. The Plan 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. The identified objectives contain statements of desirable conditions to be achieved in the long run, within an approximate 20-year timeframe. The broad policies are intended to facilitate the attainment of the objectives of the Plan. The Plan includes eleven subject areas which provide a framework of the City’s expression of public policy concerning the needs of the people and the functions of government. The eleven areas of concern include: population; economic activity; the natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety; health and education; cultural and recreation; and government operations and fiscal management.

The General Plan is currently being updated and will focus on critical issues such as growth, development, economic health, tourism, affordable housing, agriculture, and sustainability. In support of the update, five trend reports, three economic discussions with key stakeholders, and a summary paper on the key planning issues have been completed. Key focus groups for agriculture, affordable housing, and tourism were created and involved participation from the public.

The objectives and policies of the General Plan that are relevant to the proposed project are as follows:

I. Population

Objective C: To establish a pattern of population distribution that will allow the people of Oahu to live and work in harmony.

Policy 4: Direct growth according to Policies 1, 2, and 3 above by providing land development capacity and needed infrastructure to seek a 2025 distribution of Oahu’s residential population.

Discussion: The proposed replacement water line replaces existing infrastructure with similar capacity. No impacts to O‘ahu’s population would result from the replacement water line.

II. Transportation and Utilities

Objective B: To meet the needs of the people of O‘ahu for an adequate supply of water and for environmentally sound systems of waste disposal.

Policy 1: Develop and maintain an adequate supply of water for both residents and visitors.

Objective C: To maintain a high level of service for all utilities.

Policy 1: Maintain existing utility systems in order to avoid major breakdowns.

Policy 2: Provide improvements to utilities in existing neighborhoods to reduce substandard conditions.

Discussion: The Proposed Action is to replace an aging water transmission main that is over 60 years old and has reached the end of its service life. The existing 42-inch transmission main provides water for drinking, fire protection, and industrial services; these utilities are needed in order to maintain a high level of service. The water main is part of the system that conveys water to the residents of JBPHH, Manana Housing Area, and Aliamanu Housing Area.

III. Physical Development and Urban Design

Objective F: To promote and enhance the social and physical character of Oahu's older towns and neighborhoods.

Policy 3: Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.

Discussion: The proposed replacement water line will be subsurface and will not impact the character of the older communities through which it traverses.

5.1.2.2 Primary Urban Center Development Plan

The City and County of Honolulu provides a conceptual framework for implementing the objectives and policies of the General Plan though its Development Plan (DP) program. There are eight geographical DP areas established on Oahu, which each have community-oriented plans intended to guide public policy and decision-making through 2025.

Major growth in population and economic activity will be directed into two of the eight planning areas, the Primary Urban Center (PUC) and Ewa, and are guided under their respective Development Plans. The remaining six planning regions are considered Sustainable Communities Plans, and are envisioned to remain relatively stable.

The project area is located within the PUC DP area. The Primary Urban Center Development Plan (PUC DP), adopted in 2004, establishes policy to shape the growth and development of the PUC through 2025. The PUC is home to almost half of the island's population and contains a diverse mix of neighborhoods, business, and industries (see PUC DP Land Use Map, Figure 5-2).

The proposed project is consistent with the following concepts identified in the PUC DP:

- Expand the capacity of infrastructure, including water supply, sewers, and storm drains.
- Support continuation of military uses.

Discussion: The Proposed Action will improve upon infrastructure that services JBPHH and multiple military family housing areas and has reached the end of its service life. The proposed water line will provide adequate infrastructure necessary to deliver the required level of potable, fire protection, and industrial water service for DoN and USAF operations. Improvements to the existing water transmission system are needed in order to ensure that services provided by the line can continue.

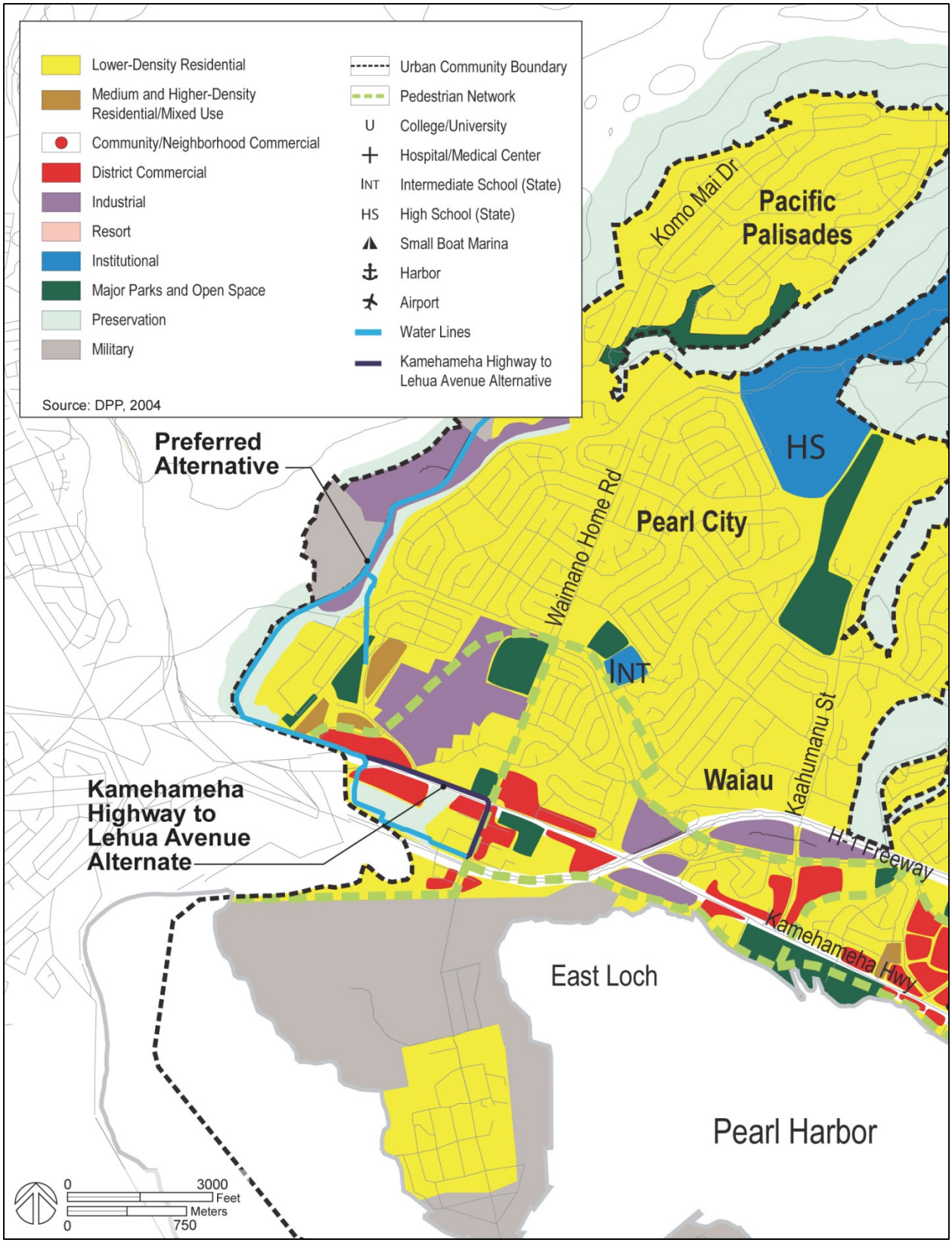


Figure 5-2 Primary Urban Center Development Plan Land Use Map

5.1.2.3 City and County of Honolulu Land Use Ordinance

The Land Use Ordinance (LUO) of the City and County of Honolulu regulates land use in accordance with adopted land use polices from the General Plan and Development Plans. The provisions, also referred to as the Zoning Ordinance, of the LUO are intended to provide reasonable development and design standards. Under current LUO zoning, the proposed Waiawa water line and surrounding area are located within the following zoning districts: F-1 Military and Federal Preservation; AG-1 Restricted Agricultural; AG-2 General Agricultural; R-5 Residential; and I-1 Limited Industrial (see City and County Zoning and Special Management Area Map, Figure 5-3). Under the LUO, the proposed water line is considered a Type A utility installation, and is a permitted use in all applicable zoning districts.

5.1.2.4 City and County of Honolulu Special Management Area and Shoreline Setback

Established in 1975 with the enactment of Act 176, the Special Management Area (SMA) permit is also known as the Shoreline Protection Act. The SMA, conferred by HRS Chapter 205A, is designed to preserve, protect, and restore the natural resources of Hawai‘i’s coastal zone. Along the shoreline, special controls on development are necessary in order to avoid the permanent loss of valuable resources and insure adequate access to beaches, recreation areas, and natural reserves. Permissible land uses, allowed by various land use policies such as county general plans, are regulated through the SMA permit. The SMA permit ensures that uses, activities, or operations on land, in water, or under water within the SMA comply with SMA guidelines, as well as the CZM objectives and policies.

The proposed water line is not within the SMA (see City and County Zoning and Special Management Area (Figure 5-3).

5.2 Relationship between Short-Term Use of the Environment and Long-Term Productivity

NEPA requires an analysis of the relationship between a project’s short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development site reduces future flexibility in pursuing other options, or that using a parcel of land or other resources often eliminates the possibility of other uses at that site.

In the short-term, effects to the human environment with implementation of the Proposed Action would primarily relate to the construction activity itself. Noise and transportation facilities would be impacted in the short-term. In the long-term, almost all of the new water transmission infrastructure would be located below grade and have no effect on the relevant resource areas. Because it replaces the function and capacity of an existing water transmission line (which would be taken out of service), the proposed water line would not change potable water demand or supply. The construction and operation of the replacement water line would not significantly impact the long-term natural resource productivity of the area. The Proposed Action would not result in any impacts that would significantly reduce environmental productivity or permanently narrow the range of beneficial uses of the environment.

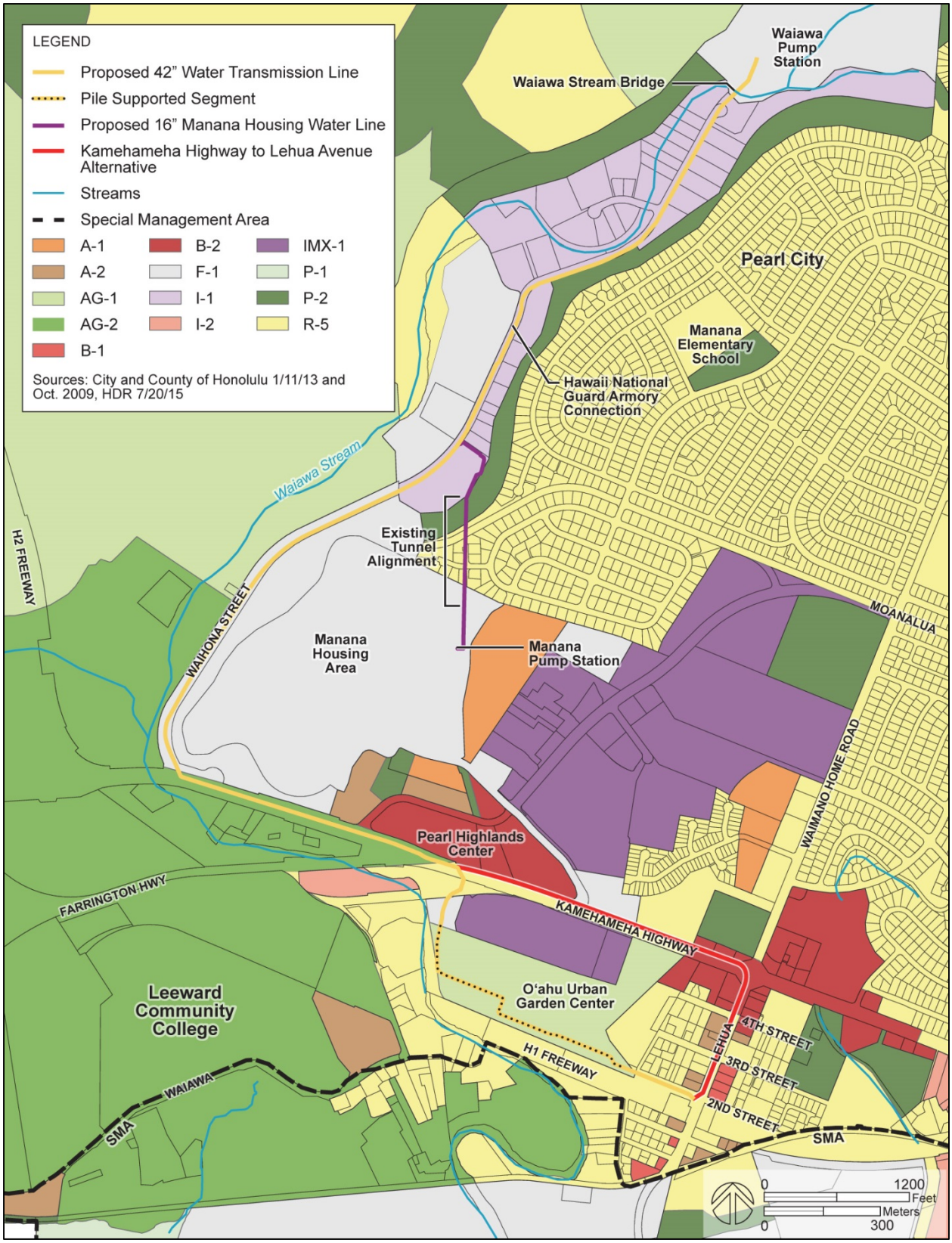


Figure 5-3 City and County of Honolulu Zoning Districts and SMA

6 References

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7 List of Preparers

This EA was prepared collaboratively between the Navy and contractor preparers.

U.S. Department of the Navy

Alan Suwa (NAVFAC Pacific)
Masters of Urban and Regional Planning
Years of Experience: 36 years
Responsible for: NEPA EA Project Manager

Carly R. Antone (NAVFAC Pacific)
B.A., Anthropology
Years of Experience: 13
Responsible for: Cultural Resources

Justin Fujimoto, Fish and Wildlife Biologist (NAVFAC Pacific)
B.S. Natural Resources and Environmental Management
Years of Experience: 6
Responsible for: Terrestrial Biology

Shirley Matoi, P.E. (NAVFAC Pacific)
M.S. Coastal Engineering; B.S. Civil Engineering
Years of Experience: 34 years
Responsible for: Project Design/Description

Contractors

Thomas A. Fee, AICP, LEED AP ND (HHF Planners)
B.A., Economics and Master of Urban and Regional Planning
Years of Experience: 29 years
Responsible for: Overall quality assurance/quality control

Gail Renard, LEED AP (HHF Planners)
B.A., International Relations
Years of Experience: 19 years
Responsible for: Purpose and Need, Proposed Action and Alternatives, Air Quality, Water Resources, Geological Resources, Noise, Infrastructure, Transportation, Public Health and Safety, Hazardous Materials and Wastes, Environmental Justice, Cumulative Impacts, Other Considerations

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8 List of Parties Contacted

8.1 Pre-Assessment Consultation

An informational letter was sent on February 8, 2016 to 38 agencies, organizations, and individuals to obtain comments on the proposed project during the pre-assessment consultation process to prepare this Draft EA. A total of ten agencies and organizations provided written responses. The parties contacted are listed in the table below. The parties that provided written comments are marked with "x" and relevant comments are addressed in this Draft EA. A copy of the pre-assessment consultation letter, written comments received in response to the letter, and subsequent DoN responses addressing those comments are included in Appendix A.

AGENCY/ORGANIZATION	WRITTEN RESPONSE
Federal	
U.S. Army Corps of Engineers, Honolulu District	X
U.S. Department of Transportation	
USDA Natural Resources Conservation Service	
U.S. Environmental Protection Agency	
Department of the Interior, Fish and Wildlife Service	
State of Hawai'i	
Department of Agriculture	
DBEDT Office of Planning	x
Department of Defense	
Department of Hawaiian Homelands	x
Department of Health	x
Department of Land and Natural Resources, Land Division	x
DLNR, State Historic Preservation Division	
Office of Environmental Quality Control	
Office of Hawaiian Affairs	X
University of Hawai'i Office of Planning and Facilities	
Department of Transportation	
City and County of Honolulu	
Board of Water Supply	X
Department of Budget and Fiscal Services	
Department of Design and Construction	X
Department of Emergency Management	x
Department of Environmental Services	
Department of Facility Maintenance	X
Department of Planning and Permitting	x
Department of Transportation Services	X
Honolulu Fire Department	x
Honolulu Police Department	x
Honolulu Authority for Rapid Transportation	x
Elected Officials	
Senator Clarence Nishihara	
Representative Roy Takumi	
Councilmember Brandon Elefante	
Community Organizations and Utilities	
Pearl City Neighborhood Board No. 21	

AGENCY/ORGANIZATION	WRITTEN RESPONSE
Historic Hawaiʻi Foundation	
Hawaiian Electric Company	x
Hawaiian Telcom	
Oceanic Time-Warner Cable	
Hawaii Gas	X
AT&T	
Hawaii Independent Energy	

8.2 NHPA Section 106 Consultation

During its NHPA Section 106 consultation process, the DoN consulted with the Hawaiʻi SHPO, National Park Service, Advisory Council on Historic Preservation, Historic Hawaiʻi Foundation, National Trust for Historic Preservation, Office of Hawaiian Affairs, Oʻahu Council of Hawaiian Civic Clubs, and ʻAiea Hawaiian Civic Club regarding the undertaking (see correspondence in Appendix B).

8.3 Cultural Impact Assessment Consultation

In addition to the EA pre-assessment consultation and NHPA Section 106 consultation, 26 individuals or organizations (listed below) were contacted in January and April 2016 during the preparation of the project's CIA. The process was intended to identify cultural practitioners who are familiar with the area of the Proposed Action and who could provide insight on the history of the land. See Section 3.4.2.4 for a discussion of the CIA findings and Appendix C for the CIA report.

Name	Affiliation
Aʻala O Ka ʻĀina Hula Hālau	Hula Hālau Aʻala O Ka ʻĀina
Aragon-Balgas, Beatriz	Oʻahu Urban Garden Center
Association of Hawaiian Civic Clubs	Association of Hawaiian Civic Clubs
Christensen, Makani	ʻAha Moku Council: Oʻahu – Moku O Kakuhihewa, Chair
Elefante, Brandon	Honolulu City Councilmember, District 8
Hālau Hula Olana	Hālau Hula Olana
Hao-Tamon, Shelly	King Kamehameha Hawaiian Civic Club, Pelekikena
Hawaiʻi Okinawa Center	Hawaiʻi United Okinawa Association
Hawaiʻi's Plantation Village	Hawaiʻi's Plantation Villages
Hilo, Regina	State Historic Preservation Division
Hula Preservation Society	Hula Preservation Society
Kane, Shad	ʻAhahui Siwila Hawaiʻi o Kapolei Hawaiian Civic Club
Kapua, Charles Kanaha	Pearl Harbor Hawaiian Civic Club, Pelekikena
Lee, Curtis	Pearl City Lions Club, President
Losch, Tracie Kuʻuipo	Hawaiian Studies Program, UH-Leeward Community College
Lum, Kehau	Aliʻi Pauahi Hawaiian Civic Club, Pelekikena
Markell, Kai	Office of Hawaiian Affairs
Nagano, Steven	Oahu Urban Garden Center

Name	Affiliation
Nishihara, Clarence K.	State Legislator - District 17, Senator
Pearl City Community Association	Pearl City Community Association
Rodrigues, Hinano	State Historic Preservation Division
Takumi, Roy M.	State Legislator - District 35, Representative
The Filipino Community Center, Inc.	Filipino Community Center
Veray, Larry	Pearl City Neighborhood Board No. 21, Chair
Wong-Kalu, Hinaleimoana K.K.	Island Burial Council, Chair
Yasuhara, Jerome	Office of Hawaiian Affairs

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Appendix A
Draft EA Pre-Assessment Consultation Comments and Responses

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090.1F0B
Ser EV21/0073
February 8, 2016

To: Distribution:

Subj: WAIAWA WATER TRANSMISSION MAIN REPLACEMENT
DRAFT ENVIRONMENTAL ASSESSMENT PRE-ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

The U.S. Navy proposes to replace an existing 42-inch primary water transmission main that serves Joint Base Pearl Harbor-Hickam and the U.S. Army's Aliamanu Housing area with a new 42-inch water transmission main. The existing water main has reached the end of its service life and would generally be left in place and filled with flowable fill. It is critical infrastructure that provides water for drinking, industrial, and fire protection purposes. A 16-inch secondary potable water line would also be installed to serve the Navy's Manana Housing Area.

The new 42-in, approximately 2.7-mile long water transmission main would be routed from the Navy's Waiawa Pump Station, within Waihona Street and Kamehameha Highway, through the University of Hawai'i's O'ahu Urban Garden Center, and along Second Street to an existing tie-in point at the intersection of Second Street and Lehua Avenue. The new 16-in secondary water line would be approximately 2,000 ft. long and extend between the new 42-in water main (approximately midway down Waihona Street) and the Manana Housing booster pump station. A project summary is provided as Enclosure (1) and project area and route maps are provided in Enclosures (2) and (3).

The U.S. Navy is preparing an Environmental Assessment (EA) for the proposed project in compliance with the National Environmental Policy Act (NEPA). Because the water transmission main involves work within State and County land, the EA will also be prepared to satisfy the applicable requirements of Hawai'i Revised Statutes (HRS) Chapter 343.

This pre-assessment consultation is to ensure that interested parties are notified of the forthcoming Proposed Action and are given the opportunity to identify relevant environmental issues and concerns that should be addressed in the Draft EA and comply with HRS Chapter 343.

Please send written comments by February 24, 2016 to the following address:

NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, HI 96860
ATTN: Alan Suwa (EV21)

Thank you for taking the time to review the enclosed project information. If you have specific questions about the forthcoming EA or would like to be removed from the list of parties to receive the Draft EA, please contact Mr. Alan Suwa, NEPA project manager at (808) 472-1450 or by email to alan.suwa@ navy.mil.

Sincerely,

Karen Sumida
Business Line Manager
Environmental

Enclosures:
1: Project Summary
2: Regional Location Map
3: Project Location Map

Distribution:

U.S. Army Corps of Engineers, Honolulu District

U.S. Department of Transportation

USDA Natural Resources Conservation Service

U.S. Environmental Protection Agency

Department of the Interior, Fish and Wildlife Service

Department of Agriculture

DBEDT Office of Planning

Department of Defense

Department of Hawaiian Homelands

Department of Health

Department of Land and Natural Resources, Land Division

DLNR, State Historic Preservation Division

Office of Environmental Quality Control

Office of Hawaiian Affairs

University of Hawai'i Office of Planning and Facilities

Department of Transportation

Board of Water Supply

Department of Budget and Fiscal Services

Department of Design and Construction

Department of Emergency Management

Department of Environmental Services

Department of Facility Maintenance

Department of Planning and Permitting

Department of Transportation Services

Honolulu Fire Department

Honolulu Police Department

Honolulu Authority for Rapid Transportation

Senate District 17

House District 35

Honolulu City Council

Pearl City Neighborhood Board No. 21

Historic Hawai'i Foundation

Hawaiian Electric Company

Hawaiian Telcom

Oceanic Time-Warner Cable

Hawaii Gas

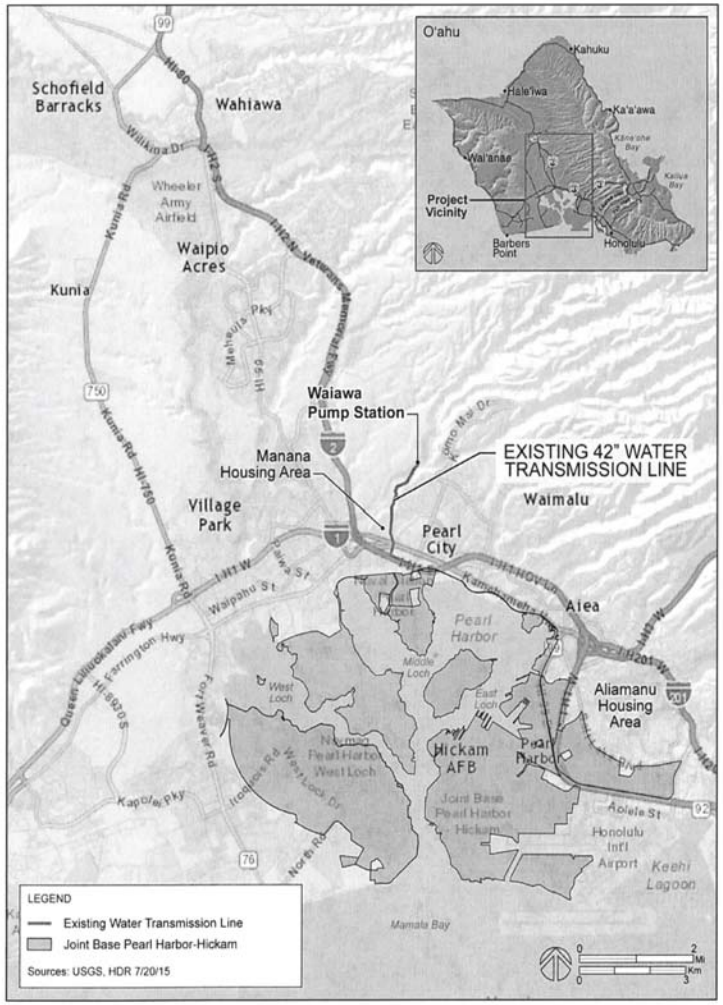
AT&T

Hawaii Independent Energy

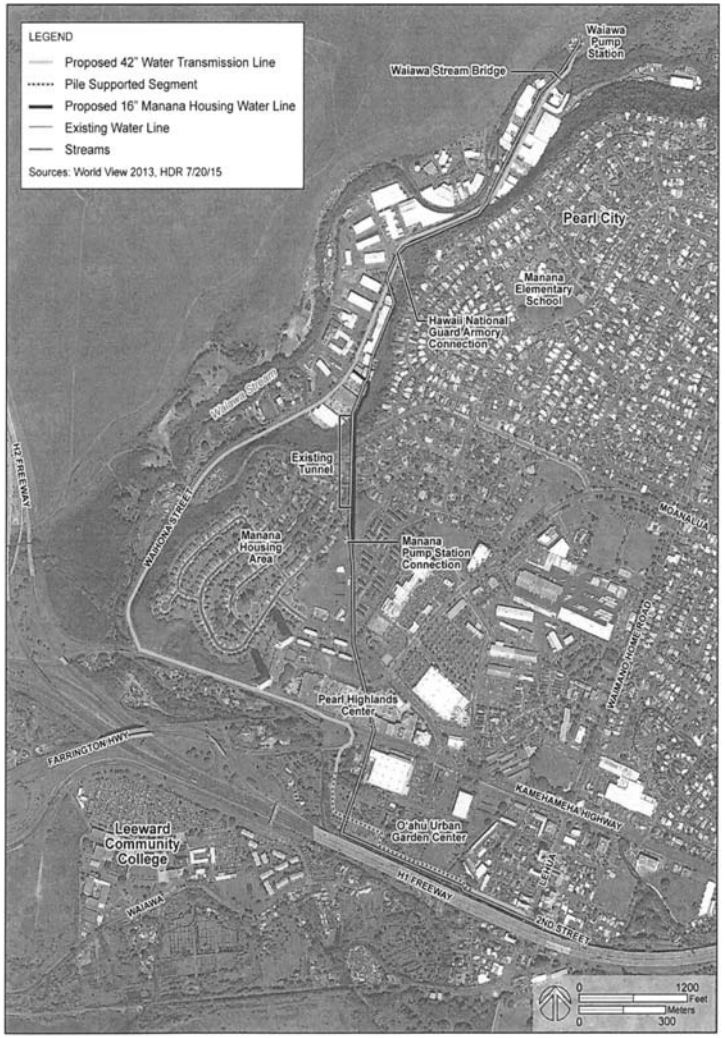
ENCLOSURE 1: PROJECT SUMMARY

Applicant:	U.S. Navy
EA Preparer:	NAVFAC Pacific 258 Makalapa Drive, Suite 100 JBPHH, HI 96860 Phone: (808) 472-1450 POC: Alan Suwa, NEPA Project Manager
Chapter 343, Hawai'i Revised Statutes "EA Trigger:"	Use of State- and County-owned lands
Proposed Action:	Installation of 42-inch and 16-inch water transmission lines to replace outdated infrastructure
Project Location:	Pearl City, O'ahu, Hawaii
Tax Map Key Parcel:	(1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096
Project Area:	Approximately 3-mile corridor
Existing Uses:	State and County roadways; light industrial (easement through private parcels); University of Hawai'i O'ahu Urban Garden Center (educational)
Landowners:	USA; State of Hawai'i; University of Hawai'i; City and County of Honolulu; various private owners
State Land Use District:	Urban
Primary Urban Center Development Plan Land Use Map:	Military; Industrial; Preservation; District Commercial; Lower Density Residential; Major Parks and Open Space
City and County of Honolulu Zoning District:	F-1 Military and Federal Preservation; P-2 General Preservation; AG-1 Restricted Agricultural ; AG-2 General Agricultural; R-5 Residential; I-1 Limited Industrial
State and County Permits and Approvals:	**State of Hawai'i** Department of Transportation • Permit to Perform Work Upon State Highway • Private Storm Drain Connection and/or State Highways Division Storm Drain System • Permit to Discharge into State Highways Drainage System • Use and Occupancy Agreement Department of Health • National Pollutant Discharge Elimination System permit University of Hawai'i • Easement **City and County of Honolulu** Department of Planning and Permitting • Construction Plan approval • Trenching Permit Department of Transportation Services • Street Usage Permit Department of Budget and Fiscal Services • Easement
Federal Permits and Approvals	U.S. Army Corps of Engineers

ENCLOSURE 2: REGIONAL LOCATION MAP



ENCLOSURE 3: PROJECT LOCATION MAP



DEPARTMENT OF THE ARMY
HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

April 8, 2016

SUBJECT: Review Comments for the Waiawa Water Transmission Main Replacement Draft Environmental Assessment located in Pearl City, Oahu, Hawaii. DA File No. POH-2016-00060.

NAVFAC Pacific
Environmental Planning & Conservation Division
Attn: Mr. Alan Suwa (EV21)
258 Makalapa Drive, Suite 100
JBPHH, HI 96860

Dear Mr. Suwa:

The U.S. Army Corps of Engineers, Honolulu District (Corps) has received your letter, dated February 8, 2016, requesting review comments for the above-subject project. Department of the Army (DA) file number POH-2016-00060 has been assigned to this project. Please reference this number in all future correspondence with our office concerning this project.

We have reviewed your submittal pursuant our authorities at Section 404 of the Clean Water Act (33 U.S.C. 1344)(Section 404) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)(Section 10). Section 404 requires authorization prior to the discharge and/or placement of dredged or fill material into waters of the U.S., including adjacent wetlands. Section 10 requires authorization prior to installing structures or conducting work in, over, under, and affecting navigable waters of the U.S.

Based on our review of the submitted information and available resources, we have preliminarily determined that the Waiawa Stream may be waters of the U.S. subject the Corps' regulatory jurisdiction. Similarly, we note that the southern portion of the proposed utility line alignment runs parallel to the Waiawa Stream and 2nd Street (south of Kamehameha Highway), which is in close proximity to the Pearl City-Waiawa wetlands complex and contains Corps-verified jurisdictional wetlands. However, given the limited information provided, we are unable to determine whether the proposed project requires a DA permit. Accordingly, we recommend you continue coordinating with this office until a DA permit determination is issued for your project.

To assist you with your future coordination with our office, we recommend that you submit a request for a DA permit determination, which includes a written project description, maps, photos of the project site, and plans with the ordinary high water mark (OHWM) delineated for work at the Waiawa Stream, and the delineated wetland

boundary for wetlands present within the project boundary (i.e., alignment, staging areas, etc.), if applicable.

This letter contains a preliminary jurisdictional determination (JD), which is a written indication that aforementioned water resources affected by your project may be waters of the U.S. (Enclosure 1). Please note, a preliminary JD is not appealable. If you concur with the findings of the preliminary JD, please sign it and return it to the following address within two weeks. If you believe the preliminary JD is inaccurate, you may request an approved JD, which is an official determination regarding the presence or absence of waters of the U.S.

Honolulu District
U.S. Army Corps of Engineers
Regulatory Office, Building 230
Fort Shafter, Hawaii 96858-5440

Thank you for your cooperation with the Honolulu District Regulatory Program. Should you have any questions related to this comment letter, please contact Ms. Joy Anamizu of my staff at (808) 835-4308 or via e-mail at joy.n.anamizu@usace.army.mil . You are encouraged to provide comments on your experience with the Honolulu District Regulatory Office by accessing our web-based customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Sincerely,

Joy Anamizu

Joy N. P. Anamizu
Ecologist, Regulatory Office

Enclosure

Cc via email w/encl:

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS ANDEQUEST FOR APPEAL

Applicant: NAVFAC Pacific	File Number: POH-2016-00060	Date: 8 Apr 2016

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
XX	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

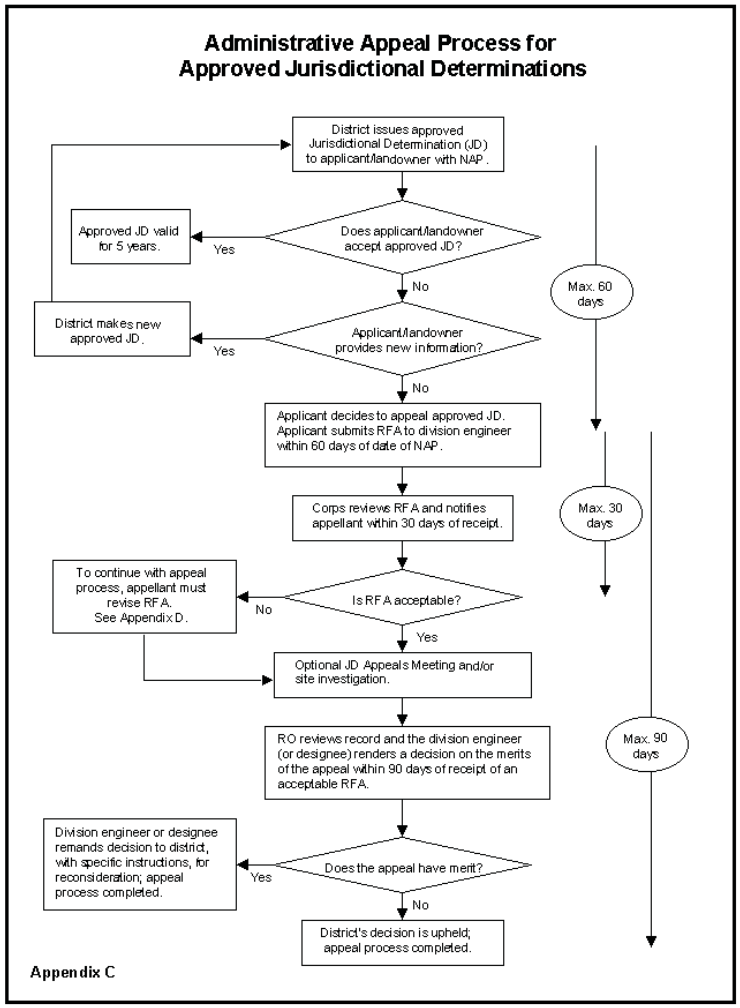
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Joy Anamizu US Army Corps of Engineers - Honolulu District Building 230, CEPOH-RO Fort Shafter, HI 96858-5440 Office: 808-835-4308 Email: joy.n.anamizu@usace.army.mil	If you only have questions regarding the appeal process you may also contact: Regulatory Program Manager U.S. Army Corps of Engineers, Pacific Ocean Division CEPOD-PDC, Bldg 525 Fort Shafter, HI 96858-5440 Phone: (808) 835-4626

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:



Appendix C

US Army Corps of Engineers, Honolulu District

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

File Number: POH-2016-00060
Project Title: Waiawa Water Transmission Main Replacement, Pearl City, Oahu, Hawaii
Subject: PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary jurisdictional determination (JD) finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

A. REPORT COMPLETION DATE FOR PRELIMINARY JURSDICTIONAL DETERMINATION: 8 Apr 2016

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
NAVFAC Pacific
Environmental Planning & Conservation Division
Attn: Mr. Alan Suwa (EV21)
258 Makalapa Drive, Suite 100
JBPHH, HI 96860

C. DISTRICT OFFICE: Honolulu District, CEPOH-RO
FILE NAME: Waiawa Water Transmission Main Replacement, Pearl City, Oahu, HI
FILE NUMBER: POH-2016-00060

D. PROJECT LOCATION(S), BACKGROUND INFORMATION, AND WATERS:
State or Territory: Hawaii
City: Peal City
County: Honolulu
Center Coordinates of Site:
Latitude: 21.401099
Longitude: -157.977531
Name of nearest waterbody: See table below
Identify the amount of waters in the review area:

Waters of the U.S.

