

**FINAL**  
**ENVIRONMENTAL ASSESSMENT**  
**for**  
**Red Hill Water Treatment Facility**  
**at**  
**Joint Base Pearl Harbor-Hickam, Oahu**

**May 2026**



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## Abstract

<b>Designation:</b>	Environmental Assessment
<b>Title of Proposed Action:</b>	Red Hill Water Treatment Facility
<b>Project Location:</b>	Red Hill, Oahu, Hawaii
<b>Lead Agency for the EA:</b>	Department of the Navy
<b>Affected Region:</b>	Ewa District, City and County of Honolulu, Oahu, Hawaii
<b>Action Proponent:</b>	Joint Base Pearl Harbor-Hickam
<b>Point of Contact:</b>	Red Hill Water Treatment Facility EA Project Manager Naval Facilities Engineering Systems Command (NAVFAC) Hawaii/EV21 Building 55 400 Marshall Road Joint Base Pearl Harbor-Hickam, HI 96860-3139
<b>Date:</b>	May 2026

Joint Base Pearl Harbor-Hickam (JBPHH), a Command of the United States (U.S.) Navy (hereinafter referred to as the Navy), has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA). The Proposed Action is to construct and operate a new water treatment facility to reconnect water from the Navy's Red Hill Shaft to the JBPHH drinking water system and discontinue the discharge of water into Halawa Stream. The Proposed Action would include the construction of a new, permanent water treatment facility and the associated utilities, infrastructure, and site improvements, as well as the connection of an interim, modified granular activated carbon (GAC) water treatment system that is currently under construction at Red Hill to the Navy drinking water system. Both the permanent water treatment facility and the interim water treatment system would treat water from the Red Hill Shaft to meet National Primary Drinking Water Regulations (NPDWR) and State of Hawaii Department of Health (HDOH) Safe Drinking Water Standards before it is distributed to the Navy drinking water system. The proposed project is consistent with the Navy's commitment to carry out long-term actions agreed upon by the U.S. Environmental Protection Agency (EPA), HDOH, and the Navy in the January 2022 Red Hill Shaft Recovery and Monitoring Plan (Section 1.4 page 11 and Section 2 pages 17-18). This EA evaluates the potential environmental impacts associated with the two action alternatives (including a Preferred Alternative) and the No Action Alternative to the following resource areas: water resources, cultural resources, public health and safety, hazardous materials/waste, infrastructure, terrestrial biological resources, air quality, and noise.



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## EXECUTIVE SUMMARY

### ES.1 Proposed Action

The Navy proposes to construct and operate a new water treatment facility at Red Hill Bulk Fuel Storage Facility (RHBFSF) to reconnect water from the Navy's Red Hill Shaft to the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water system and discontinue the current treatment and subsequent discharge of water into Halawa Stream. Since January 2022, water pumped from the Red Hill Shaft is treated at an onsite granular activated carbon (GAC) water treatment system, then discharged to Halawa Stream. The Proposed Action would include the construction of a new, permanent on-site GAC water treatment facility and the associated utilities, infrastructure, and site improvements. Additionally, an interim, modified GAC water treatment system is currently under installation at Red Hill to provide a drinking water compliant treatment system for the Navy's Red Hill Shaft water source, which will supersede the current GAC treatment system currently onsite. The Proposed Action also includes the connection of the interim water treatment system to the Navy drinking water system until the permanent water treatment facility is operational. Both the permanent water treatment facility and the interim GAC water treatment system would treat water from the Red Hill Shaft to meet National Primary Drinking Water Regulations (NPDWR) and State of Hawaii Department of Health (HDOH) Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

The proposed project is consistent with the Navy's commitment to carry out long-term actions agreed upon by the U.S. Environmental Protection Agency (EPA), HDOH, and the Navy in the January 2022 Red Hill Shaft Recovery and Monitoring Plan (RHSRMP) (Section 1.4 page 11 and Section 2 pages 17-18). The plan calls for the permitting, design, and construction of a water treatment facility that will allow the Red Hill Shaft well to return to service as a potable water source while ensuring the remediation of any residual contaminants which may migrate into the Red Hill Shaft groundwater source. In compliance with Hawaii Administrative Rules (HAR) Section 11-20, Relating to Public Water Systems, HDOH approval would be required to construct and operate the Proposed Action and reconnect the Red Hill Shaft to the Navy drinking water system.

On June 2, 2023, the EPA finalized and signed the 2023 Administrative Consent Order (ACO) with the Navy to ensure the safe defueling and closure of the RHBFSF. In accordance with the ACO, the Navy is working to safely and expeditiously execute the permanent decommissioning of the RHBFSF. The proposed water treatment facility is consistent with the ACO and the Navy's mission to permanently close the RHBFSF.

### ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to restore the Red Hill Shaft as a necessary drinking water source for JBPHH, in compliance with NPDWR and HDOH Safe Drinking Water Standards and the RHBFSF closure plan, and to discontinue discharge of the resource into Halawa Stream. The Proposed Action would ensure that the drinking water pumped from the Red Hill Shaft and distributed to the Navy's drinking water system meets Safe Drinking Water Standards and is consistent with the Navy's commitment to carry out long-term actions agreed upon by the EPA, HDOH, and the Navy in the January 2022 RHSRMP.

The Proposed Action is necessary to: a) restore the Red Hill Shaft as a drinking water source in order to achieve adequate resiliency and redundancy to the Navy's water system for consumers and Department

of Defense (DoD) operations at JBPHH; and, b) provide effective treatment of drinking water and ensure removal of any contaminants, as proposed in the 2022 RHRMP and superseding 2022 HDOH Emergency Order and in recognition of the fact that all observed water quality conditions indicate treatment is unnecessary. No other Navy drinking water production (e.g. source) well provides the extent of resiliency that Red Hill Shaft will provide to support ongoing requirements at the installation.

### ES.3 Alternatives Considered

Alternatives were developed for analysis based upon the following reasonable alternative screening factors, including:

- A. Technical feasibility
- B. Efficiency of operations and maintenance
- C. Impacts to sensitive environmental and cultural resources
- D. Location on property controlled by the Navy or another federal agency

The Navy is considering two action alternatives that meet the purpose of and need for the Proposed Action and a No Action Alternative.

Alternative 1 (Preferred Alternative) includes construction of a new, permanent water treatment facility and the associated utilities, infrastructure, and site improvements, as well as the connection of an interim GAC water treatment system (currently under construction at Red Hill) to the Navy drinking water system. Both the permanent water treatment facility and the interim water treatment system would treat water from the Red Hill Shaft to meet NPDWR and HDOH Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

Action Alternative 2 is the same as the Preferred Alternative except it also includes six packed tower aerators (PTA) and six primary feeder pumps. Aeration involves the mass transfer of volatile organic contaminants (VOCs) from water to air by increasing the water surface area exposed to air. For groundwater treatment, this process is typically conducted in packed columns or low-profile tray strippers. The PTA design is the most commonly used aerator due to its lower cost, higher design capacity, and lower air requirement. The PTAs and primary feeder pumps would fit within the same water treatment facility footprint as the Preferred Alternative. PTAs were originally considered by the Navy for the proposed water treatment facility because they are effective at removing significant concentrations of hydrocarbon contamination from drinking water and when used ahead of the GAC filters, they can greatly extend the life of the GAC filters. However, groundwater monitoring for the Red Hill Shaft has documented low levels of hydrocarbon contamination, and because the Red Hill fuel storage tanks have been defueled, removing the primary contamination source, the incorporation of PTAs would not provide an additional benefit in drinking water quality.

Under the No Action Alternative, the Proposed Action would not occur. The permanent GAC water treatment facility would not be constructed at Red Hill and the interim GAC water treatment system would not be connected to the Navy drinking water system. Consequently, the No Action Alternative would not restore the Red Hill Shaft as a source of potable water for JBPHH or communities serviced by the Navy drinking water system and the water pumped from the Red Hill Shaft would continue to be treated and discharged to Halawa Stream. The No Action Alternative analyzes the consequences of not undertaking the Proposed Action and serves to establish a comparative baseline for the analysis of the action alternatives.

The Navy also considered an additional course of action which entails reconnecting the Red Hill Shaft to the Navy drinking water system without treatment. Frequent water quality results observed by the Navy over the past year indicate the Red Hill Shaft is free of fuel-related contamination, is no longer compromised and therefore does not warrant the need for treatment prior to use as a prospective drinking water source. However, considering the Navy's commitment to pursue a permanent treatment facility, as set forth by the 2022 RHRMP and as required in the superseding 2022 HDOH Emergency Order, with consideration of public sentiment for consumption of raw water from the Red Hill Shaft, the Navy elected *not* to investigate this course of action, and has determined that the provision of a treatment system is appropriate in order to restore the RHS as a drinking water source. A water treatment facility sustains a groundwater capture zone, treats raw water for any constituents of concern and mitigates the discharge of water that is not utilized for the drinking water system.

#### **ES.4 Summary of Environmental Resources Evaluated in the EA**

NEPA specifies that an EA should address those resource areas potentially subject to impacts from a proposed action. 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: public health and safety, water resources, hazardous materials and wastes, terrestrial biological resources, cultural resources, infrastructure, air quality, and noise.

Because potential impacts for the preferred alternative are considered to be insignificant, negligible, or nonexistent to the following resource areas, they are not evaluated in detail in this EA: airspace, geological resources, land use, marine biological resources, transportation, socioeconomic impacts, and visual resources.

#### **ES.5 Summary of Potential Environmental Consequences of the Proposed Action and Major Mitigating Actions**

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

#### **ES.6 Public Involvement**

The Navy prepared the Draft EA to inform the public of the Proposed Action and to allow the opportunity for public review and comment. The Draft EA review period began with a public notice published in the Honolulu Star-Advertiser indicating the availability of the Draft EA and the locations where public review copies were made available. The Navy made the Draft EA available on the following website, <https://pacific.navfac.navy.mil/About-Us/National-Environmental-Policy-Act-NEPA-Information>. Twenty public comments were received on the Draft EA, from nineteen different individuals. One commenter submitted two comment letters. The public comment letters and a summary of the public comments received and the associated revisions incorporated into this Final EA is provided in Appendix A.

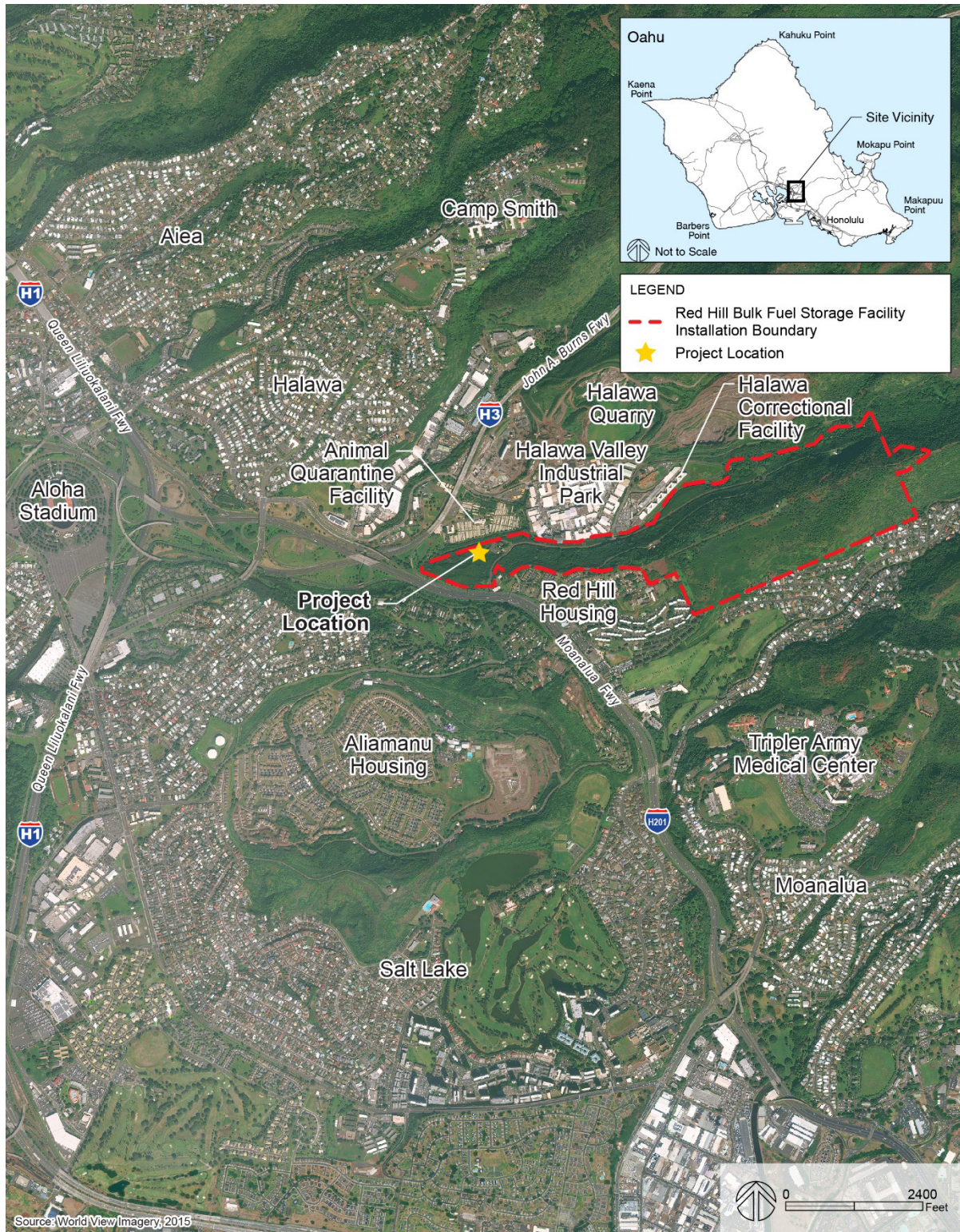


Figure ES-1 Location Map

**Table ES-2 Summary of Potential Impacts to Resource Areas**

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Alternative 1 (Preferred Alternative)</b>	<b>Alternative 2</b>
Public Health and Safety	<p>No impact</p> <p>The on-site GAC water treatment system, intended only for short-term operation, will continue to operate and treated water will continue to be discharged to Halawa Stream.</p>	<p>Beneficial impact</p> <p>Standard security measures would be implemented to secure equipment and prevent public access into the construction and operation areas, and compliance with occupational safety and health regulations, standards, and instructions would minimize the potential for workplace accidents.</p> <p>Operations would maintain the groundwater capture zone within the aquifer underlying RHBFSF and would restore the Red Hill Shaft as a source of safe, potable water to the users of the Navy drinking water system, in accordance with the long-term actions outlined in the Red Hill Shaft Recovery and Monitoring Plan.</p>	<p>Beneficial impact</p> <p>Impacts to public health and safety would be the same as for the Preferred Alternative.</p>
Water Resources	<p>Less than significant impact</p> <p>Water pumped from the Red Hill Shaft would continue to be treated then discharged into Halawa Stream to maintain the groundwater capture zone at the Red Hill Shaft. Consequently, the Red Hill Shaft would not be restored as a source of safe, potable water for the users of the Navy drinking water system.</p>	<p>Beneficial impact</p> <p>The project would be subject to a National Pollutant Discharge Elimination System (NPDES) permit and would implement a Stormwater Pollution Prevention Plan (SWPPP) and erosion control best management practices (BMPs) to avoid or minimize potential impacts associated with temporary increased runoff and erosion during construction. The project would implement permanent Low Impact Development (LID) features to mitigate the impact of development on stormwater runoff and protect stormwater quality. There would be no increase in existing stormwater peak discharge rates to offsite areas, and the existing drainage patterns would be maintained to the extent possible.</p> <p>Once operational, the project would restore the beneficial use of the Red Hill Shaft as a safe, potable drinking water source. The Navy would no longer discharge up to 5 MGD to Halawa Stream. Instead, this water would be used to supply the Navy drinking water system and would therefore reduce groundwater withdrawal at other Navy drinking water wells.</p>	<p>Beneficial impact</p> <p>Impacts to water resources would be the same as for the Preferred Alternative.</p>

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Alternative 1 (Preferred Alternative)</b>	<b>Alternative 2</b>
Hazardous Materials and Wastes	<p>Less than significant impact</p> <p>The spent GAC media from the onsite GAC system would be tested for toxicity. If it exceeds hazardous waste thresholds, an appropriate disposal facility would be identified, and the waste transported to the appropriate facility.</p>	<p>Less than significant impact</p> <p>Use of hazardous materials (i.e., fuel, oil, etc.) and generation of hazardous wastes during construction would be transported, stored, handled, and disposed of in accordance with federal and state regulations. Excess soil and shallow groundwater (if encountered), must be properly characterized, handled, stored, managed, and disposed of as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-waste in accordance with JBPHH policy, and federal and state regulations.</p> <p>The spent GAC media would be tested for toxicity. If it exceeds hazardous waste thresholds, an appropriate disposal facility would be identified, and the waste would be transported to an appropriate facility. Diesel fuel would be stored onsite to power emergency generators. Only aboveground fuel storage containers would be utilized, and they would have secondary containment to contain a release.</p>	<p>Less than significant impact</p> <p>Impacts with hazardous materials and wastes would be the same as for the Preferred Alternative.</p>

Resource Area	No Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Cultural Resources	No impact	<p>Less than significant impact</p> <p>A large portion of the project area was heavily modified during the 20<sup>th</sup> century due to agriculture and ranching use during the plantation era and construction-related activities associated with the construction of the RHBFSF, nearby freeways, the channelization of Halawa Stream, and the installation infrastructure. An archaeological inventory survey was conducted for the Proposed Action. In addition to the RHBFSF, the survey identified two sites within the federal portion of the APE that the Navy is treating as eligible listing in the National Register of Historic Places (NRHP). The Preferred Alternative would have no adverse effect on the RHBFSF but would result in the removal or disturbance of these two sites: Site 50-80-13-7785 and Temporary Site 2. Site 50-80-13-7785 is a complex of seven features associated with possible earlier ranching uses and later mid-20th century military development. Temporary Site 2 is a complex of three features (a retaining wall, a concrete structure, and a road alignment) associated with plantation era use of the project area.</p> <p>Pursuant to Section 106 of the National Historic Preservation Act (NHPA) and in accordance with Stipulation VI of the 2012 Programmatic Agreement among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer Regarding Navy Undertakings in Hawaii, as amended in 2024, the Navy consulted with the Hawaii State Historic Preservation Officer (SHPO) and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would not affect character-defining features of the RHBFSF but would adversely affect two historic properties, and accordingly prepared a Memorandum of Agreement (MOA) to resolve adverse effects consistent with Stipulation IX.C of the 2012 PA, 36 C.F.R. 800.1(c), and 36 C.F.R. 800.6. Upon completion of the consultations, the MOA was agreed to and signed by the Navy and SHPO in February 2026. Through implementation of the measures stipulated in the MOA the Preferred Alternative would result in less than significant impacts to cultural resources.</p>	<p>Less than significant impact</p> <p>Impacts to cultural resources would be the same as for the Preferred Alternative.</p>