Waterbody	*Latitude (ºN)*	*Longitude (°W)*	*Cowardin Class*	*Area (Acre)*	*Length (Feet)*	*Width (Feet)*	*Class of Aquatic Resource*
Waiawa Stream	21.413994°	-157.970663°	Riverine	TBD	~150 ft	TBD	Non-section 10 – non wetland
Pearl City-Waiwa Wetlands Complex	21.392493°	157.975554°	Palustrine	~5 ac	TBD	TBD	Non-section 10 – wetland

E. REVIEW PERFORMED FOR SITE EVALUATION:
☒ Office (Desk) Determination. Date: 4 Apr 2016
☐ Field Determination. Date(s):

F. EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD

will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

G. SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: project letter, dated 8 Feb 2016
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite quad name: Pearl City Quad, 7.5 min series
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☒ National wetlands inventory map(s). Cite name: USFWS NWI e-mapper
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google Earth Imagery, 15 Jan 2013
  or ☐ Other (Name & Date):
☐ Previous determination(s). File no. and date of response letter: .
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

//s// Joy Anamizu 8 Apr 2016	
Signature and date of Regulatory Project Manager (REQUIRED)	Signature and date of person requesting preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00300
June 14, 2016

Ms. Joy N. P. Anamizu, Ecologist
Honolulu District
U.S. Army Corps of Engineers
Regulatory Office, Building 230
Fort Shafter, HI 96858-5440

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Ms. Anamizu:

Thank you for your letter dated April 8, 2016 regarding the pre-assessment consultation for the project's Draft Environmental Assessment (DEA). We have reviewed your comments and offer the following responses:

1. We acknowledge your preliminary determination that Waiawa Stream may be waters of the U.S. subject to the Corps' regulatory jurisdiction.

2. The DEA will note that a Rivers and Harbors Action Section 10 permit would be required for the project due to construction work over waters of the U.S. (i.e., Waiawa Stream).

3. We also acknowledge your comment that Corps-verified jurisdictional wetlands are present in the vicinity of the southern portion of the proposed replacement water line. Although National Wetlands Inventory mapping does not indicate the presence of wetlands within the project area, we are coordinating with your office with respect to the potential for wetlands to be present within the project area and will conduct the appropriate level of investigation to support a conclusion of wetland presence or absence.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

5090P.1FOB
Ser EV21/00300
June 14, 2016

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

OFFICE OF PLANNING
STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

Ref. No. P-15049

February 19, 2016

Mr. Alan Suwa (EV21)
NEPA Project Manager
NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, Hawaii 96820

Dear Mr. Suwa:

Subject: Waiawa Water Transmission Main Replacement, Draft Environmental Assessment, Pre-Assessment Consultation, Pearl City, Oahu, Hawaii; TMK: (1) 9-6-7: 001, 013 (por); 9-6-8:008 (por); 9-7-023:001, 003, 014 (por); 9-7-024: 006 (por); 9-7-073:084, 085, 086, 095, 096 (por)

Thank you for the opportunity to provide comments on this pre-assessment consultation request for the Waiawa Water Transmission Main Replacement project, located in Pearl City, Oahu. The pre-consultation review material was transmitted to our office by letter dated February 8, 2016.

It is our understanding that the U.S. Navy proposes to replace an existing 42-inch primary water transmission main that serves Joint Base Pearl Harbor-Hickam and the U.S. Army's Aliamanu Housing with a new 42-inch water transmission main. The existing water main has reached the end of its service life and needs to be replaced. This water main provides potable water for drinking, industrial uses, and fire protection. A 16-inch secondary potable water line will also be installed to serve the Navy's Manana Housing area.

The 42-inch, 2.7 mile long, water transmission main would be routed form the Navy's Waiawa Pump Station, through the University of Hawaii's Oahu Urban Garden Center, and along Second Street, to an existing tie-in point at the intersection of Second Street and Lehua Avenue.

The 16-inch secondary water line would be approximately 2,000 feet long and extend between the new 42-inch water main and the Manana Housing booster pump station.

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

1. Pursuant to the Hawaii Administrative Rules (HAR) § 11-200-10(4) – general description of the action's technical, economic, social, and environmental characteristics; this project must demonstrate that it is consistent with a number of State environmental, social policies, economic goals, and policies for land use. OP provides technical assistance to State and county agencies in administering the statewide planning system in Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Plan. The Hawaii State Plan provides goals, objectives, policies, and priority guidelines for growth, development, and the allocation of resources throughout the State in areas of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, climate change adaptation, and sustainability.

   The Draft Environmental Assessment (Draft EA) should include an analysis that addresses whether the proposed project conforms to or is in conflict with the goals, objectives, policies, and priority guidelines listed in the Hawaii State Plan.

2. The coastal zone management (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" see HRS § 205A-1 (definition of "coastal zone management area").

   HRS § 205A-5(b) requires all State and county agencies to enforce the CZM objectives and policies. The Draft EA should include an assessment as to how the proposed project conforms to the CZM objectives and its supporting policies set forth in HRS § 205A-2. The assessment on compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343. These objectives and policies include recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

3. Although not stated in the list of State and County Permits and Approvals, this project is an action conducted by a federal agency and as such is subject to Federal Consistency provisions. The National Coastal Zone Management Act requires direct federal activities, and development projects, to be consistent with approved state coastal programs enforceable policies to the maximum extent practicable. OP is the lead state agency assigned to conduct Federal Consistency evaluations. Please contact our office on the procedures and requirements for this review.

4. Pursuant to HAR § 11-200-10(6) – identification and summary of impacts and alternatives considered; in order to ensure that the coastline and water resources

within Central Oahu remain protected, the negative effects of stormwater inundation ensuing from development activities should be evaluated in the Draft EA. This three mile project corridor lies within a heavily urbanized area with an extensive network of roadway storm drains and residential/industrial drainage infrastructure. During heavy storm events, the natural contours of the land and drainage infrastructure may transport upslope sediment, land-based pollutants, and toxicant-load contributions into nearby Waiawa Stream and downslope waters of Pearl Harbor.

The Draft EA should examine potential benefits and/or negative impacts resulting from this project on coastal and marine resources. Issues that may be examined in the Draft EA include, but are not limited to, project site characteristics in relation to erosion controls on flood prone areas, undeveloped open spaces, and the absorption characteristics of the soil. Furthermore, it should differentiate between the existing permeable surfaces versus hardened surfaces in the area. These items, as well as the marine water quality classification, should be considered when developing mitigation measures to protect the coastal ecosystem.

The enclosed map of this project, as well as resources available to us, indicate that this project is located approximately one mile from the nearshore waters of Middle Loch in Pearl Harbor. The project site is located within an area classified as State Land Use Urban District. The three mile project corridor lies within residential communities and commercial centers. Furthermore, the Waiawa Stream, just west of the water main site, runs parallel to the project site and empties into Pearl Harbor.

The Draft EA should examine the cumulative impact on coastal resources from land-based polluted runoff and sediment loss. It should take into account any of the natural features in the area, undeveloped open spaces, down-sloping topography, hardened non-permeable surfaces that have a cumulative effect on the volume and speed of storm runoff, and soil absorption rates.

OP has a number of resources available to assist in the development of projects which ensure sediment and stormwater control on land, thus protecting the nearshore environment. OP recommends consulting these guidance documents and stormwater evaluative tools when developing strategies to address polluted runoff. They offer useful techniques to keep land-based pollutants and sediment in place and prevent contaminating nearshore waters, while considering the practices best suited for this project. These three evaluative tools that should be used during the design process include:

- Hawaii Watershed Guidance provides direction on mitigation strategies in urban areas that will safeguard Hawaii's watersheds and implement watershed plans http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI Watershed Guidance Final.pdf

- Stormwater Impact Assessments can be used to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff, as well as consider secondary and cumulative impacts to the area http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_storm water_impact_assessments_guidance.pdf

- Low Impact Development (LID), A Practitioners Guide covers a range of structural best management practices (BMP's) for stormwater control management, roadway development, and urban layout that minimizes negative environmental impacts http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

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

Sincerely,

Leo R. Asuncion
Director

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00298
June 14, 2016

Mr. Leo R. Asuncion, Director
State of Hawai'i
Office of Planning
P.O. Box 2359
Honolulu, HI 96804

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Asuncion:

Thank you for your letter dated February 19, 2016 (Ref. No. P-15049) providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We have reviewed your comments and offer the following responses:

1. Consistency with State Land Use Goals and Policies
The DEA will include an assessment of the proposed action's conformance with relevant goals, objectives, policies, and priority guidelines of the Hawai'i State Plan.

2. Conformity to Coastal Zone Management (CZM) Objectives and Policies
The DEA will include an assessment of the proposed action's conformance with the CZM objectives and policies.

3. CZM Federal Consistency
The Navy prepared a CZM Consistency determination (submitted it to your Office on February 25, 2016), which found that the proposed action would be consistent with the enforceable policies of the Hawai'i Coastal Zone Management Program to the maximum extent practicable. By letter dated April 8, 2016, your Office concurred with the Navy's determination. The DEA will include a discussion of the consistency determination and copies of the relevant correspondence.

4. Identification of Impacts on Coastal and Marine Resources
The DEA will describe the project's likely impacts to coastal and marine resources, including cumulative impacts. The guidance documents and stormwater evaluative tools provided in your comments will be forwarded to the project's designers.

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Ser EV21/00298
June 14, 2016

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

SHAN S. TSUTSUI
LT. GOVERNOR
STATE OF HAWAII

JOBIE M. K. MASAGATANI
CHAIRMAN
HAWAIIAN HOMES COMMISSION

WILLIAM J. AILA, JR.
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P. O. BOX 1879
HONOLULU, HAWAII 96805

February 24, 2016

NAVFAC PACIFIC
Environmental Planning
and Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, HI 96860
Attn: Alan Suwa (EV21)

Dear Mr. Suwa:

Subject: Waiawa Water Transmission Main Replacement Pre-Assessment Consultation; Pearl City, O'ahu, Hawai'i TMKs (1)9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: pors. 084, 085, 086, 095, 096

Mahalo for giving the Department of Hawaiian Home Lands (DHHL) the opportunity for pre-assessment consultation in preparation of an Environmental Assessment (EA) for the above-referenced application. DHHL owns a 2 acre parcel currently in industrial use in the Waiawa ahupua'a, just to the west of the Manana military housing complex. See Fig. 5-7 and Exhibit 'A'

After reviewing the project description, we do not anticipate significant impacts to our lands or beneficiaries from the project. However, we offer the following comments:

Comment #1: *DHHL's general, island, regional, and water policy plans should be consulted in assessing the significant, cumulative, and secondary impacts of the proposed project.*

The DEA should discuss relationships between the proposed action and the State Land Use Plan, Hawai'i State Plan, City and County of Honolulu General Plan, City and County of Honolulu Primary Urban Center Development Plan, City and County of Honolulu Zoning, City and County of Honolulu Special Districts, City and County of Honolulu Transit Oriented Development Special

Districts, City and County of Honolulu Public Infrastructure Map, City and County of Honolulu Flood Hazard Districts, Kaka'ako Community Development District, and the State Coastal Zone Management Area Program. DHHL also develops and maintains a series of land use and water policy plans, which should be consulted to determine reasonably foreseeable cumulative and secondary impacts of the proposed project.

DHHL develops and maintains a general plan providing for the development and use of land needed for fulfilling the purposes of the Hawaiian Homes Commission Act of 1920, as amended (HHCA). Hawaii Administrative Rule (HAR) §10-4-2; *see* "Department of Hawaiian Home Lands General Plan," (approved Feb. 26, 2002). DHHL developed its O'ahu Island Plan (July 2014), which identifies DHHL land use designations for its O'ahu lands and whose designations function similarly to county land-use zoning. DHHL also developed regional plans, which identify land use development factors, issues, opportunities, and each region's top priority projects for implementation within three years of regional plan development for each island. Most pertinent to the proposed water system improvements are DHHL's Water Policy Plan (Jul. 2014)[1] and the DHHL O'ahu Island Plan (Jul. 2014).

A priority policy of DHHL's Water Policy Plan is to "[e]xpressly determine and plan for future water needs and actively participate in broader water management, use and protection efforts in Hawai`i in order to secure water." Water Policy Plan at 2. Consistent with this policy, this comment raises DHHL's foreseeable future water needs in order to ensure these needs are adequately planned for.

Comment #2: *DHHL's rights and interests in the Waipahu-Waiawa aquifer system resources and potential development needs for those water resources should be considered in assessing the significance of the proposed project's impacts.*

Hawai'i's environmental review law, HRS Chapter 343, contains clear language requiring that EAs examine the impacts of proposed actions on Hawaiian rights, including those of DHHL. Our

[1] *See* The Hawaiian Homes Commission Water Policy Plan, adopted July 22, 2014 *available at:* http://dhhl.hawaii.gov/wp-content/uploads/2013/09/HHC-Water-Policy-Plan-140722.pdf.

interpretations of significance assessment as required by HRS Chapter 343 indicate DHHL land use plans should be considered in the DEA. HAR §11-200-12(3) concerns: "conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders." Hawai'i's Environmental Policy Act, Chapter 344, HRS (HEPA) includes conserving natural resources by safeguarding "natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i." HRS §344-3(1).

Comment #3: *Consult with N(n)ative Hawaiian organizations when assessing potential impacts to cultural and natural resources, access and other Native Hawaiian rights.*

We highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)native Hawaiian organizations when assessing environmental impacts in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians as well as to better design suitable mitigation measures to minimize those impacts.

Conclusion:

Mahalo nui for requesting pre-assessment comments in preparation of an EA on the proposed Waiawa Water Transmission Main Replacement. DHHL requests that the Draft EA fully and expressly address impacts on DHHL's reasonably foreseeable rights, interests, and plans for water and land development, as well as potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

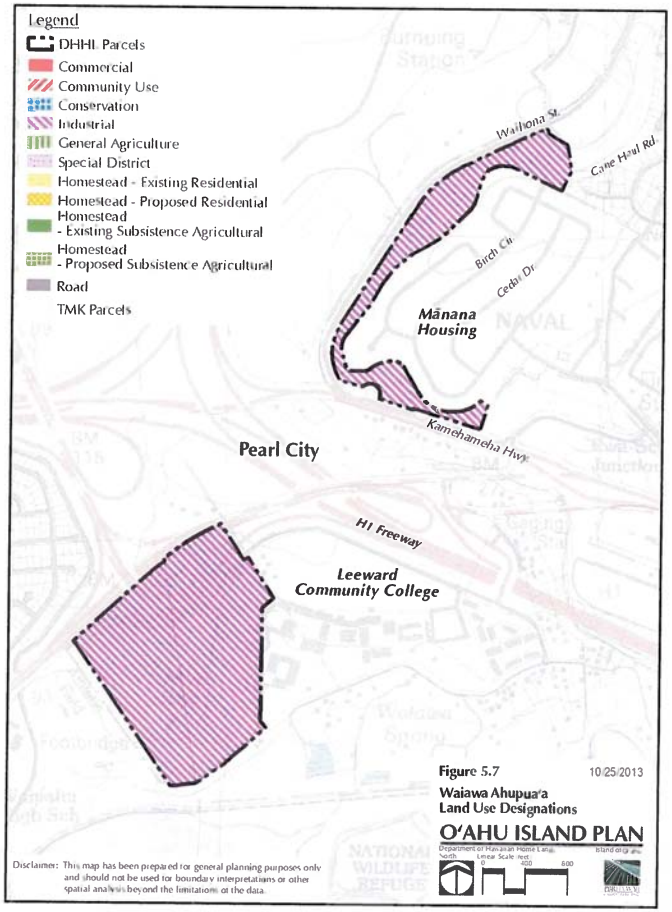
Please direct any questions to me at (808) 620-9501, or your staff may contact Kaleo Manuel in our Planning Office at (808) 620-9485 or at Kaleo.L.Manuel@hawaii.gov.

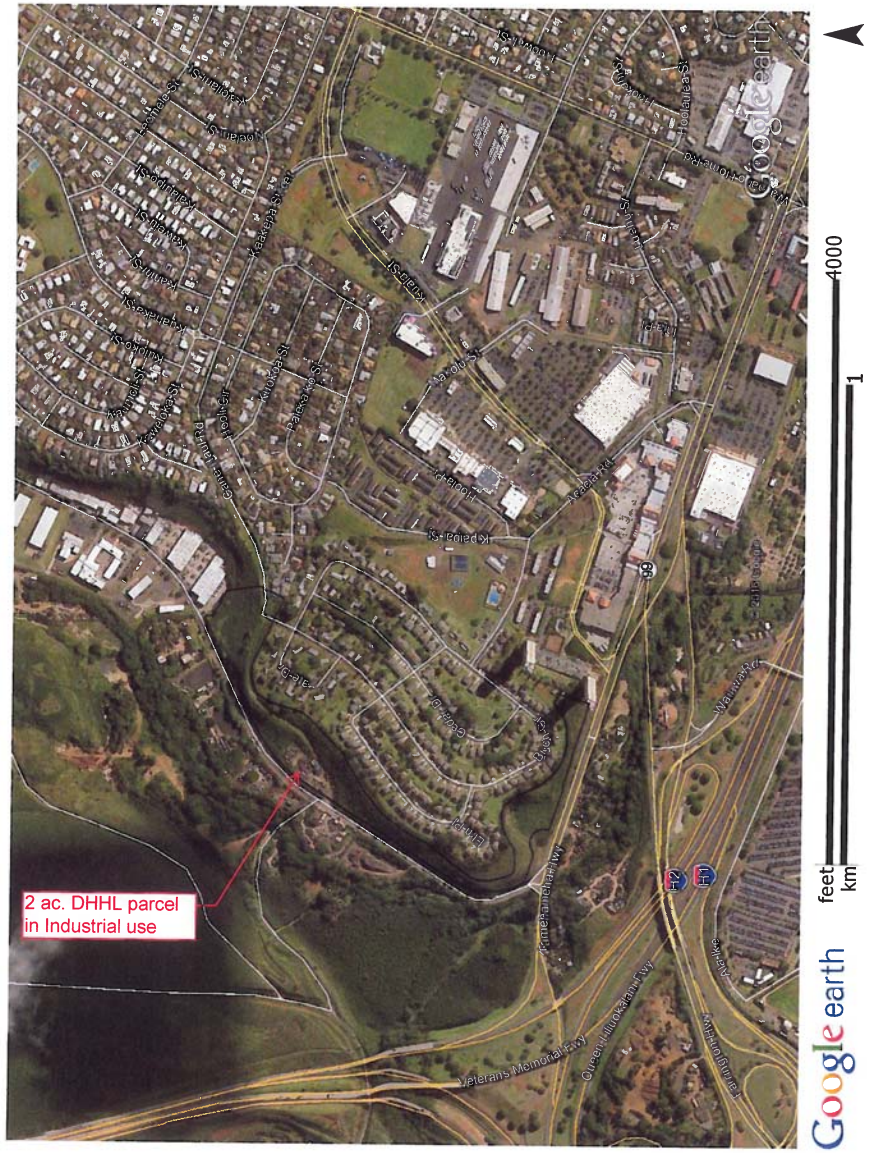
Aloha,

Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission

Enc.

Figure 5-7 Waiawa Ahupua'a Land Use Designations




2 ac. DHHL parcel
in Industrial use
Veterans Memorial Fwy
Queen Liliuokalani Fwy
Farrington Hwy
Kamehameha Hwy
Waipahu St
Leoleo St
Kupuna Loop
Kaleipua St
Kaleiwa St
Kaleiwa St
Kaleiwa

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June 14, 2016

affect groundwater withdrawal by the Navy. The proposed action will respect existing utility easements within the project area. Therefore, based on our review of DHHL's O'ahu Island Plan and Water Policy Plan in light of the design and purpose of the proposed action, we do not believe that the Navy's water line replacement project would impede the rights and interests described in your comment.

The DEA will include a discussion of any reasonably foreseeable cumulative and secondary impacts the proposed project may have on water resources.

3. Consultation with Native Hawaiian Organizations
A Cultural Impact Assessment (CIA) for the proposed action has been prepared and will be included in the DEA. A community consultation process, including outreach to Native Hawaiian organizations, was employed. Results of the community consultation process will be included in the CIA and DEA.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:
EPO 16-053

February 29, 2016

Mr. Alan Suwa (EV21)
NAVFAC Pacific
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, Hawaii 96860
Email: alan.suwa@navy.mil

Dear Mr. Suwa:

SUBJECT: Pre-Assessment Consultation for a Draft Environmental Assessment (PAC DEA) for Waiawa Water Transmission Main Replacement

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PAC EA to our office on February 18, 2016. Thank you for allowing us to review and comment of the proposed project. The PAC EA was routed to the Clean Water and Wastewater Branches. They will provide specific comments to you if necessary. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.

EPO suggests you review guidance maps and viewers available on the Environmental Planning GIS website: http://health.hawaii.gov/epo/egis

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: https://eha-cloud.doh.hawaii.gov.

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

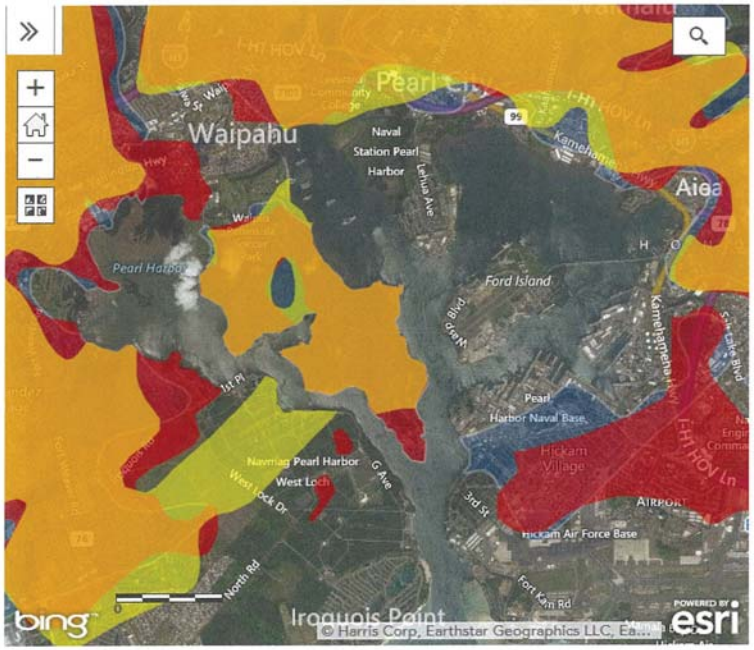
Mahalo nui loa,

Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

Attachments: Historic Sugarcane Lands Map Viewer: http://health.hawaii.gov/epo/egis/sugarcane
OEQC Viewer: http://eha-web.doh.hawaii.gov/oeqc-viewer
U.S. EPA EJScreen Map, 3 page report: http://www2.epa.gov/ejscreen

c: DOH: CWB, WWB {via email only}

HISTORIC SUGARCANE LANDS MAP VIEWER

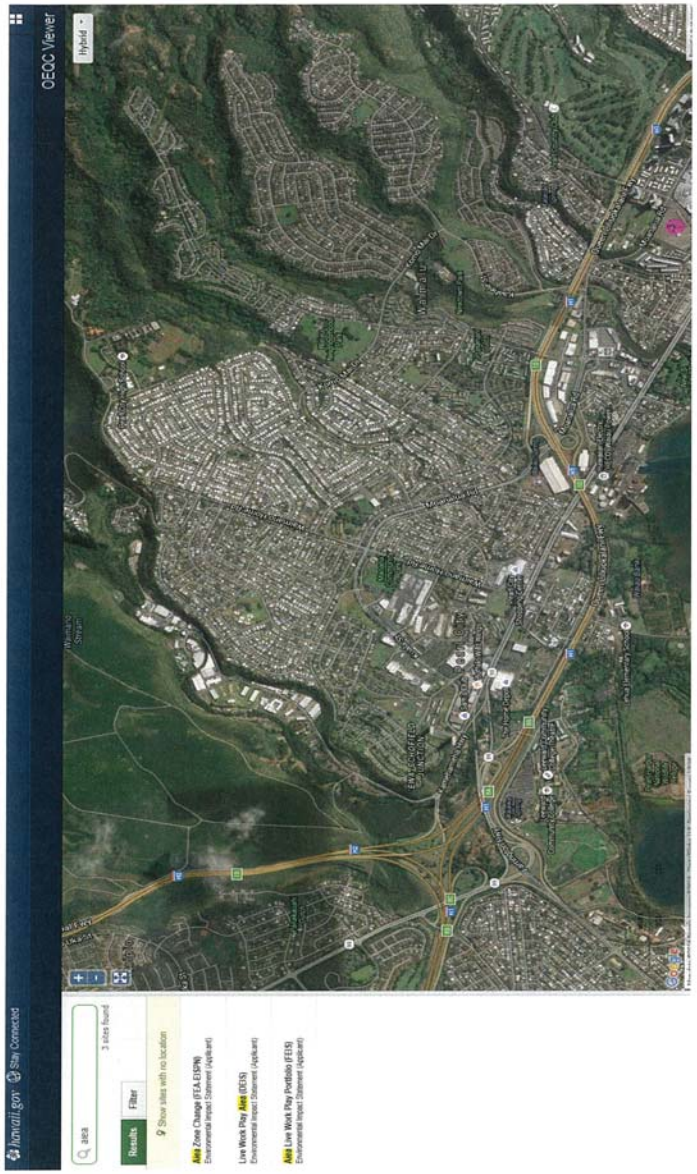


Legend Details

Sugarcane - Sugarcane_1937

Sugarcane - Sugarcane_1920

Sugarcane - Sugarcane_1900

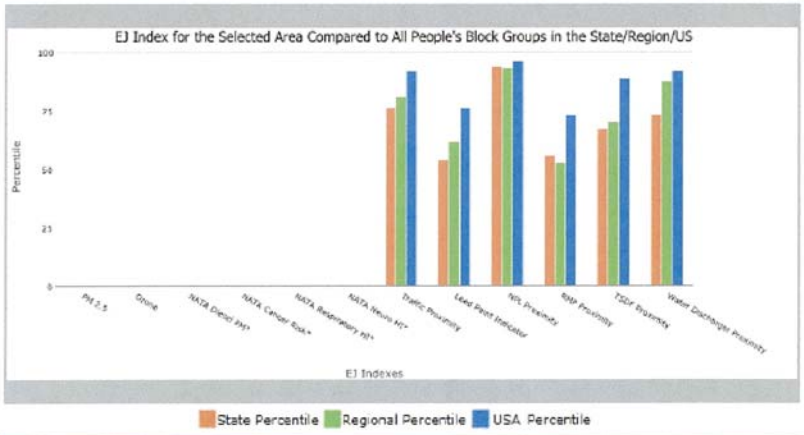


EJSCREEN Report

for 1 mile Ring Centered at 21.415329,-157.979543, HAWAII, EPA Region 9

Approximate Population: 5023

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	76	81	92
EJ Index for Lead Paint Indicator	54	62	76
EJ Index for Proximity to NPL sites	94	93	96
EJ Index for Proximity to RMP sites	56	53	73
EJ Index for Proximity to TSDFs	67	70	89
EJ Index for Proximity to Major Direct Dischargers	73	88	92



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report

for 1 mile Ring Centered at 21.415329,-157.979543, HAWAII, EPA Region 9

Approximate Population: 5023

Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM (µg/m³)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Netirological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	420	280	83	190	88	110	94
Lead Paint Indicator (% Pre-1960 Housing)	0.081	0.17	43	0.25	42	0.3	32
NPL Proximity (site count/km distance)	0.41	0.092	96	0.11	96	0.096	96
RMP Proximity (facility count/km distance)	0.089	0.18	46	0.41	19	0.31	30
TSDF Proximity (facility count/km distance)	0.079	0.092	57	0.12	58	0.054	83
Water Discharger Proximity (facility count/km distance)	0.39	0.33	70	0.19	89	0.25	84
Demographic Indicators							
Demographic Index	55%	51%	61	46%	63	35%	78
Minority Population	87%	77%	62	57%	79	36%	88
Low Income Population	22%	25%	50	35%	35	34%	35
Linguistically Isolated Population	6%	6%	66	9%	50	5%	75
Population With Less Than High School Education	6%	10%	35	18%	25	14%	27
Population Under 5 years of age	8%	6%	71	7%	62	7%	67
Population over 64 years of age	22%	14%	84	12%	90	13%	88

* The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: http://www.epa.gov/ttn/atw/natamain/index.html.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00290
June 14, 2016

Ms. Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Ms. McIntyre:

Thank you for your letter dated February 29, 2016 (Ref. EPO 16-053) providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). No additional comments from the Clean Water or Wastewater Branches were received during the comment period. We have reviewed DOH's standard comments and offer the following responses to those that are relevant to the proposed action:

Clean Air Branch
The DEA will note that project activities will comply with applicable federal, state, and county regulations for activities that may affect lead containing paint, asbestos, or other hazardous or regulated materials and waste. All construction activities will comply with the provisions of HAR 11-60.1-33 (Fugitive Dust) and the contractor will employ fugitive dust control measures during the construction period.

Clean Water Branch
The DEA will include a discussion of water resources, including surface waters. A National Pollutant Discharge Elimination System (NPDES) permit will be obtained for the proposed project's construction activities.

Hazard Evaluation & Emergency Response Office
A Phase I Environmental Site Assessment will be conducted for the Proposed Action to identify recognized environmental conditions, if any, at the project site and, based on its findings, recommendations included in the conclusion of the report.

5090P.1FOB
Ser EV21/00290
June 14, 2016

Noise, Radiation & Indoor Air Quality Branch
As noted in the response to Clean Air Branch comments, project activities will comply with applicable federal, state, and county regulations for activities involving hazardous or regulated materials and waste. The proposed action will comply with the conditions of the Construction Noise Permit that will be required for the project.

Safe Drinking Water Branch
The proposed project will comply with HAR Title 11, Chapter 20, Rules Relating to Public Water Systems. The Navy is in compliance with relevant State of Hawai'i and U.S. Environmental Protection Agency regulations for drinking water and continually performs the required testing, with results submitted to the Department of Health's Safe Drinking Water Branch.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

DAVID Y. IGE
GOVERNOR OF HAWAII

CARTY S. CHANG
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 22, 2016

NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100 via email: alan.suwa@navy.mil
JBPHH, HI 96860

Dear Mr. Alan Suwa (EV21):

SUBJECT: Waiawa Water Transmission Main Replacement Draft Environmental Assessment Pre-Assessment Consultation, Pearl City, O'ahu, Hawai'i TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments only from the (i) Oahu District Land Office on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 16, 2016

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
__Div. of Forestry & Wildlife
__Div. of State Parks
__Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Waiawa water transmission main replacement draft environmental assessment pre-assessment consultation

LOCATION: Waiawa, Pearl City, Oahu; TMK: (1) 9-6-007: pors. 001, 013; 9-6-8: por. 008; 9-7 23; pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096
APPLICANT: United States Navy

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by February 22, 2016.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

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

Signed: T. Chee

Print name: Troy Chee
Date: 2/18/2016

cc: Central Files

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

RECEIVED
LAND DIVISION
2016 FEB 16 PM 3:54
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

5090.1F0B
Ser EV21/0073
February 8, 2016

To: Distribution:

Subj: WAIAWA WATER TRANSMISSION MAIN REPLACEMENT
DRAFT ENVIRONMENTAL ASSESSMENT PRE-ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7 23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

The U.S. Navy proposes to replace an existing 42-inch primary water transmission main that serves Joint Base Pearl Harbor-Hickam and the U.S. Army's Aliamanu Housing area with a new 42-inch water transmission main. The existing water main has reached the end of its service life and would generally be left in place and filled with flowable fill. It is critical infrastructure that provides water for drinking, industrial, and fire protection purposes. A 16-inch secondary potable water line would also be installed to serve the Navy's Manana Housing Area.

The new 42-in, approximately 2.7-mile long water transmission main would be routed from the Navy's Waiawa Pump Station, within Waihona Street and Kamehameha Highway, through the University of Hawai'i's O'ahu Urban Garden Center, and along Second Street to an existing tie-in point at the intersection of Second Street and Lehua Avenue. The new 16-in secondary water line would be approximately 2,000 ft. long and extend between the new 42-in water main (approximately midway down Waihona Street) and the Manana Housing booster pump station. A project summary is provided as Enclosure (1) and project area and route maps are provided in Enclosures (2) and (3).

The U.S. Navy is preparing an Environmental Assessment (EA) for the proposed project in compliance with the National Environmental Policy Act (NEPA). Because the water transmission main involves work within State and County land, the EA will also be prepared to satisfy the applicable requirements of Hawai'i Revised Statutes (HRS) Chapter 343.

This pre-assessment consultation is to ensure that interested parties are notified of the forthcoming Proposed Action and are given the opportunity to identify relevant environmental issues and concerns that should be addressed in the Draft EA and comply with HRS Chapter 343.

Please send written comments by February 24, 2016 to the following address:

NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, HI 96860
ATTN: Alan Suwa (EV21)

Thank you for taking the time to review the enclosed project information. If you have specific questions about the forthcoming EA or would like to be removed from the list of parties to receive the Draft EA, please contact Mr. Alan Suwa, NEPA project manager at (808) 472-1450 or by email to alan.suwa@ navy.mil.