<i>Resource Area</i>	<i>No Action Alternative</i>	<i>Alternative 1 (Preferred Alternative)</i>	<i>Alternative 2</i>
Terrestrial Biological Resources	No impact	<p>Less than significant impact</p> <p>The Preferred Alternative would include approximately 8.9 acres of permanent vegetation removal, primarily non-native scrub forest. The project location does not include critical habitat, but BMPs would be implemented to avoid or minimize potential impacts to protected species.</p> <p>In accordance with Section 7 of the Endangered Species Act (ESA), the Navy consulted the U.S. Fish and Wildlife Service (USFWS) regarding the Preferred Alternative. In a letter to the USFWS dated January 7, 2025, the Navy determined that the Preferred Alternative may affect, but is not likely to adversely affect the Hawaiian Stilt, Band-rumped Storm-Petrel, Hawaiian Petrel, Newell’s Shearwater, and Hawaiian hoary bat, or jeopardize the continued existence of these species. USFWS concurred with the Navy’s determination in a letter dated February 27, 2025 (Appendix C).</p>	<p>Less than significant impact</p> <p>Impacts to terrestrial biological resources would be the same as for the Preferred Alternative.</p>

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Alternative 1 (Preferred Alternative)</b>	<b>Alternative 2</b>
Infrastructure	<p>Water: Less than significant impact</p> <p>The Red Hill Shaft would not be restored as a source of potable water for JBPHH and communities serviced by the Navy drinking water system. The Navy would continue to rely on its other wells to serve the drinking water system. The Navy would continue to implement water conservation measures to stay within their permitted withdrawal rates.</p> <p>Wastewater: No Impact</p> <p>Energy: No Impact</p>	<p>Water: Beneficial impact</p> <p>The restoration of the Red Hill Shaft as a potable water source would increase redundancy within the Navy’s drinking water system and decrease reliance on the Navy’s other water sources.</p> <p>Wastewater: Less than significant impact</p> <p>Wastewater volumes from the site are expected to be within existing sewer capacity. The sanitary sewer connection would require an agreement with the Army and a sewer connection permit from the City and County of Honolulu Department of Planning and Permitting for use of their systems.</p> <p>Energy: Less than significant impact</p> <p>The project would require a new point of connection from the Hawaiian Electric Company (HECO) grid. Energy demand is within HECO’s existing grid capacity and the Navy is coordinating with HECO on the anticipated demand and point of connection. Proposed undergrounding of the new electrical circuits would improve the new systems’ reliability and resilience.</p>	<p>Water: Beneficial impact</p> <p>Impacts to water infrastructure would be the same as for the Preferred Alternative.</p> <p>Wastewater: Less than significant impact</p> <p>Impacts to wastewater infrastructure would be the same as for the Preferred Alternative.</p> <p>Energy: Less than significant impact</p> <p>Alternative 2 would require additional energy to run the PTAs and primary feeder pumps, but energy demand is still expected to be within HECO’s existing grid capacity.</p>
Air Quality	No Impact	<p>Less than significant impact</p> <p>The Preferred Alternative would generate short-term, temporary indirect air emissions during the construction period (e.g., fugitive dust, exhaust emissions from construction equipment and vehicles, etc.). During the operational phase, temporary, minor emissions would be generated from vehicle trips to the site and running the emergency generators.</p>	<p>Less than significant impact</p> <p>Alternative 2 would have similar air quality impacts as the Preferred Alternative, except that there would be additional VOC emissions from running the PTAs. An air quality permit from HDOH would be required.</p>

<i>Resource Area</i>	<i>No Action Alternative</i>	<i>Alternative 1 (Preferred Alternative)</i>	<i>Alternative 2</i>
Noise	No Impact	<p>Less than significant impact</p> <p>Construction would result in short-term increases in daytime noise. Noise impacts would be greatest at the nearest residences along Madrona Place within the Army’s Red Hill Housing neighborhood. Noise from construction would comply with applicable federal, state, and local regulations.</p> <p>Operation of the proposed permanent water treatment facility would generate negligible impacts on the noise environment. The GAC filters and associated equipment at the proposed water treatment facility generally run at low noise levels. The emergency generators would be housed within dedicated structures and would not impact the ambient noise environment.</p>	<p>Less than significant impact</p> <p>Impacts to the noise environment would be slightly greater than for the Preferred Alternative because of the construction of additional components (i.e., PTAs and feeder pumps), and additional operating noise from the feeder pumps.</p>

**Environmental Assessment**  
**Red Hill Water Treatment Facility**  
**Joint Base Pearl Harbor-Hickam, Oahu, Hawaii**

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## Abbreviations and Acronyms

Acronym	Definition
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos containing material
ACO	Administrative Consent Order
AFFF	Aqueous film-forming foam
APE	Area of Potential Effects
BMP	best management practice
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
CWB	Clean Water Branch
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
dB	decibel
dBA	A-weighted sound level
DERP	Defense Environmental Restoration Program
DLNR	State of Hawaii Department of Land and Natural Resources
DoD	United States Department of Defense
DP	Development Plan
EA	Environmental Assessment
EAL	Environmental action level
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act

Acronym	Definition
FHWA	Federal Highways Administration
GAC	Granular Activated Carbon
HAP	hazardous air pollutant
HAR	Hawaii Administrative Rules
HAER	Historic American Engineering Record
HDOA	State of Hawaii Department of Agriculture
HDOH	State of Hawaii Department of Health
HDOT	State of Hawaii Department of Transportation
HECO	Hawaiian Electric Company
HRS	Hawaii Revised Statutes
JBPHH	Joint Base Pearl Harbor-Hickam
JTF-RH	Joint Task Force-Red Hill
LCP	Lead containing paint
LID	Low Impact Development
LUD	Land Use District
LUO	Land Use Ordinance
MBTA	Migratory Bird Treaty Act
MCL	Maximum containment level
MGD	Million gallons per day
MOA	Memorandum of Agreement
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAHS	Navy Aiea-Halawa Shaft
NASED	New Aloha Stadium Entertainment District
Navy	United States Department of the Navy
NAVFAC	Naval Facilities Engineering Systems Command
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act

<b>Acronym</b>	<b>Definition</b>
NO <sub>2</sub>	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NPDWR	National Primary Drinking Water Regulations
NRHP	National Register of Historic Places
OCCC	Oahu Community Correctional Center
OGP	Oahu General Plan
OPSD	State of Hawaii Office of Planning and Sustainable Development
OWDF	Oily waste disposal facility
PA	Programmatic Agreement
PCBs	Polychlorinated biphenyls
PFAS	Per- and poly-fluoroalkyl substances
PFOA	Perfluorooctanoic acid
PM <sub>10</sub>	particulate matter less than or equal to 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 microns in diameter
PSD	Prevention of Significant Deterioration
PTA	Packed tower aerators
PUC	Primary Urban Center
RCRA	Resource Conservation and Recovery Act
RHBFSF	Red Hill Bulk Fuel Storage Facility
RHSRMP	Red Hill Shaft Recovery and Monitoring Plan

<b>Acronym</b>	<b>Definition</b>
RI	Remedial investigation
ROH	Revised Ordinances of Honolulu
ROI	Region of influence
ROW	Right-of-way
SCP	Sustainable Communities Plan
SFP	State Functional Plan
SHPO	State Historic Preservation Officer
SO <sub>2</sub>	sulfur dioxide
STP	Shovel test pit
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional cultural properties
TMDL	Total Maximum Daily Load
TPH	Total Petroleum Hydrocarbons
TPH-d	TPH diesel range
TPH-g	TPH gasoline range
TPH-o	TPH oil range
tpy	tons per year
TS	Temporary site
TSCA	Toxic Substances Control Act
VOC	Volatile organic compound
UFC	Unified Facilities Criteria
U.S.	United States
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WWII	World War II

# 1 Purpose of and Need for the Proposed Action

## 1.1 Introduction

Joint Base Pearl Harbor-Hickam (JBPHH), a Command of the United States (U.S.) Navy (hereinafter, jointly referred to as the Navy) proposes to construct and operate a new water treatment facility to reconnect water from the Navy's Red Hill Shaft to the JBPHH drinking water system and discontinue the discharge of water into Halawa Stream. The Proposed Action would include the construction of a new, permanent granular activated carbon (GAC) water treatment facility and the associated utilities, infrastructure, and site improvements. Additionally, an interim, modified GAC water treatment system is currently under installation at Red Hill to replace the existing onsite GAC water treatment system. The Proposed Action also includes the connection of the interim water treatment system to the Navy drinking water system until the permanent water treatment facility is operational. Both the permanent water treatment facility and the interim GAC water treatment system would treat water from the Red Hill Shaft to meet National Primary Drinking Water Regulations (NPDWR) and State of Hawaii Department of Health (HDOH) Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

The proposed project is consistent with the Navy's commitment to carry out long-term actions agreed upon by the U.S. Environmental Protection Agency (EPA), HDOH, and the Navy in the January 2022 Red Hill Shaft Recovery and Monitoring Plan (Section 1.4 page 11 and Section 2 pages 17-18). In compliance with Hawaii Administrative Rules (HAR) Section 11-20, Relating to Public Water Systems, HDOH approval would be required to construct and operate the Proposed Action and reconnect the Red Hill Shaft to the Navy drinking water system.

On June 2, 2023, the EPA finalized and signed the 2023 Administrative Consent Order (ACO) with the Navy to ensure the safe defueling and closure of Red Hill Bulk Fuel Storage Facility (RHBFSF). In accordance with the ACO, the Navy is working to safely and expeditiously execute the permanent decommissioning of RHBFSF. The proposed water treatment facility is consistent with the ACO and the Navy's mission to permanently close RHBFSF.

The Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA).

## 1.2 Background

The Red Hill Shaft is located on federal property within RHBFSF installation on the island of Oahu, Hawaii. It is owned, operated, and maintained by the Navy and was constructed in 1942. The Red Hill Shaft overlies the Waimalu system of the Pearl Harbor Aquifer, which is an underground source of drinking water. Prior to its closure in November 2021, the Red Hill Shaft was one of several Navy drinking water wells that served as a source for the Navy's drinking water distribution system that provided drinking water to JBPHH and several outlying residential and non-residential communities. The Red Hill Shaft Pump Station provides significant resiliency for the JBPHH system.

In late November 2021, a fuel release from the RHBFSF contaminated the Red Hill Shaft drinking water well, and contaminated water was unknowingly pumped from the Red Hill Shaft into the Navy drinking water distribution system. Upon identifying the Red Hill Shaft as the source of contaminated water, pumping at the Red Hill Shaft pump station was stopped and the shaft was disconnected from the Navy drinking water system.

In consultation with the EPA and HDOH, the Navy installed an onsite water treatment system and resumed pumping operations at the Red Hill Shaft in January 2022 to remove contamination from groundwater at the Red Hill Shaft, and to mitigate any potential movement of groundwater contamination. The current, onsite water treatment system utilizes GAC technology to remove any fuel contaminants if any in groundwater extracted from the Red Hill Shaft, and treats the water in compliance with the National Pollutant Discharge Elimination System (NPDES) permit granted by HDOH. After the water is treated, it is then discharged into the adjacent South Halawa Stream.

In January 2022, the Navy, EPA, and HDOH signed the Red Hill Shaft Recovery and Monitoring Plan (RHSRMP) which articulated the rationale for creating/maintaining the capture zone, providing GAC treatment and ultimately, returning the Red Hill shaft to service. As directed in the State of Hawaii 2021 Emergency Order, and superseding 2022 Emergency Order, the Navy was directed by the state to install a water treatment system at Red Hill Shaft to recover the well as a drinking water source. Additionally, the Navy is working to safely and expeditiously execute the permanent decommissioning of RHBFSF in compliance with the 2023 ACO. In compliance with the RHSRMP and the 2023 ACO, the Navy significantly increased and enhanced environmental efforts, including increased monitoring, expanding its groundwater monitoring well network, and initiating several remediation projects. The Navy continues to coordinate extensively with the EPA and HDOH on all groundwater monitoring, modeling, and remediation activities at Red Hill.

Between January 2022 and April 2024, the Navy pumped an average of 4.2 MGD from Red Hill Shaft, treated it through the onsite water treatment system, and discharged it to Halawa Stream. In 2023, the Navy prepared a Red Hill Shaft Flow Optimization Study to determine if reduced pumping rates would impact the groundwater capture zone (Naval Facilities Engineering Systems Command [NAVFAC] Hawaii, 2023). In April 2024, HDOH approved the Navy's request to reduce the average daily pumping rate for Red Hill Shaft from 4.2 to 1.8 MGD, and to implement a revised Consolidated Groundwater Sampling Plan (Navy Closure Task Force, 2024). The Navy remains committed to its efforts to remediate, recover, and protect the environment surrounding Red Hill.

The Navy is currently constructing an interim GAC water treatment system at Red Hill as a temporary solution until the permanent solution to sustaining the groundwater capture zone is completed (the Proposed Action). Once operational, the interim water treatment system will discharge treated water to Halawa Stream. As a part of the Proposed Action, the Navy is proposing to connect the interim water treatment system to the Navy drinking water system. This would only happen following the completion of this EA and approval from HDOH.

### **1.3 Location and Surrounding Environment**

RHBFSF installation consists of 226 acres on the lower slopes of Halawa Ridge which separates the Halawa and Moanalua Valleys of the island of Oahu, Hawaii. RHBFSF is a part of JBPHH. The Proposed Action would be located within RHBFSF installation, at the base of a ridge of a volcanic formation known as Red Hill. The site is bounded by Interstates H-201 and H-3 to the south and west, the Hawaii Department of Agriculture (HDOA) Animal Quarantine Facility, Hawaii Department of Public Safety Halawa Correctional Facility, and the Halawa Valley Industrial Park to the north, and the U.S. Army Red Hill Family Housing to the east. Notable landmarks in the vicinity of the Proposed Action include Aloha Stadium, Halawa Quarry, and Tripler Army Medical Center. Figure 1-1 shows the project site and nearby features and landmarks.

### **1.4 Purpose of and Need for the Proposed Action**

The purpose of the Proposed Action is to restore the Red Hill Shaft as a reliable drinking water source for the Navy drinking water system, in compliance with NPDWR and HDOH Safe Drinking Water Standards, and to discontinue discharge of the resource into Halawa Stream. The Proposed Action is necessary to: a) restore the Red Hill Shaft as a drinking water source in order to achieve adequate resiliency and redundancy to the Navy's water system for consumers and Department of Defense operations at JBPHH; and, b) provide effective treatment, and therefore remediation, of any contaminants which may migrate into the Red Hill Shaft groundwater source, as proposed in the 2022 RHSRMP and the superseding 2022 HDOH Emergency Order, despite observed water quality conditions which indicate treatment is not necessary. No other Navy drinking water production (e.g. source) well provides the extent of resiliency that Red Hill Shaft will provide for the JBPHH drinking water system.

The Proposed Action is needed because potable water from the Red Hill Shaft has been unavailable to support users and activities on the Navy's drinking water system since November 2021 and because the installation needs an additional source to ensure adequacy of its drinking water system.

### **1.5 Scope of Environmental Analysis**

This EA includes an analysis of potential environmental impacts associated with the Proposed Action, Action Alternatives, and the No Action Alternative. The environmental resource areas analyzed in this EA include: public health and safety, water resources, hazardous materials and wastes, cultural resources, terrestrial biological resources, infrastructure, air quality, and noise. The study area for each resource analyzed may differ due to how the Proposed Action interacts with or impacts the resource.

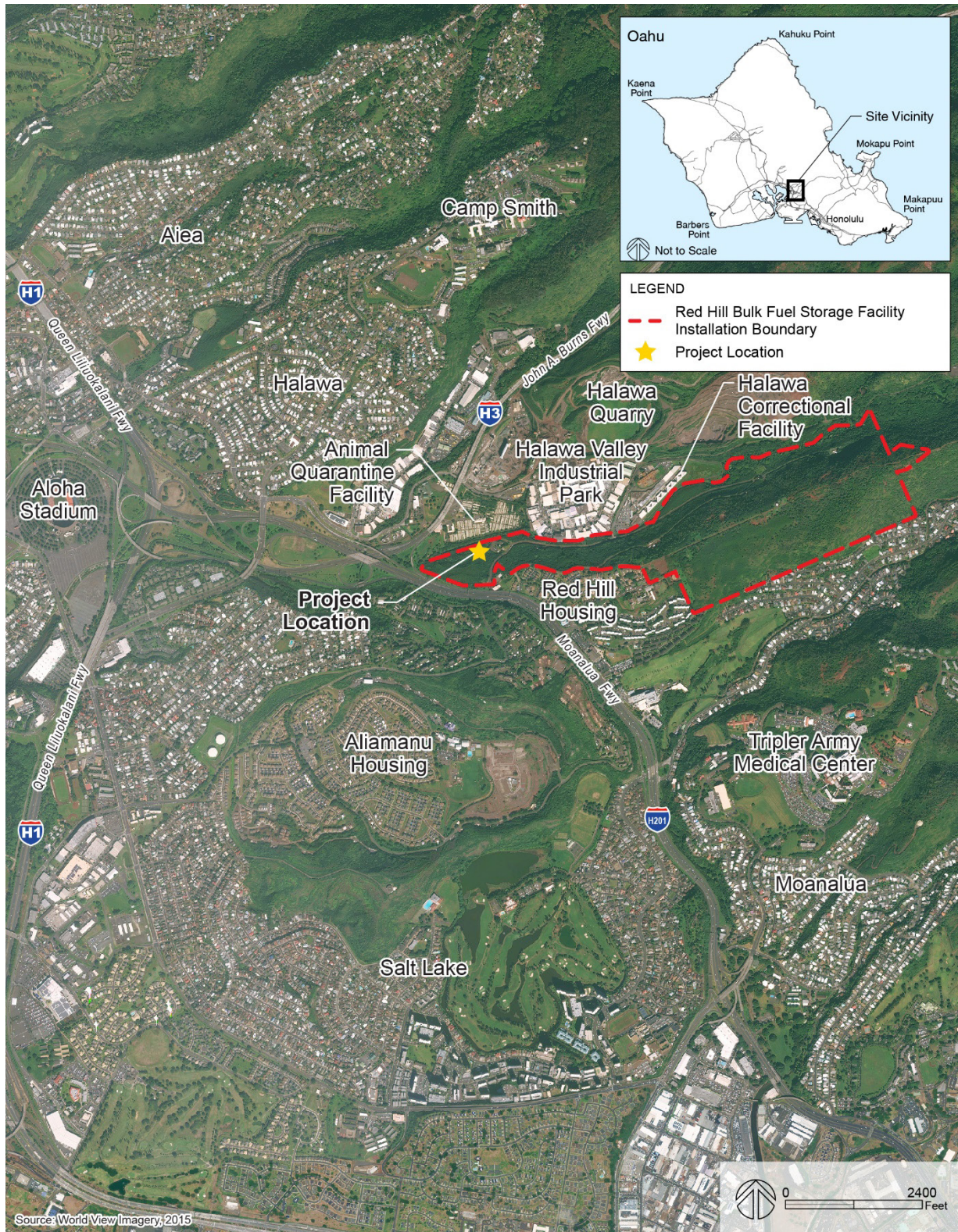


Figure 1-1 Project Location Map

## 1.6 Key Documents

Key documents are sources of information incorporated into this EA. Documents are considered to be key because of similar actions, analyses, or impacts that may apply to this Proposed Action. Navy guidance encourages incorporating documents by reference. Documents incorporated by reference in part or in whole include:

- **Red Hill Shaft Recovery and Monitoring Plan (January 2022).** This document was developed jointly by representatives of HDOH and the State of Hawaii Department of Land and Natural Resources (DLNR), EPA, and the Navy. The Plan provides a process to capture and remove organic contaminants from water extracted at the Red Hill Shaft and the underlying aquifer, and to ensure that the aquifer is available for future drinking water use. Actions identified in the plan include the design, permitting, and construction of a drinking water treatment system that will allow the Red Hill Shaft well to return to service as a potable water source.
- **Environmental Assessment and Finding of No Significant Impact for Red Hill Defueling and Fuel Relocation (August 2023).** This document addresses gravity-based defueling of the RHBFSF at JBPHH, as well as the relocation of flowable fuels from the facility to other Department of Defense fuel supply locations in the Pacific Region. The defueling action complies with HDOH Emergency Orders, the EPA 2023 Consent Order, and United States Secretary of Defense Lloyd J. Austin III's March 7, 2022, order to defuel and permanently close the RHBFSF.