Sincerely,

Karen Sumida
Business Line Manager
Environmental

Enclosures:
1: Project Summary
2: Regional Location Map
3: Project Location Map

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 25, 2016

NAVFAC PACIFIC
Environmental Planning & Conservation Division
Attention: Mr. Alan Suwa (EV21) via email: alan.suwa@navy.mil
258 Makalapa Drive, Suite 100
JBPHH, HI 96860

Dear Mr. Suwa:

SUBJECT: Waiawa Water Transmission Main Replacement Draft Environmental Assessment Pre-Assessment Consultation

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on February 22, 2016, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

'16 FEB 17 PM01:32 ENGINEERING

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 16, 2016

MEMORANDUM

~~TO:~~ FR: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
__Div. of Forestry & Wildlife
__Div. of State Parks
__Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

~~FROM:~~ TO: Russell Y. Tsuji, Land Administrator
SUBJECT: Waiawa water transmission main replacement draft environmental assessment pre-assessment consultation

LOCATION: Waiawa, Pearl City, Oahu; TMK: (1) 9-6-007: pors. 001, 013; 9-6-8: por. 008; 9-7 23; pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096
APPLICANT: United States Navy

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by February 22, 2016.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

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

Signed: _____

Print name: Carty S. Chang, Chief Engineer
Date: 2/23/16

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/ Russell Y. Tsuji
Ref.: Waiawa water transmission main replacement draft environmental assessment pre-assessment consultation
Oahu.010

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site according to the Flood Insurance Rate Map (FIRM), is located in Zones AE, AEF, D, XS, and X. The National Flood Insurance Program regulates developments within Zones AE, AEF, D and XS as indicated in bold letters below, but not Zone X. (See attached Flood Hazard Assessment Reports)

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

(X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

(X) Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Carter Romero (Acting) at (808) 961-8943 of the County of Hawaii, Department of Public Works.
( ) Mr. Carolyn Cortez at (808) 270-7253 of the County of Maui, Department of Planning.
( ) Mr. Stanford Iwamoto at (808) 241-4846 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

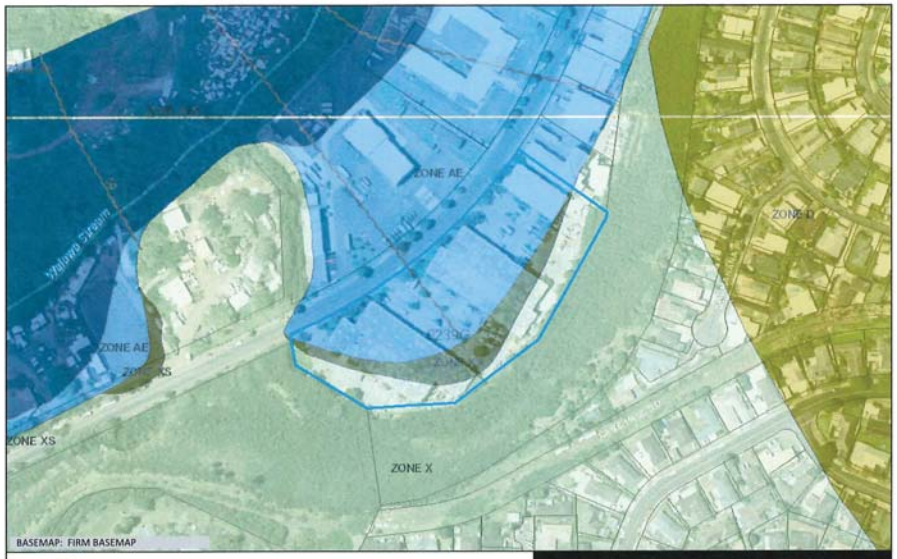
( ) Additional Comments: _____

( ) Other: _____

Should you have any questions, please call Mr. Rodney Shiraishi of the Planning Branch at 587-0258.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 2/25/14



Flood Hazard Assessment Report

www.hawaiinfip.org

TMK 1-9-6-007-001

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-6-007:001
WATERSHED:	WAIAWA
PARCEL ADDRESS:	96-1173 WAIHONA ST PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 200 400 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

Zone A: No BFE determined.

Zone AE: BFE determined.

Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.

Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.

Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.

Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.

Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

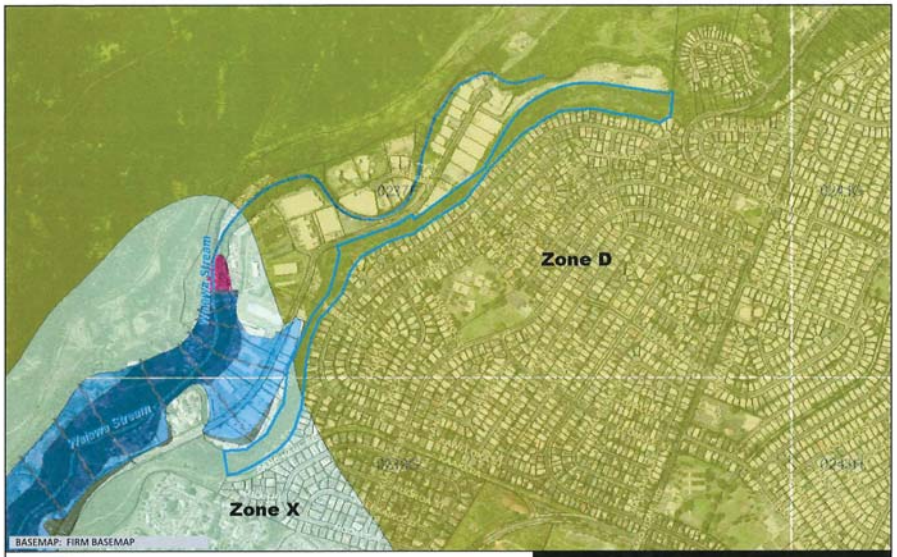
NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.



Flood Hazard Assessment Report

www.hawaiinfip.org

1-9-6-007-013

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-6-007:013
WATERSHED:	WAIAWA
PARCEL ADDRESS:	UNKNOWN ADDRESS PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL - EFFECTIVE DATE:	15003C0237F - SEPTEMBER 30, 2004 15003C0239G - JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 600 1,200 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- **Zone A**: No BFE determined.
- **Zone AE**: BFE determined.
- **Zone AH**: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO**: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V**: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF**: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

1-9-6-008-008

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-6-008:008
WATERSHED:	WAIAWA
PARCEL ADDRESS:	96-1383 WAIHONA ST PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0237F
PANEL EFFECTIVE DATE:	SEPTEMBER 30, 2004

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 100 200 ft

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If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

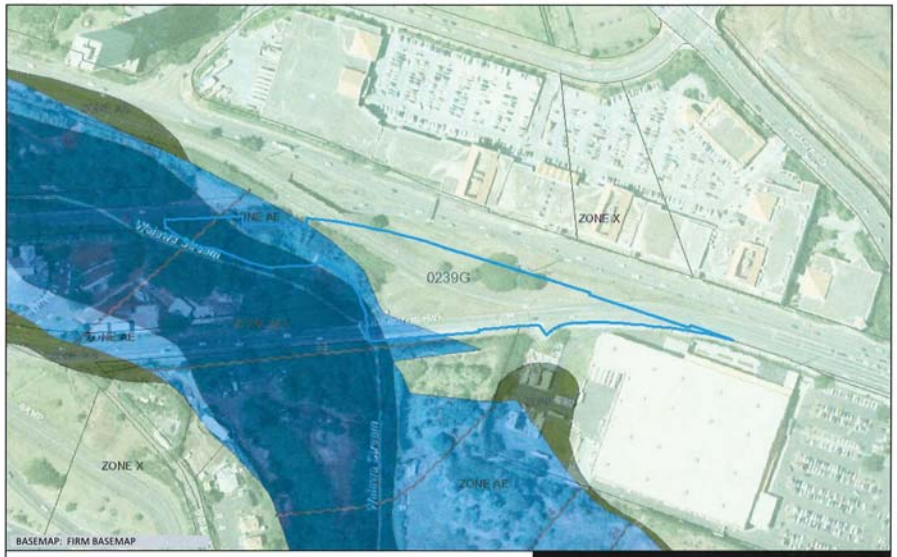
- **Zone A**: No BFE determined.
- **Zone AE**: BFE determined.
- **Zone AH**: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO**: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V**: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF**: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.



Flood Hazard Assessment Report

www.hawaiinfip.org

TMK 1-9-7-023-001

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-023:001
WATERSHED:	WAIAWA
PARCEL ADDRESS:	UNKNOWN ADDRESS PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 200 400 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

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- **Zone AO**: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V**: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF**: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

TMK 1-9-007-023-003

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-023:003
WATERSHED:	WAIAWA
PARCEL ADDRESS:	955 KAM HWY PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 400 800 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

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- **Zone AO**: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
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- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF**: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

TMK 1-9-7-023-014

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-023:014
WATERSHED:	WAIAWA
PARCEL ADDRESS:	UNKNOWN ADDRESS PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 20 40 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

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- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF**: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

TMK 1-9-7-024-006

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-024:006
WATERSHED:	WAIAWA
PARCEL ADDRESS:	UNKNOWN ADDRESS PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 600 1,200 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

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- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
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NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

TMK (1) 9-7-066:082

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-066:082
WATERSHED:	WAIAWA
PARCEL ADDRESS:	1351 KAUMAHANA PL PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 100 200 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

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- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

TMK (1) 9-7-073:084

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-073:084
WATERSHED:	WAIAWA
PARCEL ADDRESS:	1390A KUAHAKA ST PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 200 400 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
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OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

TMK (1) 9-7-073:085

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-073:085
WATERSHED:	WAIAWA
PARCEL ADDRESS:	1019 HOOLI PL PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 40 80 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
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OTHER FLOOD AREAS

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Flood Hazard Assessment Report

www.hawaiinfip.org

TMK (1) 9-7-073:086

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-073:086
WATERSHED:	WAIAWA
PARCEL ADDRESS:	1021 HOOLI PL PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 40 80 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
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OTHER FLOOD AREAS

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Flood Hazard Assessment Report

www.hawaiinfip.org

(1) 9-7-073:095

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-073:095
WATERSHED:	WAIAWA
PARCEL ADDRESS:	1312 HAAWI WAY PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0239G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 20 40 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

Zone A: No BFE determined.

Zone AE: BFE determined.

Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.

Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.

Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.

Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.

Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report

www.hawaiinfip.org

TMK (1) 9-7-073:096

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-7-073:096
WATERSHED:	WAIAWA
PARCEL ADDRESS:	1317 HAAWI WAY PEARL CITY, HI 96782

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
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THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 20 40 ft

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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

Zone A: No BFE determined.

Zone AE: BFE determined.

Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.

Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.

Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.

Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.

Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00289
June 14, 2016

Mr. Russell Y. Tsuji, Land Administrator
State of Hawai'i
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, HI 96809

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Tsuji:

Thank you for your letters dated February 22 and February 25, 2016 providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We note that DLNR Land Division has no comments on the proposed action. We have reviewed DLNR Engineering Division's comments and offer the following responses:

Flood Zones

The DEA will include discussion of the flood zones in which the project would be located. All of the project-related development (i.e., infrastructure) that would be within designated flood zones would be located below grade. The DEA will also describe the Navy's compliance with Executive Order (EO) 11988 Floodplain Management and EO 13690 establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input. Project construction drawings have been submitted for review and approval by City and County of Honolulu Department of Planning and Permitting, and necessary revisions have been or will be made.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

PHONE (808) 594-1888

FAX (808) 594-1938

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAI'I 96817

HRD16-7746B

February 26, 2016

Karen Sumida
NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, HI 96860
ATTN: Alan Suwa (EV21)

Re: Request for Pre-Assessment Consultation for the Draft Environmental Assessment for the Waiawa Water Transmission Main Replacement
Waiawa Ahupua'a, 'Ewa Moku, O'ahu Mokupuni
Tax Map Key (1) 9-6-007: pors. 001, 013; (1) 9-6-008: por. 008; (1) 9-7-023:001, 003, 014; (1) 9-7-024: por. 006; (1) 9-7-066: por. 082; (1) 9-7-073: pors. 084, 085, 086, 095, 096

Aloha Ms. Karen Sumida:

The Office of Hawaiian Affairs (OHA) is in receipt of your February 8, 2016 letter requesting information on cultural, historic, and archaeological sites within the area of potential effect (APE). The U.S. Navy intends to replace an existing 42-inch primary water main with a new one, which currently serves Joint Base Pearl Harbor-Hickam and the U.S. Army's Āliamanu Housing area. In addition, the Navy is proposing to install a secondary 16-inch water line to serve the Navy's Mānana Housing Area.

OHA appreciates the outreach efforts that the U.S. Navy has undertaken by consulting OHA. However, we noticed in the attached distribution list that no other Native Hawaiian organizations (NHOs) were consulted other than OHA. Under 36 C.F.R § 800.8(a)(2), the agency is encouraged to consult with NHOs early in the National Environmental Policy Act process if there is a possible effect upon historic properties; and under §800.8(c)(2)(i) the agency shall share the document with NHOs for review. Contacting only OHA does not constitute a

good-faith effort in identifying NHOs. Under 36 C.F.R. § 800.3(f)(2), the agency needs to make a good-faith effort to identify any NHOs with cultural and religious affiliation to the historic properties in the area of potential effect, and invite them to participate in consultation. We strongly encourage the U.S. Navy to contact more NHOs. A good starting point is the Department of the Interior list of NHOs. In addition we would like to suggest the Aha Moku Council, the appropriate O'ahu-based Hawaiian Civic Clubs, and the O'ahu Island Burial Council.

Mahalo for the opportunity to consult. We look forward to participating in the consultation process for the archeological inventory survey, as well as an opportunity to review the completed draft environmental assessment. Should you have any questions, please contact Jeannin Jeremiah at 594-1790 or by email at jeanninj@oha.org.

'O wau iho nō me ka 'oia 'i'o,

Kamana'opono Crabbe

Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:jj

**Please address replies and similar, future correspondence to our agency:*
Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy, Ste. 200
Honolulu, HI 96817

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/0299
June 14, 2016

Kamana'opono M. Crabbe, Ph.D.
Chief Executive Officer
State of Hawai'i
Office of Hawaiian Affairs
Attn: OHA Compliance Enforcement
560 N. Nimitz Highway, Suite 200
Honolulu, HI 96817

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Dr. Crabbe:

Thank you for your letter dated February 26, 2016 (Ref. No. HRD16-7746B) providing pre-assessment consultation comments as part of the project's Draft Environmental Assessment (DEA) process. We have reviewed your comments and offer the following responses:

Outreach to Native Hawaiian Organizations
We understand and appreciate the importance of consultation with Native Hawaiian Organizations (NHOs) on the Proposed Action in the early stages of the environmental review process. In addition to our February 8, 2016 DEA pre-assessment consultation letter, the Navy initiated two earlier efforts to seek input and comments from pertinent agencies and organizations, including NHOs, on the Proposed Action.

1. **National Historic Preservation Act Section 106 Consultation** – October 2, 2015 letter to Hawai'i State Historic Preservation Office (SHPO) and seven other consulting parties listed below. NHOs selected for consultation include those NHOs who may have cultural or religious affiliation with the Pearl City/Mānana/Waiawa areas. This list was obtained from the Department of Interior NHO listing and the Cultural Impact Assessment. No objections to the Navy's determination of no adverse effect on historic properties were received by SHPO or any of the consulting parties, including:

- O'ahu Council of Hawaiian Civic Clubs
- 'Aiea Hawaiian Civic Club
- Office of Hawaiian Affairs
- National Park Service
- Advisory Council on Historic Preservation
- Historic Hawai'i Foundation
- National Trust for Historic Preservation

2. **Cultural Impact Assessment** – January 29, 2016 Community Consultation letter requesting information on land use history; cultural associations; legends; cultural sites potentially impacted; traditional uses or gathering practices; referrals to kūpuna or community members knowledgeable about the project area or ahupua'a; and other cultural concerns to be used in the preparation of a cultural impact assessment (CIA) for the project. After reviewing the Department of Interior's NHO Notification List for NHOs that may have cultural or religious affiliation to historic properties in the Pearl City/Mānana/Central O'ahu areas or an association with these geographic areas, the community consultation letter was sent to 21 parties, including the following organizations:

- State Historic Preservation Division (Vincent Hinano Rodrigues, JD and Regina Hilo)
- Island Burial Council (Hinaleimoana K.K. Wong-Kalu, Chair)
- Association of Hawaiian Civic Clubs
- Pearl Harbor Hawaiian Civic Club
- Ali'i Pauahi Hawaiian Civic Club
- King Kamehameha Hawaiian Civic Club
- 'Ahahui Siwila Hawai'i o Kapolei Hawaiian Civic Club
- Hawaiian Studies Program, UH-Leeward Community College
- Hālau Hula Olana
- A'ala O Ka 'Āina Hula Hālau
- Hula Preservation Society
- Office of Hawaiian Affairs (Kai Markell and Jerome Yasuhara)

No comments or input from any NHPA Section 106 or CIA consulting parties or NHOs was received to date.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

March 9, 2016

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair
ADAM C. WONG, Vice Chair
DAVID C. HULIHEE
KAPUA SPROAT
BRYAN P. ANDAYA

ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

Mr. Alan Suwa (EV21)
NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii 96860-3134

Dear Mr. Suwa:

Subject: Your Letter Dated February 8, 2016 on the Draft Environmental Assessment Pre-Assessment Consultation for the Waiawa Water Transmission Main Replacement – Tax Map Key: 9-6-7: 001, 013; 9-6-008: 008; 9-7-023: 001, 003, 014; 9-7-024: 006, 9-7-066: 082; 9-7-073: 084, 085, 086, 095, 096

Thank you for the opportunity to comment on the proposed project.

The construction schedule should be coordinated with the Board of Water Supply to minimize the impact to our existing customers.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Water for Life . . . Ka Wai Ola

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00284
June 14, 2016

Mr. Ernest Y.W. Lau, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Lau:

Thank you for your letter dated March 9, 2016 providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). The Navy will coordinate the project's construction schedule with the Board of Water Supply to minimize impacts to your existing customers.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROBERT J. KRONING, P.E.
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

March 14, 2016

NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, HI 96860

Attn: Alan Suwa (EV21)

Dear Mr. Suwa:

Subject: Waiawa Water Transmission Main Replacement Draft Environmental Assessment Consultation, Pearl City, Oahu, Hawaii

The Department of Design and Construction does not have comments to offer on the draft environmental assessment.

Thank you for the opportunity to review and comment. Should there be any questions, please contact me at 768-8480.

Sincerely,

for M. Yonamine

Robert J. Kroning, P.E.
Director

RJK: ms (643083)

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00285
June 14, 2016

Mr. Robert J. Kroning, P.E., Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Thank you for your letter dated March 14, 2016 regarding the pre-assessment consultation for the project's Draft Environmental Assessment (DEA). We note that you have no comments.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

From: Suwa, Alan M CIV NAVFAC Pacific, EV <alan.suwa@navy.mil>
Sent: Tuesday, February 23, 2016 1:49 PM
To: Gail Renard
Subject: FW: Draft EA for Waiawa Water Transmission Main Replacement
Signed By: alan.suwa@navy.mil

-----Original Message-----
From: Hirai, Peter J.S. [mailto:PHirai@honolulu.gov]
Sent: Thursday, February 18, 2016 5:33 PM
To: Suwa, Alan M CIV NAVFAC Pacific, EV
Subject: [Non-DoD Source] Draft EA for Waiawa Water Transmission Main Replacement

Dear Alan Suwa:

Regarding your letter of February 8, 2016 reference 5090.1F0B, the City Department of Emergency Management has no comments regarding the draft EA.

Thank you for giving us the opportunity to comment.

Sincerely,

Peter J.S. Hirai, MSS, CEMR
Deputy Director
Department of Emergency Management
650 South King Street
Honolulu, Hawaii 96813-3078
Voice: (808) 723-8960 Fax: (808) 768-1458

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00286
June 14, 2016

Mr. Peter J. S. Hirai, MSS, CEMR
Deputy Director
City and County of Honolulu
Department of Emergency Management
650 South King Street
Honolulu, HI 96813-3078

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Hirai:

Thank you for your email dated February 18, 2016 regarding the pre-assessment consultation for the project's Draft Environmental Assessment (DEA). We note that your department has no comments on the project's DEA.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Ulu'ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 16-198

March 7, 2016

Mr. Alan Suwa (EV21)
NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, HI 96860

Dear Mr. Suwa:

SUBJECT: Waiawa Water Transmission Main Replacement
Draft Environmental Assessment Pre-Assessment Consultation,
Pearl City, O'ahu, Hawai'i TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Thank you for the opportunity to review and provide our input regarding your letter dated February 8, 2016, on the above subject project.

Our comments are as follows:

- Once construction phase commences, install approved Best Management Practices fronting all City drainage facilities.
- During construction and upon completion of the project, any damages/deficiencies within City street right-of-way shall be corrected to City standards and accepted by the City.
- All trenching work on all City-owned or maintained roadways shall comply with the current City policy. See attachment.

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

Sincerely,

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

Attachment

OFFICE OF THE MANAGING DIRECTOR

CITY AND COUNTY OF HONOLULU

530 SOUTH KING STREET, ROOM 306 • HONOLULU, HAWAII 96813
PHONE: (808) 523-4331 • FAX: (808) 523-4242 • INTERNET: www.honolulu.gov

JEREMY HARRIS
MAYOR

BENJAMIN B. LEE, FAIA
MANAGING DIRECTOR

MALCOLM J. TOM
DEPUTY MANAGING DIRECTOR

September 30, 2004

TO: ERIC CRISPIN, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

CLIFF JAMILE, P.E., CHIEF ENGINEER
BOARD OF WATER SUPPLY

TIMOTHY STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

LARRY LEOPARDI, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

FRANK DOYLE, P.E., DIRECTOR
DEPARTMENT OF ENVIRONMENTAL SERVICES

KEOKI MIYAMOTO, ACTING DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

BILL BALFOUR, JR., DIRECTOR
DEPARTMENT OF PARKS AND RECREATION

DAVID ARAKAWA, CORPORATION COUNSEL
DEPARTMENT OF THE CORPORATION COUNSEL

FROM: BENJAMIN B. LEE, FAIA
MANAGING DIRECTOR

SUBJECT: **TRENCHING PERMITS AND REPAVING OF STREETS**

The policy for all trenching work on all City and County of Honolulu (City) owned or maintained roadways shall be as follows:

- Owner (HECO, VERIZON, GASCO, BWS, City agencies, and Others) shall **SELF CERTIFY** that trenching activities, which include all construction/emergency repairs, have been constructed as per City standards and/or specifications. Implicit to this certification is increased effort by the owners to take compaction tests (mechanical, nuclear gage, or other means) to ensure contract and specification compliance. The owners shall self-inspect their own or their contractors' work to ensure quality control and acceptable levels of compliance.

- The City shall work with the Hawaii Local Technical Assistance Program and others to provide an ongoing training program, which addresses the needs of inspectors to effectuate good quality trench restoration and pavement repair.

- The warranty period for all aspects of the trench restoration shall be increased to two years. Owners shall be responsible to correct any trench failures within that two-year period.

- All trenching in City roadways shall be designed to minimize trench alignment wandering with consideration given to the probable vehicles' wheel tracking within the travel way. This should help to provide improved pavement smoothness by keeping the trench locations outside of the vehicles' wheel tracking whenever possible.

- Flowable Fill or Controlled Low Strength Material (CLSM) shall be permitted for use as backfill as per the specifications. The CLSM shall be specified at a 28-day compressive strength between 50 and 100 psi to permit ease of subsequent mechanical excavation through the CLSM. The CLSM shall not be permitted higher than the bottom level of the permeable base layer so as to permit drainage flow through the pavement.

- Native soil or better material shall be permitted as long as the material conforms to City standards and specifications.

- The permanent pavement restoration shall be accomplished as soon as practicable but not to exceed two months after trench is backfilled. This applies to emergency repairs and designed/contracted construction.

- Trenches running longitudinally to the travel way on roadways where the paved travel way is greater than 36 feet shall be cold planed a minimum of two inches and repaved to the original grade. The paving shall be a minimum width of one lane not exceeding 15 feet in width with a minimum of two feet in added length to each end of the longitudinal trench. The replaced pavement within the trench limits, plus an additional one foot on each side of the trench (T-section), shall have a minimum thickness of four inches of asphalt concrete or match the existing pavement thickness, whichever is greater.

- Trenches running longitudinally to the travel way on roadways where the paved travel way is 36 feet or less shall be repaved to the trench width plus an additional one foot on each side of the trench (T- section) with a recommended two feet in added length to each end of the longitudinal trench. The replaced pavement shall have a minimum thickness of four inches of asphalt concrete or match the existing pavement thickness, whichever is greater.

- Trenches running perpendicular or skew to the travel way and/or longitudinal trenches less than ten feet in length shall be repaved a minimum of four feet wide with the trench centered within the paved width (T-section) or the paved area shall be the trench width plus an additional one foot on each side of the trench (T-section), whichever is greater. The length of the repaved trench shall be repaved a recommended two feet in added length to each end of the trench. The replaced pavement shall have a minimum thickness of four inches of asphalt concrete or match the existing pavement thickness, whichever is greater.

- Rectangular excavations (manholes or pits) shall be a minimum of three feet by four feet or two feet larger in each dimension than the excavated area, whichever is greater. The replaced pavement shall have a minimum thickness of four inches of asphalt concrete or match the existing pavement thickness, whichever is greater.

This policy is effective immediately. Please inform all applicable utility companies and governmental agencies and develop procedures to enforce this policy.

BENJAMIN B. LEE, FAIA
Managing Director

BBL:aa

CONCUR:

MAYOR JEREMY HARRIS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00287
June 14, 2016

Mr. Ross Sasamura, P.E.
Director and Chief Engineer
City and County of Honolulu
Department of Facility Maintenance
1000 Ulu'ohia Street, Suite 215
Kapolei, HI 96707

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Sasamura:

Thank you for your letter dated March 7, 2016 regarding the pre-assessment consultation for the project's Draft Environmental Assessment (DEA). We have reviewed your comments and offer the following responses:

1. During the construction period, approved temporary Best Management Practices will be installed fronting City drainage facilities downstream of the construction work areas.

2. If any damages or deficiencies occur to existing infrastructure within City street rights-of-way due to construction of the proposed project, they will be repaired to match the preconstruction condition or current City standards and accepted by the City.

3. All project-related trenching work on City-owned or maintained roadways will comply with the project's City Department of Planning and Permitting approved construction plans. The plans have been reviewed for compliance with current City policy (i.e., September 30, 2004 memorandum from City and County Managing Director Benjamin B. Lee) and may include approved project-specific variances from the City policy.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to

prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

GEORGE I ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2016/ELOG-377 (TB)

February 26, 2016

Mr. Alan Suwa (EV21)
NAVFAC Pacific
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, Hawaii 96860

Dear Mr. Suwa:

This is in response to your letter received on February 16, 2016 regarding your request for comments on the pre-assessment consultation for the proposed Water Transmission Main Replacement located in Waiawa, Tax Map Keys: 9-6-007: 001, 013; 9-6-008: 008; 9-7-023: 001, 003, 014; 9-7-24: 006; 9-7-066: 082; and 9-7-073: 084, 085, 086, 095, 096. We have reviewed the project description and have the following comments:

1. The Draft Environmental Assessment (DEA) should include a discussion of the consistency of the project with the Oahu General Plan and the Primary Urban Center Development Plan.

2. The DEA should list all permits required from the City and County including, but not limited to, the following:

   a) Trenching permit;
   b) Grading permit; and
   c) Subdivision application to designate the various proposed easements.

Should you have any questions, please contact Thomas Blair of our staff at 768-8030.

Very truly yours,

George I. Atta, FAICP
Director

GIA:js

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00291
June 14, 2016

Mr. George I. Atta, FAICP
Director, City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813-8000

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Atta:

Thank you for your letter dated February 26, 2016 (Ref. 2016/ELOG-377 [TB]) providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We have reviewed your comments and offer the following responses:

1. The DEA will include a discussion of the project's consistency with the O'ahu General Plan and the Primary Urban Center Development Plan.

2. The DEA will list all required City and County permits, including those listed in your letter.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR

MICHAEL D. FORMBY
DIRECTOR

MARK N. GARRITY, AICP
DEPUTY DIRECTOR

TP2/16-643382R

March 9, 2016

Mr. Alan Suwa (EV21)
NAVFAC Pacific
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, Hawaii 96860

Dear Mr. Suwa:

SUBJECT: Pre-Consultation for Draft Environmental Assessment (DEA) Waiawa Water Transmission Main Replacement; Tax Map Key: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096: Pearl City, Oahu, Hawaii

In response to a letter from Ms. Karen Sumida, Business Line Manager, Environmental, NAVFAC Pacific, dated February 8, 2016, we have the following comments:

1. The DEA should include a Traffic Mitigation Plan that evaluates existing traffic conditions of the surrounding City roadways, possible impacts to traffic and pedestrian patterns as a result of the project, and measures to mitigate these impacts.

2. The affected Neighborhood Board, as well as the area residents, businesses, etc., should be kept apprised of the details of the proposed project and the impacts, particularly during construction, the project may have on the adjoining local street area network.

3. A street usage permit from the City's Department of Transportation Services should be obtained for any construction-related work that may require the temporary closure of any traffic lane on a City street.

4. The DEA should include a description of Public Transit and the impact of your project on Public Transit bus and paratransit operations during construction. Basic information is available on our websites: www.thebus.org and www.honolulu.gov/dts. If your project will affect bus routes and services, you should contact our staff at 768-8370 to coordinate your planned activities.

5. Any construction materials and equipment should be transferred to and from the project sites during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.

We reserve further comment pending submission of the DEA.

Thank you for the opportunity to review this matter. Should you have any further questions, please contact Michael Murphy of my staff at 768-8359.

Very truly yours,

Michael D. Formby
Director

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00292
June 14, 2016

Mr. Michael D. Formby, Director
City and County of Honolulu
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, HI 96813

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Formby:

Thank you for your letter dated March 9, 2016 (Ref. TP2/16-643382R) regarding the pre-assessment consultation for the project's Draft Environmental Assessment (DEA). We have reviewed your comments and offer the following responses:

1. The DEA will include a qualitative assessment of the project's potential impacts to existing traffic conditions on affected roadways, including city roadways, as well as to pedestrians using those roadways. Traffic Control Plans for the project were submitted to and reviewed by the City and County Department of Planning and Permitting and State Department of Transportation.

2. A Navy representative appears before the Pearl City, Salt Lake and other Neighborhood Boards to provide information on relevant issues and activities, and to address residents' concerns as needed. The Pearl City Neighborhood Board was notified of this water line replacement project on February 22, 2016 and will request a briefing at a future meeting.

3. We are aware of the need to obtain a street usage permit from your agency; the DEA will include a list of permits required for the project, including a street usage permit.

4. The DEA will include a discussion of the potential impacts to bus and para-transit service during construction. The Navy will contact your staff to coordinate construction activities at the appropriate time.

5. Construction materials and equipment would be transferred to and from the project sites generally during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize disruption to traffic on local streets; this could vary depending on permit requirements and the specific work areas.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR

MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

February 23, 2016

Mr. Alan Suwa (EV21)
Department of the Navy
Naval Facilities Engineering Command, Pacific
Environmental Planning and Conservation Division
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii 96860-3134

Dear Mr. Suwa:

Subject: Draft Environmental Assessment Preassessement Consultation
Waiawa Water Transmission Main Replacement
Tax Map Keys: 9-6-007: Portions 001 and 013
9-6-008: Portion 008
9-7-023: Portions 001, 003, and 014
9-7-024: Portion 006
9-7-066: Portion 082
9-7-073: Portions 084, 085, 086, 095, and 096

In response to your memorandum dated February 8, 2016, regarding the above-mentioned subject, the Honolulu Fire Department determined that there will be no significant impact to fire department services.

Should you have questions, please contact Battalion Chief Terry Seelig of our Fire Prevention Bureau at 723-7151 or tseelig@honolulu.gov.

Sincerely,

Socrates D. Bratakos

SOCRATES D. BRATAKOS
Assistant Chief

SDB/SY:bh

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00296
June 14, 2016

Mr. Socrates D. Bratakos, Assistant Chief
City and County of Honolulu
Honolulu Fire Department
636 South Street
Honolulu, HI 96813-5007

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Assistant Chief Bratakos:

Thank you for your letter dated February 23, 2016 providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We note that your department has determined that the proposed action will have no significant impact to fire department services.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

KIRK CALDWELL
MAYOR

LOUIS M. KEALOHA
CHIEF

MARIE A. McCAULEY
CARY OKIMOTO
DEPUTY CHIEFS

OUR REFERENCE MT-DK

February 22, 2016

Mr. Alan Suwa (EV21)
NAVFAC PACFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, Hawaii 96860

Dear Mr. Suwa:

This is in response to a letter from Ms. Karen Sumida, Business Line Manager/ Environmental of the Naval Facilities Engineering Command, Pacific, Department of the Navy, requesting comments on the Waiawa Water Transmission Main Replacement project.

Based on the information provided, this project should have no significant impact on the services or operations of the Honolulu Police Department at this time.

If there are any questions, please call Major Dagan Tsuchida District 3 (Pearl City) at 723-8803.

Thank you for the opportunity to review this project.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

By
MARK TSUYEMURA
Management Analyst VI
Office of the Chief

Serving and Protecting With Aloha

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00297
June 14, 2016

Mr. Louis M. Kealoha, Chief of Police
City and County of Honolulu
Honolulu Police Department
801 South Beretania Street
Honolulu, HI 96813

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Chief Kealoha:

Thank you for your letter dated February 22, 2016 (Ref. MT-DK) providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We note that your department has determined that the proposed action will have no significant impact on police department services or operations.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

IN REPLY REFER TO:
CMS-AP00ENV-00679

Daniel A. Grabauskas
EXECUTIVE DIRECTOR AND CEO

BOARD OF DIRECTORS

Donald G. Horner
CHAIR

Damien T.K. Kim
VICE CHAIR

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William "Buzz" Hong
Terrence M. Lee
Ivan M. Lui-Kwan

February 23, 2016

Ms. Karen Sumida, Business Line Manager
Environmental Planning and Conservation Division
NAVFAC PACIFIC
258 Makalapa Drive, Suite 100
JBPHH, Hawaii 96860-3134

Attention: Mr. Alan Suwa, NEPA Manager (EV21)

Dear Ms. Sumida:

Subject: Pre-Assessment Consultation for Draft Environmental Assessment
Waiawa Water Transmission Main Replacement
Pearl City, Oahu, Hawaii
Tax Map Keys: 9-6-7: Pors. 001, 013; 9-6-8: Por. 008; 9-7-23: Pors. 001, 003, 014; 9-7-24: Pors. 006; 9-7-66: Por. 082; 9-7-73: Pors. 084, 085, 086, 095, 096

Thank you for providing the Honolulu Authority for Rapid Transportation (HART) with the opportunity to comment on the pre-assessment consultation letter for the proposed water transmission main replacement project in Waiawa.

The Honolulu Rail Transit Project is currently conducting the guideway construction and utility work along Kamehameha Highway. In addition, the Pearl Highland Station and Traction Power Substation #10 are planned to be built on the makai side of Kamehameha Highway where the proposed transmission main is to be designed.

HART requests that NAVFAC PACIFIC coordinate closely with HART's right-of-way planners and guideway engineers to coordinate use of right-of-way, easements, and construction schedule, as well as design plans along the aforementioned locations.

If you have any questions regarding this matter, please contact Mr. Tomo Murata, Land Use Planner, at 768-6120.

Sincerely,

Daniel A. Grabauskas
Executive Director and CEO

CITY AND COUNTY OF HONOLULU, Ali'i Place, Suite 1700, 1099 Alakea Street, Honolulu, Hawai'i 96813
Phone: (808)768-6159 Fax: (808)768-5110 www.honolulutransit.org

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00293
June 14, 2016

Mr. Daniel A. Grabauskas
Executive Director and CEO
City and County of Honolulu
Honolulu Authority for Rapid Transportation
1099 Alakea Street, Suite 1700
Honolulu, HI 96813

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Grabauskas:

Thank you for your letter dated February 23, 2016 (Ref. CMS-AP00ENV-00679) providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We have reviewed your comments and offer the following responses:

1. The DEA will include a discussion of the Honolulu Rail Transit Project's ongoing guideway construction and utility work along Kamehameha Highway, as well as future construction of the Pearl Highlands Station and Traction Power Substation #10 in the vicinity of the Navy's proposed replacement water transmission main.

2. The appropriate Navy personnel are aware of the need for close coordination with HART planners and engineers regarding design plans, easements, construction schedule, and the use of rights-of-way. We will continue our coordination efforts with your agency to ensure efficient implementation of both projects.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environment

From: Suwa, Alan M CIV NAVFAC Pacific, EV <alan.suwa@navy.mil>
Sent: Wednesday, February 24, 2016 5:58 PM
To: Gail Renard
Subject: FW: Waiawa Water Transmission Main Replacement - Draft EA pre assessment consultation
Signed By: alan.suwa@navy.mil

-----Original Message-----
From: Liu, Rouen [mailto:rouen.liu@hawaiianelectric.com]
Sent: Wednesday, February 24, 2016 5:52 PM
To: Suwa, Alan M CIV NAVFAC Pacific, EV
Subject: [Non-DoD Source] Waiawa Water Transmission Main Replacement - Draft EA pre assessment consultation

Dear Mr. Suwa,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should HECO have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities.

We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed Waiawa Water Transmission Main Replacement Project comes to fruition, please continue to keep us informed. Further along in the design, we will be better able to evaluate the effects on our system facilities.

If you have any questions, please call me at 543-7245.

Sincerely,
Rouen Q. W. Liu
Permits Engineer
Hawaiian Electric Company, Inc.
Tel: (808) 543-7245
Email: Rouen.liu@hawaiianelectric.com <mailto:Rouen.liu@hawaiianelectric.com>

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00295
June 14, 2016

Mr. Rouen Q. W. Liu, Permits Engineer
Engineering Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, HI 96840

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Liu:

Thank you for your email dated February 24, 2016 providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We note that HECO has no objection to the proposed action. We also acknowledge that, should HECO have existing easements and facilities on the subject property, it will need continued access for maintenance of its facilities. The Navy will coordinate project construction activities with HECO to avoid impacts to HECO facilities and customers.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

March 8, 2016

Mr. Alan Suwa (EV21)
NAVFAC PACIFIC
Environmental Planning & Conservation Division
258 Makalapa Drive, Suite 100
JBPHH, Hawaii 96860

Dear Mr. Suwa:

Subject: Waiawa Water Transmission Main Replacement
Draft Environmental Assessment

In response to your letter dated February 8, 2016, it has been determined that the area is currently clear of utility gas facilities.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Should there be any questions, or if additional information is desired, please call Colin Chikamoto at 596-1430.

Sincerely,

Hawaii Gas

Keith K. Yamamoto
Manager, Engineering

KKY:krs

P.O. Box 3000 | Honolulu, Hawai'i 96802-3000 | www.HawaiiGas.com

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/00294
June 14, 2016

Mr. Keith K. Yamamoto, Manager
Engineering
Hawai'i Gas
P.O. Box 3000
Honolulu, HI 96802-3000

Subj: WAIAWA TRANSMISSION MAIN REPLACEMENT, DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION, PEARL CITY, O'AHU, HAWAI'I
TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Dear Mr. Yamamoto:

Thank you for your letter dated March 8, 2016 providing pre-assessment consultation comments as part of the process for the project's Draft Environmental Assessment (DEA). We note that Hawai'i Gas has determined that the area is currently clear of utility gas facilities.

Your letter and this response will be included in the DEA. Please note that after consultation with the State Office of Environmental Quality Control, the City and County of Honolulu (CCH) Department of Planning and Permitting (DPP) assumed the responsibility and authority for determining the project's required level of environmental review under Chapter 343, Hawai'i Revised Statutes (HRS). By letter dated May 11, 2016, CCH DPP determined that the Proposed Action is an exempt class of action pursuant to its Exemption List (dated August 12, 1981), and that it would not require the preparation of a Chapter 343, HRS EA. The Navy will continue to prepare the DEA in compliance with the National Environmental Policy Act, and the DEA will be made available for public review and comment.

We appreciate your participation in this review process. If you need additional information, please contact Alan Suwa at 808-472-1450 or alan.suwa@navy.mil.

Sincerely,

KAREN SUMIDA
Business Line Manager
Environmental

Appendix B
NHPA Section 106 Consultation Correspondence

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DEPARTMENT OF THE NAVY
COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
JBPHH, HAWAII 96860-5101

5750
Ser N45/779
October 02, 2015

CERTIFIED NO: 7014 1200 0000 9858 8111

Dr. Alan Downer
Deputy State Historic Preservation
Officer Administrator
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, HI 96707

Dear Dr. Downer:

SUBJECT: PROPOSED WAIAWA WATER TRANSMISSION LINES, WAIAWA AND MĀNANA AHUPUA'A, 'EWA DISTRICT, O'AHU, HAWAII (TMK: 9-6/9-7 SERIES)

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Navy requests your review of the proposed undertaking to install water transmission lines in the Waiawa and Mānana area of Oahu, Hawaii (TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096). Enclosure 1 depicts the TMK boundaries in the vicinity of the proposed project.

In accordance with the implementing regulations for Section 106 of the NHPA, the Navy has determined the project is an undertaking as defined in 36 CFR 800.16(y).

Project Description

The Navy proposes to install approximately 14,000 linear feet of a 42-inch diameter potable water transmission line (water main) from Waiawa Pump Station, located at the northern end of Waihona Street, to the existing 42-inch water main at the intersection of Lehua Avenue and Second Street. Enclosure 2 depicts the project area. The new water line replaces the existing 42-inch transmission main which has reached the end of its useful life. The existing 42-inch transmission main will be grouted and abandoned in place. The existing water transmission main valve vaults will also be abandoned in place.

The proposed undertaking includes connections (tie-ins) to the existing water system as follows: 1) at the 36-inch Waiawa Pump Station water main, 2) the 16-inch Hawaii National Guard Armory fire water service lateral, 3) the 16-inch Mānana Housing Booster Pump Station, and 4) the 42-inch Lehua Avenue water main. The tie-in to the Mānana Housing Booster Pump Station includes the installation of approximately 1,000 linear feet of 16-inch ductile iron waterline from Waihona Street. A portion of the 16-inch water line will run through

an existing water line tunnel currently housing the existing 42-inch transmission main. The existing 42-inch line will be removed from the tunnel prior to installing the new 16-inch line.

The design of the new water transmission main will meet or exceed the requirements specified in the Department of Defense (DoD) Unified Facility Criteria (UFC) 3-230-01 Water Storage, Distribution, and Transmission, the Naval Facilities Engineering Command Hawaii Public Works Utilities Criteria for Design and Construction: Electrical, Sewer, and Water, and the Hawaii Water System Standards.

Area of Potential Effects (APE)

The proposed location of the 14,000 linear feet of 42-inch water transmission main runs from the Navy's Waiawa Pump Station at the end of Waihona Street to the intersection of Lehua Avenue and Second Street, where the University of Hawaii's urban garden is located. The installation also includes tie-ins, specifically, 1,000 linear feet of 16-inch water line from Waihona Street through an existing water tunnel to the Mānana Housing Booster Pump Station. The APE is approximately 12.5 acres as depicted in Enclosure 3. The APE includes a five meter area on either side of the proposed water line to account for any unforeseen site conditions.

The entire length of the proposed transmission main is planned to be installed amid an urbanized environment through the town of Pearl City. Most of the transmission main will traverse beneath the asphalt paved roadway of Waihona Street and Kamehameha Highway, west of Home Depot. The southern section of the transmission main will traverse the University of Hawaii's urban garden and easements of a residential area before terminating at a Navy water line tie-in at Lehua Avenue. The tie-in installed at the Mānana Housing Booster Pump Station will start at Waihona Street, travel through an existing tunnel and beneath the Mānana Housing area, and terminate at the booster station.

Identification of Historic Properties

Previous studies, including archival research on traditional and historic land use, offer an indication as to the types of properties characteristic of the area as well as the likelihood of encountering historic properties during work. Identification efforts are consistent with 36 CFR Part 800.4(b)(1). In addition, Native Hawaiian Organizations have been included in the consultations for an opportunity to provide comment and assist with the identification of historic properties per 36CFR Part 800.4(b).

Regarding historic structures, Waihona Street was originally constructed by the Navy as an access road to the Naval Aviation Supply

Depot (NASD) area, formerly known as U.S.N. Road. Pacific Naval Air Bases contractors constructed the supply depot that extended along Waiawa Stream for two miles and originally contained 50 World War II wooden structures with 20 auxiliary warehouses constructed by the Seabees just south of the Mānana Naval Supply Center near Kamehameha Highway. The Waiawa Gulch NASD World War II facilities were not identified as historic resources at the time of their transfer out of Navy ownership.

The area of the water pumping station within the former World War II naval storage area was constructed in 1944. The pump station, Waiawa Pumping Plant Head House (Facility S71), is located in the northern portion of the APE and was part of the former Waiawa NASD area. The facility was designed in 1949 by the 14th Naval District Public Works and constructed in 1951. The pumping plant and head house are considered historic under Criteria A and C along with the other Navy pumping plants that circle the Pearl Harbor basin. Facility S-71 and its associated period engineering features are considered significant for its association with the post-war urbanization of Oahu and its municipal civil engineering and architectural design. Enclosure 4 includes photos of the pump station.

An historic water tunnel also associated with the NASD facilities is located in the APE from Waihona Street and traverses underground to the Mānana Housing area. The existing 42-inch water line (to be removed) runs through the tunnel. While no formal evaluation of the tunnel has been conducted, the Navy is treating the tunnel as an historic property. Enclosure 5 includes photos of the tunnel. Enclosure 6 shows the location of the water pump and tunnel.

The southern NASD area used to support warehouses. The warehouses were demolished to make way for the construction of Home Depot. The only building that exists today in this area is Quonset Hut 33 formerly used as a Galley Storehouse at the center of the small housing encampment. This personnel area during World War II housed segregated African-American sailors who were assigned as stevedores to the various naval supply areas associated with Pearl Harbor. The Quonset Hut is not within the APE for this undertaking.

A number of archaeological studies have been conducted in the area. Enclosure 7 depicts the locations of previous studies in vicinity of the APE.

Goodman and Nees (1991) conducted an inventory survey of 3,600 acres between Waiawa Gulch and the H-2 freeway, west and northwest of Waihona Street. Historic components relating to the Oahu Sugar Company railroad system were documented, as well as an irrigation

complex dating to the turn of the nineteenth century. The Goodman and Nees (1991) study area is not within the APE for this undertaking.

Tuggle (1982) conducted an archaeological survey and subsurface testing of a 3.18 acre parcel east of Waihona Street, between the street and the gulch bottom. A possible agricultural canal associated with two natural terraces was identified. No other features identified. The study area is not within the APE for this undertaking.

Bell et al. (2006) conducted literature review and a field inspection in support of a rock fall remediation project. The project was located along 900 feet of Waihona Street between the street and the slope. One small terrace was identified at the top of the slope above the road. The feature is not within the APE for this undertaking.

A few studies have been conducted in the vicinity of the APE from Waihona Street to the intersection of Lehua Avenue and Second Street, where the University of Hawaii's urban garden is located. McGerty and Spear (1995) conducted an archaeological assessment of 138.5 acres in Pearl City, bisected by Kamehameha Highway west of Lehua Avenue. The study indicated that pre-contact land use of the area focused on agriculture, and post-contact uses included rice and sugar cane cultivation, as well as later military development. Due to the history of intensive land modification in the area, McGerty and Spear (1995) concluded that there remained little possibility for encountering significant cultural deposits. The study area is not in the APE for this undertaking.

Rasmussen and Tomonari-Tuggle (2006) conducted archaeological monitoring south (seaward) of the APE from Waihona Street to the intersection of Lehua Avenue and Second Street in support of the Waiau Fuel Pipeline. The study area occurred in the vicinity of previously identified properties associated with traditional Hawaiian burials and fishponds. However, no historic properties were encountered during monitoring. The study area is not within the APE for this undertaking.

Henry et al. (1993) conducted inventory survey of a 23-acre section of the Waiawa Floodplain, located immediately south of the east end of the APE. A single course linear rock alignment was identified in the southernmost portion of the study area. The feature is not located within the APE for this undertaking.

Studies have been completed in the vicinity of the tie-in from the Waihona Street to the Mānana Housing Booster Pump Station. In addition to the McGerty and Spear (1995) assessment previously discussed, Connolly (1980) and Fong et al. (2005) conducted studies

east of this section of the APE. Connolly (1980) conducted a reconnaissance survey for the Mānana Kai Neighborhood Park. No archaeological features were identified. Fong et al. (2005) conducted literature review and field inspection of a 13-acre parcel near the Mānana Kai Neighborhood Park, and included area studies by McGerty and Spear (1995). No archaeological features were identified. These study areas are not located within the APE for this undertaking.

Archaeological studies done in support of the Honolulu High-Capacity Transit Corridor included use of ground penetrating radar and subsurface testing along the corridor of Kamehameha Highway. In the area on Kamehameha Highway from Waihona Street to just west of Lehua Avenue, no cultural deposits were identified by Hammatt (2010). Generally, stratigraphy in this area of Kamehameha Highway consisted of fill layers overlying naturally deposited alluvial sediment. The study area overlaps the APE for this undertaking from Waihona Street to just west of Home Depot.

Determination of Effect

It is the determination of the Navy that the proposed undertaking will have no adverse effect on the National Historic Landmark or any historic properties within the APE. Work to install the new water main and tie-ins will not affect the water pumping station or the tunnel. Furthermore, the absence of cultural deposits from previous archaeological studies in the vicinity is consistent with intensive land modification associated with development of the Pearl City area, and supports the finding of effect. Therefore, the Navy is requesting your concurrence with its determination of no adverse effect.

We have compressed multiple consultation steps to expedite the consultation in accordance with 36 CRF Part 800.3(g).

As defined in 36 CFR 800.5(c), we will assume State Historic Preservation Division (SHPD) concurrence if no objection is received from your office within 30 days of receipt of this letter.

If you have any questions, please contact Ms. Carly Antone of our Environmental Business Line, NAVFAC Pacific at (808) 472-1462, or email carly.antone@navy.mil.

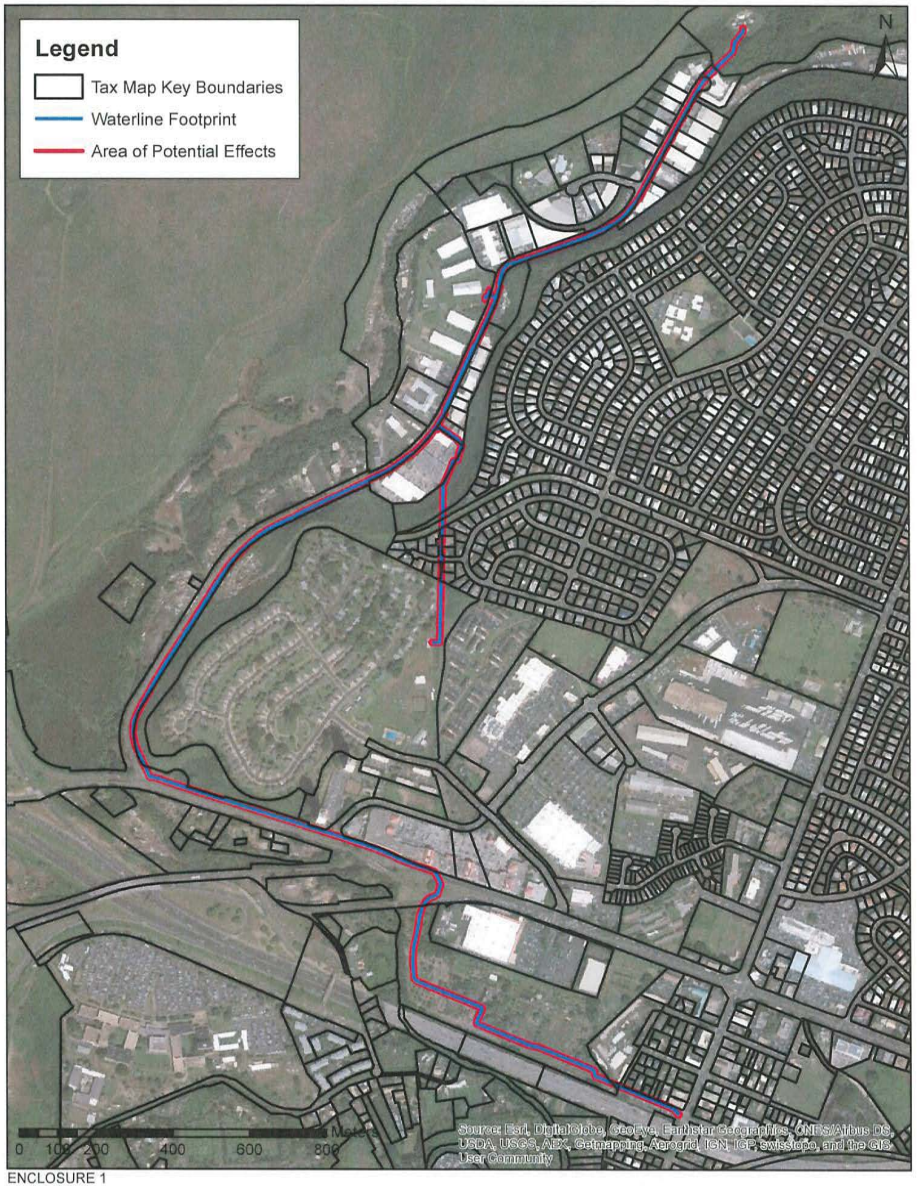
Sincerely,

S. O. CLOYD
Commander, CEC, U.S. Navy
Deputy Regional Engineer
By direction of the
Commander

Enclosures:
1. TMK Boundaries in Vicinity of the Project Area
2. Project Location
3. Area of Potential Effects
4. Photos of Pump Station
5. Photos of Tunnel
6. Location of Waiawa Pump Station and Tunnel
7. Previous Studies in Vicinity of the APE

Copy to: Jessica Puff, Susan Lebo and Megan Borthwick, State Historic Preservation Division (PDF Format)
Elaine Jackson-Retondo, National Park Service (PDF format)
Katharine Kerr, Advisory Council on Historic Preservation (PDF format)
Kiersten Faulkner and Tanya Gumpac-McGuire, Historic Hawaii Foundation (PDF format)
Betsy Merritt and Brian Turner, National Trust for Historic Preservation (PDF format)
Kamana'opono M. Crabbe Ka Pouhana, Chief Executive Officer Office of Hawaiian Affairs (PDF format)
Shad Kane, O'ahu Council of Hawaiian Civic Clubs (PDF format)
Kehau Lum, Aiea Hawaiian Civic Culb (PDF format)

TMK Boundaries in the Vicinity of the APE



ENCLOSURE 1

Waiawa Transmission Main Installation Project

Oahu, Hawaii

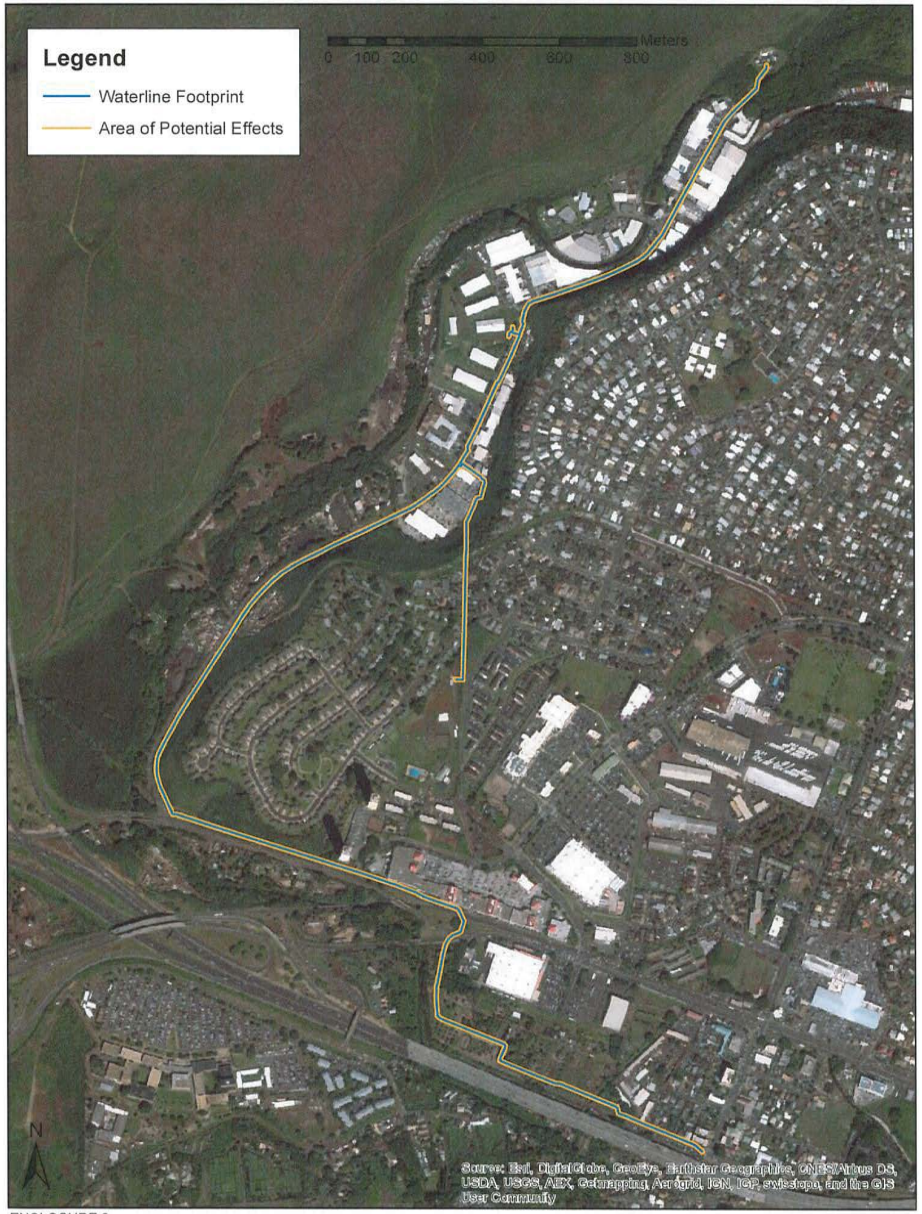
Legend

Area of Potential Effects

N
W E
S

ENCLOSURE 2

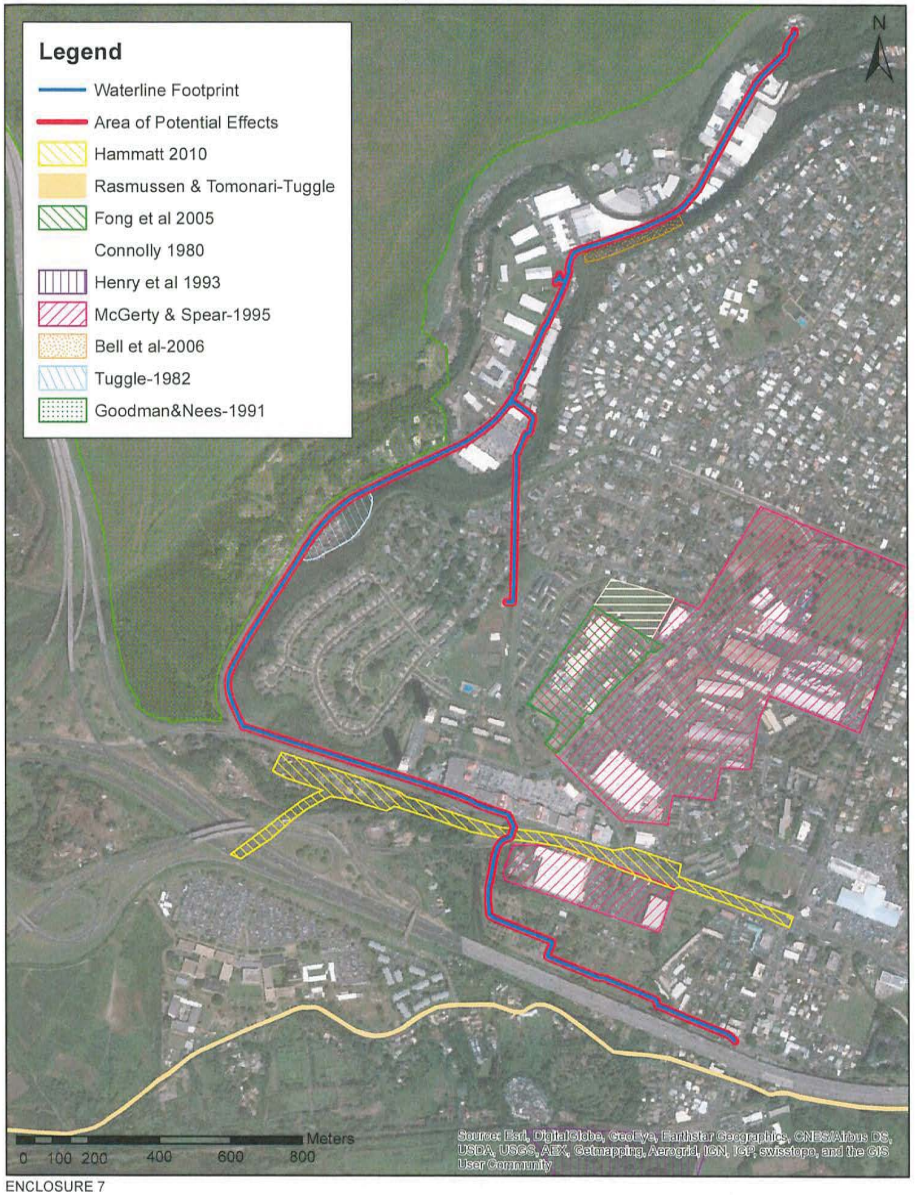
ENCLOSURE 4 REDACTED



ENCLOSURE 3

ENCLOSURE 5 REDACTED ENCLOSURE 6 REDACTED

Previous Archaeological Studies in Vicinity of APE



ENCLOSURE 7

Antone, Carly R CIV NAVFAC PAC, EV

From: Antone, Carly R CIV NAVFAC PAC, EV
Sent: Wednesday, October 21, 2015 10:30
To: 'Susan.A.Lebo@hawaii.gov'; 'Jessica.L.Puff@hawaii.gov'; 'Megan.Borthwick@hawaii.gov'
Subject: RE: Section 106: Waiawa Transmission Line—Follow-up
Attachments: 106 Waiawa Water Transmission Line.pdf; Encl 6 with Jean Boyle Bridge.pdf; Jean Boyle Bridge Photos.pdf
Signed By: CARLY.ANTONE@NAVY.MIL

Hello,

This message is regarding the subject Section 106 consultation (attached for your reference) dated on October 2, 2015 and submitted on October 7, 2015. We have recently determined that the Navy-owned Jean Boyle Bridge (1944) that crosses Waiawa stream on Navy property is within the Area of Potential Effects (APE) for this undertaking. While the installation of the proposed water line will be independent of the bridge, the Navy plans to remove the existing water line and supports that are connected to the bridge on the downstream side.

Although the Navy could not locate a formal evaluation for the bridge in its records, we are considering the bridge potentially eligible for listing in the National Register of Historic Places. The existing water line and supports are considered secondary equipment and not character-defining features of the bridge. Therefore, removal of these elements will not have an adverse effect on the bridge. A modification to Enclosure 6 of our initial letter has been attached here to show the location of the Jean Boyle Bridge. Photos have also been attached. Photo 1 shows the existing line to be removed at the bridge. Photo 2 shows the upstream side of the bridge opposite the water line.

Had this been an independent undertaking, the work to remove the existing water line from the bridge would be reviewed under the Commander Navy Region Hawaii 2012 Programmatic Agreement (Amended and Restated). However, we are including it in this follow-up because it is a part of the overall undertaking described in our initial consultation letter. The presence of the bridge in the APE and the work to remove the existing water line does not constitute a revision of our determination of effect. To reiterate, the undertaking will have no adverse effect on historic properties.

If you have any questions or concerns, please do not hesitate to contact me. Thank you for your continuing consultation efforts.

Very Respectfully,
Carly R. Antone
Archaeologist
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134
Desk: (808) 472-1464

-----Original Message-----
From: Antone, Carly R CIV NAVFAC PAC, EV
Sent: Wednesday, October 07, 2015 11:15 AM
To: 'Susan.A.Lebo@hawaii.gov'; 'Jessica.L.Puff@hawaii.gov'; 'Megan.Borthwick@hawaii.gov'

ENCLOSURE 6 REDACTED

Subject: Section 106: Waiawa Transmission Line

Hello:

Resending the below message sent yesterday because I received an "undeliverable" message upon initial attempt due to attachment size. I've resized the attachment here.

Very Respectfully,

Carly R. Antone
Archaeologist
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134
Desk: (808) 472-1464

Dear Dr. Lebo, Ms. Puff, and Ms. Borthwick:

Attached, please find a copy of the subject Section 106 consultation letter and accompanying enclosures.

I previously discussed this proposed undertaking via email with Dr. Lebo regarding archaeological information, but would also like to include Ms. Puff and Ms. Borthwick at this time in order to extend the courtesy of a read-ahead copy. If others in the SHPD have been overlooked, please feel free to forward.

If you have any questions or concerns that may be answered more expeditiously through direct communication, please feel free to contact me by email or phone and I will respond to you as soon as possible.

Very Respectfully,

Carly R. Antone
Archaeologist
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134
Desk: (808) 472-1464

Jean Boyle Bridge Photos

Photo 1. Jean Boyle Bridge, showing downstream side with existing water line to be removed.

Photo 2. Jean Boyle Bridge, showing upstream side opposite the existing water line.

From: Antone, Carly R CIV NAVFAC PAC, EV
To: Suwa, Alan M CIV NAVFAC Pacific, EV
Subject: FW: Waiawa Waterline Section 106 Ltr
Date: Thursday, November 19, 2015 7:13:37 AM

Alan,
Confirmation from SHPD below.

V/R,
Carly

-----Original Message-----
From: Lohr, John R CIV NAVFAC Hawaii, EV
Sent: Wednesday, November 18, 2015 3:34 PM
To: Antone, Carly R CIV NAVFAC PAC, EV
Subject: FW: Waiawa Waterline Section 106 Ltr

Carly,

Looks like we are gtg.

John R. Lohr, AIA, FSAME
Historic Preservation Officer, EV5, NAVFAC Hawaii
400 Marshall Rd, Bldg 55, FL 1, Rm 113
Joint Base Pearl Harbor-Hickam, HI 96860-3139
(808) 474-9019

-----Original Message-----
From: Puff, Jessica L [mailto:jessica.l.puff@hawaii.gov]
Sent: Wednesday, November 18, 2015 3:25 PM
To: Lohr, John R CIV NAVFAC Hawaii, EV; Lebo, Susan A
Cc: Downer, Alan S
Subject: [Non-DoD Source] RE: Waiawa Waterline Section 106 Ltr

Thanks for the notification John.

Jessica L. Puff
Architectural Historian
Hawaii State Historic Preservation Division
#: (808) 692 8023
@: Jessica.l.puff@hawaii.gov

-----Original Message-----
From: Lohr, John R CIV NAVFAC Hawaii, EV [mailto:john.r.lohr@navy.mil]
Sent: Tuesday, November 17, 2015 7:53 AM
To: Lebo, Susan A; Puff, Jessica L
Cc: Downer, Alan S
Subject: Waiawa Waterline Section 106 Ltr

Aloha Susan and Jess,

I am following up on the attached Section 106 ltr hand carried and delivered on 6 Oct 2015 (return receipt).

The Navy has not received any response (42 days), so we are assuming concurrence and moving

forward with the undertaking.

Mahalo, John

John R. Lohr, AIA, FSAME
Historic Preservation Officer, EV5, NAVFAC Hawaii
400 Marshall Rd, Bldg 55, FL 1, Rm 113
Joint Base Pearl Harbor-Hickam, HI 96860-3139
(808) 474-9019

Appendix C
Cultural Impact Assessment

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Department of the Navy

CULTURAL IMPACT ASSESSMENT

Waiawa Water Transmission Main Replacement

TMK: [1] 9-6-7, 9-6-8, 9-7-23, 9-7-24, 9-7-66, 9-7-73, various parcels

Waiawa and Mānana Ahupuaʻa
ʻEwa District, Oʻahu, Hawaiʻi

May 2016

Prepared for:
Department of the Navy

Prepared by:
HHF Planners

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Acronyms and Abbreviations

APE	Area of Potential Effect
CIA	Cultural Impact Assessment
CNRH	Commander, Navy Region Hawaii
CTAHR	College of Tropical Agricultural and Human Resources
JBPHH	Joint Base Pearl Harbor-Hickam
LCA	Land Commission Award
MAGIS	Maps, Aerial photos, and Geographic Information Systems
NASD	Naval Aviation Supply Depot
NAVFAC Pacific	Naval Facilities Engineering Command Pacific
NCTAMS PAC	Naval Computer and Telecommunications Area Master Station Pacific
NHPA	National Historic Preservation Act
OHA	Office of Hawaiian Affairs
SHPD	Hawaiʻi State Historic Preservation Division
SHPO	State Historic Preservation Officer
UH	University of Hawaiʻi
USAF	U.S. Air Force

Glossary of Hawaiian Terms

Hawaiian Term	English Translation
ahupuaʻa	Land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (*ahu*) of stones surmounted by an image of a pig (*puaʻa*), or because a pig or other tribute was laid on the altar as tax to the chief.
ʻawa	Kava, a shrub with green jointed stems and heart-shaped leaves
awa	Harbor or milkfish
heiau	Traditional Hawaiian place of worship
iwi	Human remains
kawailoa	Long water
kalo	Taro, a kind of aroid cultivated since ancient times for food. In Hawaiʻi, taro has been the staple from earliest times to the present.
konohiki	Headman of an ahupuaʻa land division under the chief
kula	Plain, field, open country, pasture. An act of 1884 distinguished dry or kula land from wet or taro land.
kupuna	Ancestor, grandparent
lehua	The flower of the ʻōhiʻa tree; also the tree itself.
loʻi	Taro patch
loko	A pond (of either fresh or salt water)
māhele	Land division of 1848, also known as Great Māhele
makai	Inland
makaula	Prophet
maika	Ancient Hawaiian game suggesting bowling; the stone used in the game
mauka	Seaward
moku	Districts, or land divisions, established after the Great Māhele
moʻo	Narrow strip of land, smaller than an ʻili
moʻoʻaina	Land parcel
moʻolelo	Story
pahale	House wall
paʻaina	Fences and walls
pipi	Pearl oysters
puʻu	Mountain peak or other geographical high point
wai	Water

Executive Summary

This Cultural Impact Assessment (CIA) was prepared to assess potential cultural impacts associated with the U.S. Navy's (Navy) proposed Waiawa Water Transmission Main Replacement project on cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups. The proposed replacement line would replace an aging, approximately 2.1-mile long, 42-inch primary water transmission main that serves Joint Base Pearl Harbor-Hickam (JBPHH) and military family housing areas.

The existing line extends from the Waiawa Pump Station in upper Pearl City to a connecting point near the intersection of Lehua Avenue and Second Street. The proposed replacement line would also extend from Waiawa Pump Station to a connecting point at Second Street and Lehua Avenue. It would be routed within Waihona Street, Kamehameha Highway, and the University of Hawaiʻi's Oʻahu Urban Garden Center. Secondary water lines would replace existing service to the Hawaiʻi National Guard facility on Waihona Street and Manana Housing Area, respectively.

This CIA was conducted following protocols established by the State of Hawaiʻi Office of Environmental Quality Control with the objective of identifying any subsistence, cultural, or religious practices or uses of lands in the vicinity of the new 42-inch water transmission main that could potentially be affected. Archival research of secondary source materials (including historical documents and maps pertaining to the Waiawa and Mānana *ahupuaʻa*, through which the proposed replacement water line alignment traverses) was conducted to understand and identify land use trends over time. In addition, efforts were made to find community members or *kūpuna* who have a relationship with the land in the vicinity of the project area. Upwards of 25 individuals or organizations were consulted for the project; however, the consultation process did not yield interviews.

The broad coastal plain surrounding Pearl Harbor and streams that bisect the coastal lowlands provided a favorable environment for taro cultivation. Records of the *Māhele* (land division) of 1848 for the lands in Waiawa and Mānana *ahupuaʻa* indicate that the primary land uses and features in these areas included agricultural uses such as taro fields, agricultural fields, dry land farming, fishponds, and pasture lands; trails and government roads; and houses and house lots. Records for land awards in the immediate vicinity of the project area indicate that land near Waiawa Stream (along what is presently Kamehameha Highway) was used for house lots, dryland crops, and taro fields. Other land uses supplanted wetland taro cultivation during the latter half of the 19th century, with lands converted to livestock grazing, rice cultivation, and plantation sugar cane and pineapple production.