## 1.7 Relevant Laws and Regulations

The Navy has prepared this EA based upon federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action, including the following:

- National Environmental Policy Act (42 U.S. Code (U.S.C.) section 4321 et seq.)
- 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.)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. section 9601 et seq.)
- National Historic Preservation Act (NHPA) (54 U.S.C. section 3001018 et seq.)
- National Primary Drinking Water Regulations (NPDWR) (40 CFR part 141)
- Endangered Species Act (ESA) (16 U.S.C. section 1531 et seq.)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. section 703 et seq.)
- Emergency Planning and Community Right-to-Know Act (42 U.S.C. section 11001 et seq.)
- Resource Conservation and Recovery Act (42 U.S.C. section 6901 et seq.)
- Toxic Substances Control Act (TSCA) (15 U.S.C. section 2601 et seq.)
- Executive Order (EO) 12088, Federal Compliance with Pollution Control Standards
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks
- HAR Section 11-20, Relating to Public Water Systems
- HAR Section 11-55, Water Pollution Control

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

### **1.8 Public and Agency Participation and Intergovernmental Coordination**

The Navy initiated Pre-Assessment Early Consultation between May 24, 2024, to June 3, 2024, to inform the preparation of the Draft EA. An informational letter was sent to 79 elected officials, agencies, organizations, and individuals to obtain comments on the proposed project during the pre-assessment consultation process (Section 7.1). A total of seven responses were received. The responses are provided in Appendix A, and relevant comments were addressed in the Draft EA.

The Navy prepared the Draft EA to inform the public of the Proposed Action and to allow the opportunity for public review and comment. The Draft EA review period began with a public notice published in the Honolulu Star-Advertiser indicating the availability of the Draft EA and the locations where public review copies were made available. The Draft EA was also made available on the following website, <https://pacific.navfac.navy.mil/About-Us/National-Environmental-Policy-Act-NEPA-Information>. Twenty public comments were received on the Draft EA, from nineteen different individuals. One commenter submitted two comment letters. The public comment letters and a summary of the public comments received and the associated revisions incorporated into this Final EA are provided in Appendix A.

Pursuant to Section 106 of the NHPA and in accordance with Stipulations VI and IX of the 2012 Programmatic Agreement among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer Regarding Navy Undertakings in Hawaii, as amended in 2024, the Navy consulted with the Hawaii State Historic Preservation Officer (SHPO) and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would result in an adverse effect to historic properties, and prepared a Memorandum of Agreement (MOA) to resolve adverse effects. Upon completion of the consultations, the MOA was agreed to and signed by the Navy and SHPO in February 2026 (Appendix B).

In accordance with Section 7 of the ESA, the Navy consulted with the U.S. Fish and Wildlife Service (USFWS) regarding the Preferred Alternative. In a letter to the USFWS dated January 7, 2025, the Navy determined that the Preferred Alternative may affect but is not likely to adversely affect the Hawaiian Stilt, Band-rumped Storm-Petrel, Hawaiian Petrel, Newell's Shearwater, and Hawaiian hoary bat, or jeopardize the continued existence of these species. USFWS concurred with the Navy's determination in a letter dated February 27, 2025 (Appendix C).

In accordance with the CZMA, the Navy submitted a Federal Consistency Review to the State of Hawaii Office of Planning and Sustainable Development (OPSD) indicating that the project is consistent with the enforceable policies of the Hawaii Coastal Zone Management Program (CZMP). OPSD published a public notice requesting public comments on the consistency review on May 23, 2025, and comments were due by June 7, 2025. No public comments were received. OPSD provided their conditional concurrence with the Navy's Federal Consistency Review in a letter dated June 19, 2025 (Appendix D).

## 2 Proposed Action and Alternatives

### 2.1 Proposed Action

The Proposed Action is to construct and operate new water treatment facilities to reconnect water from the Navy's Red Hill Shaft to the Navy drinking water system and discontinue the discharge of water into Halawa Stream. The Proposed Action would include the construction of a new, permanent GAC water treatment facility and the associated utilities, infrastructure, and site improvements, as well as the connection of the interim GAC water treatment system (currently under construction at Red Hill) to the Navy drinking water system. Both the permanent water treatment facility and the interim water treatment system would treat water from the Red Hill Shaft to meet NPDWR and HDOH Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

The proposed project is consistent with the Navy's commitment to carry out long-term actions agreed upon by the EPA, HDOH, and the Navy in the January 2022 RHSRMP (Section 1.4 page 11 and Section 2 pages 17-18). The plan calls for the permitting, design, and construction of a water treatment facility that will allow the Red Hill Shaft well to return to service as a potable water source. In compliance with HAR Section 11-20, Relating to Public Water Systems, HDOH approval would be required to construct and operate the Proposed Action and reconnect the Red Hill Shaft to the Navy drinking water system.

### 2.2 Screening Factors

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

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

- A. Technical feasibility
- B. Efficiency of operations and maintenance
- C. Minimizes impacts to sensitive environmental and cultural resources
- D. Located on property controlled by the Navy or another federal agency

Several potential action alternatives were evaluated against the screening factors. The alternatives considered include:

1. Alternative 1 (Preferred Alternative): Permanent Water Treatment Facility near Red Hill Shaft
2. Alternative 2: Permanent Water Treatment Facility with Packed Tower Aerators near Red Hill Shaft
3. Alternative 3: Interim Modified GAC Water Treatment System Only
4. Alternative 4: Alternative Locations for the Water Treatment Facility
5. Alternative 5: Alternative Water Treatment Technology
6. Alternative 6: Alternative Utility Points of Connections
7. Alternative 7: Non-potable Water Reuse
8. Alternative 8: Reconnect Red Hill Shaft Without a Water Treatment Facility

## 2.3 Alternatives Carried Forward for Analysis

Although several possible action alternatives were evaluated, as described in Section 2.4, only two reasonable alternatives were identified: the Preferred Alternative and Alternative 2. Based on the screening factors identified above, these action alternatives are carried forward for analysis in this EA.

Although the No Action Alternative would not meet the purpose of and need for the Proposed Action, it is also carried forward for analysis in this EA as required by NEPA.

### 2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not take place. The interim GAC water treatment system would not be connected to the Navy drinking water system, and the permanent GAC water treatment facility would not be constructed at Red Hill. Water pumped from the Red Hill Shaft would continue to be treated and then discharged into Halawa Stream to maintain the groundwater capture zone within the underlying aquifer. Consequently, the No Action Alternative would not restore the Red Hill Shaft as a source of potable water for JBPHH, and communities serviced by the Navy drinking water system.

The No Action Alternative would not meet the purpose of and need for the Proposed Action; however, as required by NEPA, the No Action Alternative is carried forward for analysis in this EA. The No Action Alternative analyzes the consequences of not undertaking the Proposed Action and serves to establish a comparative baseline for the analysis of the action alternatives.

### 2.3.2 Alternative 1 (Preferred Alternative): GAC Water Treatment Facility

The Preferred Alternative includes the construction and operation of a permanent GAC water treatment facility with supporting a permitted capacity of approximately 5 MGD (limited to an annualized average daily volume of approximately 5 MGD), as well as the connection of the interim GAC water treatment system to the Navy drinking water system. The interim GAC water treatment system is currently under construction at RHBFSF to replace the existing onsite GAC water treatment system. The interim water treatment system will be located along the southern installation boundary adjacent to the H-3 Freeway right of way (ROW) (Figure 2-1). The Preferred Alternative includes the connection of the interim water treatment system to the Navy drinking water system until the permanent water treatment facility is operational. Both the permanent water treatment facility and the interim water treatment system would treat water from the Red Hill Shaft to meet NPDWR and HDOH Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

Connection of the interim water treatment system to the Navy drinking water system would include the installation of new piping for treated water from the interim system to the point of connection to the Navy drinking water system near the Red Hill Shaft. Construction of the interim system (not including connection to the Navy drinking water system) is anticipated to be completed and in operation by 2027. Connecting the permanent and interim treatment facilities to the Navy drinking water system would require approval from the HDOH under HAR Section 11-20-30 (New and Modified Public Water Systems).

The proposed permanent water treatment facility would utilize GAC pressure vessels to treat water from the Red Hill Shaft before distributing it to the Navy drinking water system. GAC technology is identified by the EPA as the best available technology for removing organic contaminants in drinking water. The proposed facilities would be located within RHBFSF installation boundary at three separate sites (Table 2-1). The proposed permanent water treatment facility would be located at the lower site to

the west of the existing onsite GAC water treatment system and the Lower Access Road. Additional support facilities are proposed at the upper site. An aboveground fire protection water storage tank would be constructed at an uphill location. The storage tank is required to provide adequate fire protection infrastructure at the permanent water treatment facilities.

Due to the sites' sloping topography, grading and earthwork would be needed to create level areas for the facilities, equipment, access roads, and construction work areas. Construction access would be provided through the existing RHBFSF Gate. A construction staging would be provided on an adjacent State of Hawaii Department of Transportation (HDOT) ROW. Access to this staging area would utilize an existing HDOA-owned driveway off Halawa Valley Street and a new connection to an existing roadway access to the HDOT ROW that continues across Halawa Stream to the proposed permanent water treatment facility site (Figure 2-1). Construction activities would be generally restricted to daylight hours except for occasions where night work is required (e.g., connections to existing utilities).

### 2.3.2.1 Facilities

The Preferred Alternative would involve the construction of approximately 26,300 square feet of new facilities. A description of the proposed facilities is provided in Table 2-1.

**Table 2-1 Facilities proposed for Preferred Alternative**

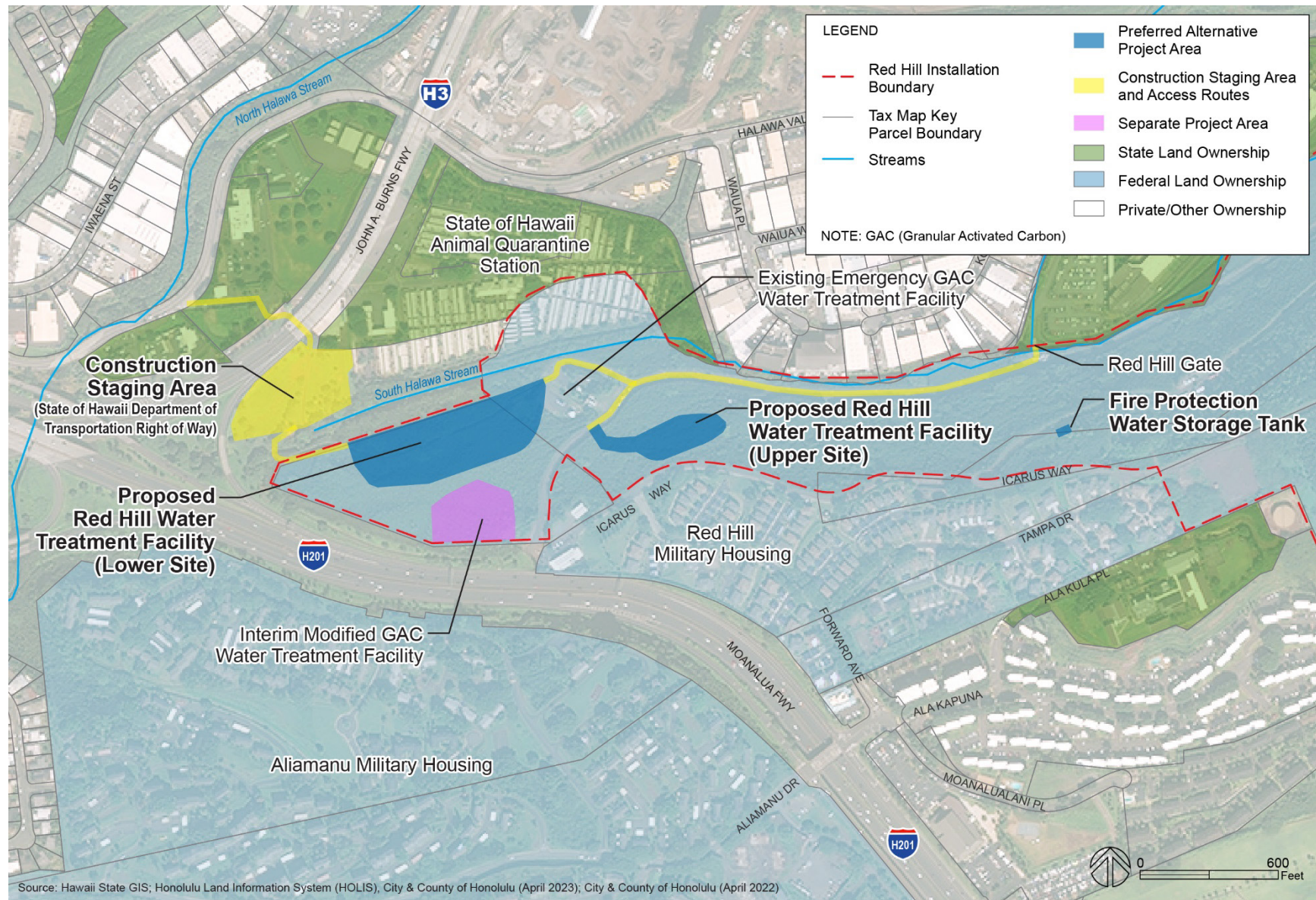
<i>Site</i>	<i>Facility</i>	<i>Description</i>
Lower Site	GAC Pressure Vessels and Canopy	GAC Pressure Vessels and ancillary equipment would be installed as part of the permanent water treatment facility. The GAC pressure vessels would be housed under a canopy.
Lower Site	Wash Water Transfer Tank	The wash water transfer tank is proposed to receive and attenuate wash water from backwashing the GAC media prior to discharge into the sanitary sewer system.=
Lower Site	Chemical Feed Building	A chemical feed building would be constructed to support general operations at the water treatment facility. Chlorine bleach is commonly used to disinfect drinking water. The solution will be generated onsite from a salt brine. Both solution and the salt brine have non-hazardous concentrations and do not necessitate special storage requirements. The facility would be less than 10,000 square feet in area.
Lower Site	Generator Building 1	Emergency generators will be used to power water treatment facilities at the lower site in the case of power outages. The generator building would be paired with an adjacent above ground fuel tank. The facility would be less than 2,000 square feet in area.
Lower Site	Neutralization Building	A neutralization building would be constructed to support flushing and media change-out activities. The facility would be less than 2,000 square feet in area.
Upper Site	Switchgear Building	A switchgear building would be constructed to support the permanent water treatment facility. The facility would be less than 2,000 square feet in area.
Upper Site	Generator Building 2	Emergency generators will be used to power the Red Hill Shaft Pump Station in case of power outages. The generator building would include a fuel tank. The facility would be less than 2,000 square feet in area.
Fire Protection Water Storage Tank Site	Fire Protection Water Storage Tank	A 250,000-gallon, aboveground concrete, non-potable fire protection water storage tank would be constructed at an uphill location within RHBFSF along the Upper Access Road

### 2.3.2.2 Site Improvements

The Preferred Alternative includes site improvements for the permanent water treatment facility encompassing a total area of approximately 25.6 acres. Descriptions of the proposed site improvements are included in the table below (Table 2-2).

**Table 2-2 Site Improvements for Preferred Alternative**

<i>Improvement</i>	<i>Description</i>
Site Preparations	The water treatment facility footprint would be located in a generally undeveloped area of RHBFSF. The lower site would be grubbed and graded and revetted with mechanically stabilized retaining walls ranging up to 33 feet in height. The upper site would be grubbed, graded, and revetted with concrete retaining walls. Rock fall mitigation measures would also be installed at the sites (e.g., scaling of cut surfaces, anchored wire mesh, etc.). Extant utilities would be relocated, removed and/or demolished to accommodate the new facility.
Construction Staging and Access	The Preferred Alternative includes the use of a construction staging area within HDOT ROW adjacent to the H-201 to H-3 off-ramp. Construction access to the Proposed Action site would be provided via two approaches: (1) through the existing RHBFSF Gate via the Lower Access Road and (2) an existing HDOA-owned driveway off of Halawa Valley Street serving the Animal Quarantine Facility and a connection to an existing roadway serving the HDOT ROW that continues across Halawa Stream to the permanent water treatment facility site. Parking for construction personnel would be provided within the proposed HDOT staging area to the north of the project site. The access road from the HDOT ROW staging area includes an HDOT-owned culvert bridge over Halawa Stream that is rated for highway traffic. Improvements to the existing access roads are not needed prior to construction and once construction is complete, the roads would be restored to their pre-construction condition.
Security Fencing	The Preferred Alternative would comply with Unified Facilities Criteria (UFC) 4-022-03 Security Fences and Gates. Approximately 4,200 feet (0.8 miles) of security fencing would be installed on federal property along the perimeter of the proposed water treatment facility site and adjacent to the H-201 ROW boundary. The perimeter fence would be approximately eight feet tall, including a three-strand barbed wire top guard. In compliance with UFC requirements, the Navy would clear vegetation and maintain a 30-foot-wide clear zone on the exterior of the perimeter fence. Portions of this clear zone would be located within the HDOT ROW and the Navy would obtain easements from HDOT for access and maintenance. All proposed barbed wire fencing is located on federal property.
Site and Security Lighting	The Preferred Alternative would include the installation of site lighting at the permanent water treatment facility (upper and lower sites) as well as security lighting along the perimeter security fence. All lighting would be shielded to reduce light pollution and potential impacts to wildlife.



**Figure 2-1 Alternative 1 (Preferred Alternative) – Conceptual Site Plan**

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### 2.3.2.3 Utilities and Infrastructure

The Preferred Alternative would include utilities improvements for electrical, telecommunications, water, fire protection, sanitary sewer, and stormwater infrastructure to support the permanent water treatment facility. These improvements are described in Table 2-3. Specific utility line locations and points of connection are not shown in Figure 2-1 due to Operational Security guidelines.