U.S. military acquisition and use of Pearl Harbor and its surrounding lands began in the late 1800s and continued through the early 1900s with the build-up of the naval base and submarine base. A military reservation was established within the Waiawa *ahupuaʻa* (north of the project area), and after the Japanese attack on December 7, 1941, the base at Pearl Harbor underwent a major expansion that included most of Waipiʻo and Pearl City Peninsulas (Tuggle & Tomonari-Tuggle, 2004). Military land use included infrastructure and facilities in the vicinity of the proposed water line alignment along Waihona Street and the Oʻahu Urban Garden Center.

Based on its historical and current land use, there are no Native Hawaiian or other ethnic groups' cultural customs and traditions exercised for subsistence, cultural, or religious purposes known to be practiced within the project area at this time. The proposed action within the study area would not impact traditional Hawaiian, or other ethnic groups' rites related to gathering, access, or other customary activities because construction activities would take place generally in public roadways and Navy-controlled, limited access areas. During the operational period, the disturbed areas would return to pre-construction conditions. When completed, the subsurface water lines would not impact above-ground activities or practices.

1. Introduction

HHF Planners was contracted by Naval Facilities Engineering Command Pacific (NAVFAC Pacific) to conduct a Cultural Impact Assessment for the proposed water line replacement, which crosses through the *ahupua'a* of Waiawa and Mānana on O'ahu (TMK: [1] 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096). The U.S. Navy proposes to replace an existing 42-inch primary water main currently serving Joint Base Pearl Harbor-Hickam (JBPHH), the Navy's Manana Housing area, and the U.S. Army's Aliamanu Housing area with a new 42-inch water transmission main. The existing line is now over 60 years old and has reached the end of its service life. This line provides water for drinking, industrial, and fire protection services. A 16-inch secondary potable water line would also be installed to maintain service the Navy's Manana Housing Area. A 12-inch lateral line along Waihona Street would replace existing service to the Hawai'i National Guard Armory on Waihona Street.

In this report, the *study area* refers to the overall geographic area around the proposed project area, while the *project area* refers to the direct location of the approximately 3 mile, 42-inch water line and the secondary 16-inch water line (i.e., the actual trench in which the water line will be installed).

1.1. Background and Objectives of the Cultural Impacts Assessment

The purpose of the CIA is to consider the effect of the proposed action on Native Hawaiian or any other concerned ethnic group in terms of their culture and their right to practice traditional customs. Article XII, Section 7 of the Constitution of the State of Hawai'i addresses traditional and customary rights, and states, "The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural, and religious purposes and possessed by ahupua'a tenants who are descendants of Native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights." HRS Chapter 343 requires disclosure of the effects of a proposed action on the cultural practices of the community and State.

PROTOCOL FOR ASSESSING CULTURAL IMPACTS:

- Identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or *ahupua'a*;
- Identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- Receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- Conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research
- Identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- Assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified

Office of Environmental Quality Control 1997

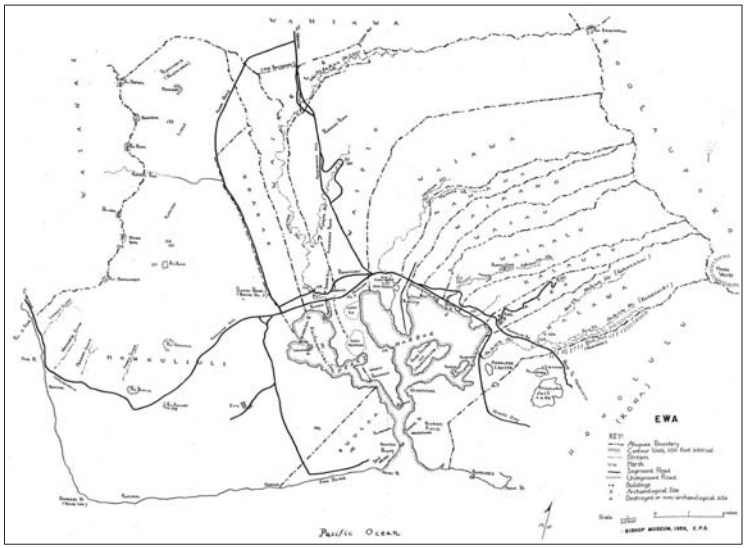
Although the proposed project footprint is relatively limited to the length and width of the water transmission main trench, the extent of cultural impact assessment extends well beyond the proposed project site in accordance with recommended cultural impact studies protocol:

> *In scoping the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place. This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment (Office of Environmental Quality Control 1997).*

The study area for this assessment refers to the vicinity around the proposed project area, including: the Waiawa Stream, University of Hawai'i's O'ahu Urban Garden Center, the U.S. Navy's Manana Housing area, the U.S. Army's Aliamanu Housing area, as well as, to a limited extent, the overall Waiawa and Mānana *ahupua'a*. The *ahupua'a* is usually the appropriate geographical unit for a cultural impact assessment. *Ahupua'a* references are largely limited to cultural legends (*mo'olelo*) and possible gathering resources (e.g., plants and animals that were traditionally used).

1.2. Descriptions of the Project Area and Ahupua'a of Waiawa and Mānana

The project area is located in the community of Pearl City, Island of O'ahu, State of Hawai'i, crossing through Waiawa and Mānana *ahupua'a*. The Waiawa and Mānana *ahupua'a* are located in the 'Ewa District, which is known for its spacious coastal plain with the surrounding deep bays, or lochs, of Pearl Harbor (Figure 1). The Waiawa a*hupua'a* extends from the summit of the Ko'olau Range down to Pearl Harbor Middle Loch. To the west of Waiawa is Waipi'o a*hupua'a*, and to the east is Mānana *ahupua'a*. Mānana a*hupua'a* is divided into two sections; Mānana-iki is narrow in the lower portion, and Mānana-nui broadens in the mountains, and includes Mānana Stream which flows into Waiawa (Handy, 1940). This CIA focuses on the Mānana-iki portion of Mānana a*hupua'a*.



* Source: Sterling & Summers (1978)

Figure 1 - 'Ewa District *Ahupua'a* Boundaries

The project site spans approximately 3 miles, where the new 42-inch water line would provide the same water transmission capacity as the existing line and be routed from the Navy's Waiawa Pump Station, along Waihona Street and Kamehameha Highway, through the University of Hawai'i's (UH) College of Tropical Agricultural and Human Resources (CTAHR) O'ahu Urban Garden Center, and along Second Street to an existing line at the intersection of Second Street and Lehua Avenue. The new 16-inch secondary water line would be approximately 2,000 feet long and ties into the new 42-inch line approximately midway down Waihona Street, routed to the south-southeast, terminating at the Manana Housing booster pump station (see Figure 2). Both of the new water lines would extend through public (Federal, State, City and County) and private property. Most of the project area includes public roadway rights-of-way, Navy-controlled utility and roadway corridors, and private industrial land uses. There is an approximately 2,500-ft segment through O'ahu Urban Garden Center, a public garden affiliated with the University of Hawai'i, that provides horticultural information to the public.

Located on the southern coastal area of the island of O'ahu, JBPHH encompasses approximately (approx.) 28,000 acres of land and water. It is located approximately eight miles west of Honolulu and includes significant land holdings at the Main Base, West Loch Annex, Pearl City Peninsula, Waipi'o Peninsula, and includes outlying areas such as Naval Computer and Telecommunications Area Master Station Pacific (NCTAMS PAC) in Wahiawā (also known as Wahiawa Annex). In 2010, Naval Station Pearl Harbor joined with Hickam Air Force Base to become JBPHH, combining the two bases into a single joint installation to support both U.S. Air Force (USAF) and Navy missions in the Pacific. JBPHH serves as the home base for USAF air wings and Navy surface ship and submarine squadrons, and is a regional maintenance center for ships and submarines. The Main Base is host to Commander U.S. Pacific Fleet and the Headquarters Pacific Air Forces. In addition, JBPHH hosts over 100 tenant commands that support the Navy, USAF, and other missions in Hawaii and the Pacific. While the water line replacement would provide mission-critical infrastructure for JBPHH, only parts of it will be located within Navy-owned property.

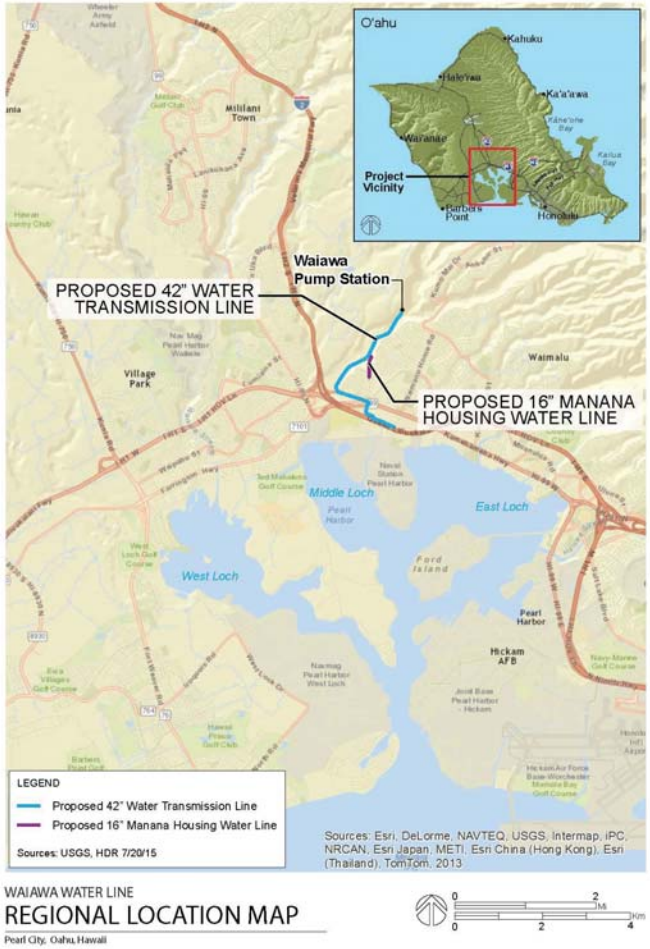


Figure 2 - Project Location

1.3. Methods

1.3.1. Archival research

Archival research of secondary source materials, such as historical and anthropological documents, was conducted as a key component to understanding and identifying land use changes over time. This research included the review of historical documents and maps pertaining to the Waiawa and Mānana *ahupuaʻa*. The archaeological surveys that were reviewed provide detailed background information and insight to how the land was utilized.

Historical maps, available through the University of Hawaiʻi at Mānoa Library system's Maps, Aerial photos, and Geographic Information Systems (MAGIS) database, and the Kamakakūokaʻāina organization, or AVA Konohiki, were used to identify historical land ownership, *Māhele* land commission awards, and locations of prominent uses. A list of land commission awards for the project area, with descriptions of their land uses, is described in more detail in section 2.1. Prominent land uses included traditional fishpond locations in both Waiawa and Mānana *ahupuaʻa*. *Moʻolelo*, or cultural stories and legends, were also researched to provide a cultural context of the area.

1.3.2. Community Consultation

Community consultation is a significant component of the cultural impact assessment because it helps identify cultural practitioners who are familiar with the area of the proposed project, and who can provide invaluable insight on the history of the land. Different qualitative methods of sampling can be used to identify study participants. Because the purpose of the consultation effort is to identify a group of people who possess specific knowledge regarding the study area, techniques such as purposive and snowball sampling are used. These techniques involve selecting a group of participants based on certain characteristics or criteria often by way of a snowball or chain effect in which one interview leads to another. These techniques are particularly effective because they capitalize on informal social networks to identify key players who may be difficult to locate.

Relevant community-based or culture-based organizations were contacted and include, but are not limited to: the Hawaiʻi State Historic Preservation Division (SHPD), Office of Hawaiian Affairs (OHA), Pearl City Neighborhood Board No. 21, Pearl City Community Association, Pearl City Lions Club, Oʻahu Urban Garden Center, Hula Preservation Society, Hawaii United Okinawa Association, Filipino Community Center, and the Association of Hawaiian Civic Clubs. Table 2 in section 3.1 includes the list of all of the community-based and culture-based organizations that were contacted for input. In total, 25 consultation letters were sent out on January 29, 2015. Follow-up calls and emails were placed in order to ensure that the letters were received and to inquire about familiarity with cultural practices in the area. During this consultation process, Dr. Kamanaʻopono Crabbe, OHA Compliance Enforcement, sent a letter with a list of suggested Native Hawaiian Organizations that we should contact for further input (see Appendix A for OHA letter). From this list there was one organization, ʻAha Moku Council, which had not been previously contacted. Attempts to contact Makani Christensen, Chair of the Oʻahu Moku O Kakuhihewa, were made on April 15, 2016. There was no communication that led to the discovery of information that was not already incorporated into this assessment.

2. History and Archaeology of the Area

The proposed project is located in the Pearl City, area which has a rich history and anthropological studies have uncovered and recorded a range of settlement, agricultural, and documented cultural legends. Information on archaeological sites, or traditional and cultural practices within the vicinity of the study area was gathered by reviewing published archaeological and cultural surveys. Property characteristics of the area

based on traditional and historic land use, including the likelihood that they are historic properties, can be found in previous archaeological studies and archival research.

2.1. Anthropological Background

Over time, the built environment and historic use of land in Waiawa and Mānana *ahupuaʻa* have evolved to reflect the changing trends of land use throughout the ʻEwa District, in which the project area is located. The following section provides a brief historic view of how the land use has changed over time, in both land ownership and utilization of the land.

Source: State of Hawaiʻi DBEDT Office of Planning, 2001
Figure 3 - Oʻahu District Boundary Map

The most notable point of the ʻEwa District is its broad coastal plain with the surrounding deep bays, or lochs, of Pearl Harbor (Figure 3). The Hawaiian name for Pearl Harbor was Ke-awa-lau-o-Puʻuloa, the many (*lau*)-harbors (*awa*)-of-Puʻuloa (Handy & Handy, 1972). Puʻuloa was the area that entered into the sea at the long and narrow entrances of the harbor. The English name "Pearl" resembles the prevalence of pearl oysters, *pipi*, in the deep harbor waters (Handy & Handy, 1972). This area was considered to be the most favorable location in all of the Hawaiian Islands for its ability to attract deep-sea fish in the fishponds and fish traps (Handy & Handy, 1972). Further inland ʻ*awa* was grown, which was famous in this area; the lower parts of the valley leading into the Koʻolau range were well-suited for the growth of yams and bananas (Handy & Handy, 1972).

The cultivation of taro plantations in the ʻEwa District was successful because of the natural environment, including the broad coastal plain surrounding the Pearl Harbor lochs. The lowlands of ʻEwa are bisected by ample streams, which are ideal for the cultivation of irrigated taro (Handy & Handy, 1972). Although ʻEwa receives very little rain in the summer months, stream water was always abundant and was used for irrigation (Handy & Handy, 1972). The widely dispersed taro plantations for ʻEwa were irrigated by a number of streams flowing from the deep valleys of the Koʻolau range, including both Waiawa and Mānana streams (Handy & Handy, 1972). More specifically, Mānana *ahupuaʻa* is identified as once having a few terraces of taro. Handy (1940) reports that the seaward terraces of taro production in Mānana *ahupuaʻa* were irrigated by Waiawa Stream. Rosendahl (1993) notes that by the end of the 19th century, wetland taro cultivation gave way to rice cultivation, which marked a shift from the use of traditional subsistence foods to introduced crops.

Prior to the enactment of the *Māhele* in 1848, the lands in Hawaiʻi were divided within the islands into a number of divisions, for easier control and management (Chinen, 1958). These divisions of land were made along rational lines, typically following a mountain ridge, bottom of a ravine, or the center of a stream or river (Chinen, 1958). The Land Commission, established in 1845, recommended that the land be separated into three equally valuable lands; one part to be retained by the king, one part to be set aside to the chiefs and *konohiki*, and the third part to be distributed to the tenants or common people (Chinen, 1958). The *Māhele*, the most important event in the reformation of the land system in Hawaiʻi, changed the land tenure from traditional use rights to private ownership (Bushnell & Hammatt, 2001; Chinen, 1958).

As an outcome of the *Māhele*, a majority of the Waiawa *ahupua'a* was awarded to Victoria Kamāmalu as part of Land Commission Award (LCA) 7713 (Dye, Macak, & Jourdane, 2008). As the sister to King Kamehameha IV and V, Kamāmalu's lands were considered Crown Lands. LCA 387, located in the *makai* portion of Waiawa, was awarded to the American Board of Commissioners for Foreign Missions and included a salt pond, a *mo'o* (narrow strip of land) for the church, and a house lot (Dye, Macak, & Jourdane, 2008). Other land claims granted near the project area include house lots, fishponds, and a pasture (Dye, Macak, & Jourdane, 2008).

A review of the *Māhele* records for the lands in Waiawa and Mānana *ahupua'a* was conducted to understand the land use practices at the time of the *Māhele*. No references of traditional ceremonial sites or religious features were found while looking at the LCAs (Maly & Maly, 2012). In the *ahupua'a* of Waiawa, a total of 40 LCAs were granted to those who could prove historical use of the land. These awards varied in size, ranging from half an acre to a few larger than three acres. The Mānana a*hupua'a* is divided into two sections, Mānana-iki and Mānana-nui. Mānana-iki is narrow in the lower portion, and Mānana-nui broadens in the mountains, and includes Mānana Stream which flows into Waiawa (Handy, 1940). The project area runs through the Mānana-iki section of the Mānana *ahupua'a*. There was a total of 36 LCAs granted in the Mānana a*hupua'a*; four claims were awarded in Mānana-iki, and 32 awards in Mānana-nui.

The primary land use and types of features documented through the *Māhele* records for the Waiawa area included: trails and government roads; houses and house lots; river stream flow, irrigation channels and estuaries; agricultural fields; dry land parcels; pasture lands; taro pond fields; fishponds; fences and walls; and agricultural parcels (Maly & Maly, 2012). The primary land uses documented for Mānana-iki and Mānana-nui included: trails and government roads; houses and house lots; river stream flow, irrigation channels, and estuaries; agricultural fields; dry land parcels; taro pond fields; fishponds; fences and walls; and agricultural parcels (Maly & Maly, 2012).

Figure 4 illustrates the LCAs granted in relation to the lower segment of the proposed water line. Research has been conducted and no LCAs were found in the northern, or upper, section of the project area along Waihona Street.

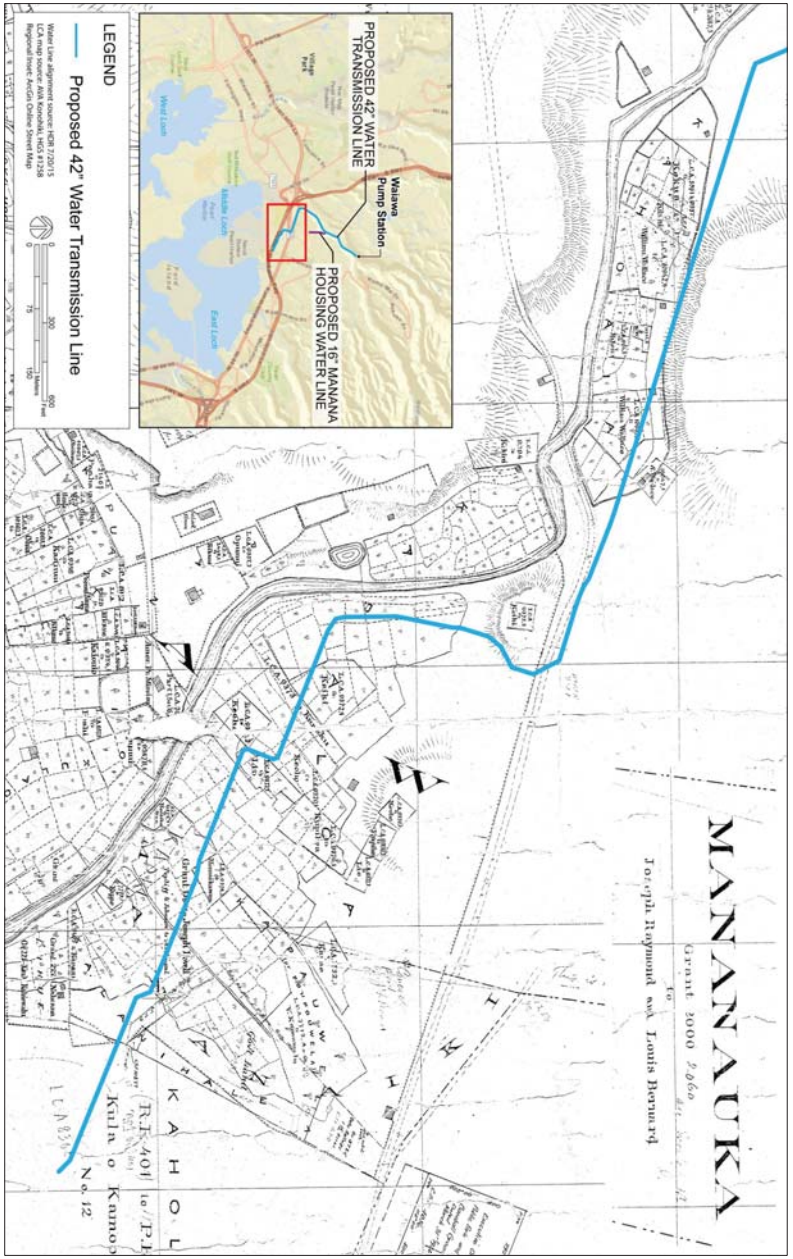


Figure 4 - Land Commission Awards in the Immediate Vicinity of the Project Area

As part of the award process, claimants were required to describe the way in which the land was being utilized at the time the claim was being made. Table 1 describes the land use for the ten LCAs located in the immediate vicinity of the current project area. The LCAs in Table 1 are listed in the order as they appear along the water line, from west to east, in Figure 4. These LCAs were located near Waiawa Stream along what is presently Kamehameha Highway. It is evident from these awards that among house lots being claimed, the land was also being cultivated for dryland (*kula*) crops, and *lo'i* were established utilizing water from Waiawa Stream and marshy areas (see Table 1).

Table 1 - Land Commission Awards in the Immediate Vicinity of the Project Area

Land Commission Award No.	Awardee	*'Ili*	*Ahupua'a*	Land Use
5591 and 9357*	Kekua	Kahoaiai	Waiawa	5591: *mo'o* (Kaekumenenui)-5 *lo'i*, *kula*, wall 9357: *mo'o kalo* (Kaekumenenui)-4 *lo'i*, pasture
4213*	Kauhi	Holoipiapia	Waiawa	*mo'o* (Kaihumaneiki)-3 *lo'i, kula*; house lot *pahale*; Holoipiapia Stream *pahale*
10942*	Wallace, William	Kahoaiai	Waiawa	Former *konohiki* (Noa Naheana) lands; house lot, 2 *mo'o* (Kalualii & Mooiki); *mo'o* (Ulu-2 *lo'i*); *mo'o* (Oopu & Kahoai-4 *lo'i*)
904*	Naheana	Kahoaiai	Waiawa	4 lots: (1) house lot-bounded/3 houses; (2) *lo'i kalo*; (3) *loko*-sand dune; (4) *loko*
9372**	Keiki	Kapaloa	Waiawa	2 lots: *mo'o'aina*, and one house lot
9373**	Kamoku	Kapaloa	Waiawa	1 *mo'o'aina*
9320**	Keoho	Kapaloa	Waiawa	3 lots: One *mo'o'aina*, one *lo'i*, and one *pahele*
9377**	Lio	Kapaloa	Waiawa	2 lots: One *mo'o'aina*, one *pa'aina*
9378**	Homaiikawaa	Kaohai	Mānana-iki	2 lots: Both *lo'i*

* Source: HART, 2008
** Source: AVA Konohiki – LCA – Land Commission Awards, 2016

These *Māhele* data shows that the project area was rich in taro production. Six of the ten LCAs claimed at least one *lo'i.* Of those six awards, three claimants documented multiple *lo'i*. The records also include claims of *kula* (pasture lands), house lots, and *loko* (pond). The land around the project area had multiple claims of house lots and land parcels, also indicating that the project area was a community of taro growers who lived on the land cultivating mainly taro. Other notable land use includes LCA 10942 which documented that the land was former *konohiki* lands.

The landscape began to drastically transform away from wetland taro cultivation towards other prominent uses. Between 1861 and 1873, parcels of Waiawa were leased to Valdemar Knudsen and used as grazing lands for livestock (Bushnell, Shideler, & Hammatt, 2003). By the late 1880s, Chinese farmers began converting Hawaiian taro fields, in the Pearl City Peninsula, for rice cultivation. In 1887, maps documented

that most of the former taro fields had been converted for rice cultivation, with only a small patch of taro remaining. By 1897, map records indicate that all of the lands on the peninsula and coastal floodplain were marked as rice fields (Tuggle & Tomonari-Tuggle, 2004).

Further land transformation occurred in 1868, when the heirs of Kamāmalu granted a 50-year lease of Waiawa lands and lease-holds to James Robinson, a famed ship builder. Following Robinson's death, his son Mark P. Robinson maintained the family land and was granted a 25-year lease. However, this lease was overwritten and permission was granted to the Oahu Railway and Land Company in 1890. In 1897, the Oahu Railway and Land Company then subleased the land to the Oahu Sugar Company for 43 years. This lease contained language granting the Oahu Sugar Company the right to tunnel for water, and to make reservoirs and dams, flumes, ditches, railway tracks, side tracks, as well as switches, piping, bridges, and roads (Dye, Macak, & Jourdane, 2008).

The Oahu Sugar Company was developed in the late 1890s by Benjamin Franklin Dillingham, of the Oahu Railroad and Land Company (Goodman & Nees, 1991). By 1899, the Oahu Sugar Company was cultivating sugar in the lower fields of Waiawa and transporting sugar cane; eight thousand tons of sugar were harvested in this year alone (Goodman & Nees, 1991). An additional railroad spur would extend into Waiawa from 'Ewa Junction, northwest to the eastern edge of Pānakauahi Gulch, and continuing northeast to the Hawaiian Pineapple Company cannery (Dye, Macak, & Jourdane, 2008; Bushnell, Shideler, & Hammatt, 2003).

By the early 20th century, the Oahu Sugar Company had garnered great success, and had planted all of its available land by the end of World War I (Dye, Macak, & Jourdane, 2008). With improved practices, the growth of the Oahu Sugar Company increased from 40,000 tons in 1922 to 70,000 in 1947 (Dye, Macak, & Jourdane, 2008). Railroad transportation and shipping would later become obsolete, as cane haul trucks replaced them following World War II (Bushnell, Shideler, & Hammatt, 2003).

Pineapple and sugar became viable and profitable crops, and as transportation to the sugar mills and pineapple canneries became available, it is likely that more land was placed into cultivation (Bushnell & Hammatt, 2001). Documentation of early pineapple cultivation in the Waiawa *ahupua'a*, began in 1893 with a record of attempted pineapple irrigation utilizing the water from the shallow wells throughout Waiawa Gulch (Bushnell & Hammatt, 2001). Through public auction in 1901, the Hawaiian Pineapple Company obtained 61 acres in Waiawa. In the beginning, most pineapple was shipped to California for packaging, and in an effort to save money and provide a fresher product, a cannery was constructed in Waiawa. Initially constructed by the Pearl City Fruit Company, the cannery later became part of the Hawaiian Pineapple Company and was in operation from 1905 to 1935. Japanese and Filipino workers, both male and female, worked in the fields and in the cannery. From 1905 to 1935, communities of Japanese Camps and Filipino Camps were set up alongside the cannery. By 1935, this area was planted with sugar cane and maps from 1943 give little indication of the pineapple cannery, and surrounding camps existence (Bushnell, Shideler, & Hammatt, 2003).

Pearl Harbor was initially leased to the United States under the terms of the 1887 Reciprocity Treaty. Development of Pearl Harbor began in 1898 following the overthrow of the monarchy in 1893, which led to the annexation of the islands by the United States. By 1900, sand dredging in the harbor began, followed by the first of property condemnations of land along the lagoon edge of Pearl Harbor. Throughout this time, major facilities of the naval base and submarine base were constructed, and by the early 1930s, the military had acquired large areas of the island as part of a general build-up of facilities on O'ahu to alleveiate overcrowding at Pearl Harbor. This included a 650-acre military reservation established in the upland regions of the Waiawa *ahupua'a* (north of the project area), which was used as a training area, artillery impact area, and storage space for munitions and supplies (Tuggle & Tomonari-Tuggle, 2004; Bushnell, Shideler, & Hammatt, 2003).

By the 1940s, Pearl Harbor underwent major expansion, which was accelerated following the Japanese attack of December 7, 1941 (Tuggle & Tomonari-Tuggle, 2004). This expansion included the acquisition of most of Waipiʻo and Pearl City Peninsulas, and a major housing expansion at Makalapa and other areas (Tuggle & Tomonari-Tuggle, 2004).

A few historic resources (i.e., listed or eligible for listing on the National Register of Historic Places) were identified around the project area; those resources found within the project area are being treated as historic properties by the Navy. The Waiawa Pumping Plant Head House (Facility S71), located within the former Waiawa Naval Aviation Supply Depot (NASD) area, was constructed in 1951 and is located in the northern portion of the project area. The pumping plant and head house are considered historic, and its associated engineering features are significant for their association with the post-war urbanization of Oʻahu. The water tunnel located within the project area, and the existing 42-inch water line running through it, is associated with the NASD facilities and is being treated as a historic property by the Navy.[1] The Navy-owned Waiawa Stream Bridge (also known as Jean Boyle Bridge) was constructed in 1944 and crosses Waiawa Stream on Navy property south of Waiawa Pump Station. While no formal evaluation of the bridge has been identified, the Navy is treating the bridge as an historic property. The Navy consulted with the Hawaiʻi State Historic Preservation Officer (SHPO), National Park Service, Advisory Council on Historic Preservation, Historic Hawaiʻi Foundation, National Trust for Historic Preservation, Office of Hawaiian Affairs, Oʻahu Council of Hawaiian Civic Clubs, and ʻAiea Hawaiian Civic Club regarding the project as required under Section 106 of the National Historic Preservation Act (NHPA). The Navy determined that the proposed replacement water line will have no adverse effect on the Pearl Harbor National Historic Landmark or any historic properties within the area of potential effect (APE) under Section 106. (Note: For this proposed action, the Navy determined that the APE includes approximately 12.5 acres and includes an area defined as a 5-meter area on either side of the proposed water line to account for unforeseen site conditions.) No objections were received and concurrence was assumed in accordance with 36 CFR 800.5(c).

The southern NASD area used to support warehouses, but the warehouses were demolished to make way for the Home Depot facility which is located near the project area. Quonset Hut 33 is the only remaining building in this area, and was once used as a Galley Storehouse at the center of the small housing encampment. During World War II, this area was used to house segregated African-American sailors assigned to the various naval supply areas associated with Pearl Harbor. The Quonset Hut is not within the project area.[2]

2.2. Archaeological Background

Several archaeological studies have been documented with association to Waiawa and Mānana *ahupuaʻa*; however, only one of these studies (Hammatt, 2010) is located within the Waiawa Water Transmission Main Replacement project area. Though the Hammatt (2010) study area crosses a portion of the water line project area, no historic properties were identified in this location. Archaeological inventories and surveys for various areas within these two *ahupuaʻa* include limited findings on the traditional and historic land uses for the project area. The coverage of the previous studies, in relation to the project area, can be found in Figure 5. Some studies discussed below are not included in Figure 5 because their survey areas are located beyond the map's extent. This is because the Figure 5 map (prepared for the Section 106 consultation) includes only the previous archaeological studies that were conducted in the vicinity of the project's APE, while this section provides an overview of studies conducted throughout Waiawa and Mānana *ahupuaʻa*.

In 1933, McAllister recorded one site in Mānana, a *heiau* during his site survey of the area. A *heiau* (traditional Hawaiian place of worship), Puoiki Heiau (Site 121), was once located near the *ahupuaʻa*

[1] Section 106 Consultation Letter from Commander Navy Region Hawaii to the Hawaiʻi State Historic Preservation Officer Regarding the Proposed Waiawa Water Transmission Lines, Waiawa and Mānana Ahupuaʻa, ʻEwa District, Oʻahu, Hawaiʻi. (October 2, 2015).

[2] Ibid.

boundary between Waiawa and Mānana, but has since been destroyed (Sterling & Summers, 1978). Puoiki Heiau was located in Waiawa Gulch at the junction of Waiawa and Mānana streams, crowning the top of a small knoll, which is about 50 feet high by 100 feet wide and 200 feet long (Sterling & Summers, 1978). The sides of the knoll were perpendicular with the exception of a steep and narrow neck on the mountain side (Sterling & Summers, 1978).

Tuggle (1982) conducted an archaeological survey of a 3.18-acre parcel adjacent to Manana Marine Corps Housing Area, east of Waihona Street. A possible agricultural canal, with two associated natural terraces was identified, but further testing revealed no signs of any cultural activity (Tuggle, 1982).

Fishponds were another source of aquaculture and an important use of the land in this area. Handy and Handy (1972) report that the Pearl Harbor area was valuable for its variety and abundance of edible shellfish. The shells of the Hawaiian pearl oyster, or *pipi*, were valued for their use in creating shanks for bonito hooks (Handy & Handy, 1972). There are no fishponds within the project area, but McAllister identified five fishponds at nearby Pearl City Peninsula. McAllister (1933) recorded three traditional fishponds in the Waiawa *ahupuaʻa*, Loko Apala (Site 118), Loko Kuhia-loko (Site 119), and Loko Moʻo (Site 120). The two fishponds identified in the *ahupuaʻa* of Mānana were, Loko Paaua (Site 117) and Loko Welokā (Site 116).

An archaeological subsurface survey for TMK 9-7-19:10 located in Pearl City—approximately one-half mile northeast of the eastern terminus of the proposed water line—was completed in 1990 to establish a presence of unmarked human graves. A total of 12 definite or very probable human graves were identified, where five were found in the form of surface indications, and seven were found as subsurface burials (Kaschko, 1990). A number of broken headstones were found piled in the *makai* and ʻEwa corner of the property (Kaschko, 1990). Most of the headstones included were inscribed with names and dates ranging from 1900 to 1908 (Kaschko, 1990). The consistency between orientation, depth, and headstone placement for both the surface and subsurface burials indicate that additional unmarked graves must be present throughout most of the property area (Kaschko, 1990). This consistency of the patterned burials seems to indicate that this site was once a formal graveyard or cemetery burial arrangement (Kaschko, 1990). Only one burial pit, Burial 2, was disturbed enough to expose human bones; the other grave pits were probed by hand only to the top of the wooden coffin, which was seen as sufficient verification of the presence of a human burial (Kaschko, 1990).

An inventory survey of 3,600 acres between Waiawa Gulch and the H-2 freeway, west and northwest of Waihona Street, was completed by Goodman and Nees (1991). This survey documented historic components relating to the Oahu Sugar Company railroad system, as well as an irrigation complex dating to the turn of the nineteenth century.

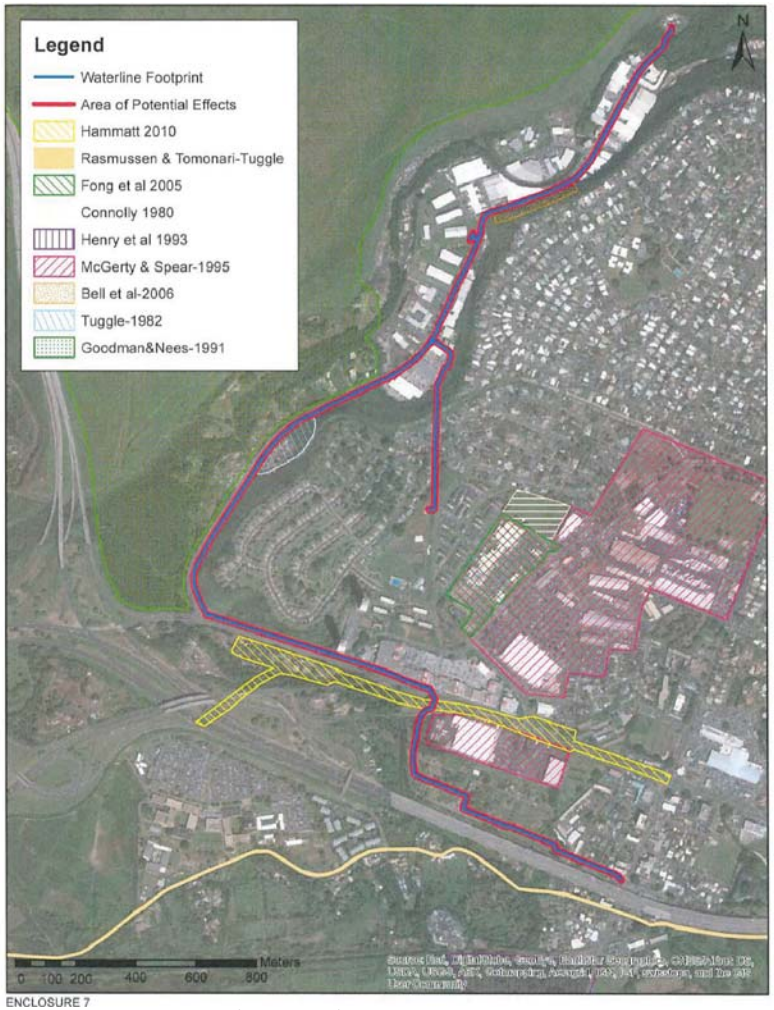
An archaeological inventory survey for the Waiawa Floodplain Feasibility Study project area, located in Mānana, was completed by Paul H. Rosendahl, Inc. in 1993. The project area was a 23 acre site in Pearl City Peninsula, between the East and Middle Lochs of Pearl Harbor (Rosendahl, 1993). The project area was bound by Waiawa Stream on the west, Lehua Avenue on the east, the Pearl Harbor sewage pump station and a utility corridor road to the north, and undeveloped lands to the south (Rosendahl, 1993). Results of the site testing indicated that most recent deposits, Stratum I, consist of a mixture of landfill and naturally deposited soil, while below that, Stratum II, consists of a "cultural" layer is most likely associated with rice cultivation (Rosendahl, 1993). Strata III-V were found to be most likely associated with prehistoric cultivation of the project area, while strata VI-VIII appeared to represent an oxbow-lake, or swamp deposit (Rosendahl, 1993).

McGerty and Spear (1995) completed an archaeological assessment of approximately 138.5 acres at the Manana and Pearl City Junction Sites (McGerty & Spear, 1995). This assessment, bisected by Kamehameha Highway, was conducted within the vicinity of the project area, just west of Lehua Avenue. Though the study

indicated pre-contact land use of the area, post-contact use, and military activities, McGerty and Spear (1995) concluded that there were no significant historic sites present in their project area.

In 2008, Dye and Jourdane (2008) completed an archaeological assessment on a parcel in Waimano, ʻEwa, just south of the project site. This assessment was for the proposed Nextel Partners Inc. cellular site with a focus on the discovery and treatment of historic properties within the area of potential effect. A field inspection revealed that the project site had small residential structures; however, these had been constructed in 1985. Though the proposed cell site sits on undeveloped land near the middle of the parcel, it appeared to be covered with piles of metal debris. Directly south of this project area lies the former Oahu Railway right-of-way, with residential properties on the north and east of the project site. Though testimony on the LCA for this parcel indicated the existence of *loʻi, kula* and a house in the area, this survey did not locate any surface historic properties (Dye & Jourdane, 2008).

The Hammatt (2010) archaeological study was completed in support of the Honolulu High-Capacity Transit Corridor project and included the use of ground penetrating radar and subsurface testing along the corridor of Kamehameha Highway. The study area for Hammatt (2010) overlaps the Waiawa Water Transmission Main Replacement project area, from Waihona Street to just west of Home Depot. No cultural deposits were identified in the study area.



ENCLOSURE 7

Source: Section 106 Consultation Letter (October 2, 2015).

Figure 5 - Previous Archaeological Studies in the Vicinity of the Project Area

2.3. Regional Legends

Several legends pertaining to the Waiawa and Mānana *ahupua'a* were researched and obtained either through published literature or oral histories gained from knowledgeable informants documented in other reports. Researching the *mo'olelo*, or cultural stories and legends, can lead to information regarding traditional land use practices. Although none of the *mo'olelo* identified during the archival research were specific to the project area, several mention both Waiawa and Mānana *ahupua'a* as points of interest.

2.3.1. Legend of Kahalaopuna

One applicable *mo'olelo* that mentions Mānana *ahupua'a* is the Legend of Kahalaopuna, the virgin daughter of Kauakuahine (her father) and Kahoiamano (her mother) who promised her to Kauhi, a man belonging to Ko'olau. Kauhi would collect and send gifts to Kahalaopuna as soon as he learned that Kahalaopuna's parents had given consent for their engagement. One day, Kauhi ran into people who wished to see Kahalaopuna die, who told him slanderous stories about Kahalaopuna going out dancing with several different lovers. This made Kauhi angry and want to kill Kahalaopuna, so he traveled to Mānoa to find Kahalaopuna. Together, they travelled to Pohakea, a place above 'Ewa near the Ka'ala mountain, settling for the night in Mānana. The next day they stopped under a *lehua* tree where Kauhi struck, and killed, Kahalaopuna with a *lehua* branch for disgracing him. Kahalaopuna's spirit chanted to passersby and word eventually travelled back to her parents who travelled to the *lehua* tree to bring her body back to Mānoa and restore her life. Eventually, Kauhi heard about the restoration of Kahalaopuna, so he visited her once again begging her to love him again, but she would not listen to him (Fornander, 1918).

2.3.2. A Story of Kawelo

Born in Pupulimu, in Waimea, Kauai, Kawelo was the child of Heulu (his father) and Haiamu (his mother). Kawelo sought out the love of Kanewahineikiaoha, and he was eventually taught warfare by her father. Kawelo and his wife Kanewahineikiaoha eventually resided in Waiawa, O'ahu (Fornander, 1918).

2.3.3. Story of Ka-Ehu-Iki-Mano-O-Puu-Loa

This is a legend about the young shark-boy, Kaehuikimanoopuuloa (Kaehuiki) leaving on a journey to Tahiti where he wished to become skilled and strong. Kaehuiki's journey took him to each of the king-sharks in each district of Hawaii, who joined Kaehuiki on his journey. The group was met with resistance by some who challenged Kaehuiki because of his size, but Kaehuiki would prove his strength. Kaehuiki would be blessed by the shark-god Kamohoalii and would become friends with Kaahupahau, the protector of Oahu's waters. Before meeting Kaahupahau, Kaehuiki met the guard-chief at Waiawa, who passed along his message to Puuloa. Kaehuiki and the guard-sharks fostered a friendship with Kaahuapahau and would stay with her for ten days before continuing their journey meeting the king-shark, Kuaimoana of Kauai and Niihau. Upon return from their journey to Tahiti, Kaehuiki told of his adventures in meeting distinguished sharks, his victories, and his honors (Thrum, 1923).

2.3.4. The Eel Boy of Pilimoo

The story of the Eel Boy of Pilimoo focuses on a pool in Pearl City, which had an underground tunnel that led out to the sea. There was no danger to the children that swam in the pool, until one day a man-eating shark was discovered travelling through the tunnel, at will, between the pool and the sea. One day, a boy disappeared in the pool without a trace and his worried father consulted a *makaula*, or prophet, who told the man that it was the will of the gods to change the boy into a small eel so he could warn other children of the dangers. The father visited the pool to see if it were true; he heard a whistle and noticed the head of an eel, who exclaimed that he was now an eel in order to, "save human lives from the wicked sharks of the deep that come here". The father would inform children that the whistling sounds were a warning of danger and

that they should leave immediately. The sound of the whistle, from there on out, became the signal that danger was near (Sterling & Summers, 1978).

2.3.5. Pearl City Stone

The Pearl City Stone, as mentioned by Sterling and Summers (1978), was a rock regarded by the ancients as "supernatural" and located on the grounds of the Pearl City Mormon Church. Though the rock remained undisturbed while the church was built and called attention to visitors, no one worried about the meaning behind the sacred stone. The "higher ups" of the church, heard about the rock and insisted that it be relocated off of church property and onto the street. Waiwaiole, who lived in the neighborhood, was familiar with the legend and was tasked to remove the rock. The rock was impossible to move without first speaking to it, and Waiwaiole sought out help from a friend to help relocate it. Upon speaking to it, moving the rock was quite easy. Eventually, half of the rock was destroyed in order to widen the road. Both Waiwaiole and the man who helped move the rock became ill, and Waiwaiole's house was mysteriously burned down in a fire (Sterling & Summers, 1978).

3. Community Consultation

Consulting with the community is a major component of the cultural impact assessment. Community consultation was sought to identify knowledgeable *kupuna* and participants to be interviewed and provide information on the history and possible previous land uses of the proposed project area. Section 1.3.2 describes the consultation methodology. Through this process, three people requested that the consultation letters be sent to them through email so they could forward the request on to someone else within their organization. Follow-up attempts were made by telephone to all parties who did not respond to the initial consultation request. In total, two parties responded with additional Native Hawaiian Organizations to contact, and sources that may be helpful to review, but had nothing further to provide.

The organizations consulted include, but are not limited to, the following: SHPD, OHA, Pearl City Neighborhood Board No. 21, Pearl City Community Association, Pearl City Lions Club, Oahu Urban Garden Center, Hula Preservation Society, Hawaii United Okinawa Association, Filipino Community Center, and the Association of Hawaiian Civic Clubs. Table 2, below in section 3.1, provides the results of the community consultation process.

3.1. Results of the Community Consultations

Key:
Y=Yes
N=No
A=Attempted
S=Some knowledge

Table 2 - Results of Community Consultation

Name	Affiliation	Contacted (Y/N)	Knowledge of Area	Comments
A'ala O Ka 'Āina Hula Hālau	Hula Hālau A'ala O Ka 'Āina	A		
Aragon-Balgas, Beatriz	O'ahu Urban Garden Center	A		
Association of Hawaiian Civic Clubs	Association of Hawaiian Civic Clubs	A		
Christensen, Makani	'Aha Moku Council: O'ahu – Moku O Kakuhihewa,	A		

Name	Affiliation	Contacted (Y/N)	Knowledge of Area	Comments
	Chair			
Elefante, Brandon	Honolulu City Councilmember, District 8	Y	N	
Hālau Hula Olana	Hālau Hula Olana	A		
Hao-Tamon, Shelly	King Kamehameha Hawaiian Civic Club, Pelekikena	A		
Hawai'i Okinawa Center	Hawai'i United Okinawa Association	Y	N	
Hawai'i's Plantation Village	Hawai'i's Plantation Villages	Y	N	
Hilo, Regina	State Historic Preservation Division	Y	N	Ms. Hilo acknowledged receipt of the project map and said she would follow up with any information.
Hula Preservation Society	Hula Preservation Society	A		
Kane, Shad	'Ahahui Siwila Hawai'i o Kapolei Hawaiian Civic Club	A		
Kapua, Charles Kanaha	Pearl Harbor Hawaiian Civic Club, Pelekikena	A		
Lee, Curtis	Pearl City Lions Club, President	A		
Losch, Tracie Ku'uipo	Hawaiian Studies Program, UH-Leeward Community College	Y	N	Ms. Losch forwarded email to faculty and staff at Leeward Community College. Ms. Losch also recommended a few sources to look through.
Lum, Kehau	Ali'i Pauahi Hawaiian Civic Club, Pelekikena	A		
Markell, Kai	Office of Hawaiian Affairs	A		Dr. Kamana'opono Crabbe responded with a suggested list of Native Hawaiian Organizations to contact for further information.
Nagano, Steven	Oahu Urban Garden Center	A		
Nishihara, Clarence K.	State Legislator - District 17, Senator	A		
Pearl City Community Association	Pearl City Community Association	A		
Rodrigues, Hinano	State Historic Preservation Division	A		

Name	Affiliation	Contacted (Y/N)	Knowledge of Area	Comments
Takumi, Roy M.	State Legislator - District 35, Representative	A		
The Filipino Community Center, Inc.	Filipino Community Center	Y	N	
Veray, Larry	Pearl City Neighborhood Board No. 21, Chair	A		
Wong-Kalu, Hinaleimoana K.K.	Island Burial Council, Chair	A		
Yasuhara, Jerome	Office of Hawaiian Affairs	A		

3.2. Interviewees

Through the consultation process, no individuals were identified as interviewees, or knowledgeable informants. There were two parties who responded by sending additional Native Hawaiian Organizations to contact, and several helpful resources to review. Neither provided information regarding the cultural beliefs, practices, or resources of Native Hawaiians and other ethnic groups within the project area.

4. Traditional Cultural Practices

During the cultural assessment for the proposed Waiawa Water Transmission Main Replacement project, no traditional practices or resources were identified within the project area. Although there are no cultural practices associated directly with the project area, the game of *maika* is one traditional cultural practice that took place on land throughout the Waiawa and Mānana *ahupua'a*. The lands of Waiawa and Mānana once included two *maika* fields, Puehulunui and Haupuu. The game was played on a smooth, level hard packed track of ground, where a round stone ball or disc 3 inches in diameter and one inch thick at the rim was rolled for distance. *Maika* is thought to have been popular among all residents, where frequent challenges with people across O'ahu, or other islands, were brought together in competition. (Sterling & Summers, 1978). Although no current traditional practices or resources were identified within the project area, there may be unidentified Native Hawaiian or other cultural practices customarily and traditionally exercised for subsistence, cultural, or religious purposes taking place in nearby Waiawa Stream and Pearl Harbor Middle Loch, which formerly provided resources used in traditional practices (e.g., fishing, fishponds and traps).

5. Summary and Recommendations

The CIA was conducted as part of an Environmental Assessment for the proposed replacement of an existing 42-inch primary water main currently serving Joint Base Pearl Harbor-Hickam and the U.S. Army's Aliamanu Housing area with a new 42-inch water transmission main. The water line is proposed to be constructed largely with existing city and state roads, and a segment of the O'ahu Urban Garden Center. Though this CIA is intended to address the area immediately surrounding the approximately 3-mile long water line corridor, the area studied was much broader and included both Waiawa and Mānana *ahupua'a*.

Presented in this section are the cultural beliefs, practices, and resources in the vicinity of the study area which have been identified through archival research and community consultations. These findings guide the recommendations to mitigate any concerns and potential adverse impacts that the proposed water line may have on the study area.

5.1. Results of Background Research

Archival research on the project area and the surrounding vicinity of Pearl City indicated the following results:

Several archaeological inventories and surveys previously completed indicate that there are no longer historic properties within the vicinity of the project area.

There were ten LCAs located in the immediate vicinity of the proposed project with land uses that included: house lots, *moʻoʻaina*, *loʻi, kula*, and fishponds. These LCAs were located near Waiawa Stream along what is presently Kamehameha Highway.

Traditional Hawaiian wetland agriculture, including: *loʻi* , *kula*, and fishponds once existed near the project area.

No Native Hawaiian or other ethnic group's cultural customs and traditions exercised for subsistence, cultural or religious purposes are known to be currently practiced within the project area.

5.2. Results of Community Consultation

HHF contacted 26 community members including government agencies, civic organizations, and cultural groups for the purposes of this CIA. The community consultation process did not provide any additional information or research about the potential impacts associated with the proposed water line replacement project. The community consultation process did not yield referrals to *kupuna* or community members who may have knowledge of the study area or surrounding *ahupuaʻa*.

5.3. Impacts

Based on the land use history discovered through research and the community consultation process, there are no Native Hawaiian or other ethnic groups' cultural customs and traditions exercised for subsistence, cultural or religious purposes known to be practiced within the project area at this time. The proposed action within the area of study and its vicinity would not impact traditional Hawaiian, or other ethnic groups, rites related to gathering, access, or other customary activities because construction activities would take place generally in public roadways and Navy-controlled limited access areas. Coordination with Oʻahu Urban Garden Center would limit potential impacts to horticultural and educational activities during construction. During the operational period, the disturbed area would return to pre-construction conditions. When completed, the subsurface water lines would not impact above-ground activities or practices.

5.4. Recommendations

- In the event that there are inadvertent discoveries of cultural resources during the project, work must cease to allow the find to be assessed by Navy archaeologists. If the resource is determined to be significant, the Navy will initiate Section 106 consultation.
- Although not specifically identified during the preparation of this CIA, subsistence fishing—which is important to Native Hawaiians and other ethnic groups in Hawaiʻi—may occur in the waters of Waiawa Stream and Pearl Harbor. Measures should be taken to protect the water quality of Waiawa Stream and Pearl Harbor from project-related impacts, particularly during the construction period when ground disturbance and construction equipment and vehicles could contribute sediments and pollutants to downstream surface waters via stormwater flow.

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Appendix A: Office of Hawaiian Affairs Letter

PHONE (808) 594-1888

FAX (808) 594-1938

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAI'I 96817

HRD16-7746

February 26, 2016

Laura Comstock, Planner
HHF Planners
733 Bishop St., Suite 2590
Honolulu, HI 96813

Re: Request for Information for a Cultural Impact Assessment for the Waiawa Water Transmission Main Replacement
Waiawa Ahupua'a, 'Ewa Moku, O'ahu Mokupuni
Tax Map Key (1) 9-6-007: pors. 001, 013; (1) 9-6-008: por. 008; (1) 9-7-023:001, 003, 014; (1) 9-7-024: por. 006; (1) 9-7-066: por. 082; (1) 9-7-073: pors. 084, 085, 086, 095, 096

Aloha Ms. Comstock:

The Office of Hawaiian Affairs (OHA) is in receipt of your January 29, 2016 letter requesting information on cultural, historic, and archaeological sites within the area of potential effect for the above-titled project. HHF Planners is acting on behalf of the U.S. Navy. The U.S. Navy intends to replace an existing 42-inch primary water main with a new one, which currently serves Joint Base Pearl Harbor-Hickam and the U.S. Army's Āliamanu Housing area. In addition, the Navy is proposing to install a secondary 16-inch water line to serve the Navy's Mānana Housing Area.

OHA appreciates the outreach efforts that HHF Planners has undertaken by consulting OHA. In the future, we would appreciate a list of all other consulted parties in order to determine whether additional ones, particularly Native Hawaiian Organizations, should be suggested. If you have not already done so, please consult with the 'Aha Moku Council, the appropriate O'ahu-based Hawaiian Civic Clubs, and the O'ahu Island Burial Council.

As with all subsurface ground disturbances, OHA does request assurances that should iwi kūpuna or Native Hawaiian cultural deposits be identified during any ground altering activities, all work will immediately cease and the appropriate agencies, including OHA, will be contacted pursuant to applicable law.

Mahalo for the opportunity to comment. We look forward to participating in the consultation process for the archeological inventory survey, as well as an opportunity to review the completed draft environmental assessment. Should you have any questions, please contact Jeannin Jeremiah at 594-1790 or by email at jeanninj@oha.org.

'O wau iho nō me ka 'oia 'i'o,

Kamana'opono Crabbe

Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:jj

**Please address replies and similar, future correspondence to our agency:*
Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy, Ste. 200
Honolulu, HI 96817

Appendix D
CZMA Coastal Consistency Determination Correspondence

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

5090P.1FOB
Ser EV21/ 0101
February 25, 2016

Mr. Leo R. Asuncion, Jr., AICP
Acting Director
Office of Planning
State of Hawai'i
P.O. Box 2359
Honolulu, HI 96804-2359

Dear Mr. Asuncion:

Subj: FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION FOR WAIAWA WATER TRANSMISSION MAIN REPLACEMENT (MILCON P-493)

In accordance with the 1972 Coastal Zone Management Act (CZMA) §307 (16 United States Code [U.S.C.] §1456) and the National Oceanic and Atmospheric Administration federal consistency regulations (15 Code of Federal Regulations [C.F.R.] Part 930), the Office of Planning's (OP) review and concurrence is requested for the U.S. Department of the Navy's (Navy's) proposed Waiawa Water Transmission Main Replacement project at Pearl City, O'ahu, Hawai'i. A completed CZM Federal Consistency Review Application form is included as Attachment 1 and a detailed project description is included as Attachment 2.

The CZMA's consistency provision requires federal actions that have reasonably foreseeable effects on any land or water use or natural resources of the coastal zone to be undertaken in a manner consistent with the enforceable policies of a coastal state's federally approved coastal management plan.

Under the Hawaii Coastal Zone Management (CZM) Program, the CZM area is defined as encompassing 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 United States territorial sea. However, the United States federal government retained the rights to certain lands and mineral rights to include "all submerged lands adjacent to property owned by the United States above the line of mean high tide" in 48 U.S.C. §1705(b)(ii). According to 15 CFR sec. 930.33(5)(b), "Federal agencies shall consider all development projects within the coastal zone to be activities affecting any coastal use or resource." Because the project will not occur exclusively on federal land, a CZM review is required. Therefore, the Navy has prepared an application for CZM federal consistency review.

Per 15 CFR §930.33, the Navy assessed reasonably foreseeable direct, indirect and cumulative effects on Hawai'i's defined coastal zone, and reviewed relevant management programs (enforceable policies) of the Hawai'i CZM Program in accordance with the CZMA. Based on the information, data, and analysis contained in the attached completed Hawai'i CZM Program Assessment Form (Attachment 3), the Navy finds that the proposed Waiawa water transmission main construction and operational activities are consistent to the maximum extent practicable with the enforceable policies of the Hawai'i CZM Program.

We appreciate your consideration of our determination and look forward to your response. Should you

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Ser EV21/ 0101
February 25, 2016

have any questions or need additional information, please contact Mr. Alan Suwa (808) 472-1450 or by email at alan.suwa@navy.mil.

Sincerely,

Karen Sumida
Business Line Manager
Environmental Engineering Department

Enclosures: 1. CZM Federal Consistency Review Application Form (completed)
2. Project Description & Figures
3. Hawai'i CZM Program Federal Consistency Assessment Form (completed) & Exhibits)

ATTACHMENT 1

Hawaii CZM Program
Coastal Zone Management
www.hawaii.gov/dbedt/czm

APPLICATION FOR CZM FEDERAL CONSISTENCY REVIEW

Project/Activity Title or Description: Waiawa Water Transmission Main Replacement

Location: Pearl City (Ewa Judicial District)

Island: Oahu

Tax Map Key: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

Applicant or Agency

U.S. Navy
Name of Applicant or Agency

Mailing Address

City / State / Zip Code

Phone

E-mail Address

Agent or Representative for Applicant

Alan Suwa, NAVFAC Pacific
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9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096

CZM Consistency Determination or Certification

✓ Check the applicable type of federal action below and sign.

☑ Federal Agency Activity

CZM Consistency Determination: "The proposed activity will be undertaken in a manner consistent to the maximum extent practicable with the enforceable policies of the Hawaii Coastal Zone Management Program."

Signature [signature] Date 3/8/2016

☐ Federal Permit or License

CZM Consistency Certification: "The proposed activity complies with the enforceable policies of Hawaii's approved management program and will be conducted in a manner consistent with such program."

Signature _____ Date _____

☐ Federal Grants and Assistance

CZM Consistency Certification: "The proposed activity complies with the enforceable policies of Hawaii's approved management program and will be conducted in a manner consistent with such program."

Signature _____ Date _____

Mail Application To: Office of Planning, State of Hawaii, P.O. Box 2359, Honolulu, Hawaii 96804

Waiawa Water Transmission Main Replacement Project (MILCON P-493)
Federal Consistency Review
PROJECT DESCRIPTION

INTRODUCTION/GENERAL

The U.S. Department of the Navy (Navy) proposes to replace an existing 42-inch diameter primary water main currently serving Joint Base Pearl Harbor-Hickam (JBPHH), the Navy's Manana Housing Area, and the U.S. Army's Aliamanu Housing Area. The existing 2.1-mile long water transmission main provides JBPHH and military family housing areas with approximately 73 percent of its potable, fire protection, and industrial water (see Figure 1 for Location Map and existing water line alignment). It is considered critical infrastructure for Navy and U.S. Air Force operations and mission support activities at JBPHH as there is no redundancy for the existing line that was originally installed in 1953. Because it is now over 60 years old and has reached the end of its service life, improvements to the existing water transmission system are needed to ensure continuation of essential services to support national security.

The aging water main would be replaced by a new water transmission main of the same capacity. The replacement infrastructure would transmit potable water from the Navy's existing source at Waiawa Pump Station to a connecting point approximately 2.7 mi to the south. Because the existing 42-in water main also provides secondary potable water service to the Navy's Manana Family Housing Area, the proposed action would also include infrastructure to maintain potable water service to the housing area. Construction of replacement facilities would begin in late 2017, with completion projected for mid-2019.

LOCATION

The project area is located in the community of Pearl City, Island of O'ahu, State of Hawai'i. Although the replacement infrastructure would provide mission-critical infrastructure for JBPHH, it would not be located within installation boundaries.

ALIGNMENT

The new 42-in, approximately 2.7-mile long water line would be routed from the Navy's Waiawa Pump Station, along Waihona Street and Kamehameha Highway, through the University of Hawai'i's O'ahu Urban Garden Center (OUGC), and along Second Street to an existing tie-in point near the intersection of Second Street and Lehua Avenue. The proposed route was selected to meet the following objectives:

- Minimize disruption to existing water service
- Maintain existing water transmission capacity
- Utilize existing easements where practical
- Utilize public rights-of-ways and developed areas where practical
- Minimize disturbance to natural, undeveloped areas
- Balance practical life cycle cost with maximizing energy efficiency
- Facilitate constructability and ease of maintenance
- Minimize risks to public safety by utilizing best practices for construction of subsurface utilities (e.g., avoid construction under major facilities such as parking structures)

Because segments of the existing 42-in water line are located below private property and developed areas (e.g., Pearl Highlands Center parking structure), the new 42-in water main would follow an

alignment primarily routed through State- and County-owned rights-of-way (ROW) for constructability and ease of maintenance. The Waihona Street, Kamehameha Highway, OUGC and Second Street segments would be approximately 7,600 ft, 2,900 ft, 2,600 ft and 500 ft respectively. (See Figure 2 for proposed water line alignment and Figures 3 and 4 for representative photos along the 42-in replacement water line route.)

A new 16-inch secondary water line would also be installed to serve the Navy's Manana Housing Area via an approximately 2,000-foot long branch line. The new 16-in secondary water line would extend between the new 42-in line (branching off approximately midway down Waihona Street) and the Manana Pump Station. Approximately 1,500 ft of the 16-in line would be located along the same corridor as the original 42-in and 12-in lines. An approximately 700-ft long segment of the 16-in secondary line would be located subsurface within privately-owned parcels, and then be aligned through the tunnel that contains the existing 42-in water main. After exiting the tunnel, the 16-in line would continue below grade to the Manana Pump Station.

A 12-in lateral from the proposed new 42-in line Waihona Street segment would be installed to serve the Hawaii National Guard Armory (also located on Waihona Street), approximately 1,600 ft southwest of its intersection of Waihona Place. This approximately 30-ft long, 12-in lateral would connect to an existing 10-in water line currently serving the National Guard property.

PROJECT COMPONENTS

Key features of the project include:

- 14,000 linear feet (LF) of 42-in main along Waihona Street, Kamehameha Highway, O'ahu Urban Garden Center, and Second Street
- Connection to an existing 36-in water main at Waiawa Pump Station
- Connection to an existing 42-in water main at Second Street and Lehua Avenue
- Pipe bridge supporting the 42-in water main crossing Waiawa Stream near Waiawa Pump Station
- Pile support for the 42-in water main within OUGC
- 2,000 LF of 16-in water line from the new 42-in water main from Waihona Street to the Manana Pump Station
- 12-in lateral (approximately 30-ft long) to the Hawaii National Guard Armory on Waihona Street
- Filling of the existing 42-in water line to be left in place with flowable fill material
- Removal of 170 ft of existing 42-in water main on Kamehameha Highway (if removal is required by State Department of Transportation)
- Demolition of eight existing isolation valve and air relief valve vaults
- Removal of approximately 1,050 ft of existing 42-in water main inside the existing water main tunnel leading to Manana Pump Station
- Removal of approximately 105 ft of 36-in existing water main affixed to the downstream (west) side of Waiawa Stream Bridge

Both new water lines would extend through both public (federal, state, city and county) and private property. Land acquisition includes acquiring easements from public and private landowners along the length of the new 42-in main waterline and the secondary 16-inch waterline for Manana Housing.

PIPE BRIDGE

The pipe line segment between Waiawa Pump Station and Waihona Street would cross Waiawa Stream adjacent to the existing Waiawa Stream Bridge (see Photo B in Figure 3). Because the loading limit of the existing bridge is unknown, the proposed replacement water line would be supported on a new concrete encased steel pipe bridge, fully independent of the existing bridge. The new, approximately 140-ft pipe bridge would be located on the upstream (east) side of the existing bridge. The single span bridge would be supported on drilled caisson-supported abutments outside (i.e., upslope) of the existing bridge wing walls (see Figure 5 for pipe bridge details). A concrete-encased structural steel truss structure would support the 42-in pipe. The bottom of the pipe bridge would be at the same or higher elevation as the bottom of the existing bridge to avoid reducing or restricting current stream flow at the bridge crossing. No work would take place within the stream and there would be no alteration of the stream banks.

PILES

Due to anticipated soil conditions, approximately 2,000 LF of the replacement water line within the OUGC would be supported on standard 16.5-in octagonal pre-stressed, precast concrete piles, ranging in depth from 35 ft to 95 ft long. The octagonal piles would be spaced approximately 9 ft on center, for a total of approximately 200 octagonal piles. See Figure 2 for approximate location of pile-supported water line segment.

An approximately 100-ft segment at the east end of the replacement water line route within the OUGC property would be located in an area where the use of pile driving equipment is precluded due to the proximity to existing high voltage overhead lines (i.e., there would be insufficient lateral and radial clearance between operation of pile driving equipment and the high voltage lines within this segment). In this area, micropiles would likely be used to support the water line. Micropiles would consist of 5.5-in diameter steel pipe containing a reinforcing bar grouted into the pipe. They would be installed in pairs approximately 9-ft on center, for a total of approximately 24 micropiles. See Figure 6 for proposed pile details.

REMOVAL/DISPOSITION

Most of the existing 2.1-mile-long, 42-in water line, totaling approximately 10,000 LF, would be grouted with flowable grout material and left in place. Three sections of the existing 42-inch water line, totaling approximately 1,300 LF, would be removed after the new 42-in water line becomes fully operational. Two of the sections to be removed do not require excavation (i.e., Waiawa Stream Bridge and within existing water line tunnel). The State Department of Transportation requires the removal of the third segment, located within the State-controlled Kamehameha Highway ROW. See Figure 7 for proposed disposition of existing water lines.

The total volume of grout material is estimated at 3,500 cubic yards. The grout material would consist of controlled low strength material (CLSM) (i.e., flowable fill material) or cellular concrete, which would be pumped into the empty pipeline and harden into a solid mass as the concrete cures. The grout materials to be used are typical materials used in filling abandoned pipes and do not spill or leak after they solidify.

CONSTRUCTION METHODOLOGY

Trench dimensions for the 42-in water line would be approximately 6 ft wide, with varying depths. The water line invert (i.e., bottom of inside of pipe) would generally be 10 to 15 ft below grade. At locations where it is necessary to cross under existing utilities or subsurface obstructions, the water line invert may be as deep as 25 ft below grade. There will be four new isolation valve vaults on the 42-in main, plus an additional ten air relief valve (ARV) vaults. The 16-in line would have two new isolation valve vaults and no ARV vaults.

In paved areas, material to backfill the trench would consist of imported subbedding and pipe bedding material (i.e., gravel) or CLSM. In unpaved areas, existing excavated material may be utilized for general backfill if it meets specified soil properties.

Excess or unusable excavated material would generally be disposed of at a construction landfill. There are eight valve vaults along the existing water line alignment, ranging in size from 4 ft in diameter to approximately 10 ft by 12 ft. These vaults would be modified as follows, and then left in place after the replacement water lines are installed and operational. The top slabs of the vaults would be removed and the bottom slabs broken up to allow for drainage. They would then be backfilled with gravel or CLSM and the ground surface at each vault restored to generally match the surrounding area.

BEST MANAGEMENT PRACTICES

Best management practices during construction would be employed to avoid or minimize adverse impacts to the environment. Typical BMPs will include:

- Erosion and sediment control measures such as protection of erodible soils; mechanical control of stormwater runoff from the construction site; use of sediment basins; and use of vegetation and mulch on soil exposed by grading
- Protection of Waiawa Stream waters through use of silt fencing and barriers around excavated and cleared areas; no work within stream waters or stream bed will be allowed
- Employment of personnel qualified to identify and handle hazardous materials if unexpectedly encountered
- Use of personal protective equipment (e.g., protective clothing, eye protection, and respirators) during pipe removal activities to protect personnel from lead containing paint. Implementation of appropriate procedures to contain dust and paint chips that may be loosened during pipe removal activities.
- If contaminated soil is suspected, it will be tested, stored and disposed of at an appropriate waste facility.

Best management practices will also be identified as conditions of the National Pollutant Discharge Elimination System permit required for the discharge of storm water associated with construction activity, including a Storm Water Pollution Prevention Plan.