**Table 2-3 Utilities and Infrastructure for the Preferred Alternative**

<b>Improvement</b>	<b>Description</b>
Electrical	The Preferred Alternative would harden electrical infrastructure at the site to ensure a more resilient and reliable electrical service to the installation, including the proposed permanent water treatment facility. A new underground Hawaiian Electric Company (HECO) electrical service point of connection would be constructed along the H-201 ROW, and new underground duct lines would be constructed to provide electrical distribution to and within the project sites. To provide a backup to HECO power, the Preferred Alternative would provide backup emergency generators.
Telecommunications	The Preferred Alternative would connect the proposed permanent water treatment facility to the Navy’s existing telecommunications system. Within the site, the Preferred Alternative would provide a new, underground telecommunications distribution system to serve the permanent water treatment facility and Red Hill Pump Station.
Water	The Preferred Alternative would construct a raw water transmission line to convey water from the Red Hill Shaft Pump Station to the permanent water treatment facility. A finished water line would convey the treated water from the permanent water treatment facility to the Navy’s existing drinking water distribution main. Additional ancillary water lines would be constructed as necessary to support operations at the permanent water treatment facility and to connect the interim GAC water treatment system to the Navy drinking water system. Ancillary water lines would be constructed of ductile iron pipe or high-density polyethylene. All proposed water lines would be constructed within federal property and would be drinking water compliant.
Fire Protection	A 250,000-gallon aboveground concrete, non-potable fire water storage tank would be constructed at an uphill location within RHBFSF. Fire protection for the upper and lower sites would be provided by a pipeline. Hydrants would be installed at the lower site and at the upper site. Fire sprinklers for the proposed buildings would also be fed from the fire protection water system.
Sanitary Sewer	The Preferred Alternative would construct a new domestic wastewater pump station (located at the lower site) and a new sanitary sewage force main. Domestic wastewater from the facility would be pumped to a point of connection within the Red Hill Army Family Housing sewer system. The Preferred Alternative would also construct a new wash water waste pump station (located at the lower site) and a new wash water waste force main. The wash water waste generated during backwash activities would be pumped to one of two potential points of connection: 1) a connection to the Red Hill Army Family Housing sewer system, or 2) a connection to the City and County of Honolulu’s sewer system within Forward Avenue near Ala Kupuna Street. These connections would require agreements with the Army and a sewer connection permit from the City and County of Honolulu Department of Planning and Permitting Wastewater Branch.

<i>Improvement</i>	<i>Description</i>
Stormwater	The proposed facilities would increase impervious surfaces within the project site. Stormwater at the site would be managed according to guidelines in Unified Facilities Criteria 3-210-10 Low Impact Development (LID). LID features would be implemented to provide infiltration areas and underground detention basins within the site. There would be no increase in peak stormwater discharge rates to offsite areas. The existing drainage patterns would be maintained to the maximum extent possible.

**2.3.2.4 Operations**

It is anticipated that the facility would support a permitted capacity of approximately 5 MGD and be limited to an annualized average daily volume of approximately 5 MGD (i.e., within the current Water Use Permit allocation). The water treatment facility would be designed to meet NPDWR and HDOH Safe Drinking Water Standards. The Navy will institute hydrocarbon monitoring throughout the water treatment system to enable detection of any possible fuel in the water. The hydrocarbon analyzers would provide monitoring procedures and capability. If fuel contamination is detected in the water, an alarm would be triggered to alert the operators to investigate and take action to respond. The operators would be able to remotely operate valves to prevent contaminated water from entering the Navy water distribution system.

The Proposed Action would utilize GAC pressure vessels to treat the water from the Red Hill Shaft. The GAC media within the GAC pressure vessels used by the permanent water treatment facility would have an expected lifespan of several years. A specific timeframe cannot be narrowed down as many factors including those beyond the Navy's control, can impact the service life of the GAC media (i.e., usage rates, type of GAC media used, and concentration of contaminants in the untreated water). The GAC media lifespan will be periodically monitored by qualified technicians to ensure GAC media is replaced well in advance of saturation. Prior to placing new GAC media into service, best practice requires the media to be backwashed to remove fine, inert particles that can be dispersed throughout the GAC media. The GAC media would also be backwashed periodically during its service lifespan (estimated at two to three times per year). Backwashing the GAC media is intended to “unpack” the GAC media from consolidation that takes place over prolonged periods of downward flow. The source of the backwash water for initial setup would be treated water from the interim water treatment system.

In the GAC treatment process, contaminants are adsorbed to the GAC media. The only way to remove contaminants from the GAC media is via extreme heat or a significant change in water chemistry, which is highly unlikely. Therefore, backwashing by itself would not cause adsorbed contaminants to be released from the media during backwashing. For the Proposed Action, the backwash wastewater would be collected in the wash water waste tank where it would be field tested prior to discharge to confirm that water quality is within the City's requirement for acceptance of industrial waste discharges. The Navy will obtain an Industrial Waste Discharge Permit from the City and will comply with any permit requirements. Testing of the backwash wastewater will confirm that it is safe to dispose of in the City sewer and would not require a Resource Conservation Recovery Act (RCRA) discharge permit.

The permanent water treatment facility would be operated by Navy personnel based at the Navy's Waiawa Pump Station (approximately seven miles to the northwest). Water treatment operators would be licensed in the State of Hawaii. A Water Treatment Plant Operator Level 1 license issued by HDOH would be required to operate the proposed water treatment facility. The operators would perform process control functions, collect, and record operating data, collect samples, complete regulatory reporting, and conduct preventive maintenance and basic corrective maintenance. More complicated

maintenance would be performed by third-party contractors on an as-needed basis. All laboratory analyses for regulatory purposes would be performed by a certified third-party laboratory.

GAC technology is identified by the EPA as the best available technology for removing organic contaminants in drinking water. Moving forward, the Navy would continue to operate the facilities in compliance with safe drinking water standards and best practices including regular testing and reporting consistent with EPA and HDOH requirements. The proposed permanent water treatment facility has been designed to accommodate potential future enhanced treatment technologies within the existing site footprint.

### **2.3.3 Alternative 2: GAC Water Treatment Facility with Packed Tower Aerators**

Alternative 2 would be the same as the Preferred Alternative except it would also include six packed tower aerators (PTA) and six primary feeder pumps. The PTAs and primary feeder pumps would fit within the same water treatment facility footprint as the Preferred Alternative (at the lower site). PTA height is estimated at 40 feet with an estimated diameter of 12 feet.

Aeration involves the mass transfer of volatile organic contaminants (VOCs) from water to air by increasing the water surface area exposed to air. For groundwater treatment, this process is typically conducted in packed columns or low-profile tray strippers. The PTA design is the most commonly used aerator due to its lower cost, higher design capacity, and lower air requirement.

The proposed PTAs would precede the GAC pressure vessels in the treatment process, meaning raw water would first be aerated and then pumped through the GAC system before being chlorinated, fluoridated, and transmitted to the Navy's drinking water distribution system. The proposed configuration would pair one PTA with two pairs of GAC pressure vessels.

The PTAs were originally considered by the Navy for the proposed water treatment facility because they are effective at removing significant concentrations of hydrocarbon contamination from drinking water and when used ahead of the GAC filters, they can greatly extend the life of the GAC filters. However, groundwater monitoring for the Red Hill Shaft has documented low levels of hydrocarbon contamination, and because the Red Hill fuel storage tanks have been defueled, removing the primary contamination source, the incorporation of PTAs would not provide an additional benefit in drinking water quality.

The emission of contaminated exhaust air from the packed tower aerators creates potential air quality considerations. The transfer of VOCs from water to air might be a concern depending on site conditions, local regulations, type of VOCs, daily quantity of water to be processed, the contaminant level, local air quality, and local meteorological conditions. An air quality permit from HDOH would be required.

## **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 Alternative 3: Interim Modified GAC Water Treatment System Only**

The Navy is currently constructing an interim modified GAC water treatment system at Red Hill as an interim solution to replace the existing onsite water treatment system. The Interim GAC system will treat water from the Red Hill Shaft to NPDWR and HDOH safe drinking water standards. As part of the Proposed Action for this EA, the Navy is proposing to connect the Interim GAC to the Navy drinking

water system pending the completion of construction and HDOH approval. However, this would not replace the need for the permanent water treatment facility.

The interim GAC system was designed as an interim solution to be constructed quickly. It was intended to provide a bridge between the onsite and permanent water treatment facilities, which would take longer to design and construct. The interim GAC system will only have a smaller capacity than the permanent facility (which will be limited to an annualized average daily volume of approximately 5 MGD). Additionally, it is critical that the interim GAC system remain in full operation once it is completed. Consequently, it would not be feasible to expand and/or upgrade the interim GAC system to a higher capacity due to the operational disruptions that this would cause. Utilization of the interim GAC water treatment system as a long-term water treatment facility is not a technically feasible alternative and it was dismissed from further consideration (screening factor A).

#### **2.4.2 Alternative 4: Alternative Locations for the Water Treatment Facility**

In addition to the Proposed Action site, the Navy considered two alternative sites for the location of the water treatment facility. The first alternative site is located uphill from the Red Hill Shaft on Halawa Ridge directly above the RHBFSF, approximately 4,000 feet from the preferred site. The second alternative site is located 5,200 feet southwest from the preferred site in the vicinity of Aliamanu Military Reservation. Aside from the proposed siting, these alternatives are identical to the Preferred Alternative.

The Uphill Site was eliminated from consideration because it would require significant mechanical systems and energy usage to convey water to an elevation of 550 feet above sea level, a vertical difference of 440 feet from the existing Red Hill Shaft Pump Station (screening factor A). Additionally, due to the site's location above the RHBFSF, the equipment layout would be constrained to areas between the storage tanks, increasing construction complexity. Finally, the upper site is located at the crest of Halawa Ridge, making the project highly visible to the surrounding community against the backdrop of the Koolau Mountains (screening factor C).

The Aliamanu Military Reservation Site was eliminated from consideration because it would require the construction of significant new infrastructure (i.e., water pipelines and booster pumps) to pump water 5,200 feet away from the Red Hill Shaft to an elevation of approximately 180 feet above sea level (a vertical difference of 70 feet from the existing Red Hill shaft Pump Station), and back again to enter into the Navy's water distribution system (screening factor A). Construction of the required pipelines would cross State and County-owned ROWs that would result in temporary disruptions of vehicle and pedestrian traffic (screening factor D). Additionally, this alternative site is located within an existing residential community. Construction noise and dust, as well as background operational noise from the water treatment facility could result in negative impacts to the adjacent residential community (screening factor C).

#### **2.4.3 Alternative 5: Alternative Water Treatment Technology**

GAC technology is identified by the EPA as the best available technology for removing organic contaminants in drinking water. In addition to the GAC pressure vessels included in the Preferred Alternative, the Navy considered built-in-place GAC contactors as an alternative water treatment technology. In this alternative, built-in-place GAC contactors would be utilized rather than pressure vessels. GAC contactors differ from pressure vessels in that contactors utilize gravity flow to move water through the system, rather than pressure differences. To maintain the lead-lag configuration, the lag contactor would have to be constructed below grade to allow for gravity flow. Built-in-place contactors

have an open top, increasing the likelihood of debris entering the system, algae growth, and potential biological contamination from birds. A cover structure would need to be constructed over the contactors to mitigate exposure to the elements, but algae growth is still documented even when exposure to direct sunlight is limited. GAC pressure vessels are completely enclosed, reducing contamination risks, and system pressure is sufficient to move water through the filters. Additionally, built-in-place GAC contactors require all contactors to be operational in order to treat raw water coming into the facility, limiting operational flexibility during all anticipated flow scenarios. The Navy evaluated both treatment technologies and dismissed built-in-place contactors because of increased operational and maintenance difficulties associated with the GAC contactor configuration (screening factor B), and because the GAC contactors require a much greater footprint than the GAC pressure vessels.

#### **2.4.4 Alternative 6: Alternative Utility Points of Connection**

The Navy developed and evaluated alternative points of connection for many of the proposed utility improvements for the Proposed Action, including the sanitary sewer connections and the electrical service connection. The alternatives were coordinated with utility providers and adjacent landowners (including the Army and HDOT). In some cases, utility connection alternatives were modified due to conflicts with other existing utility corridors, in others utility connection alternatives were dismissed from consideration due to technical feasibility concerns (screening factor A).

#### **2.4.5 Alternative 7: Non-Potable Water Reuse**

In this Alternative, the Proposed Action would not take place. This Action Alternative differs from the No Action Alternative in that water from the Red Hill Shaft would continue to be pumped and treated to confirm no fuel contaminants are present, but rather than being discharged into the Halawa Stream, the treated water would be reused for non-potable purposes, such as large-scale irrigation, industrial use, or aquifer recharge.

The Navy evaluated a range of potential alternatives for non-potable reuse, including potential private, public, and U.S. Department of Defense (DoD) non-potable water users, and the transmission infrastructure required to deliver the non-potable water to these users. Ultimately, the Navy dismissed non-potable water reuse as a reasonable alternative because it does not meet the purpose and need for the Proposed Action (to restore the Red Hill Shaft as a valuable source for the Navy's potable water system). Additionally, non-potable reuse would require substantial new infrastructure for delivery to potential customers from the Red Hill Shaft (screening factor A).

#### **2.4.6 Alternative 8: Reconnect the Red Hill Shaft Without a Water Treatment Facility**

In this Alternative, the Proposed Action would not take place, and the Red Hill Shaft would be reconnected to the Navy Drinking Water System without the installation of a drinking water treatment facility. Groundwater and drinking water monitoring over the past year at the Red Hill Shaft has not detected TPH at any level since November 7, 2023, and per- and polyfluoroalkyl substances (PFAS) detected at the Red Hill Shaft was below HDOH environmental action levels (EALs) and EPA maximum contaminant levels (MCLs) (JBPHH Safe Waters, 2024). Frequent drinking water quality monitoring results observed by the Navy over the past year indicate the Red Hill Shaft is no longer compromised and therefore does not warrant the need for treatment prior to use as a prospective drinking water source. However, considering the Navy's commitment to pursue a permanent treatment facility as set forth by the 2022 RHSRMP, and as directed in the 2021 and 2022 State of Hawaii Emergency Orders, as well as, with consideration of public sentiment for consumption of raw water from the Red Hill Shaft, the Navy elected *not* to investigate this course of action, and has determined that the provision of a

treatment system is appropriate in order to restore the RHS as a drinking water source. A water treatment facility sustains a groundwater capture zone, treats raw water for any constituents of concern and mitigates the discharge of water that is not utilized for the drinking water system.

## 2.5 Best Management Practices Included in Proposed Action

This section presents an overview of the best management practices (BMPs) that are incorporated into the Proposed Action in this document. BMPs are existing policies, practices, and measures that the Navy would adopt to reduce the environmental impacts of designated activities, functions, or processes. Although BMPs mitigate potential impacts by avoiding, minimizing, or reducing/eliminating impacts, BMPs are distinguished from potential mitigation measures because BMPs are (1) existing requirements for the Proposed Action, (2) ongoing, regularly occurring practices, or (3) not unique to this Proposed Action. In other words, the BMPs identified in this document are inherently part of the Proposed Action and are not considered as potential mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action. Table 2-4 includes a list of BMPs.

BMPs include actions required by federal or state law or regulation. The recognition of the general management measures prevents unnecessarily evaluating impacts that are unlikely to occur.

**Table 2-4 Best Management Practices**

<i><b>BMP</b></i>	<i><b>Description</b></i>	<i><b>Impacts Reduced/Avoided</b></i>
Implement construction dust control plan	Example BMPs include watering of active work areas, using wind screens, keeping adjacent paved roads clean, covering of open-bodied trucks, limiting the area that is disturbed at any given time, and stabilizing inactive areas that have been worked. Other potential BMPs include the use of designated stabilized construction entrance locations.	Prevents or minimizes impacts to air pollution such as fugitive particulate emissions from being transported away from the project area
Erosion Control	Compliance with NPDES provisions including Storm Water Pollution Prevention Plans; erosion and sediment control measures, such as protection of erodible soils; control of storm water runoff from the construction site; use of sediment basins; use of vegetation and mulch on soil exposed by grading; use of silt fencing or silt socks around excavated and cleared areas; and fugitive dust control measures.	Prevents or minimizes water quality impacts on receiving waters (i.e., Halawa Stream)
Low Impact Development (LID)	LID features would be implemented to increase stormwater infiltration onsite. There would be no increase in the existing peak stormwater discharge rate to offsite areas, and the existing drainage patterns would be maintained to the extent possible.	Prevents or minimizes stormwater runoff and water quality impacts.
Invasive species control and decontamination procedures	To minimize the potential for invasive species introduction, all construction equipment, vehicles, and materials that have been sourced off-island would be inspected and decontaminated of any excessive debris or plant material prior to use onsite.	Prevents invasive species introduction within the project area.

<b>BMP</b>	<b>Description</b>	<b>Impacts Reduced/Avoided</b>
JBPHH Green Waste Policy	All green waste generated at the project area will be chipped with excess soil removed and processed according to current JBPHH Green Waste Policy. No green waste would be exported from Oahu or imported to Oahu.	Prevents the spread of the coconut rhinoceros beetle.
Pre-construction nest surveys of protected bird species	Conduct nest surveys for protected bird species before construction activities involving clearing of vegetation. If an active nest is found, the JBPHH Natural Resources Manager would be notified. The nest would be left in place, a 100- foot buffer would be established, and the nest would remain undisturbed until chicks have fledged. A qualified biologist would be present on the project site during all construction or earth moving activities until the chicks fledge to ensure that the birds and nests are not adversely impacted.	Prevents adverse impacts to protected avian species.
Shearwater fallout season response guidelines	Shearwater Fallout Season Response Guidelines for JBPHH will be placed on construction site note/safety boards so that all crew on site can respond appropriately in cases of shearwater fallout during nighttime construction.	Minimizes potential adverse impacts to seabirds.
Downed seabird response protocols and supplies	Appropriate supplies (cardboard box, towel, drop off location and contact) will be provided to nighttime construction crew to care for any downed seabirds.	Minimizes potential adverse impacts to seabirds.
Shielded lighting	Outdoor lighting would follow the Dark Skies Instruction (Commander Navy Region Hawaii Instruction 5090.9) to avoid night lighting whenever possible, and to install only full cutoff exterior down-lighting fixtures for all new construction.	Prevents disorientation, disturbance, and/or injury to protected avian species and reduce impact from light pollution to the public ROW along Interstate H-201 and H-3.
Hawaiian hoary bat protections	Any trees 15 feet in height or taller will not be trimmed or cleared during the Hawaiian hoary bat pupping season (June 1 through September 15). If any bat pups were to be discovered in the construction zone, outside of this season, vegetation clearing would immediately stop, NAVFAC Hawaii would contact the USFWS within 24 hours, and operations would be moved to a minimum of 300 feet away. Construction would not resume until the bat pups have departed the area on their own accord and/or the USFWS gives additional guidance.	Prevents adverse impacts to the Hawaiian hoary bat.
Hazardous Materials and Hazardous Waste Management	Handle, transport, dispose of and/or remediate hazardous materials or waste encountered during construction in accordance with applicable federal and state regulations.	Protects construction workers/community members from hazardous material encountered during construction.