LIST OF FIGURES

Figure 1 Location Map
Figure 2 Project Location
Figure 3 Site Photos – North Segment
Figure 4 Site Photos – South Segment
Figure 5 Proposed Pipe Bridge at Waiawa Stream
Figure 6 Proposed Pile Details
Figure 7 Existing Water Line Disposition

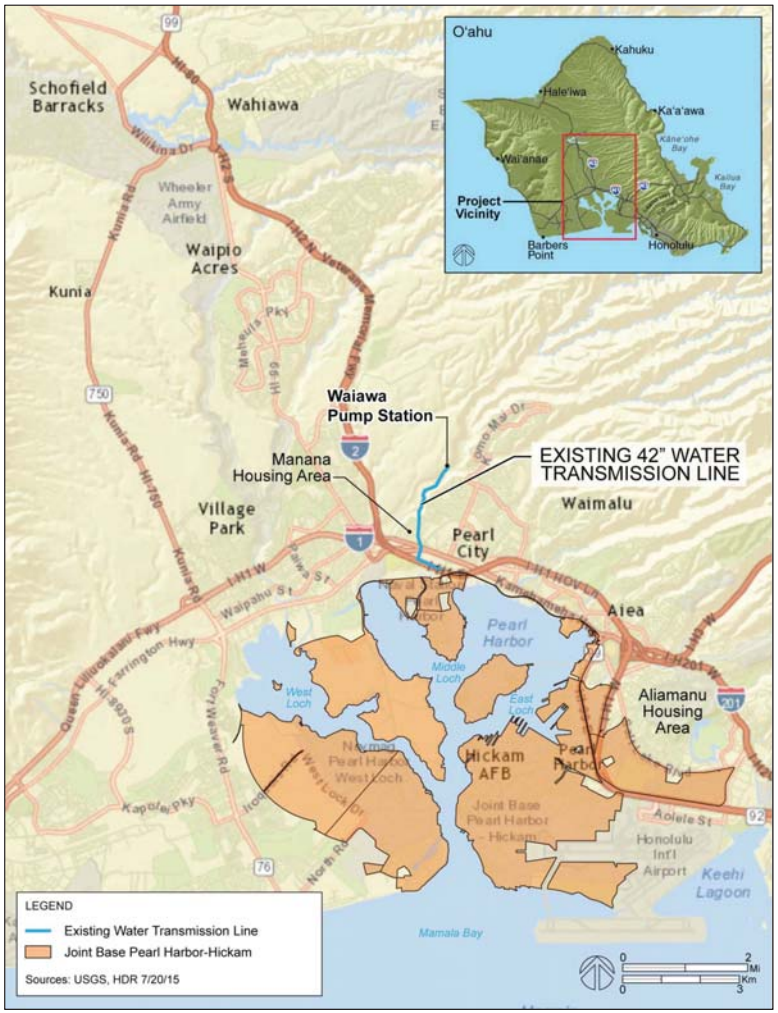

FIGURE 1: LOCATION MAP

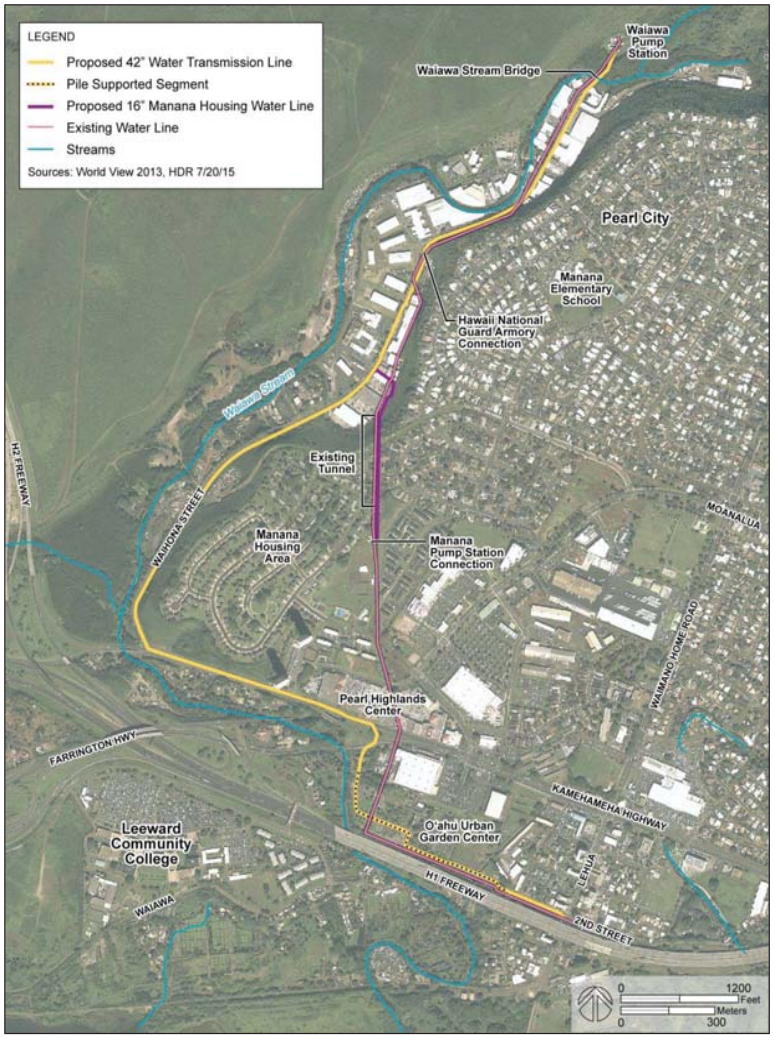

FIGURE 2: PROJECT LOCATION

FIGURE 3 REDACTED

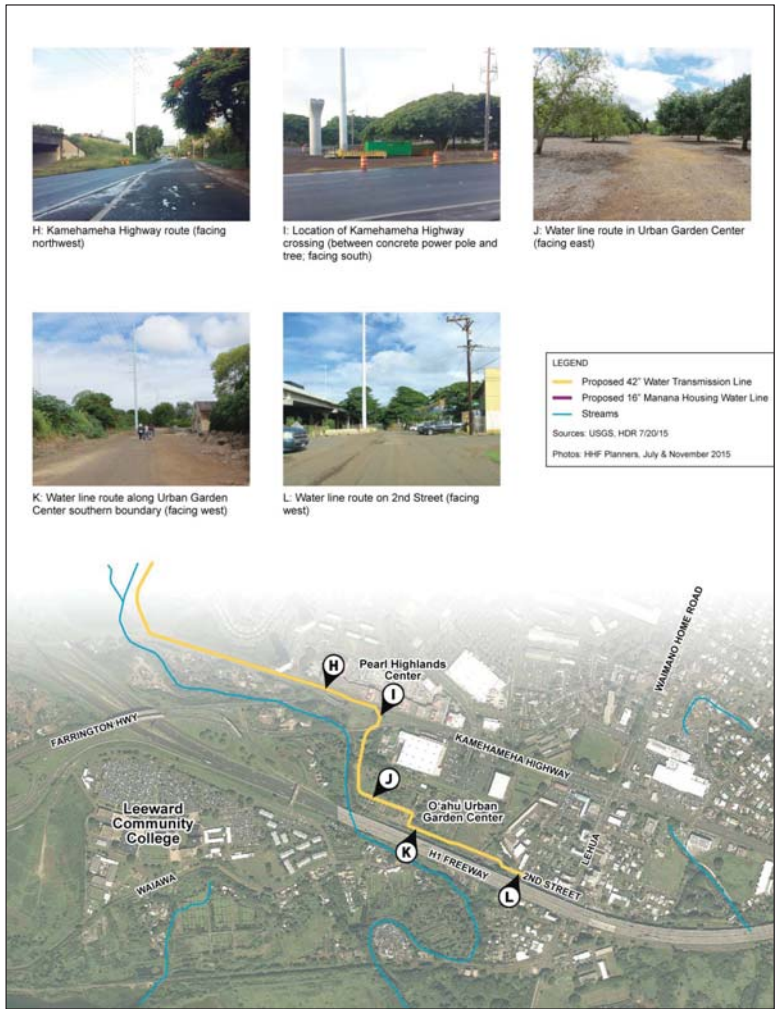

FIGURE 4: SITE PHOTOS – SOUTH SEGMENT

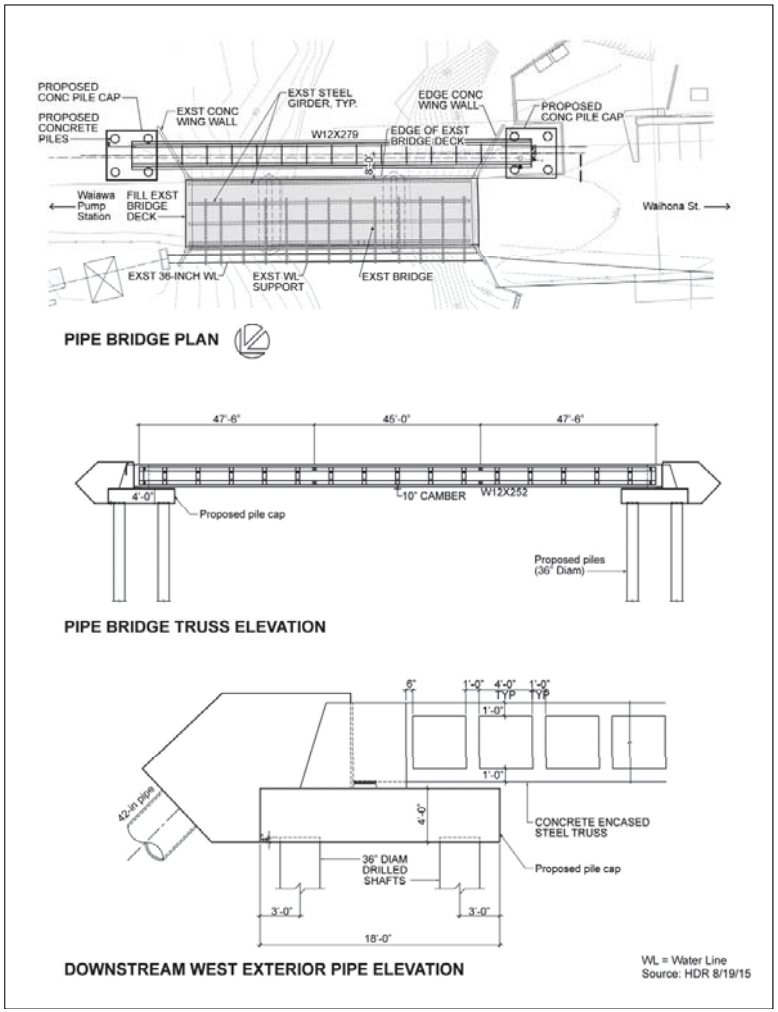

FIGURE 5: PROPOSED PIPE BRIDGE AT WAIAWA STREAM

Waiawa Water Transmission Main Replacement (MILCON P-493) **ATTACHMENT 2 - Project Description**
Federal Consistency Review

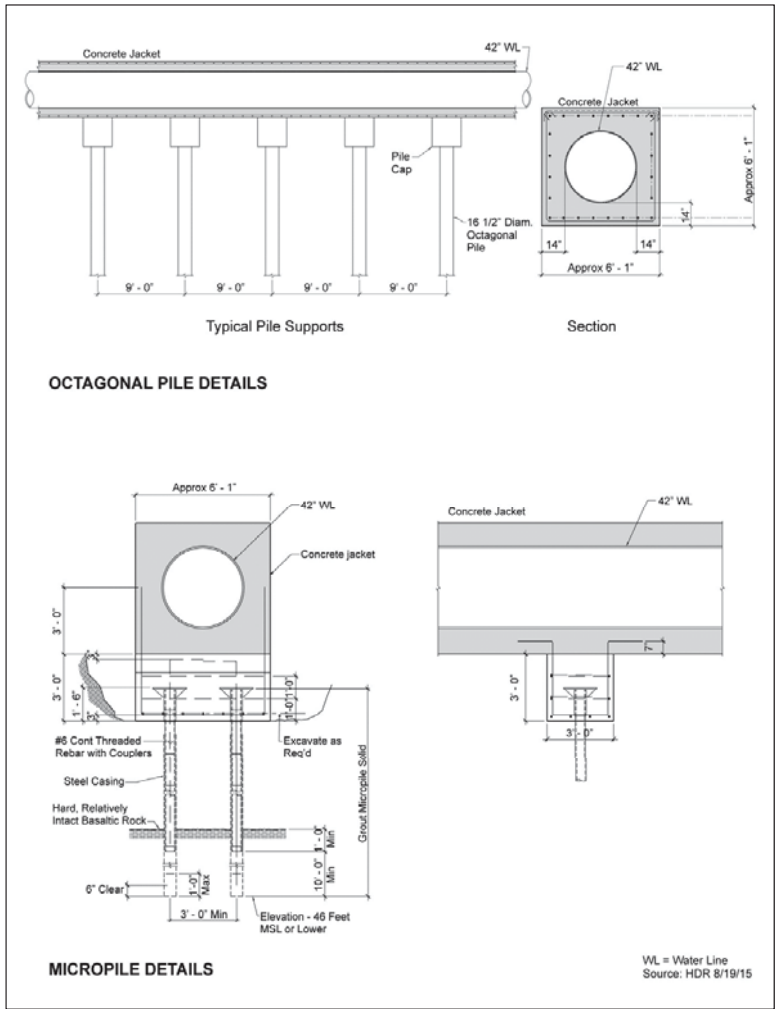

FIGURE 6: PROPOSED PILE DETAILS

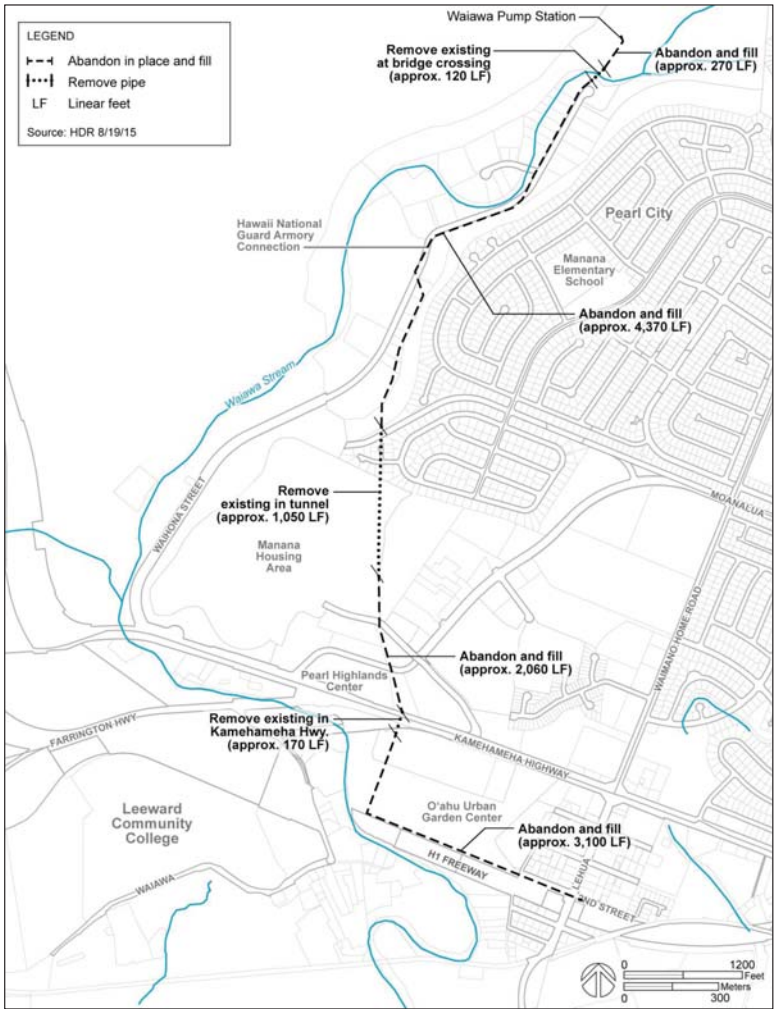

FIGURE 7: EXISTING WATER LINE DISPOSITION

HAWAII CZM PROGRAM
FEDERAL CONSISTENCY ASSESSMENT FORM

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

1) Improve coordination and funding of coastal recreational planning and management.
2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
   a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas.
   b) Requiring replacement of coastal resources having significant recreational value including, but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable.
   c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.
   d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation.
   e) 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.
   f) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters.
   g) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing.
   h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of Hawaii Revised Statutes, section 46-6.

RECREATIONAL RESOURCES (continued)

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action occur in or adjacent to a dedicated public right-of-way, e.g., public beach access, hiking trail, shared-use path?	☐	☐
2. Will the proposed action affect public access to and along the shoreline?	☐	☑
3. Does the project site abut the shoreline?	☐	☑
4. Is the project site on or adjacent to a sandy beach?	☐	☑
5. Is the project site in or adjacent to a state or county park?	☐	☑
6. Is the project site in or adjacent to a water body such as a stream, river, pond, lake, or ocean?	☑	☐
7. Will the proposed action occur in or affect an ocean recreation area, swimming area, surf site, fishing area, or boating area?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

5. Water Body

The 42-in replacement pipe line segment between Waiawa Pump Station and Waihona Street would cross Waiawa Stream adjacent to the existing Waiawa Stream Bridge. Because the loading limit of the existing bridge is unknown, the proposed replacement water line would be supported on a new concrete encased steel pipe bridge, fully independent of the existing bridge. The new, approximately 140-ft long pipe bridge would be located on the upstream (east) side of the existing bridge. The single span bridge would be supported on drilled caisson-supported abutments outside (i.e., upslope) of the existing bridge wing walls. A concrete-encased structural steel truss structure would support the 42-in pipe. The bottom of the pipe bridge would be at the same or higher elevation as the bottom of the existing bridge to avoid reducing or restricting current stream flow at the bridge crossing. No work would take place within the stream and there would be no alteration of the stream banks.

During construction, access to the stream in the vicinity of the bridge may be restricted for public safety. However, in the project area, access to Waiawa Stream is controlled by the Navy or private property owners; it is not a public recreational resource.

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:

1) Identify and analyze significant archaeological resources.
2) Maximize information retention through preservation of remains and artifacts or salvage operations.
3) Support state goals for protection, restoration, interpretation, and display of historic resources.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Is the project site within a designated historic or cultural district?	☐	☑
2. Is the project site listed on or nominated to the Hawaii or National Register of Historic Places?	☐	☑
3. Has the project site been surveyed for historic or archaeological resources?	☑	☐
4. Does the project parcel include undeveloped land which has not been surveyed by an archaeologist?	☐	☑
5. Is the project site within or adjacent to a Hawaiian fishpond or historic settlement area?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

Cultural resources that are listed in or eligible for listing in the National Register of Historic Places (NRHP) are "historic properties" as defined by the National Historic Preservation Act of 1966, as amended (NHPA). A property must meet at least one of four National Register of Historic Places (NRHP) criteria to qualify as eligible for the NRHP.

As defined in the implementing regulations for Section 106 of the NHPA, impacts of an undertaking on significant cultural resources are considered adverse if they "diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR § 800.5(a)(1)). NHPA Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties. The Navy conducted an analysis of the project's potential effects on historic properties and determined that it would have no adverse effects on historic properties under NHPA Section 106 (see Exhibit A for State Historic Preservation Division correspondence).

With respect to the proposed replacement water line, the Navy identified the area of potential effect (APE) for cultural resources as the approximately 2.7-mile long 42-in water line alignment and 1,000-ft long 16-in secondary water line alignment, along with a 5-meter area on either side of both alignments (total of 12.5 acres).
(continued on next page)

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Three historic properties are located within the APE:

WAIAWA PUMP STATION (FACILITY S71):
Constructed in 1951 and located north of Waihona Street, this Navy-owned pump station is part of a former World War II Naval Aviation Supply Depot (NASD) storage area. The pumping plant and head house are considered historic under Criteria A ("associated with events that have made a significant contribution to the broad patterns of our history") and C ("embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction"), along with other Navy pumping plants around Pearl Harbor. Facility S71 and its associated period engineering features are considered significant for its association with the post-war urbanization of O'ahu and its municipal civil engineering and architectural design. Enclosure 4 of Exhibit A NHPA Section 106 Correspondence contains photographs of the pump station.

JEAN BOYLE BRIDGE (referred to in this CCD as Waiawa Stream Bridge):
Constructed in 1944, this Navy-owned facility crosses Waiawa Stream on Navy property south of Waiawa pump station and is also within the APE for this undertaking. While no formal evaluation of the bridge has been identified, the Navy is considering the bridge as potentially eligible for listing in the NRHP. The Navy's existing water line that is connected to the bridge and the associated water line supports are considered secondary equipment and not character-defining features of the bridge. A photo of the existing water line adjacent to Waiawa Stream Bridge is included in Enclosure 4 of Exhibit A.

WATER TUNNEL:
An historic water tunnel also associated with the NASD facilities is located in the APE from Waihona Street and traverses underground to the Manana Housing area. The existing 42-in water line (to be removed) runs through the tunnel and the new secondary 16-in water line will be installed within the tunnel. While no formal evaluation of the tunnel has been conducted, the Navy is treating the tunnel as an historic property. See Enclosure 5 of Exhibit A for photographs of the tunnel.

A review of previous archaeological studies conducted in and near the project area indicated an absence of cultural deposits in the vicinity of the project, which is consistent with the intensive land modification associated with development of the Pearl City area (see Exhibit A for a map of surveyed areas and summaries of their findings). There are no known traditional cultural properties within the APE.

The Navy determined that the proposed replacement water line will have no adverse effect on the Pearl Harbor National Historic Landmark or any historic properties within the APE under Section 106. The Navy consulted with the Hawai'i State Historic Preservation Officer (SHPO) regarding the project (see correspondence in Exhibit A). The work to install the new water main and tie-ins would not affect the Waiawa Pump Station or water transmission tunnel. Because they are considered secondary equipment and not character-defining features of the bridge, removal of the existing water line and supports from the Jean Boyle Bridge (Waiawa Stream Bridge) will not have an adverse effect on the bridge. In addition, the absence of cultural deposits from previous archaeological studies in the vicinity supports the finding of effect.

The SHPO did not object to the "no adverse effect" determination within 30 days of receipt of the Navy's consultation letter and, according to 36 CFR 800.5(c), its concurrence with the determination is assumed. In the event there are inadvertent discoveries of historic properties during any project-related activity, the standard operating procedures listed in the Programmatic Agreement among the Commander, Navy Region Hawaii, Advisory Council on Historic Preservation, and the Hawai'i SHPO Historic Preservation Office regarding Navy Undertakings in Hawaii (U.S. Navy et al. 2012) will be implemented.

SCENIC AND OPEN SPACE RESOURCES

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

Policies:

1) Identify valued scenic resources in the coastal zone management area.
2) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.
3) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.
4) Encourage those developments that are not coastal dependent to locate in inland areas.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action alter any natural landforms or existing public views to and along the shoreline?	☐	☑
2. Does the proposed action involve the construction of a multi-story structure?	☐	☑
3. Is the project site located on or adjacent to an undeveloped parcel, including a beach or oceanfront land?	☐	☑
4. Does the proposed action involve the construction of a structure visible between the nearest coastal roadway and the shoreline?	☐	☑
5. Will the proposed action involve constructing or placing a structure in waters seaward of the shoreline?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

COASTAL ECOSYSTEMS

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

Policies:

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

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Does the proposed action involve dredge or fill activities?	☐	✓
2. Is the project site within the Special Management Area (SMA) or the Shoreline Setback Area?	☐	✓
3. Is the project site within the State Conservation District?	✓	✓
4. Will the proposed action involve some form of discharge or placement of material into a body of water or wetland?	☐	✓
5. Will the proposed action require earthwork, grading, clearing, or grubbing?	✓	☐
6. Will the proposed action include the construction of waste treatment facilities, such as injection wells, discharge pipes, or septic systems?	☐	✓
7. Is an intermittent or perennial stream located on or adjacent to the project parcel?	✓	☐
8. Does the project site provide habitat for endangered species of plants, birds, or mammals?	☐	✓
9. Is any such habitat located in close proximity to the project site?	☐	✓

COASTAL ECOSYSTEMS (continued)

	Yes	No
10. Is a wetland located on the project site or parcel?	☐	✓
11. Is the project site situated in or abutting a Natural Area Reserve, a Marine Life Conservation District, or an estuary?	☐	✓
12. Will the proposed action occur on or in close proximity to a reef or coral colonies?	☐	✓

Discussion: (If more space is needed, attach a separate sheet.)

5. EARTHWORK:
Earthwork consisting of trenching will be required to install the replacement 42-in primary water line and 16-in secondary line. The majority of the earthwork will occur within existing public roadways or developed areas. After the new water lines are installed, the trenches will be backfilled with suitable fill material to match existing or surrounding grades/conditions (i.e., the excavated areas would be returned to their pre-development condition).

The proposed action would not introduce new sources of pollutants or contaminants into pathways that may migrate to groundwater, surface water, or coastal resources. Construction staging and work areas would involve ground disturbance, which has the potential for disturbed sediments or pollutants being transported to surface waters. This potential would be minimized by implementing best management practices (BMPs) such as temporary sediment barriers at existing catch basins and drain inlets downstream of open trenches along the pipeline route. Because more than one acre of land is anticipated to be disturbed for construction, a National Pollutant Discharge Elimination System (NPDES) permit would be required for the construction activities, including a Storm Water Pollution Prevention Plan (SWPPP). Conditions of the permit would be complied with to further reduce the potential for construction period project-related sediments and pollutants to be transported to receiving surface waters, including wetlands. The proposed action would not result in the destruction or modification of wetlands, and would not involve new construction in wetlands or the discharge of dredge or fill into wetlands.

7. STREAMS:
As described under "Recreational Resources," the replacement water line will cross Waiawa Stream (perennial) near the Navy's Waiawa Pump Station and be supported on a new concrete encased steel pipe bridge, fully independent of the existing bridge. The bridge supporting elements would be located outside (i.e., upslope of) the existing bridge wing walls. The bottom of the pipe bridge would not reduce or restrict current stream flow at the bridge crossing. No work would take place within the stream and there would be no alteration of the stream banks.

Best Management Practices will include:
• Erosion and sediment control measures such as protection of erodible soils; mechanical control of stormwater runoff from the construction site; use of sediment basins; and use of vegetation and mulch on soil exposed by grading
• Protection of Waiawa Stream waters through use of silt fencing and barriers around excavated and cleared areas; no work within stream waters or stream bed will be allowed
• Employment of personnel qualified to identify and handle hazardous materials if unexpectedly encountered
• If contaminated soil is suspected, it will be tested, stored and disposed of at an appropriate waste facility.

(continued on next page)

(continued from previous page)

BIOLOGICAL RESOURCES
Marine Resources: The project is not located in or adjacent to marine waters or the shoreline; therefore, no impacts to marine biological resources or habitats are anticipated.

Terrestrial Vegetation:
From Waiawa Pump Station to Kamehameha Highway, the new water line would generally be located within roadway ROWs. In this segment, trenching or other construction or disposition activities that take place in undeveloped areas would only affect non-native vegetation or landscape vegetation. The water line would be supported by a new pipe bridge structure adjacent to the upstream side of the existing Waiawa Stream Bridge. No part of the new pipe bridge would be located within the stream bed or stream waters; therefore, no impact to stream vegetation is anticipated. Along the Kamehameha Highway section of the proposed water line route to its Oʻahu Urban Garden Center (OUGC) entry point, the proposed action would not impact any natural resources, as this section is highly disturbed and contains only non-native plant species. The water line construction would disturb a variety of trees and shrubs at the OUGC, starting from the point of entry at Kamehameha Highway. The Navy will coordinate with UH to relocate the affected plants, which include candle nut trees, a variety of palms, native dryland plants, mango trees, a variety of plum trees, and plumeria trees. The proposed alignment was coordinated with UH and OUGC to minimize impacts to the existing plant resources. Along its route within Second Street, construction of the proposed water line would not impact natural resources, as most of the construction would be within the roadway ROW and there is no native vegetation within or adjacent to the project area.

The proposed 16-in secondary water line serving Manana Housing Area would traverse developed areas or areas without natural or native vegetation, and not impact natural resources. The areas where the existing water line would be removed or filled are in existing developed areas and would require minimal ground disturbance. Vegetation in these areas is generally non-native or landscape vegetation.

Terrestrial Wildlife:
Construction of the water line and disposition of the existing water line would not impact sensitive wildlife habitats, as most of the construction and disposition activities would occur within developed areas. The non-native species of birds, mammals, and reptiles that may be present are tolerant of urban activities and noise. No federally-listed threatened and endangered species are likely to occur within the project area or its vicinity. Though not observed by a Navy biologist during a 2015 survey, two bird species listed by the State of Hawaiʻi (but not the federal government) may be found within the project area: the threatened white tern (Gygis alba rothschildi) or manu o ku, and the endangered Hawaiian short-eared owl (Asio flammeus sandwichensis) or pueo. State-listed species are habituated to high levels of noise associated with vehicular traffic and other construction activities within the urbanized areas of Pearl City and Waiawa (e.g., City and County of Honolulu's rail project construction, Kamehameha Highway and H-1 Freeway traffic noise). Increases in ambient noise levels from water line construction activities would be negligible and temporary, as the construction location would move as segments of the water line are completed. Construction would occur on previously disturbed and cleared or developed areas. No permanent loss of habitat would occur under the proposed action. Therefore, habitat removal would be negligible and would not negatively impact habitat use by any threatened or endangered species.

Construction activity is unlikely to result in short-term impacts from disturbance to terrestrial wildlife including State of Hawaiʻi-listed threatened and endangered species. No federally-listed threatened or endangered plant species would be impacted by the water line construction or operation, or by the disposition activities for the existing water line. There would be no significant impact on threatened and endangered species and no formal consultation between the U.S. Navy and USFWS or NOAA Fisheries is required.

ECONOMIC USES

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

Policies:

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

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Does the proposed action involve a harbor or port?	☐	☑
2. Is the proposed action a visitor industry facility or a visitor industry related activity?	☐	☑
3. Does the project site include agricultural lands or lands designated for such use?	☐	☑
4. Does the proposed action relate to commercial fishing or seafood production?	☐	☑
5. Is the proposed action related to energy production or transmission?	☐	☑
6. Is the proposed action related to seabed mining?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

COASTAL HAZARDS

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

Policies:

1) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards.
2) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards.
3) Ensure that developments comply with requirements of the Federal Flood Insurance Program.
4) Prevent coastal flooding from inland projects.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Is the project site on or abutting a sandy beach?	☐	☑
2. If "Yes" to question no. 1, has the project parcel or adjoining shoreline areas experienced erosion?	☐	☐
3. Is the project site within a potential tsunami inundation area? Refer to tsunami evacuation maps at http://www.scd.hawaii.gov	☐	☑
4. Is the project site within a flood hazard area according to a FEMA Flood Insurance Rate Map (https://msc.fema.gov)?	☑	☐
5. Is the project site within a subsidence hazard area?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

4. FLOOD HAZARD:

According to Flood Insurance Rate Map (FIRM) data produced by the Federal Emergency Management Agency, sections of the project area are located in a floodplain (see Exhibit B). Some sections of the proposed water line alignment located within the Waihona Street and Kamehameha Highway rights of ways are located in Zone AE, Special Flood Hazard Areas Subject to Inundation by the 1 Percent Annual Chance Flood, Base Flood Elevations Determined. Shorter segments on Waihona Street and Kamehameha Highway are located in Zone X, Other Flood Areas of 0.2 percent annual chance flood; areas of one percent annual chance flood with average depths of less than one ft or with drainage areas less than one square mile; an areas protected by levees from one percent annual chance flood. Small sections of the water line alignment in Waihona Street and much of the alignment within the southern section of O'ahu Urban Garden Center are located within floodway areas in Zone AE.

In the proposed action, the excavated areas would be returned to their pre-development condition. Therefore, the predevelopment hydrology of the affected environment would be maintained or restored to the maximum extent technically feasible, with regard to the temperature, rate, volume, and duration of flow.

The Navy will comply with the requirements of the 1977 version of EO 11988 and its regulations and procedures to incorporate the amendments from EO 13690. The 1977 version of EO 11988 requires that federal agencies follow a prescribed decision-making process that includes consideration of alternatives to avoid adverse effects and incompatible development in floodplains; minimization of potential harm to or within the floodplain through design or action modifications; and public notification.

The proposed action would not involve the placement of any permanent above ground structures within the floodplain or floodway.

MANAGING DEVELOPMENT

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

Policies:

1) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development.
2) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements.
3) 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.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. List the permits or approvals required for the proposed action and provide the status of each in the Discussion section below.		
2. Does the proposed action conform with state and county land use designations for the site?	☑	☐
3. Has the public been notified of the proposed action?	☑	☐
4. Has an environmental impact statement or environmental assessment been prepared for the proposed action?	☑	☐

Discussion: (If more space is needed, attach a separate sheet.)

1. REQUIRED PERMITS AND APPROVALS:

FEDERAL
A. National Environmental Policy Act Finding of No Significant Impact: EA in progress
B. Coastal Zone Management Act: Federal consistency review in progress
C. National Historic Preservation Act: Consultation
D. Rivers and Harbors Act, Section 10
E. Executive Order 11988, Floodplain Management:

STATE
A. Chapter 343, Hawai'i Revised Statutes compliance
B. State Department of Transportation
• Permit to Perform Work Upon State Highway
• Private Storm Drain Connection and/or State Highways Division Storm Drain System
• Permit to Discharge into State Highways Drainage System
• Use and Occupancy Agreement /Easements

(continued on next page)

(continued from page 9)

C. Department of Health
• National Pollutant Discharge Elimination System permit

CITY AND COUNTY OF HONOLULU
A. Department of Planning and Permitting
• Construction Plan approval
• Trenching Permit:
B. Department of Transportation Services
• Street Usage Permit:
C. Department of Budget and Fiscal Services
• Easement:

3 and 4 PUBLIC NOTIFICATION/EA:
An environmental assessment (EA) is being prepared that will meet federal NEPA and state HRS 343 requirements. The public will be notified of the proposed action through the HRS 343 EA process, including pre-assessment consultation, DEA consultation, and publication of the DEA availability in the Office of Environmental Quality Control's Environmental Notice. A project website will be created during the Draft EA review and a notice of availability of the DEA will be published in the local newspaper. The Navy also provides periodic updates of their projects to the local neighborhood boards.

PUBLIC PARTICIPATION

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

Policies:

1) Promote public involvement in coastal zone management processes.
2) 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.
3) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Has information about the proposed action been disseminated to the public?	✓	
2. Has the public been provided an opportunity to comment on the proposed action?	✓	
3. Has or will a public hearing or public informational meeting be held?	✓	

Discussion: (If more space is needed, attach a separate sheet.)

1. PUBLIC INFORMATION

An EA is being prepared that will meet federal NEPA and state HRS 343 requirements. The public will be notified of the proposed action through the HRS 343 EA process, including pre-assessment consultation, DEA consultation, and publication of the DEA availability in the Office of Environmental Quality Control's Environmental Notice. The HRS 343 process will allow the public to comment on the proposed action. A project website will be created during the Draft EA review and a notice of availability of the DEA will be published in the local newspaper. The Navy also provides periodic updates of their projects to the local neighborhood boards.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policies:

1) 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.
2) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities.
3) Minimize the construction of public erosion-protection structures seaward of the shoreline.
4) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor.
5) 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.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action occur on or adjacent to a beach?		✓
2. Is the proposed action located within the shoreline setback area?		✓
3. Will the proposed action affect natural shoreline processes?		✓
4. Will the proposed action affect recreational activities?		✓
5. Will the proposed action affect public access to and along the shoreline?		✓

Discussion: (If more space is needed, attach a separate sheet.)

MARINE RESOURCES

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

Policies:

1) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial.
2) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency.
4) 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.
5) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources.
6) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action involve the use or development of marine or coastal resources?	☐	☑
2. Will the proposed action affect the use or development of marine or coastal resources?	☐	☑
3. Does the proposed action involve research of ocean processes or resources?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

DEPARTMENT OF THE NAVY
COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
JBPHH, HAWAII 96860-5101

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CERTIFIED NO: 7014 1200 0000 9858 8111

Dr. Alan Downer
Deputy State Historic Preservation
Officer Administrator
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, HI 96707

Dear Dr. Downer:

SUBJECT: PROPOSED WAIAWA WATER TRANSMISSION LINES, WAIAWA AND MĀNANA AHUPUA'A, 'EWA DISTRICT, O'AHU, HAWAII (TMK: 9-6/9-7 SERIES)

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Navy requests your review of the proposed undertaking to install water transmission lines in the Waiawa and Mānana area of Oahu, Hawaii (TMK: (1) 9-6-7: pors. 001, 013; 9-6-8: por. 008; 9-7-23: pors. 001, 003, 014; 9-7-24: por. 006; 9-7-66: por. 082; 9-7-73: pors. 084, 085, 086, 095, 096). Enclosure 1 depicts the TMK boundaries in the vicinity of the proposed project.

In accordance with the implementing regulations for Section 106 of the NHPA, the Navy has determined the project is an undertaking as defined in 36 CFR 800.16(y).

Project Description

The Navy proposes to install approximately 14,000 linear feet of a 42-inch diameter potable water transmission line (water main) from Waiawa Pump Station, located at the northern end of Waihona Street, to the existing 42-inch water main at the intersection of Lehua Avenue and Second Street. Enclosure 2 depicts the project area. The new water line replaces the existing 42-inch transmission main which has reached the end of its useful life. The existing 42-inch transmission main will be grouted and abandoned in place. The existing water transmission main valve vaults will also be abandoned in place.