<i><b>BMP</b></i>	<i><b>Description</b></i>	<i><b>Impacts Reduced/Avoided</b></i>
Construction Noise Control	The contractor would implement noise mitigation practices during construction including ensuring correctly installed mufflers are functioning on all construction equipment and locating stationary noise-generating equipment as far as practical from existing noise-sensitive land uses.	Avoids or minimizes potential construction noise impacts to noise sensitive receptors.
Construction Traffic and Safety Management	The contractor will implement the following traffic management BMPs: <ul style="list-style-type: none"> <li>• Notification of area residents, businesses, and schools prior to the start of the construction process;</li> <li>• Installation and maintenance of all necessary lights, signs, barricades, and other safety equipment during construction; and</li> <li>• Acquiring police services as needed to ensure traffic flow is not adversely affected by the construction process.</li> </ul>	Avoids or minimizes potential construction traffic and safety impacts.

### 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 the NEPA and Navy 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.

“Significant,” as used in NEPA, requires considerations of both context and intensity. Context means that the significance of an action must be analyzed under several perspectives such as society as a whole, 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. 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 to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be considered significant.

This section includes public health and safety, water resources, hazardous materials and wastes, cultural resources, terrestrial biological resources, infrastructure, air quality, and noise.

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

**Airspace:** Construction and operation of the Proposed Action would not involve impacts to military or civilian airspace.

**Geological Resources:** The Proposed Action would not involve work that will affect major geological characteristics such as bedrock material, or mineral deposits. Ground-altering construction activities would comply with all applicable regulations, and the Contractor would be responsible for implementing BMPs to control soil erosion and sedimentation during construction activities (See Table 2-4).

**Marine Biological Resources:** The Proposed Action would not involve work that will affect marine biological resources in Pearl Harbor or the near- and off-shore waters of Malama Bay. The Action Location is sited inland from the coast. The Proposed Action does occur along Halawa Stream—an intermittent stream channel—which empties into Pearl Harbor. Ground-altering construction activities and an increase in impermeable surfaces at the site may result in short- to long-term impacts to stormwater management at the Action Location. These impacts are not anticipated to compound existing or present new adverse impacts to marine ecosystems. Implementing BMPs relating to erosion control and stormwater management will mitigate potential impacts to this resource area.

**Land Use:** The proposed water treatment facility would be located within land under federal jurisdiction at RHBFSF. The Navy would pursue agreements with the State to access the HDOT ROW on a permanent basis for maintenance purposes. The entire island of Oahu lies within the Coastal Zone as defined by the CZMA. The Navy coordinated with the OPSD CZMP to ensure the Proposed Action is consistent with the

Hawaii Coastal Management Program to the maximum extent practicable and complies with the CZMA. Appendix D includes the coastal consistency determination for the Proposed Action.

**Visual Resources:** The Proposed Action would be visible from public viewpoints including Interstates H-201 and H-3. However, the proposed water treatment facility and other support structures would be consistent with existing industrial uses both at RHBFSF and adjacent to the site in the Halawa Valley industrial area. Additionally, existing vegetation around the perimeter of the proposed water treatment facility would be maintained to screen views into the site.

**Transportation:** Construction activities associated with the Proposed Action would generate temporary increases in traffic to the immediate project vicinity. However, these temporary increases would be minimal and would not exceed roadway capacities. During the operational period, the Proposed Action would require a limited number of operators and maintenance personnel and there would be a negligible impact on traffic.

**Socioeconomics:** The Proposed Action would not contribute to changes in socioeconomic conditions on the island of Oahu. There would be no significant change in the number of personnel assigned to RHBFSF or JBPHH, and, therefore, the Proposed Action would not contribute to changes in area population or associated demands for housing and support services.

### **3.1 Public Health and Safety**

This discussion of public health and safety includes consideration of any activities, occurrences, or operations that have the potential to affect the safety, well-being, or health of members of the 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. The primary goal is to identify and prevent potential accidents or impacts to the general public. Public health and safety considerations in this EA pertain to the availability of drinking water, the quality of said drinking water, workforce safety, and environmental health and safety risks to children and the general public.

Environmental health and safety risks to children are defined as those that are attributable to products and substances that a child is likely to come into contact with or ingest, including air, food, water, soil, and products that children use or which they are exposed. Safety risks to children may also include physical hazards from vehicles and moving equipment, access to attractive nuisances (e.g., construction site), or disruptive noise.

#### **3.1.1 Regulatory Setting**

The regulatory setting for public health and safety includes laws and regulations pertaining to the transportation and treatment of hazardous materials and waste exposure, contaminants in the air and water, noise pollution, workforce safety, and the health and safety of children and vulnerable populations.

EO 12088, Federal Compliance with Pollution Control Standards, requires federal agencies to comply with federal environmental statutes and regulations, including the CWA, CAA, Solid Waste Disposal Act, TSCA, and the other statutes listed in paragraph 1-102 of the EO.

EO 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.”

NPDWR from the EPA apply to all public water systems and regulate chemical contaminants, including VOCs, in the drinking water supply and the resiliency of public water systems (EPA, 2022).

HDOH safe drinking water standards aim to safeguard the public health by protecting Hawaii’s drinking water sources from contamination and assure that owners and operators of public water systems provide safe drinking water to the communities they serve (HDOH, 2023).

### 3.1.2 Affected Environment

The “region of influence” (ROI), or area where impacts are assumed likely to occur, for the public health and safety analysis includes areas at RHBFSS, the adjacent State of Hawaii-owned properties, and the Army’s Red Hill Housing where the Proposed Action would take place, and those areas serviced by the Navy’s drinking water system, including JBPHH and outlying residential communities such as Aliamanu Military Reservation, Red Hill Housing, Kapilina Beach Homes, and Catlin Park, among others (Figure 3-1).

RHBFSS, within JBPHH, is a secure military installation with access limited to authorized military personnel, civilian employees, and contractors. The portions of the ROI extending into the HDOT ROW include the proposed construction staging area and access routes, perimeter fence clear zone, and utility connections. Currently, HDOT controls vehicular access to the ROW through an HDOT-owned parcel off Halawa Valley Road. Access to the HDOT ROW is controlled by HDOT personnel. The portions of the ROI extending along existing roadways into the Army’s Red Hill Housing are accessible to the general public.



Figure 3-1 Map of Communities Serviced by the Navy Drinking Water System

### 3.1.3 Environmental Consequences

The public health and safety analysis addresses issues related to the health and well-being of the public in the ROI. Specifically, this section provides information on hazards associated with the implementation of the Proposed Action that could affect people living, working, or recreating in the ROI.

Potential risks to public health and safety that may occur as a result of the Proposed Action include increased demand on emergency services, increased potential for occupational accidents, and increased vehicle traffic and potential for vehicle accidents.

Long-term beneficial effects to public health and safety that were considered include the maintaining of the groundwater capture zone within the aquifer underlying RHBFSF by continuing to pump water from the Red Hill Shaft, and the restoration of the Red Hill Shaft as a source of potable water to JBPHH and residential communities in the ROI.

### **3.1.3.1 No Action Alternative**

Under the No Action Alternative there would be no change to existing conditions relating to public health and safety in the ROI. Security measures, including controlled access to RHBFSF, would remain unchanged from existing conditions. The Navy would continue to maintain the groundwater capture zone by pumping water from the Red Hill Shaft, treating it to remove fuel contaminants, and discharging it into Halawa Stream. Therefore, no significant impacts would occur with implementation of the No Action Alternative.

### **3.1.3.2 Preferred Alternative: GAC Water Treatment Facility**

#### **Construction Period**

Standard security measures would be implemented to secure equipment and prevent public access into the construction areas. The construction activities would result in a temporary increase in vehicle trips to the site and the potential for workplace incidents that could increase demand for emergency services. Compliance with the Navy's safety program, as well as occupational safety and health regulations, standards, and instructions would minimize the potential for workplace accidents.

#### **Operational Period**

Implementation of the Preferred Alternative would result in an increase in security at RHBFSF due to new fencing and the maintenance of a clear zone on the outer perimeter of the new fencing. Operation of the proposed water treatment facility would require minimal staffing and would not result in a significant increase in demand for emergency services at the site.

The Preferred Alternative would maintain the groundwater capture zone within the aquifer underlying RHBFSF by continuing to pump water from the Red Hill Shaft to prevent the potential migration of contaminants within the aquifer. The Preferred Alternative would also restore the Red Hill Shaft as a source of safe, potable water to the users of the Navy's drinking water system within the ROI. The restoration of the Red Hill Shaft as a potable water source would increase redundancy within the Navy's drinking water system and decrease reliance on the Navy's other water sources. Therefore, the Preferred Alternative would have a beneficial impact on public health and safety.

### 3.1.3.3 Alternative 2: GAC Water Treatment Facility with PTAs

Alternative 2 would be constructed within the same project footprint as the Preferred Alternative and would include the same construction security measures, new security fencing, and restoration of the Red Hill Shaft as a source of safe, potable drinking water as the Preferred Alternative. Therefore, Alternative 2 would have the same beneficial impacts to the public health and safety as the Preferred Alternative.

## 3.2 Water Resources

This discussion of water resources includes groundwater and surface water. Wildlife and vegetation are addressed in Section 3.5, Terrestrial Biological Resources.

Groundwater is water that flows or seeps downward and saturates soil or rock, supplying springs and wells. Groundwater is used for water consumption, agricultural irrigation, and industrial applications. Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition. Sole source aquifer designation provides limited protection of groundwater resources which serve as drinking water supplies.

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.

### 3.2.1 Regulatory Setting

The Safe Drinking Water Act is the federal law that protects public drinking water supplies throughout the nation. Under the Safe Drinking Water Act, EPA sets standards for drinking water quality. Groundwater quality and quantity are regulated under several statutes and regulations, including the Safe Drinking Water Act.

On April 26, 2024, the EPA published a final federal NPDWR establishing drinking water compliance standards for certain PFAS under the Safe Drinking Water Act to be met by 2029. This rule applies to public drinking water systems. EPA's drinking water rule includes enforceable MCLs for five PFAS: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid, perfluorononanoic acid, hexafluoropropylene oxide dimer acid (commonly known as GenX), and perfluorohexane sulfonic acid.

On December 4, 2024, DoD published "Policy for Per- and Polyfluoroalkyl Substances Monitoring and Treatment in DoD-Owned Drinking Water Systems in the United States." That memorandum describes DoD's plans to consistently evaluate, achieve, and maintain water quality levels at or below EPA's PFAS MCLs for all DoD-owned on-base drinking water systems, including the Navy drinking water system on Oahu.

In November 2024, HDOH published Interim PFAS guidance identifying environmental action levels for individually targeted PFAS. The guidance is considered interim and will be updated as new information on PFAS and experience in the field is gained (HDOH, 2024).

Through the NPDES program, the CWA establishes federal limits on the amounts of specific pollutants that can be discharged into surface waters. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources of water pollution (i.e., stormwater).

The Hawaii State NPDES program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more to obtain coverage under an NPDES General Permit for stormwater discharges during construction. Whether construction or demolition activities are performed, the NPDES General Permit requires preparation of a Notice of Intent to discharge stormwater and a Stormwater Pollution Prevention Plan (SWPPP) 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.

The HDOH Clean Water Branch (CWB) is the state agency responsible for protecting and restoring surface water resources for human and environmental health. The CWB implements surface water pollution control programs delegated from the EPA in support of the CWA and the state's goals to protect and restore surface waters to fishable and swimmable standards for the purpose of protecting human and environmental health. The components addressed within the CWB include Water Quality Standards, Enforcement and Compliance, NPDES permits, Water Quality Certifications, surface water quality monitoring and assessment, TMDLs, and Polluted Runoff Control. These programs are intended to work in concert to ensure Hawaii's surface water resources are protected and restored. In addition, HDOH also addresses CWA components within the Safe Drinking Water Branch, which monitors and protects drinking water resources, and the Wastewater Branch, which administers engineering functions related to water pollution control and wastewater systems and treatment (HDOH, 2018). The CWA requires that Hawaii 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 square feet 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."

### **3.2.2 Affected Environment**

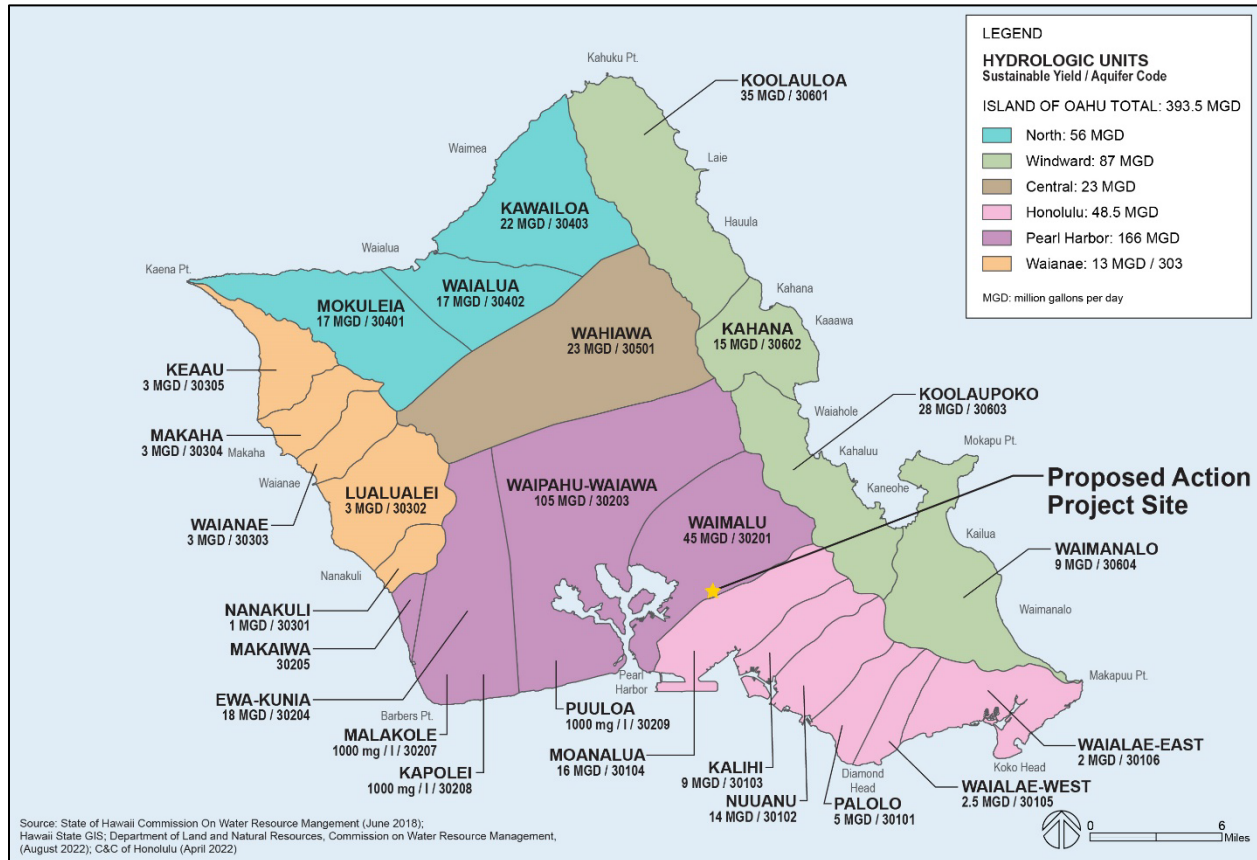
The following discussions provide a description of the existing conditions for each of the categories under water quality resources at the proposed Red Hill Water Treatment Facility. The ROI for water resources includes the Waimalu system of the Pearl Harbor Aquifer and the Halawa Stream subwatershed of the Pearl Harbor watershed.

#### **3.2.2.1 Groundwater**

On Oahu, groundwater occurs chiefly 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 sea water. The Pearl Harbor aquifer is the most important aquifer on the island of Oahu and currently supplies about 100 MGD of fresh groundwater mainly for public potable water consumption. Most of the surface above the Pearl Harbor aquifer is developed as either residential or urban areas, and most of the water pumped from the aquifer is for domestic and commercial use.

The project site overlies the Waimalu system of the Pearl Harbor Aquifer (Figure 3-2), which is an underground source (i.e., groundwater) of drinking water. The Waimalu system is part of the Pearl Harbor regional aquifers system and covers an area of 15,193 acres. The geology in the area is challenging and complex in terms of assessing groundwater flow, as there are disjointed layers of different rock and soil types with very different permeabilities, thicknesses, and orientations (Water

Resources Research Center, 2022). Shallow groundwater, the upper (“caprock”) groundwater body, occurs in the volcanic tuff. A deep “basal” aquifer occurs within fractured basalts that underlie the caprock formation. The project site is located inland of the underground injection control line, indicating it is a potential source for drinking water.



**Figure 3-2 Groundwater Hydrologic Unit Map for the Island of Oahu**

There are several Navy potable water supply wells located within the Pearl Harbor Aquifer. In response to the November 2021 Red Hill fuel release, an onsite water treatment system was constructed to prevent the migration of the pollutant plume within the underlying aquifer. The onsite water treatment system pumps up to 5 MGD from the Red Hill Shaft, which is treated with GAC filters and is then discharged into the south Halawa channel. Since the water pumped from the Red Hill Shaft is no longer a source for the Navy drinking water system, the Navy has implemented water conservation measures. However, water conservation measures do not fully account for the water supply lost from the Red Hill Shaft, so the Navy has been forced to increase its groundwater withdrawal rates from the Waiawa Shaft.

**Groundwater Quality**

For two decades, the Navy has conducted groundwater monitoring and groundwater flow modeling activities around RHBFSF, including the installation of groundwater monitoring wells, establishment of a groundwater monitoring program, and the development of a groundwater flow model. In response to the November 2021 release at Red Hill and the subsequent commitment to close the RHBFSF permanently, the Navy significantly increased and enhanced environmental efforts, including increased

monitoring, expanding its groundwater monitoring well network, and initiating several remediation projects.

Throughout this period, the Navy has conducted an extensive groundwater monitoring program to monitor for a comprehensive analyte list, including fuel constituents. As of April 2025, the Navy's groundwater monitoring well network includes over 45 groundwater monitoring points in and around RHBFSF. Groundwater monitoring data collected to date shows no evidence of contaminant migration from Red Hill (Navy Closure Task Force-Red Hill, 2025). These findings indicate that the resumption of pumping activities at the Red Hill Shaft has been successful in supporting the groundwater capture zone and preventing any possible contaminant migration within the aquifer.