The proposed undertaking includes connections (tie-ins) to the existing water system as follows: 1) at the 36-inch Waiawa Pump Station water main, 2) the 16-inch Hawaii National Guard Armory fire water service lateral, 3) the 16-inch Mānana Housing Booster Pump Station, and 4) the 42-inch Lehua Avenue water main. The tie-in to the Mānana Housing Booster Pump Station includes the installation of approximately 1,000 linear feet of 16-inch ductile iron waterline from Waihona Street. A portion of the 16-inch water line will run through

an existing water line tunnel currently housing the existing 42-inch transmission main. The existing 42-inch line will be removed from the tunnel prior to installing the new 16-inch line.

The design of the new water transmission main will meet or exceed the requirements specified in the Department of Defense (DoD) Unified Facility Criteria (UFC) 3-230-01 Water Storage, Distribution, and Transmission, the Naval Facilities Engineering Command Hawaii Public Works Utilities Criteria for Design and Construction: Electrical, Sewer, and Water, and the Hawaii Water System Standards.

Area of Potential Effects (APE)

The proposed location of the 14,000 linear feet of 42-inch water transmission main runs from the Navy's Waiawa Pump Station at the end of Waihona Street to the intersection of Lehua Avenue and Second Street, where the University of Hawaii's urban garden is located. The installation also includes tie-ins, specifically, 1,000 linear feet of 16-inch water line from Waihona Street through an existing water tunnel to the Mānana Housing Booster Pump Station. The APE is approximately 12.5 acres as depicted in Enclosure 3. The APE includes a five meter area on either side of the proposed water line to account for any unforeseen site conditions.

The entire length of the proposed transmission main is planned to be installed amid an urbanized environment through the town of Pearl City. Most of the transmission main will traverse beneath the asphalt paved roadway of Waihona Street and Kamehameha Highway, west of Home Depot. The southern section of the transmission main will traverse the University of Hawaii's urban garden and easements of a residential area before terminating at a Navy water line tie-in at Lehua Avenue. The tie-in installed at the Mānana Housing Booster Pump Station will start at Waihona Street, travel through an existing tunnel and beneath the Mānana Housing area, and terminate at the booster station.

Identification of Historic Properties

Previous studies, including archival research on traditional and historic land use, offer an indication as to the types of properties characteristic of the area as well as the likelihood of encountering historic properties during work. Identification efforts are consistent with 36 CFR Part 800.4(b)(1). In addition, Native Hawaiian Organizations have been included in the consultations for an opportunity to provide comment and assist with the identification of historic properties per 36CFR Part 800.4(b).

Regarding historic structures, Waihona Street was originally constructed by the Navy as an access road to the Naval Aviation Supply

Depot (NASD) area, formerly known as U.S.N. Road. Pacific Naval Air Bases contractors constructed the supply depot that extended along Waiawa Stream for two miles and originally contained 50 World War II wooden structures with 20 auxiliary warehouses constructed by the Seabees just south of the Mānana Naval Supply Center near Kamehameha Highway. The Waiawa Gulch NASD World War II facilities were not identified as historic resources at the time of their transfer out of Navy ownership.

The area of the water pumping station within the former World War II naval storage area was constructed in 1944. The pump station, Waiawa Pumping Plant Head House (Facility S71), is located in the northern portion of the APE and was part of the former Waiawa NASD area. The facility was designed in 1949 by the 14th Naval District Public Works and constructed in 1951. The pumping plant and head house are considered historic under Criteria A and C along with the other Navy pumping plants that circle the Pearl Harbor basin. Facility S-71 and its associated period engineering features are considered significant for its association with the post-war urbanization of Oahu and its municipal civil engineering and architectural design. Enclosure 4 includes photos of the pump station.

An historic water tunnel also associated with the NASD facilities is located in the APE from Waihona Street and traverses underground to the Mānana Housing area. The existing 42-inch water line (to be removed) runs through the tunnel. While no formal evaluation of the tunnel has been conducted, the Navy is treating the tunnel as an historic property. Enclosure 5 includes photos of the tunnel. Enclosure 6 shows the location of the water pump and tunnel.

The southern NASD area used to support warehouses. The warehouses were demolished to make way for the construction of Home Depot. The only building that exists today in this area is Quonset Hut 33 formerly used as a Galley Storehouse at the center of the small housing encampment. This personnel area during World War II housed segregated African-American sailors who were assigned as stevedores to the various naval supply areas associated with Pearl Harbor. The Quonset Hut is not within the APE for this undertaking.

A number of archaeological studies have been conducted in the area. Enclosure 7 depicts the locations of previous studies in vicinity of the APE.

Goodman and Nees (1991) conducted an inventory survey of 3,600 acres between Waiawa Gulch and the H-2 freeway, west and northwest of Waihona Street. Historic components relating to the Oahu Sugar Company railroad system were documented, as well as an irrigation

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complex dating to the turn of the nineteenth century. The Goodman and Nees (1991) study area is not within the APE for this undertaking.

Tuggle (1982) conducted an archaeological survey and subsurface testing of a 3.18 acre parcel east of Waihona Street, between the street and the gulch bottom. A possible agricultural canal associated with two natural terraces was identified. No other features identified. The study area is not within the APE for this undertaking.

Bell et al. (2006) conducted literature review and a field inspection in support of a rock fall remediation project. The project was located along 900 feet of Waihona Street between the street and the slope. One small terrace was identified at the top of the slope above the road. The feature is not within the APE for this undertaking.

A few studies have been conducted in the vicinity of the APE from Waihona Street to the intersection of Lehua Avenue and Second Street, where the University of Hawaii's urban garden is located. McGerty and Spear (1995) conducted an archaeological assessment of 138.5 acres in Pearl City, bisected by Kamehameha Highway west of Lehua Avenue. The study indicated that pre-contact land use of the area focused on agriculture, and post-contact uses included rice and sugar cane cultivation, as well as later military development. Due to the history of intensive land modification in the area, McGerty and Spear (1995) concluded that there remained little possibility for encountering significant cultural deposits. The study area is not in the APE for this undertaking.

Rasmussen and Tomonari-Tuggle (2006) conducted archaeological monitoring south (seaward) of the APE from Waihona Street to the intersection of Lehua Avenue and Second Street in support of the Waiau Fuel Pipeline. The study area occurred in the vicinity of previously identified properties associated with traditional Hawaiian burials and fishponds. However, no historic properties were encountered during monitoring. The study area is not within the APE for this undertaking.

Henry et al. (1993) conducted inventory survey of a 23-acre section of the Waiawa Floodplain, located immediately south of the east end of the APE. A single course linear rock alignment was identified in the southernmost portion of the study area. The feature is not located within the APE for this undertaking.

Studies have been completed in the vicinity of the tie-in from the Waihona Street to the Mānana Housing Booster Pump Station. In addition to the McGerty and Spear (1995) assessment previously discussed, Connolly (1980) and Fong et al. (2005) conducted studies

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east of this section of the APE. Connolly (1980) conducted a reconnaissance survey for the Mānana Kai Neighborhood Park. No archaeological features were identified. Fong et al. (2005) conducted literature review and field inspection of a 13-acre parcel near the Mānana Kai Neighborhood Park, and included area studies by McGerty and Spear (1995). No archaeological features were identified. These study areas are not located within the APE for this undertaking.

Archaeological studies done in support of the Honolulu High-Capacity Transit Corridor included use of ground penetrating radar and subsurface testing along the corridor of Kamehameha Highway. In the area on Kamehameha Highway from Waihona Street to just west of Lehua Avenue, no cultural deposits were identified by Hammatt (2010). Generally, stratigraphy in this area of Kamehameha Highway consisted of fill layers overlying naturally deposited alluvial sediment. The study area overlaps the APE for this undertaking from Waihona Street to just west of Home Depot.

Determination of Effect

It is the determination of the Navy that the proposed undertaking will have no adverse effect on the National Historic Landmark or any historic properties within the APE. Work to install the new water main and tie-ins will not affect the water pumping station or the tunnel. Furthermore, the absence of cultural deposits from previous archaeological studies in the vicinity is consistent with intensive land modification associated with development of the Pearl City area, and supports the finding of effect. Therefore, the Navy is requesting your concurrence with its determination of no adverse effect.

We have compressed multiple consultation steps to expedite the consultation in accordance with 36 CRF Part 800.3(g).

As defined in 36 CFR 800.5(c), we will assume State Historic Preservation Division (SHPD) concurrence if no objection is received from your office within 30 days of receipt of this letter.

If you have any questions, please contact Ms. Carly Antone of our Environmental Business Line, NAVFAC Pacific at (808) 472-1462, or email carly.antone@navy.mil.

Sincerely,

S. O. CLOYD
Commander, CEC, U.S. Navy
Deputy Regional Engineer
By direction of the
Commander

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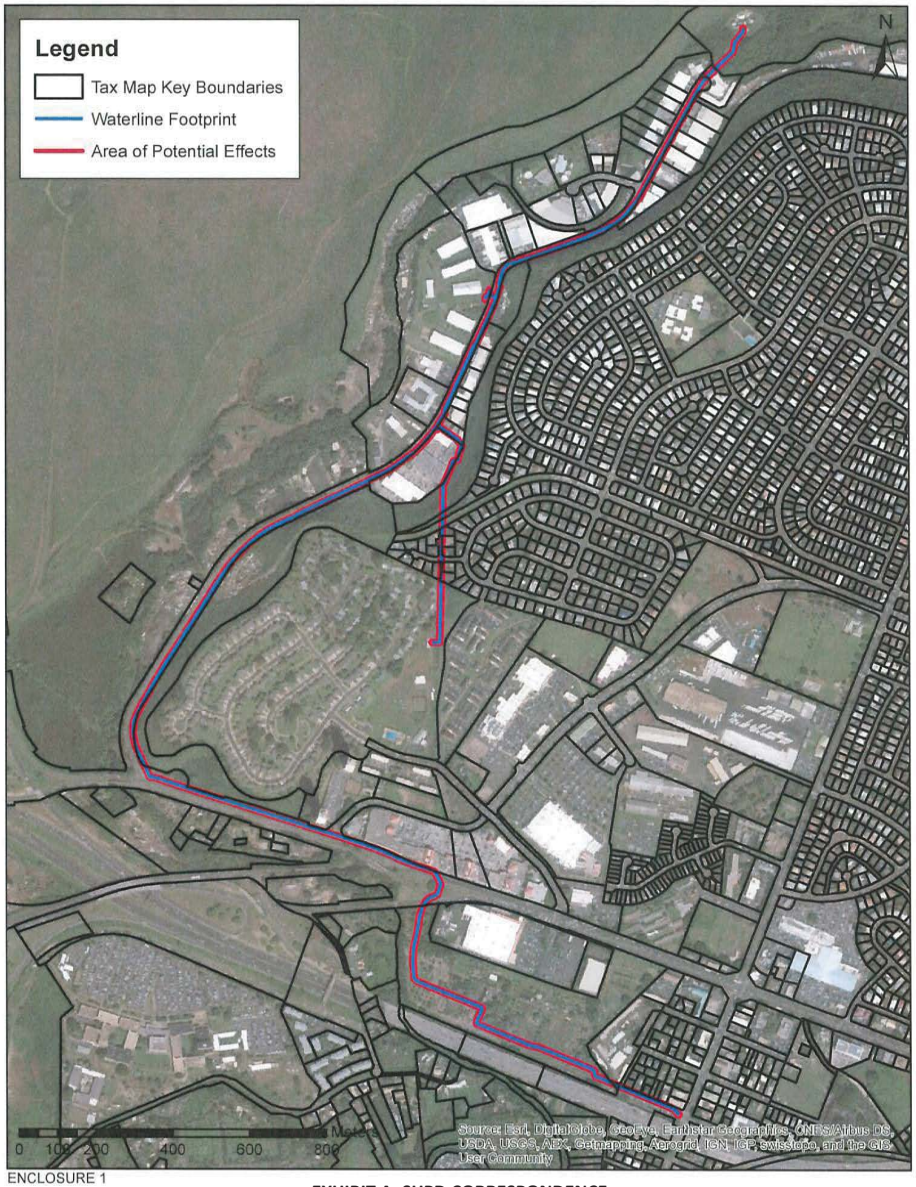
Enclosures:
1. TMK Boundaries in Vicinity of the Project Area
2. Project Location
3. Area of Potential Effects
4. Photos of Pump Station
5. Photos of Tunnel
6. Location of Waiawa Pump Station and Tunnel
7. Previous Studies in Vicinity of the APE

Copy to: Jessica Puff, Susan Lebo and Megan Borthwick, State Historic Preservation Division (PDF Format)
Elaine Jackson-Retondo, National Park Service (PDF format)
Katharine Kerr, Advisory Council on Historic Preservation (PDF format)
Kiersten Faulkner and Tanya Gumpac-McGuire, Historic Hawaii Foundation (PDF format)
Betsy Merritt and Brian Turner, National Trust for Historic Preservation (PDF format)
Kamana'opono M. Crabbe Ka Pouhana, Chief Executive Officer Office of Hawaiian Affairs (PDF format)
Shad Kane, O'ahu Council of Hawaiian Civic Clubs (PDF format)
Kehau Lum, Aiea Hawaiian Civic Culb (PDF format)

TMK Boundaries in the Vicinity of the APE



ENCLOSURE 1

Waiawa Transmission Main Installation Project

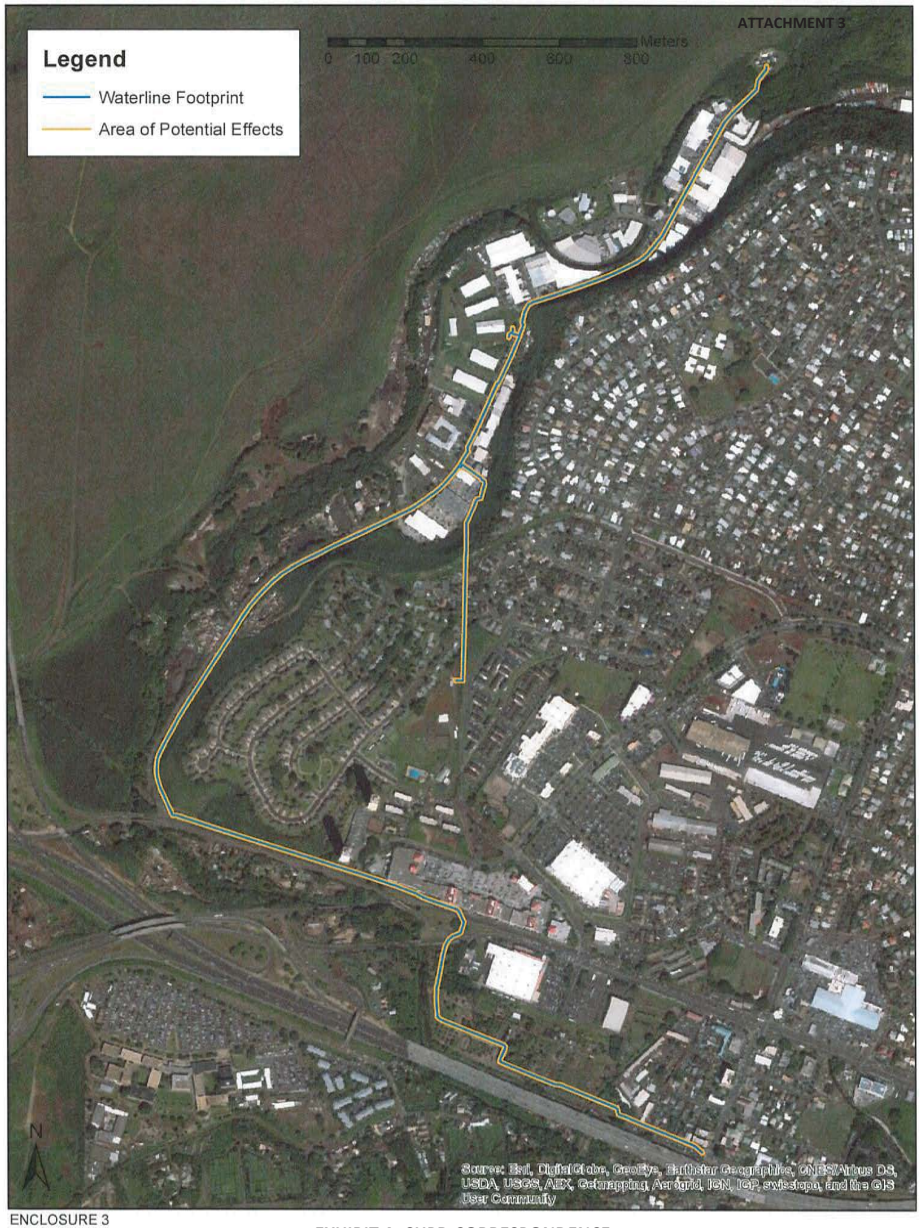
Oahu, Hawaii

Legend

Area of Potential Effects

N
W E
S

ENCLOSURE 2



ENCLOSURE 3

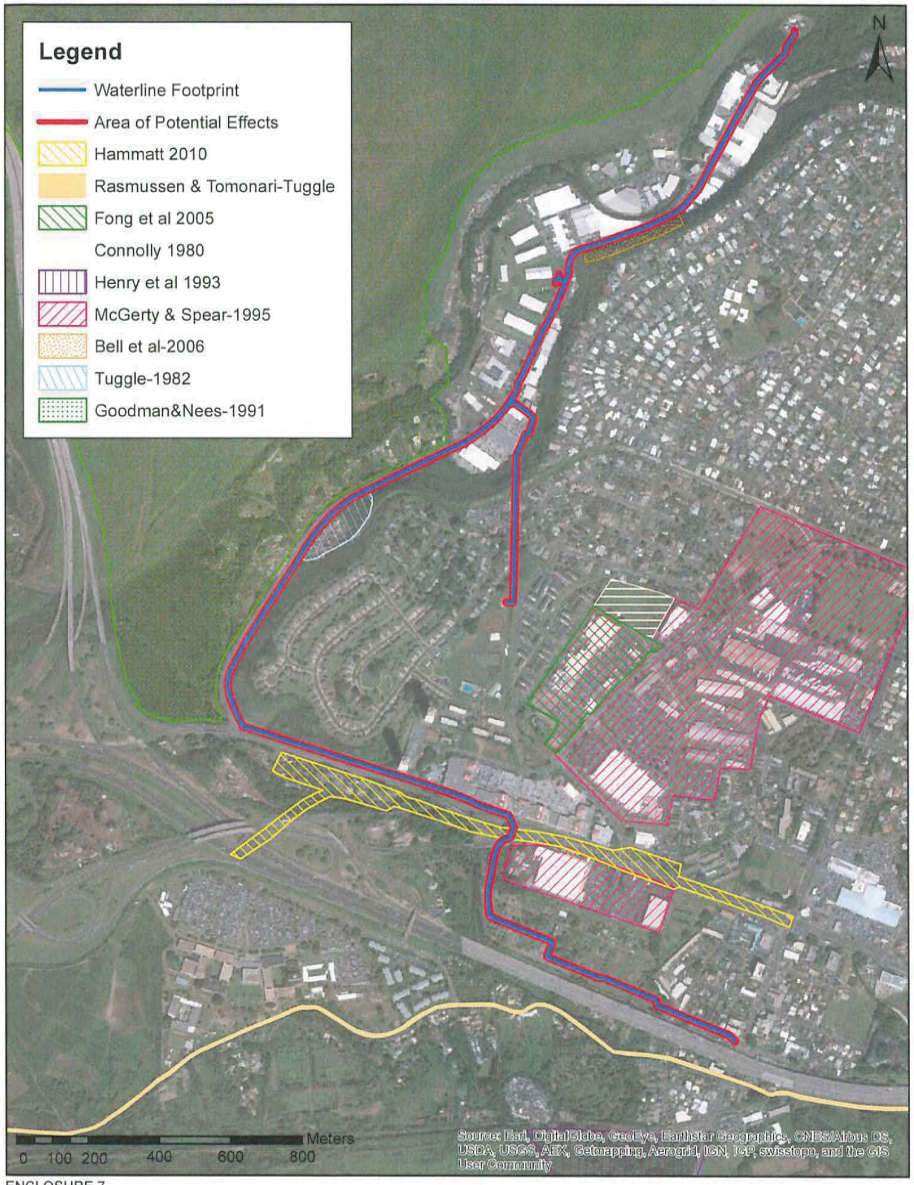
ENCLOSURE 4 REDACTED ENCLOSURE 5 REDACTED

ENCLOSURE 6 REDACTED

ATTACHMENT 3

Previous Archaeological Studies in Vicinity of APE

ATTACHMENT 3



ENCLOSURE 7

EXHIBIT A: SHPD CORRESPONDENCE

Antone, Carly R CIV NAVFAC PAC, EV

From: Antone, Carly R CIV NAVFAC PAC, EV
Sent: Wednesday, October 21, 2015 10:30
To: 'Susan.A.Lebo@hawaii.gov'; 'Jessica.L.Puff@hawaii.gov'; 'Megan.Borthwick@hawaii.gov'
Subject: RE: Section 106: Waiawa Transmission Line—Follow-up
Attachments: 106 Waiawa Water Transmission Line.pdf; Encl 6 with Jean Boyle Bridge.pdf; Jean Boyle Bridge Photos.pdf
Signed By: CARLY.ANTONE@NAVY.MIL

Hello,

This message is regarding the subject Section 106 consultation (attached for your reference) dated on October 2, 2015 and submitted on October 7, 2015. We have recently determined that the Navy-owned Jean Boyle Bridge (1944) that crosses Waiawa stream on Navy property is within the Area of Potential Effects (APE) for this undertaking. While the installation of the proposed water line will be independent of the bridge, the Navy plans to remove the existing water line and supports that are connected to the bridge on the downstream side.

Although the Navy could not locate a formal evaluation for the bridge in its records, we are considering the bridge potentially eligible for listing in the National Register of Historic Places. The existing water line and supports are considered secondary equipment and not character-defining features of the bridge. Therefore, removal of these elements will not have an adverse effect on the bridge. A modification to Enclosure 6 of our initial letter has been attached here to show the location of the Jean Boyle Bridge. Photos have also been attached. Photo 1 shows the existing line to be removed at the bridge. Photo 2 shows the upstream side of the bridge opposite the water line.

Had this been an independent undertaking, the work to remove the existing water line from the bridge would be reviewed under the Commander Navy Region Hawaii 2012 Programmatic Agreement (Amended and Restated). However, we are including it in this follow-up because it is a part of the overall undertaking described in our initial consultation letter. The presence of the bridge in the APE and the work to remove the existing water line does not constitute a revision of our determination of effect. To reiterate, the undertaking will have no adverse effect on historic properties.

If you have any questions or concerns, please do not hesitate to contact me. Thank you for your continuing consultation efforts.

Very Respectfully,
Carly R. Antone
Archaeologist
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134
Desk: (808) 472-1464

-----Original Message-----
From: Antone, Carly R CIV NAVFAC PAC, EV
Sent: Wednesday, October 07, 2015 11:15 AM
To: 'Susan.A.Lebo@hawaii.gov'; 'Jessica.L.Puff@hawaii.gov'; 'Megan.Borthwick@hawaii.gov'

Subject: Section 106: Waiawa Transmission Line

Hello:

Resending the below message sent yesterday because I received an "undeliverable" message upon initial attempt due to attachment size. I've resized the attachment here.

Very Respectfully,

Carly R. Antone
Archaeologist
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134
Desk: (808) 472-1464

Dear Dr. Lebo, Ms. Puff, and Ms. Borthwick:

Attached, please find a copy of the subject Section 106 consultation letter and accompanying enclosures.

I previously discussed this proposed undertaking via email with Dr. Lebo regarding archaeological information, but would also like to include Ms. Puff and Ms. Borthwick at this time in order to extend the courtesy of a read-ahead copy. If others in the SHPD have been overlooked, please feel free to forward.

If you have any questions or concerns that may be answered more expeditiously through direct communication, please feel free to contact me by email or phone and I will respond to you as soon as possible.

Very Respectfully,

Carly R. Antone
Archaeologist
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134
Desk: (808) 472-1464

ENCLOSURE 6 REDACTED

Jean Boyle Bridge Photos

Photo 1. Jean Boyle Bridge, showing downstream side with existing water line to be removed.

Photo 2. Jean Boyle Bridge, showing upstream side opposite the existing water line.

From: Antone, Carly R CIV NAVFAC PAC, EV
To: Suwa, Alan M CIV NAVFAC Pacific, EV
Subject: FW: Waiawa Waterline Section 106 Ltr
Date: Thursday, November 19, 2015 7:13:37 AM

Alan,
Confirmation from SHPD below.

V/R,
Carly

-----Original Message-----
From: Lohr, John R CIV NAVFAC Hawaii, EV
Sent: Wednesday, November 18, 2015 3:34 PM
To: Antone, Carly R CIV NAVFAC PAC, EV
Subject: FW: Waiawa Waterline Section 106 Ltr

Carly,

Looks like we are gtg.

John R. Lohr, AIA, FSAME
Historic Preservation Officer, EV5, NAVFAC Hawaii
400 Marshall Rd, Bldg 55, FL 1, Rm 113
Joint Base Pearl Harbor-Hickam, HI 96860-3139
(808) 474-9019

-----Original Message-----
From: Puff, Jessica L [mailto:jessica.l.puff@hawaii.gov]
Sent: Wednesday, November 18, 2015 3:25 PM
To: Lohr, John R CIV NAVFAC Hawaii, EV; Lebo, Susan A
Cc: Downer, Alan S
Subject: [Non-DoD Source] RE: Waiawa Waterline Section 106 Ltr

Thanks for the notification John.

Jessica L. Puff
Architectural Historian
Hawaii State Historic Preservation Division
#: (808) 692 8023
@: Jessica.l.puff@hawaii.gov

-----Original Message-----
From: Lohr, John R CIV NAVFAC Hawaii, EV [mailto:john.r.lohr@navy.mil]
Sent: Tuesday, November 17, 2015 7:53 AM
To: Lebo, Susan A; Puff, Jessica L
Cc: Downer, Alan S
Subject: Waiawa Waterline Section 106 Ltr

Aloha Susan and Jess,

I am following up on the attached Section 106 ltr hand carried and delivered on 6 Oct 2015 (return receipt).

The Navy has not received any response (42 days), so we are assuming concurrence and moving

ATTACHMENT 3

forward with the undertaking.

Mahalo, John

John R. Lohr, AIA, FSAME
Historic Preservation Officer, EV5, NAVFAC Hawaii
400 Marshall Rd, Bldg 55, FL 1, Rm 113
Joint Base Pearl Harbor-Hickam, HI 96860-3139
(808) 474-9019

EXHIBIT A: SHPD CORRESPONDENCE

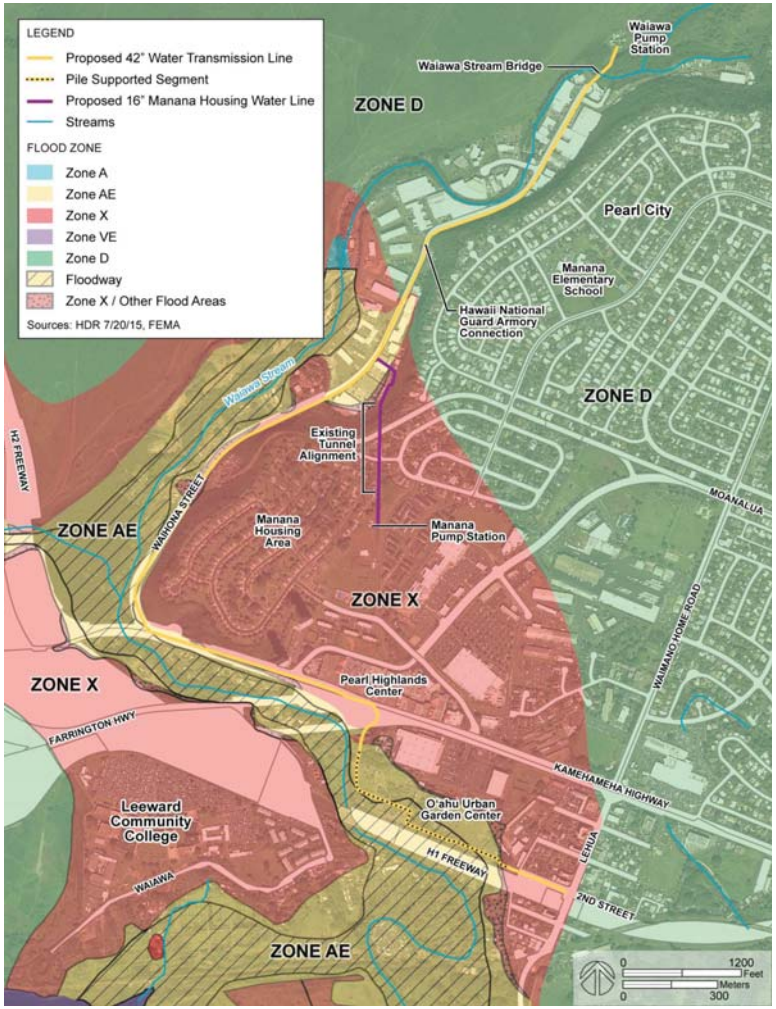


EXHIBIT B: FLOOD ZONES

COASTAL ZONE MANAGEMENT NOTICES

2. U.S. Navy Waiawa Water Transmission Main Replacement, Pearl City, O'ahu

Proposed Action: The U.S. Department of the Navy (Navy) proposes to replace an existing 42-inch diameter primary water main currently serving Joint Base Pearl Harbor-Hickam (JBPHH), the Navy's Mānana Housing Area, and the U.S. Army's Āliamanu Housing Area. The existing 2.1-mile long water transmission main provides JBPHH and military family housing areas with approximately 73 percent of its potable, fire protection, and industrial water. It is considered critical infrastructure for Navy and U.S. Air Force operations and mission support activities at JBPHH as there is no redundancy for the existing line that was originally installed in 1953. Because it is now over 60 years old and has reached the end of its service life, improvements to the existing water transmission system are needed to ensure continuation of essential services to support national security. The aging water main would be replaced by a new water transmission main of the same capacity. The replacement infrastructure would transmit potable water from the Navy's existing source at Waiawa Pump Station to a connecting point approximately 2.7 mi to the south. Because the existing 42-in water main also provides secondary potable water service to the Navy's Mānana Family Housing Area, the proposed action would also include infrastructure to maintain potable water service to the housing area. Construction of replacement facilities would begin in late 2017, with completion projected for mid-2019.

Location:	Pearl City, O'ahu
TMK:	(1) 9-7-7: por. 1, 13; 9-6-8: por. 8; 9-7-23: por. 1, 3, 14; 9-7-24: por. 6; 9-7-66: por. 82; 9-7-73: por. 84, 85, 86, 95, 96
Federal Action:	Federal Agency Activity
Federal Agency:	U.S. Department of the Navy
Informational Contact:	Mr. Alan Suwa, NAVFAC Pacific, (808) 472-1450
CZM Contact:	John Nakagawa (808) 587-2878, john.d.nakagawa@hawaii.gov
Comments Due:	April 6, 2016

3. Ala Wai Canal Flood Reduction Project, Honolulu, Oahu

Proposed Action: The U.S. Army Corps of Engineers in conjunction with the State Department of Land and Natural Resources Division of Engineering is proposing to implement the Ala Wai Canal Project. The purpose of the Ala Wai Canal Project is to reduce riverine flood risks in the Ala Wai Watershed. The tentatively selected plan would reduce flood risks by improving the flood warning system, and constructing six in-stream debris basins and detention basins in the upper reaches of Makiki, Mānoa and Pālolo streams, one standalone debris catchment feature, three multi-purpose detention areas in open spaces through the developed watershed, and concrete floodwalls ranging up to 4 feet high along one of both sides of approximately 1.9 miles of the Ala Wai Canal (including three pump stations). Details about the project, including the Draft Feasibility Study Report with Integrated Environmental Impact Statement, are available at: www.alawaicanalproject.com.

Location:	Ala Wai Canal; Makiki Stream; Mānoa Stream; and Pālolo Stream; Honolulu, O'ahu
Federal Action:	Federal Agency Activity
Federal Agency:	U.S. Army Corps of Engineers
Informational Contact:	Mr. Michael Wyatt, Project Manager, (808) 835-4031
CZM Contact:	John Nakagawa, (808) 587-2878, jnakagaw@dbedt.hawaii.gov
Comments Due:	April 6, 2016

OFFICE OF PLANNING
STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

Ref. No. P-15102

April 8, 2016

Ms. Karen Sumida
Business Line Manager
Environmental Engineering Department
Department of the Navy
258 Makalapa Drive, Suite 100
Naval Facilities Engineering Command, Pacific
Pearl Harbor, Hawaii 96860-3134

Attention: Mr. Alan Suwa

Dear Ms. Sumida:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for the Waiawa Water Transmission Main Replacement (MILCON P-493), Pearl City, Oahu

The Hawaii CZM Program has completed the federal consistency review of the U.S. Department of the Navy proposal to replace the existing 42-inch Waiawa water transmission main, which currently serves Joint Base Pearl Harbor-Hickam, the Navy's Manana Housing Area, and the U.S. Army's Aliamanu Housing Area, with a new 42-inch line, including a 16-inch secondary water line, a 12-inch lateral, and associated construction activities. We concur with the Navy's determination that the proposed activity is consistent to the maximum extent practicable with the enforceable policies of the Hawaii CZM Program based on representations made in the consistency determination that best management practices will be implemented during construction.

CZM consistency concurrence does not represent an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with the Hawaii CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

Leo R. Asuncion
Director

c: City and County of Honolulu, Department of Planning and Permitting

Appendix E
Chapter 343, HRS Compliance Correspondence

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DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

FILE

KIRK CALDWELL
MAYOR

GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2016/ELOG-1110(JS)

May 11, 2016

Ms. Karen Sumida
Department of the Navy
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii 96860

Dear Ms. Sumida:

SUBJECT: Request for Determination of Environmental Assessment Requirements
Waiawa Water Transmission Main Replacement
Tax Map Key: 9-6-7: por. 1 and 13; 9-6-8: por. 8; 9-7-23: por. 1, 3, and 14; 9-7-24: por. 6; 9-7-66: por. 82; 9-7-73: por. 84, 85, 86, 95, and 96

This is in response to your letter received May 2, 2016, requesting a determination as to whether an Environmental Assessment (EA) would be required for the Waiawa water transmission main replacement project (Project). The Project involves the replacement of an existing 42-inch primary water main currently serving Joint Base Pearl Harbor-Hickam, the Navy's Manana Housing Area, and the U.S. Army's Aliamanu Housing areas. You indicate the new 42-inch water line would extend from the Navy's Waiawa Pump Station to an existing 42-inch main at the intersection of Lehua Avenue and Second Street in Pearl City, Oahu, Hawaii. The Project will also require designation of easements over certain properties. In our meeting of May 4, 2016, Alan Suwa and Connie Chang of the Naval Facilities Engineering Command, Pacific, and two representatives of HHF Planners described the proposal in detail. We are pleased to inform you that the Project will not require an EA.

Essentially, the new 42-inch water line will replace an existing 42-inch water line and/or be installed within an existing underground utility corridor. Thus, we have determined that the Project is an exempt class of action pursuant to Exemption Class No. 1, Item 5 and Exemption Class No. 6, Item 2 of the "Exemption List for the Department of Land Utilization" dated August 12, 1981. Exemption Class No. 1 allows operations, repairs, or maintenance of existing structures, facilities, equipment or topographical features, involving negligible or no expansion of change of use beyond that previously existing; Item 5 includes the repair and maintenance of underground utility lines, including but not limited to, water, sewer, power, and telephone, and minor appurtenant structures such as pad-mounted

transformers and sewer pump stations. Exemption Class No. 6 allows continuing administrative activities such as purchases for supplies and personnel-related actions; Item 2 includes the creation or termination of easements, covenants, or other rights in structure or land.

Should you have any questions, please contact Art Challacombe at 768-8001.

Very truly yours,

George I. Atta, FAICP
Director