The Navy is continuing with its ongoing development and refinement of a groundwater flow model for the underlying aquifer and will continue to coordinate with HDOH and EPA as required under the 2015 Administrative Order of Consent. To date, the model supports the findings of Navy monitoring that there is no evidence of contaminant migration from RHBFSF within the aquifer. The Navy coordinates extensively with the EPA and HDOH on all groundwater monitoring, modeling, and remediation activities at Red Hill.

The JBPHH Safe Waters website ([www.jbphh-safewaters.org](http://www.jbphh-safewaters.org)) provides a database of groundwater monitoring results for a wide range of potential contaminants from monitoring locations in and surrounding RHBFSF. The monitoring location ID for the Red Hill Shaft is RHMW2254-01. At this location, detection of TPHs peaked shortly after the November 2021 fuel release at a level of 142,000 parts per billion in a sample on December 8, 2021. The last sample that detected TPH at a level that exceeded regulatory screening levels occurred on November 15, 2022, and the last sample that detected any level of TPH at this location occurred on November 7, 2023 (JBPHH Safe Waters, 2024).

Between December 2022 and December 2023, the Navy completed a baseline PFAS sampling event of groundwater monitoring wells at RHBFSF to help inform future site investigation. PFAS were detected at low levels (below EPA MCLs and HDOH EALs) in samples of water collected from the Red Hill Shaft (NAVFAC Hawaii, 2024a). PFAS sampling results for the Red Hill Shaft (RHMW2254-01) are also available at the JBPHH Safe Waters website.

Following the completion of baseline sampling and pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Navy is currently conducting a remedial investigation (RI) for PFAS at RHBFSF. The purpose of the RI is to evaluate the nature and extent of potential PFAS exposure at the site, and to characterize potential risks to human health and the environment associated with it. RI field activities include quarterly groundwater monitoring for one year of selected wells within the Facility property; monitoring well installation, and groundwater sampling of newly installed wells; and surface and subsurface soil sampling in selected locations. The RI has identified project screening levels that consist of regional screening levels, MCLs and EALs, typically selected by the lowest value, and originating from peer-reviewed studies that calculate risk. Because PFAS concentrations have been detected above project screening levels at some shallow and deep groundwater monitoring wells at RHBFSF, the Navy will continue its investigation. Notably, monitoring at the Red Hill Shaft has not detected any PFAS concentrations above the project screening levels. Monitoring data is reported at the following public website, <https://redhillern.com/pfas-remedial-investigation/>.

### 3.2.2.2 Surface Water

#### Pearl Harbor Watershed

The Pearl Harbor watershed encompasses 110 square miles and is subdivided into nine distinct subwatersheds, from east to west: (1) Halawa; (2) Aiea; (3) Kalauao; (4) Waimalu (Waimalu and Waimano Streams); (5) Waiawa; (6) Kapakahi; (7) Waikele; and (8) Honouliuli. These watersheds contain the headwaters of nine streams that drain into Pearl Harbor. The project site is located within the easternmost of these, the Halawa Stream subwatershed.

The Pearl Harbor Watershed is characterized by a very steep precipitation gradient from the harbor to the crest of the Koolau Range. Although the Pearl Harbor area is relatively dry with a mean annual rainfall of approximately 25 inches, the crest of the Koolau Range and other mountainous regions within the watershed are considerably wetter with a mean annual rainfall that can exceed 240 inches. Rainfall is seasonal, varying from four inches per month during the winter (December to February) to one inch per month during the summer (June to July) (McLean et al., 2020). The volume of freshwater entering Pearl Harbor has been estimated at 50 MGD during dry periods and greater than 100 MGD during rainy periods.

RHBFSF is located in both the Halawa and Moanalua watersheds; however, the project site for the proposed water treatment facility is located within the Halawa watershed, which drains to Pearl Harbor.

#### Streams

The Halawa Stream runs relatively east-west along the northern edge of the RHBFSF. It ultimately flows directly west to Pearl Harbor. According to the state's 2024 assessment (HDOH, 2024), this stream is considered impaired because water quality standards for total nitrogen, nitrate and nitrite-nitrogen, total phosphorus and turbidity are not being attained. The impairment listing is based on a visual assessment only.

There are two branches of Halawa Stream- North Halawa Stream, which is intermittent and South Halawa Stream which flows through a concrete culvert in the project area and has perennial flow below the project area due to the discharge of up to 5 MGD from the onsite water treatment system into the South Halawa Stream. The confluence of the two branches is at the H-201/H-3 interchange, downstream of the project area. These perennial and intermittent streams drain through agricultural and urban lands before passing through highly urbanized lands near the harbor. Stream water is fresh up until a short distance upstream from the mouth of the stream where saline ocean and fresh stream water mix creating an (brackish water) estuary. While base flows generally have low turbidity and high water quality, significant rain events can increase stream flow levels and rates, typically carrying larger loads of sediments and potential pollutants from the watershed into Pearl Harbor estuary (NAVFAC Pacific, 2020a). Halawa Stream drains steep, relatively narrow valleys of the Koolau Range, and therefore, transports substantial sediment loads during storm events.

The drainage area of the South Halawa watershed is 3.2 square miles and receives a mean annual precipitation of 99.6 inches. There are no active stream gauges along the South Halawa Stream. The drainage area of the North Halawa watershed is 4.6 sq. miles and receives a mean annual precipitation of 118 inches. There are two U.S. Geological Survey (USGS) stream gauge stations on North Halawa Stream. One at 160 feet in elevation, and another at 60 feet in elevation. A review of the stream gauge data indicates that stream flow in this reach is highly dependent on rainfall events, and runs dry during

periods without precipitation (USGS, 2025). The proposed project area is entirely within the south Halawa watershed.

NAVFAC partnered with the University of Hawaii to conduct Halawa Stream Ecological Monitoring from January 2022 to October 2023. A total of eight sampling sites were established along the Halawa stream, three upstream on the south Halawa branch, two on the north Halawa branch, and three below the Halawa stream intersection (Tsang, 2023). Sampling events took place pre and post-discharge of GAC water outflow. There were two sampling events before discharge and nine additional sampling events during water outflow from the GAC. Overall results showed discharge increased the amount of down water streamflow. Water chemistry and quality, such as temperature, dissolved oxygen, and nutrient levels, varied temporarily. Natural Stream flow varied due to high water levels in winter and low to dry water levels in summer. GAC-discharge changed stream flow from intermittent to almost continuous flow. Continuous water brought cooler, clear, and high flow facilitating algae growth. The upper south Halawa stream had low flow or no flow during surveys (Tsang, 2023).

NAVFAC Natural Resources staff conducted a reconnaissance survey of Halawa Stream on December 21, 2021 (Navy, HDOH, and EPA, 2022). Halawa Stream follows a concrete channel from the project area to the stream underpass below Salt Lake Boulevard (approximately 1.67 miles). During the reconnaissance survey, Natural Resources staff did not observe any fish or wildlife species within the concrete channel but did observe intermittent rain and consistent water flow. Based on visual observation, the Natural Resources staff estimated that the water depth in the concrete channel was approximately 0.5 inches and that the stream flow was about 2 feet per second. Furthermore, the water appeared clear, and no vegetation was observed within the channel. Dense stands of kiawe are present on the sides of the concrete channel (Navy, HDOH, and EPA, 2022).

Downslope of the project area in the South Halawa channel, there are multiple concrete ledges in the stream channel which may restrict upstream movement of aquatic species. The stream flows through two tunnels under the H-201 freeway with a combined distance of approximately 600 ft. Downstream of the tunnels, the concrete channel has filled in with sediment, rock, and vegetation, creating pool, riffle, and run habitat that supports native and non-native aquatic species. North Halawa channel is concrete as it traverses under the H-201 and H-3 freeway overpasses. Just before its confluence with South Halawa, the concrete ends. Halawa Stream below the confluence has a natural channel and supports multiple native and non-native species. Populations of *‘o‘opu naniha* (*Stenogobius hawaiiensis*) and of *‘o‘opu nākea* (*Awaous guamensis*) were observed in Halawa Stream below the confluence and in South Halawa below the tunnels (Navy, HDOH, and EPA, 2022).

There are no other surface water features such as ponds, wetlands, springs, or floodplains within the project area. The project area does not extend to the marine environment, so marine waters and shorelines are not part of the affected environment or this analysis.

### **3.2.3 Environmental Consequences**

In this EA the analysis of water resources looks at the potential impacts on groundwater and surface water. Groundwater analysis focuses on the potential for impacts to the quality, quantity, and accessibility of the water. The analysis of surface water quality considers the potential for impacts that may change the water quality, including both improvements and degradation of current water quality.

### **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 water resources. Water pumped from the Red Hill Shaft would continue to be pumped and treated to remove fuel contaminants and then discharged into Halawa Stream to maintain the groundwater capture zone within the underlying aquifer. Consequently, the No Action Alternative would not restore the Red Hill Shaft as a source of potable water for JBPHH and communities serviced by the Navy drinking water system. However, the Navy would continue to implement water conservation measures to attempt to stay within their permitted withdrawal rates. Therefore, implementation of the No Action Alternative would result in less than significant impacts to water resources.

### **3.2.3.2 Preferred Alternative: GAC Water Treatment Facility**

The Preferred Alternative would include the construction and operation of a permanent water treatment facility and the connection of the interim GAC water treatment system to the Navy drinking water system. Construction of the water treatment facility footprint would be located in a generally undeveloped area of RHBFSF, with the upper and lower sites getting grubbed and graded and revetted with retaining walls. The Preferred Alternative would include utilities improvements for electrical, telecommunications, water, fire protection, sanitary sewer, and stormwater infrastructure to support the permanent water treatment facility.

#### **Construction Period**

The Preferred Alternative would involve construction of a permanent water treatment facility, which would require vegetation clearing and ground disturbing activities, including excavation and grading, which have the potential to temporarily increase runoff and erosion potentially impacting surface water resources. Since the Preferred Alternative includes ground disturbing activities of over an acre, the project would be subject to compliance with an NPDES permit. Potential construction impacts would be mitigated through the implementation of a construction SWPPP and associated erosion control measures such as protection of erodible soils; control of storm water runoff from the construction site; use of sediment basins; use of vegetation and mulch cover on soil exposed by grading; use of silt fencing and barriers around excavated and cleared areas; and fugitive dust control measures. A spill kit would be kept on site in case of any fuel or hydraulic spills. Excess soil and shallow groundwater (if encountered), will be properly characterized, handled, stored, managed, and disposed of as CERCLA-waste in accordance with JBPHH policy, and federal and state regulations.

#### **Operational Period**

The Preferred Alternative would allow for the beneficial use of extracted groundwater as potable drinking water in the Navy drinking water system, eliminating the current discharge of treated water into the Halawa Stream. Ceasing the consistent discharge of up to 5 MGD into the South Halawa Stream would return this portion of the stream to an intermittent flow, based on rainfall within the watershed. This would revert to conditions prior to historical stream flow rates and is not anticipated to have long-term impacts to surface water resources.

The proposed water treatment facility would be limited to a 12-month moving average daily volume of up to 4.659 MGD (i.e., within currently permitted groundwater withdrawal rates). The permitted groundwater withdrawal rate from the Red Hill Shaft would maintain the groundwater capture zone, and is not anticipated to reduce the overall yield of the aquifer. Instead, by restoring the beneficial use of the Red Hill Shaft as a safe, potable drinking water source, the Navy would be able to significantly reduce its total groundwater extraction rate for its drinking water system because it would no longer

discharge up to 5 MGD to Halawa Stream. Additionally, it would reduce the Navy's reliance on its other drinking water wells and improve redundancy in the system.

Groundwater monitoring at the Red Hill Shaft since late 2023 has documented no fuel-related contamination, and minimal presence of PFAS at levels below EPA MCLs and HDOH EALs. Additionally, since the Red Hill fuel storage tanks have been defueled the primary groundwater contamination source has been removed. The GAC pressure vessels proposed for the Preferred Alternative would effectively treat the water from Red Hill Shaft to meet NPDWR and HDOH safe drinking water standards. GAC is recognized by the EPA as the best available technology for removing organic contaminants from drinking water. Additionally, GAC is recognized by the EPA as the best available technology for removing PFAS from drinking water and is applied at multiple other locations in Hawaii and across the nation. Therefore, the implementation of the Proposed Action would support the DoD commitment to maintaining water quality levels at or below the EPA's PFAS MCLs.

Moving forward, the Navy would continue to operate the facilities in compliance with safe drinking water standards and best practices. This could include the installation of additional enhanced treatment technologies such as anion exchange or high-pressure membrane treatment (e.g., nanofiltration or reverse osmosis). The Navy has developed and maintained the [www.jbphh-safewaters.org](http://www.jbphh-safewaters.org) website to facilitate public access to drinking water and groundwater sampling data. The Navy intends to continue updating this website with current sampling results as available.

Additionally, the proposed facility would also incorporate hydrocarbon monitoring to facilitate real-time detection of fuel-related constituents from Red Hill Shaft. Chemical storage for the water treatment system operations is planned to be contained inside a proposed treatment facility building. Operator training for the storage and use of the chemicals and containment measures would mitigate the potential risk from a spill.

The Preferred Alternative would increase impervious surfaces within the project site and increase peak stormwater runoff. The Proposed Action would also comply with Section 438 of the Energy Independence and Security Act of 2007 which limits storm water discharge to pre-development levels. Low-impact development (LID) features would be implemented to match the existing stormwater discharge rate to offsite areas, and the existing drainage patterns would be maintained to the extent possible.

Therefore, implementation of the Preferred Alternative would result in beneficial impacts to water resources.

### **3.2.3.3 Alternative 2: GAC Water Treatment Facility with PTAs**

Alternative 2 would be constructed within the same project footprint as the Preferred Alternative, and would implement the same construction and post-construction BMPs (i.e., SWPPP, erosion control measures, and LID features).

Once operational, Alternative 2 would have the same capacity and permitted withdrawal rate as the Preferred Alternative and it would also cease the consistent discharge of up to 5 MGD into the south Halawa Stream. The PTAs were originally considered by the Navy for the proposed water treatment facility because they are effective at removing significant concentrations of hydrocarbon contamination from drinking water and when used ahead of the GAC filters, they can greatly extend the life of the GAC filters. Since the groundwater monitoring for the Red Hill Shaft has documented such low levels of hydrocarbon contamination, and because the Red Hill fuel storage tanks have been defueled removing

the primary contamination source, the incorporation of PTAs would not provide an additional benefit in drinking water quality.

Therefore, implementation of Alternative 2 would also result in beneficial impacts to water resources.

### **3.3 Hazardous Materials and Wastes**

#### **3.3.1 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 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. Five 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; mercury containing equipment; hazardous waste lamps, such as fluorescent light bulbs; and hazardous waste aerosol cans.

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-containing paint (LCP). EPA is given authority to regulate special hazard substances by the TSCA. Asbestos is also regulated by EPA under the CAA, and the Comprehensive Environmental Response, Compensation, and Liability Act.

The DoD established the Defense Environmental Restoration Program (DERP) to facilitate thorough investigation and cleanup of contaminated sites on military installations (active installations, installations subject to Base Realignment and Closure, and formerly used defense sites). The Installation Restoration Program and the Military Munitions Response Program are components of the DERP. The Installation Restoration Program requires each DoD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The Military Munitions Response Program addresses nonoperational rangelands that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituent contamination. The Environmental Restoration Program is the Navy’s initiative to address DERP.

#### **3.3.2 Affected Environment**

The ROI for hazardous materials and hazardous wastes includes the Proposed Action project area where construction- and operations-related actions would occur.

The Navy has implemented a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. These programs are governed Navy-wide by

applicable Office of the Chief of Naval Operations instructions and at the installation by specific instructions issued by the Joint Base Commander. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes.

### 3.3.2.1 Hazardous Materials

The November 2021 fuel release from the RHBFSF contaminated the Red Hill Shaft and from there, the Navy's drinking water system. The health risk associated with the release of JP-5 is based on the following: 1) Individually targeted compounds such as benzene, toluene, ethylbenzene, xylenes, methylnaphthalenes and naphthalene; 2) Non-specific compounds associated with aliphatic and aromatic carbon ranges; 3) additives used to enhance performance or stabilize the fuel; 4) hydrocarbon-related degradation products; and 5) potential disinfection byproducts mixed with fuel (HDOH, 2023).

The Navy remediated contaminated soil from that release near the Adit 3 exterior entrance to RHBFSF. The Navy conducted a site assessment and soil borings in January and April 2022, followed by excavations of soil and a leach tank in May 2022. Based on results of sampling, the Navy completed a second round of excavations in September-October 2022. The Navy continues to coordinate with HDOH and EPA on remediation activities as part of the Red Hill Tank Closure Plan and the associated Phase 1 and Phase 2 Site Assessments (Navy, 2024).

In the 1940s, the Red Hill Oily Waste Disposal Facility (OWDF) was built to store oily wastewater created during the cleaning of the RHBFSF twenty large-capacity underground storage tanks. Various fuel types were stored at the RHBFSF including diesel, Navy special fuel oil, Navy distillate, marine diesel fuel, aviation gasoline, motor gasoline, and Jet Fuel Propellants. Consequently, wastewater containing these materials would have been stored at the OWDF (Navy, 2021). The OWDF was located near Adit 3, to the northeast of the of the proposed water treatment facility.

Between 1943 and 1986, the OWDF was the location for reclamation and disposal pits that were used as storage and settling ponds for rinse water and sludge generated during the RHBFSF tank cleaning operations. Starting in the early 1990s, the Navy conducted a remedial investigation (RI) to investigate the nature and extent of fuel contamination at the site. In the early 2000s, removal of petroleum impacted sludge was performed. Following the removal action, the RI concluded that the OWDF was impacted solely by petroleum hydrocarbons, and therefore would be regulated by HDOH pursuant to the Hawaii Environmental Response Law (Chapter 128D, Hawaii Revised Statutes [HRS]), rather than by the EPA pursuant to CERCLA, despite the site being listed on the federal National Priorities List. The RI determined that the site did not pose a threat to human health or the environment, and HDOH provided its concurrence and no further action determination in 2005 (Navy, 2021).

However, one of the OWDF basal aquifer wells was included in quarterly long-term groundwater monitoring events for the RHBFSF. During events in 2010, 2012, 2013, and 2015, elevated concentrations of TPH-d range organics were reported by the laboratory. Therefore, further evaluation of TPH-d in the basal groundwater aquifer at the OWDF site is being conducted (Navy, 2021).

On November 29, 2022, approximately 1,100 gallons of aqueous film-forming foam (AFFF) concentrate were released from the upgraded fire suppression system at the entrance of Adit 6 at RHBFSF (EPA, 2023). AFFF is a fire suppressant containing PFAS. Adit 6 is located approximately 3,000 feet north east of the nearest proposed improvements for the Proposed Action (the fire protection water tank). Between December 2022 to December 2023, the Navy (in coordination with the EPA and HDOH) completed baseline PFAS sampling of groundwater monitoring wells to help inform future site investigation. Low levels of PFAS were detected (under EPA MCL), at groundwater monitoring locations

including at the Red Hill Shaft. All data was published to the Navy's safe waters website, [www.jbphh-safewaters.org](http://www.jbphh-safewaters.org).

Following the baseline sampling and pursuant to CERCLA, the Navy is currently conducting an RI of PFAS at RHBFSF. The purpose of the RI is to systematically establish the nature and extent of the PFAS detections in soil and groundwater, and to evaluate any potential risk to human health and the environment. The RI includes two project areas. Project Area A includes Adit 6, where the November 2022 AFFF release incident occurred. Project Area B encompasses the western portion of the RHBFSF installation, including the proposed water treatment facility location (NAVFAF Hawaii, 2024a). There have been no documented AFFF releases in Project Area B; however, Area B was recommended for further evaluation in an RI to establish the nature and extent of the PFAS detections in soil and groundwater, and to evaluate any potential risk to human health and the environment.

### **3.3.2.2 Hazardous Waste**

The RHSRMP describes the use of GAC media for processing the contaminated water (Navy, et al., 2022). The Preferred Alternative and Alternative 2 would also involve using GAC media for processing the contaminated water. The GAC media that would be utilized for the Preferred Alternative and Alternative 2 are expected to have a service life of several years. Consequently, new GAC media would need to be installed and old GAC media removed and disposed of every few years. Prior to disposal, the GAC media would be sampled and analyzed to determine disposal requirements, including testing for potential constituents of concern. If the material is deemed hazardous, an appropriate landfill would need to be identified and the waste transported to the appropriate facility. If the waste is deemed to be non-hazardous, it would be transported to an authorized municipal solid waste landfill or GAC reactivation facility if available and feasible.

### **3.3.2.3 Special Hazards (Asbestos Containing Materials, Lead Containing Paint, Polychlorinated Biphenyls)**

Prior to demolition of a structure or disturbance of an ACM, the ACM must be identified and removed. Although LCP is not required to be removed prior to demolition or building alteration, contractors working on LCP-coated components and/or in areas containing LCP should be notified of its presence and must adhere to the requirements of Occupational Safety and Health Administration 1926.62. Items suspected to contain PCBs shall be handled and disposed of in accordance with 40 CFR 761.50(b)(2)(ii) and 40 CFR 761.62(a)-(c). No construction and demolition debris containing hazardous materials such as ACM, LCP, or PCBs is expected to be generated by the Preferred Alternative or Alternative 2.

### **3.3.2.4 Defense Environmental Restoration Program**

The DERP was created at JBPHH to identify areas on base that are considered environmental concerns under federal laws. The goal of the DERP is to identify, investigate, and clean up contamination from CERCLA hazardous substances or pollutants or contaminants. Other goals include to remediate environmental damage with the potential to cause harm to human health or the environment, and to demolish or remove unsafe buildings/structures. The DERP aims to "reduce risks to human health and the environment through implementation of effective, legally compliant, and cost-effective response actions (DoD, 2012)."

### **3.3.3 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 in the vicinity of the ROI.

#### **3.3.3.1 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. The Navy would continue to pump water from the Red Hill Shaft, treat it to remove fuel contaminants, and then discharge it into Halawa Stream to maintain the groundwater capture zone and remove contaminants from the aquifer.

Therefore, no significant impacts would occur with implementation of the No Action Alternative.

#### **3.3.3.2 Preferred Alternative: GAC Water Treatment Facility**

The Preferred Alternative would involve the construction and operation of a permanent water treatment facility utilizing GAC pressure vessels at RHBFSF and the connection of the interim GAC water treatment system to the Navy drinking water system.

##### **Construction Period**

Hazardous materials are expected to be used during the construction phase and may include diesel fuel and gasoline to fuel equipment; hydraulic fluids, oils, and lubricants; and batteries. The contractor performing the work would be responsible for properly managing, handling, and disposing of hazardous materials during and after completion of all work performed. Use of hazardous materials and generation of hazardous wastes during construction would be managed under existing laws, Navy regulations, and best management practices. Excess soil and shallow groundwater (if encountered), will be properly characterized, handled, stored, managed, and disposed of as CERCLA-waste in accordance with JBPHH policy, and federal and state regulations.

The basal aquifer is located approximately 120 feet below the ground surface and the Preferred Alternative would not involve excavations deep enough to encounter the basal aquifer. Additionally, the disposal pit areas were cleaned and capped or removed, so no surface contamination remains at the location of the OWDF that could be impacted by construction of the Preferred Alternative.

##### **Operational Period**

The media utilized during the operations phase would be GAC. Section 3.3.2.2 discusses the potential for media used in the processing of contaminated water to be deemed hazardous. If the media is deemed hazardous, a landfill would be identified and the waste transported to the appropriate facility. In addition, the chemical feed building will feature facilities to produce commonly used disinfectants, such as chlorine bleach and fluoride. Large volumes of these chemicals require special storage requirements. However, these chemicals are used for treatment or as an additive in drinking water and no significant amount of hazardous waste is expected to be generated.

Diesel fuel would be stored onsite to power emergency generators. Storage containers would have secondary containment to prevent a release. However, since it would be consumed, no significant amount of hazardous waste is expected to be generated from the storage of diesel fuel. All hazardous materials, wastes, and special hazards would be transported, stored, handled, and disposed of in accordance with federal and state regulations.

Therefore, implementation of the Preferred Alternative would result in less than significant impacts with hazardous materials and wastes.

### **3.3.3.3 Alternative 2: GAC Water Treatment Facility with Packed Tower Aerators**

Alternative 2 would be the same as the Preferred Alternative except it would also include PTAs and primary feeder pumps. There are no additional hazardous chemicals or wastes that are used or generated with this alternative. Therefore, impacts to hazardous materials and wastes for Alternative 2 are the same as those stated above under the Preferred Alternative.

Therefore, implementation of Alternative 2 would result in less than significant impacts with hazardous materials and wastes.

## **3.4 Cultural Resources**

This discussion of cultural resources includes historic properties, architectural resources, archaeological resources, and other properties of cultural significance. A historic property is defined in the NHPA and its associated regulations (36 CFR part 60) as a prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), including artifacts, records, and material remains related to such a property or resource, collectively referred to as “historic properties.” For the purposes of this analysis, historic properties can be divided into three major categories:

- Archaeological resources (prehistoric and historic) include the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these material remains.
- Architectural resources include standing buildings, structures, landscapes, and other built-environment resources of historic or aesthetic significance.
- Traditional cultural properties include properties associated with cultural practices and beliefs of a living community that are (a) rooted in the community’s history and (b) important to maintaining the continuing cultural identity of the community.

Historic properties within the area of potential effects (APE) were identified as being eligible for listing on the NRHP under Criteria A, C, and D. Criterion A includes those historic properties that are associated with events that have made a significant contribution to the broad patterns of history. Criterion C includes historic properties that embody the distinctive characteristics of a type, period, or mother 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. Criterion D includes those historic properties which have yielded, or are likely to yield, information important in prehistory or history.

### **3.4.1 Regulatory Setting**

Cultural resources are governed by federal laws, regulations, and EOs, including the Archaeological Resources Protection Act of 1979, EO 13007, and NHPA. Additionally, Department of Defense and Department of Navy instructions direct Navy actions to ensure compliance with these statutes, regulations, and EOs. For the purposes of this analysis, the term “cultural resource” generally refers to all resources of potential cultural importance protected by these federal laws and EOs.

In compliance with NHPA, the Navy consults with regulators and other interested parties to identify historic properties and other cultural resources on Navy property. 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 SHPO. An NRHP-eligible property has the same protections as a property listed in the NRHP.

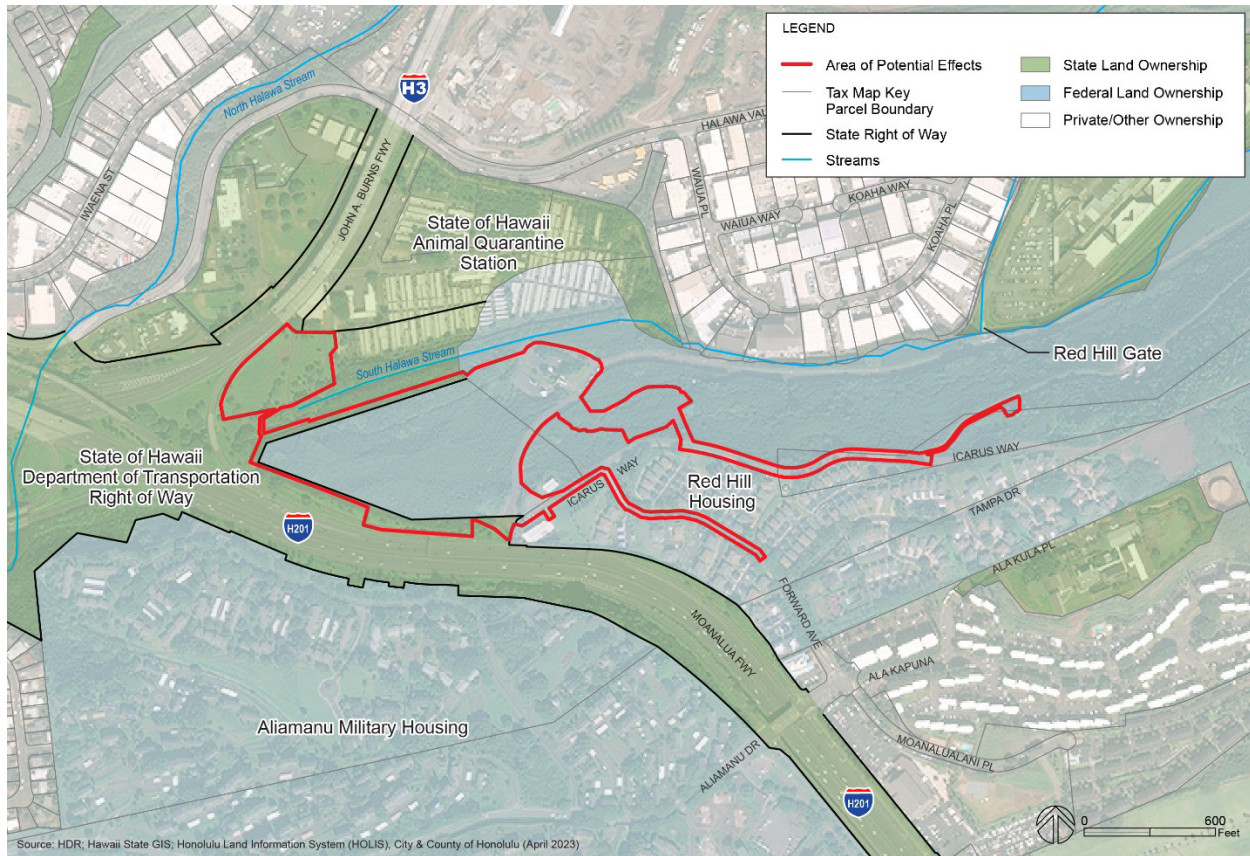
In 2012, the Commander Navy Region Hawaii entered into an amended and restated PA with the ACHP and the SHPO regarding Navy undertakings in Hawaii. The PA was again amended in 2024. The PA applies to all Navy undertakings on land controlled by Navy Region Hawaii in the State of Hawaii, and it serves as a program alternative for the Navy to fulfill its responsibilities under Section 106 of the NHPA.

In compliance with HRS Chapter 6E, before any state agency's approval of a permit, license or other entitlement for use, the agency shall advise the SHPO and allow the SHPO an opportunity for review of the effect of the proposed project on historic properties, aviation artifacts, or burial sites, consistent with Section 6E-43 (relating to protocol on prehistoric and historic burial sites), especially those listed on the Hawaii register of historic places. The Proposed Action includes project components that are located on State-owned lands, and HDOT and HDOA are subject to HRS Chapter 6E compliance.

### **3.4.2 Affected Environment**

The 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 (36 CFR 800.16[d]). 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. The Proposed Action APE is the same for both the Preferred Alternative and Alternative 2, and encompasses an area of 25.6 acres including project areas within RHBFSF, adjacent State of Hawaii-owned properties, and the Army's Red Hill Housing (Figure 3-3).

The Navy has conducted an archaeological inventory survey of cultural resources within the APE to identify and evaluate historic properties. A portion of the APE was previously surveyed in 2015 (Filimoehala and Allen, 2015). This includes the upland regions of the APE, however access to the lower region of the APE, including the proposed site of the water treatment facility, was restricted during the 2015 survey. The entire APE was made available for the archaeological survey conducted in 2025 for this EA.



**Figure 3-3 Proposed Action Area of Potential Effects**

**3.4.2.1 Archaeological Resources**

Ayres (1971), conducting the initial survey of Halawa valley, described 48 sites, mapping locations for most, and test-excavating several sites. The southwest end of Ayres (1971) survey is in proximity to the current project area, but no sites were recorded in this area.

Rechtman and Henry (1998) completed a reconnaissance survey of portions of the RHBFSF, recording six historic or modern features in the form of concrete slabs and associated debris, a concrete wall and box, an excavated depression, and an earthen mound. No sites or traditional materials were found.

Filimoehala and Allen (2015) conducted an archaeological inventory survey across much of RHBFSF, excluding most of the Proposed Action APE and steep portions of the northwest and southeast slopes of the ridge to the east. Fourteen sites were recorded, consisting of six 20th century military sites, five traditional Hawaiian sites, one historic plantation site, and one ranching/military site.

Four of these previously identified sites that are recommended as eligible for listing in the NRHP are located within or adjacent to the APE. These sites are described in Table 3-1.

**Table 3-1 Previously Identified Archaeological Sites within or near to the APE**

Site 50-80-13-	Type	Function/Age	Description	Within APE
7782	Pipeline Infrastructure	Historical Ranch/Plantation	Pipeline infrastructure, including rock and concrete pipeline supports, a concrete box, and an abandoned road or path	No

<i>Site 50-80-13-</i>	<i>Type</i>	<i>Function/Age</i>	<i>Description</i>	<i>Within APE</i>
7783	Traditional Hawaiian Complex	Pre-contact	Linear retaining wall and large L-shaped mound	No
7784	Concrete Features	Historical Ranching/Military	A retaining wall; a small, rectangular foundation inscribed with the date "1944"; and a large slab and subsurface box	No
7785	Complex	Historical Ranching/Military	Remnant stone wall, a partial enclosure, a tunnel extending into an escarpment, two basalt stone mounds, a concrete slab, and two retaining walls	Yes*

\* Site is located within land under federal jurisdiction.

Most recently, Chambers and Leppard (2025) conducted an archaeological inventory survey with subsurface testing for the Proposed Action consisting of a surface survey of the entire APE, four shovel test pits within the boundaries of site 50-80-13-7785, and four test trench excavations within the HDOT-owned ROW in the vicinity of a proposed underground utility connection corridor.

The survey found that the APE was highly modified during the 20<sup>th</sup> century due to agriculture and ranching use during the plantation era and construction-related activities associated with the construction of the RHBSF, nearby freeways, the channelization of Halawa Stream, and infrastructure such as on-site roadways, electrical lines, fences, and related support infrastructure. Historic and modern refuse, such as ceramics, pipes, appliances, vehicle remains, bottles, and litter are common across the APE. The survey identified nine distinct features grouped into seven distinct sites. The seven sites were assigned Temporary Site (TS) numbers TS-1 through TS-7 and are summarized below in Table 3-2.

Pending consultations with SHPO and other consulting parties, Site 50-80-13-7785 is being treated as eligible for listing in the NRHP under Criterion D because it may yield information important with regard to historical agriculture on Oahu.

Four shovel test pits (STP) were excavated by hand within the boundaries of Site 50-80-13-7785 to assess the extent of subsurface damage to the site and identify any subsurface cultural deposits. Subsurface disturbance to Site 7785 was documented at STP 01 in the form of construction gravel to approximately 15 cm below surface. No archaeological material was identified at any of the STPs, and subsurface disturbance appears to be limited to the extent of the access road.

Four trenches were mechanically excavated within the HDOT-owned ROW at the location of proposed utility connection corridor in order to assess subsurface conditions and the presence or absence of subsurface deposits. No archaeological material or cultural deposits were identified. The location, orientation, and depth of test trenches were determined by qualified archaeological personnel.

**Table 3-2 Temporary Archaeological Sites within or near the APE**

<i>Site No.</i>	<i>Site Type</i>	<i>Features</i>	<i>Function</i>	<i>Probable Age</i>	<i>NRHP Eligibility</i>
TS-2	Retaining wall, road alignment, concrete structure	A: Retaining wall B: Concrete pad C: Road Alignment	Plantation infrastructure	Plantation-era	Eligible, Criteria A & D
TS-3	Concrete pad	-	Unknown	WWII; post-WWII	Not eligible

<i>Site No.</i>	<i>Site Type</i>	<i>Features</i>	<i>Function</i>	<i>Probable Age</i>	<i>NRHP Eligibility</i>
TS-4	Culvert	-	Water control	WWII; post-WWII	Not eligible
TS-5	Concrete wall	-	Unknown	WWII; post-WWII	Not eligible

The three features comprising the TS-2 complex include a retaining wall (Feature A), concrete pad (Feature B), and a roadway alignment (Feature C). Feature A is 38 meters long and 5.1 meters in height and is constructed of large basalt boulders. Feature B is a partially buried concrete structure, 68 centimeters in height and 13.0 meters in length. Only the northeast and southeast corners of the structure are exposed, with the rest covered by at least 10 inches of soil. Feature C is a former road alignment which is four meters wide. It is diffuse on its western end and the eastern end has been graded recently. TS-2 is being treated as being eligible under Criteria A and D because of its association with historical plantation activity, as well as the potential to yield important information relating to the period.

TS-3 is a large rectangular pad near the southern bank of Halawa Stream. The pad is a coarse aggregate concrete and is 25 meters in length and 7.8 meters in width. There is additionally a 1.4-meter by 1.4-meter raised concrete and metal square near TS-3’s southeastern corner. The pad is covered by a 10- to 15-centimeter layer of duff and soil. A 1952 aerial image of the Red Hill area indicates that two structures occurred in the area of TS-3. TS-3 appears to be the remnants of the southernmost of these two structures, based on size and orientation.

TS-4 consists of the wall of a culvert under the lower portion of Icarus Way into Halawa Stream. TS-4 is constructed of poured concrete and mortared basalt with metal grates covering the culvert openings. The wall is 8.8 meters long and 1.4 meters high.

TS-5 is a segment of concrete wall between lower Icarus Way and Halawa Stream. Rebar protrudes from the north end of the wall segment and concrete piles in the surrounding area indicate a larger structure may have been present at the site. TS-5 is 5.7 meters long, 90 centimeters tall, and 20 centimeters thick.

### 3.4.2.2 Architectural Resources

The RHBFSF is a National Historic Civil Engineering Landmark, and a Historic American Engineering Record (HAER) was prepared for the RHBFSF (HAER, 2015). The Red Hill underground fuel storage system is a linear complex of interconnected facilities. It comprises forty-four facilities, grouped into the following five elements:

- Fuel Pumphouse
- Fuel Tanks
- Tunnels/Underground Spaces
- Adits (entrances and connecting tunnels)
- Ventilation Structures

Ground level features within the Proposed Action APE include Adit 3 (Facility Number S-312) and the top of an existing vent shaft (HAER, 2015). The Navy considers RHBFSF eligible for listing in the NRHP. Three sites associated with the RHBFSF were identified within or near the APE during the archaeological inventory survey (Table 3-3) (Chambers and Leppard, 2025).

**Table 3-3 Temporary Architectural Sites within or near the APE**

<i>Site No.</i>	<i>Site Type</i>	<i>Features</i>	<i>Function</i>	<i>Probable Age</i>	<i>NRHP Eligibility</i>
TS-1	Pipeline infrastructure	-	Fuel facility infrastructure	World War II (WWII); post-WWII	Not eligible
TS-6	Pipeline infrastructure	-	Fuel facility infrastructure	WWII; post-WWII	Not eligible
TS-7	Exhaust Portal	-	Fuel facility infrastructure	1942	Eligible, Criteria A & C

TS-1 consists of a metal pipe with a rubberized coating. 20 feet of the pipe is exposed and the pipe appears to descend below ground for an indeterminate length. Piping of this size has been used throughout the life of the RHBFSF, used to transport different grades of fuel to, from, and within the facility. Piping of this size connecting Red Hill to Pearl City was decommissioned and abandoned in the early 2000s. TS-1 may be this pipeline.

A series of two concrete block and a concrete pipe footer comprise TS-6, which is located between the upper and lower portions of Icarus Way. The blocks are oriented northwest to southeast and the concrete pipe footer features a small concrete square with a 10-centimeter diameter hole for a pipe to pass through.

Finally, TS-7 includes a large concrete structure on the slope between upper and lower Icarus Way. The facility was built in 1942 and serves to discharge air. Ventilation shafts extends below ground at TS-7TS-7 is being treated as eligible for listing in the NRHP under Criteria A and C as a contributing feature of the RHBFSF.

### **3.4.2.3 Traditional Cultural Properties**

In 2016, the Navy conducted a study to identify potential Native Hawaiian Traditional Cultural Properties (TCPs) at Navy properties on Oahu, which included the APE for the proposed project. No TCPs were identified in the APE (Vernon et al., 2016).

### **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 or auditory changes to the setting. Under NEPA indirect impacts are reasonably foreseeable effects of the undertaking that are later in time or farther removed in distance.

#### **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 Preferred Alternative: GAC Water Treatment Facility**

Construction activities associated with the Preferred Alternative would not result in significant impacts to cultural resources. A large portion of the APE was heavily modified during 20th century construction of the RHBFSF, construction of the H-201 and H-3 highways, channelization of Halawa Stream, and installation of power lines, roads and fences. In addition to the RHBFSF, the inventory survey for the

Proposed Action identified two archaeological sites within the APE (Site 50-80-13-7785 and TS-2) that are recommended eligible for listing in the NRHP. Three previously identified archaeological sites (Sites 50-80-13-7782, 7783, & 7784) and one architectural site (TS-7) associated with the RHBFSF were determined to be outside of the APE and would not be affected by the Preferred Alternative.

Site 50-80-13-7785 was partially disturbed during the previous construction of a gravel access road and various groundwater monitoring wells. Ground disturbing activities associated with the Preferred Alternative would further degrade the integrity of the site including removal of previously disturbed Feature B (mound) and Feature G (retaining wall), and the removal of intact Feature A (tunnel) and Feature H (stone wall). Construction activities would also result in the removal of Temporary Site 2, a retaining wall, a concrete structure, and a road alignment, associated with plantation era use of the project area. The project cannot be reasonably altered to prevent this destruction.

TS-7 is located outside of the Preferred Alternative's construction footprint, and would not be impacted by the construction process.

Operations of the Preferred Alternative would not impact cultural resources.

Pursuant to Section 106 of the NHPA and in accordance with Stipulations VI and IX of the 2012 Programmatic Agreement among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer Regarding Navy Undertakings in Hawaii, as amended in 2024, the Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would not affect character defining features of the RHBFSF but would adversely affect Site 50-80-13-7785 and TS-2, and accordingly prepared an MOA to resolve the adverse effects. Upon completion of the consultations, the MOA was agreed to and signed by the Navy and SHPO in February 2026.

The MOA stipulates that certain mitigation measures be taken, including the documentation of area information, site and feature drawings, and current photographs of the project site. The Navy will submit this documentation to MOA consulting parties for comment.

Additionally, ground disturbing activities associated with the project are to be monitored by cultural resources professionals with training and professional qualifications that meet the Secretary of the Interior's Historic Preservation Professional Qualifications Standards. The Navy will submit an archaeological monitoring plan to the SHPO for their review and concurrence. Should unanticipated effects to historic properties be discovered during the construction phase, the Navy shall coordinate with the SHPO in accordance with Stipulation XI of the 2012 PA as amended, or as otherwise required under Section 106 of the NHPA.

Additionally, HDOT will complete HRS Chapter 6E consultation with the SHPO for portions of the Proposed Action within State-owned land.

Through implementation of the mitigation requirements stipulated in the MOA and compliance with HRS Chapter 6E, the Preferred Alternative would result in less than significant impacts to cultural resources.

### **3.4.3.3 Alternative 2: GAC Water Treatment Facility with Packed Tower Aerators**

Alternative 2 would utilize the same footprint as the Preferred Alternative and would subsequently include the same adverse effects on Site 50-80-13-7785 and TS-2 and the same mitigation requirements stipulated in the MOA.

Therefore, implementation of the Alternative 2 would result in less than significant impacts to cultural resources.

## **3.5 Terrestrial Biological Resources**

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant communities 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, terrestrial biological resources are divided into two major categories: (1) terrestrial vegetation and (2) terrestrial wildlife. Threatened, endangered, and other special status species are discussed in their respective categories.

### **3.5.1 Regulatory Setting**

Special-status species, for the purposes of this assessment, are those species listed as threatened or endangered under the ESA and species afforded federal protection under the 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 federal action proponents to consult with the USFWS 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 provides a benefit to the species subject to critical habitat designation, as determined by the U.S. Department of the Interior.

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 includes 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.

### **3.5.2 Affected Environment**

The ROI for terrestrial biological resources encompasses approximately 25.6 acres and includes the portions of RHBFSS, the adjacent State of Hawaii-owned properties, and the Army's Red Hill Housing where the Proposed Action would take place.

The following discussions provide a description of the existing conditions for each of the categories under terrestrial biological resources within the ROI. Threatened and endangered species are discussed in each respective section below with a composite list applicable to the Proposed Action provided in Table 3-3.

RHBFSF is a 226-acre installation in south-central Oahu. The facility includes a ridge with elevations between 270 and 715 feet above sea level. Most of the proposed project area is located in the western low-elevation portion of the installation near the junction of H-201 and H-3 interstate freeways. The fire water storage tank would be located to the east on the ridge across from the Red Hill gate (Figure 2-1).

South Halawa Stream is located on the north side of the ROI. The stream is intermittent and flows in a concrete u-shaped channel with no permanent aquatic vegetation or observed aquatic species in the ROI. The channel continues for 1.67 miles downstream and has ledges (vertical drops in the channel) downstream of the ROI that may restrict upstream movement of aquatic species (Navy, HDOH, and EPA, 2022). The onsite water treatment system has been discharging up to 5 MGD of treated water into the South Halawa stream since January 2022.

There are no other natural ponds, wetlands, or waterbodies in the ROI that host aquatic communities.

### 3.5.2.1 Terrestrial Vegetation

Vegetation includes terrestrial plants as well as freshwater aquatic communities and constituent plant species. There are no surface water features and no aquatic habitats within the ROI other than South Halawa stream, which is a concrete channel in the ROI that does not provide aquatic habitat.

The vegetation community in the ROI consists of non-native scrub forest dominated by koa haole (*Leucaena leucocephala*) with an understory of Guinea grass (*Urochloa maxima*) or Chinese violet (*Asystasia gangetica*). Other conspicuous grasses are rat tail (*Sporobolus cf. indicus*), molasses grass (*Melinis minutiflora*), and Bermuda grass (*Cynodon dactylon*) (AECOS, 2016). The South Halawa Stream is lined with dense kiawe shrubs (*Prosopis pallida*) along the outside edge of the concrete stream channel (Navy, HDOH, and EPA, 2022).

The vegetation communities gradually shift to mixed forest with an increased mix of native species at higher elevations at RHBFSF site but these areas would not be affected by the proposed action. Almost no native species occur in the ROI.

### 3.5.2.2 Terrestrial Wildlife

Wildlife in the area includes insects, invertebrates, freshwater fish, amphibians, reptiles, birds, and mammals. The section below focuses on species and habitat features of greatest importance.

## Birds

Point counts conducted at the RHBFSF in 2014 and 2015 identified 24 species and none were protected by the ESA (Hamer Environmental, 2015). The most common species were the Japanese White-eye (*Zosterops japonicus*), Red-vented Bulbul (*Pycnonotus cafer*), House Finch (*Haemorhous mexicanus*), and the Common Waxbill (*Estrilda astrild*). Species observed that are protected under the MBTA include the Mariana Swiftlet (*Aerodramus bartschi*), House Finch, Cattle Egret (*Bubulcus ibis*), Northern Cardinal (*Cardinalis cardinalis*), Pacific Golden-Plover (*Pluvialis fulva*), and Ruddy Turnstone (*Arenaria interpres*) (Hamer Environmental, 2015; Navy, 2022).

## Non-Native Mammals and Reptiles

There are no native, endemic, or protected terrestrial amphibian or reptile species present within JBPHH (Navy, 2022). Limited amphibian and reptile surveys were conducted at other JBPHH locations and identified the widely distributed non-native species house gecko (*Hemidactylus frenatus*), mourning gecko (*Lepidodactylus lugubris*), and Indo-Pacific gecko (*Hemidactylus garnotii*). Although not observed during the surveys, invasive, non-native cane toad (*Rhinella marina*), American bullfrog (*Lithobates catesbeianus*), and Jackson's chameleon (*Trioceros jacksonii*) are ubiquitous on the island of Oahu and may also occur within the ROI.

With the exception of the Hawaiian hoary bat discussed below in the Threatened and Endangered Species section, all terrestrial mammals on Oahu are non-native species. Limited mammal surveys completed at RHBFSF identified small Indian mongoose (*Herpestes auropunctatus*), feral cats (*Felis catus*), and black rat (*Rattus rattus*). Additionally, feral pigs and other rodents are common throughout Oahu and may occur in the ROI (Navy, 2022).

## Aquatic Species

NAVFAC partnered with the University of Hawaii to conduct Halawa Stream Ecological Monitoring from January 2022 to October 2023. A total of eight sampling sites were established along the Halawa stream, three upstream on the south Halawa branch, two on the north Halawa branch, and three below the Halawa stream intersection (Tsang, 2023). Sampling events took place pre and post discharge of GAC water outflow. There were two sampling events before discharge and additional nine during water outflow from the GAC. Native and non-native species within the stream were documented across the sites. Native species at sites closest to the GAC-discharge included 'o'opu nākea (*Awaous guamensis*), 'o'opu naniha (*Stenogobius hawaiiensis*) and introduced species included Mollies, guppies, tilapia, and catfish. DNA sampling helped to detect cryptic species of catfish. Further down the stream from the Halawa confluence, native brackish water species of milk fish (*Chanos chanos*) and flagtail (*Kuhlia sandvicensis*) were identified. Shellfish species of pouch snail, quilted melania, crayfish, and Tahitian prawn were identified (Tsang, 2023). South Halawa Stream is the only waterbody in the ROI. It is a concrete U-shaped channel that flows intermittently upstream of the onsite water treatment system. There are ledges below the ROI that likely prevent upstream movement of aquatic species. The continuous discharge from the onsite treatment system into South Halawa stream may provide increased opportunities for aquatic species and water birds downstream of the project area where there is better in-channel habitat.

There are no other waterbodies, aquatic habitats, or marine environments within the ROI and therefore no aquatic species of concern.

**Threatened and Endangered Species**

No state-listed or federally-listed threatened, endangered, or candidate plant species or rare native Hawaiian plant species have been reported within the ROI in recent decades (AECOS, 2016). There is the potential for the occurrence of state and federal protected animal species in the ROI (Table 3-3), but no critical habitat has been designated for these species in the ROI (Navy, 2022). The only confirmed observation of a protected species in RHBFSF was the Hawaiian hoary bat (*Lasiurus cinereus semotus*), which was detected during a study using automated recording equipment. The study recorded sounds in the ultrasonic range for 190 nights over one year resulting in two detections in August of 2014.

The Hawaiian hoary bat is Hawaii’s only native terrestrial mammal and is listed as endangered under the ESA. Very little is known about Hawaiian hoary bat ecology and life history. It has been recorded on all the main Hawaiian Islands and in a diversity of habitats including developed areas and agricultural lands (Navy, 2022). For roosting, the Hawaiian hoary bat prefers woody vegetation greater than 15 feet tall, which occurs within the ROI.

**Table 3-4 Threatened and Endangered Species Known to Occur or Potentially Occurring in the ROI and Critical Habitat Present in ROI**

<i>Common Name</i>	<i>Scientific Name</i>	<i>Federal Listing Status</i>	<i>State Listing Status</i>	<i>Critical Habitat Present?</i>
Hawaiian stilt*	<i>Himantopus mexicanus knudseni</i>	FE	SE	No
White tern*	<i>Gygis alba</i>		ST	No
Hawaiian short-eared owl*	<i>Asio flammeus sandwichensis</i>		SE	No
Hawaiian petrel*	<i>Pterodroma sandwichensis</i>	FE	SE	No
Band-rumped storm petrel*	<i>Hydrobates castro</i>	FE	SE	No
Newell’s shearwater*	<i>Puffinus auricularis newelli</i>	FT	ST	No
Hawaiian hoary bat	<i>Lasiurus cinereus semotus</i>	FE	SE	No

FE = federally listed as endangered; FT = federally listed as threatened; SE = state-listed as endangered; ST = state-listed as threatened; \* = MBTA-protected species

State- or federally listed bird species with a potential to occur in the ROI are only likely to fly over or stop temporarily since suitable habitat is poor or does not exist for most species. There are no water habitats in the ROI for species such as the Hawaiian stilt (*Himantopus mexicanus knudseni*), which require wetland habitats, freshwater, shorelines, or waterbodies. The Hawaiian stilt can be found along shoreline, estuarine, and freshwater habitats of Pearl Harbor.

The Hawaiian petrel (*Pterodroma sandwichensis*) is known to nest on Kauai, Maui, Lanai, Hawaii Island and possibly on Molokai (DNLR, 2015 in Navy, 2022). Populations of the band-rumped storm petrel (*Hydrobates castro*) are known to occur on Kauai, Maui, and Hawaii island (DNLR, 2015 in Navy, 2022). While band-rumped storm petrel, Hawaiian petrel, and Newell’s shearwater (*Puffinus auricularis newelli*) do not nest at JBPHH Main Base or Surrounding Areas, they may fly over the ROI when moving between suitable nesting habitat in the Waianae and Koolau Mountains and the ocean. These species are particularly vulnerable to fallout – when fledglings or occasional migrating adult birds are disoriented by artificial light and become grounded. Due to the occasional flyovers and groundings, they have the potential to occur in the ROI (Navy, 2022).

White tern (*Gygis alba*) is a state-listed threatened and MBTA-protected seabird that is commonly observed along the southern shores of Oahu. White terns nest in large, mature trees in urban and suburban areas of Honolulu. White terns typically nest year-round, with a peak nesting period from February to July (Vanderwerf, 2003). White terns lay eggs directly on branches, and eggs and flightless chicks are highly vulnerable to tree trimming and removal activities (Vanderwerf, 2003). Nesting pairs have been observed at JBPHH Main Base but not in the density observed in Honolulu (Navy, 2022). Limited nesting habitat and distance from the shore limit the likelihood of White Terns occurring in the ROI.

Hawaiian short-eared owls (*Asio flammeus sandwichensis*) occur on all the Main Hawaiian Islands, but are most common on Kauai, Maui, and Hawaii. Unlike most owls, the Hawaiian short-eared owl is active during the day and is commonly seen hovering or soaring over open areas. Although not recorded at RHBFSF, they have been observed at Daniel K. Inouye International Airport approximately three miles to the south (2018) and the West Loch area approximately six miles to the west (Navy, 2022).

### 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 terrestrial biological resources in the ROI.

#### 3.5.3.2 Preferred Alternative: GAC Water Treatment Facility

The ROI for the analysis of effects to terrestrial biological resources associated with the Preferred Alternative encompasses 25.6 acres including portions of RHBFSF, adjacent State of Hawaii-owned properties, and utility corridors through the Army's Red Hill Housing. The ROI is bordered by interstate highways to the south and west, housing developments, and the Hawaii Department of Agriculture quarantine facility to the north. Utility connections would be placed in existing roadways and rights-of-way. The available habitat at the project area consists of non-native scrub forest.

#### Vegetation

The 8.9 acres of vegetation to be permanently cleared for the preferred alternative is non-native scrub forest and consists of non-native shrubs (primarily kiawe and koa haole) and grasses (primarily guinea grass or Chinese violet) that do not provide high-quality habitat for protected species. Project areas within the HDOT that are temporarily cleared for access or staging areas would be re-vegetated. The Navy maintains security fencing and fire breaks at RHBFSF (Navy, 2022) and the additional security fencing and cleared zones included in the Proposed Action would provide additional fire breaks.

To prevent the spread of the coconut rhinoceros beetle (*Oryctes rhinoceros*), all green waste generated at the project area will be chipped with excess soil removed and processed according to current JBPHH Green Waste Policy. No green waste would be exported from Oahu or imported to Oahu.

To minimize the potential for invasive species introduction, all construction equipment, vehicles, and materials that have been sourced off-island would be inspected and decontaminated of any excessive debris or plant material prior to use onsite. Inspection and cleaning activities would be conducted at a designated location.

During operation of the facility, there would be occasional vehicular traffic to the facility on existing roads. There would be no impacts to terrestrial vegetation during operations.

Considering the above, the Preferred Alternative is not expected to have a substantial, adverse effect on vegetation during the construction or operation phases of the project.

### **Terrestrial Wildlife**

Most of the habitat removed by the Preferred Alternative would be kiawe and koa haole forest, which would primarily impact forest-dwelling species. With the exception of the Hawaiian hoary bat (discussed below), there are no native or endemic terrestrial amphibian, reptile, bird, or mammal species present in the ROI. A number of bird species have been observed at the site. However, as described in Section 3.6.2.2, most are non-native resident species, but a number of MBTA-protected species have also been observed and are described below.

During construction, the noise and human activity associated with construction of the Preferred Alternative would displace wildlife from an area greater than the project footprint. The area is already quite noisy due to the proximity of the H-201 and H-3 interchange. The affected species are expected to use suitable nearby habitats within RHBFSF for temporary relocation and foraging.

In the long term (during operations), wildlife would return to the habitat remaining in the ROI but would be permanently displaced from the project footprint. The Preferred Alternative would discontinue the up to 5 MGD discharge from the onsite GAC water treatment system to South Halawa Stream. The higher stream flows associated with this discharge may have resulted in increased opportunities for aquatic species downstream of the discharge point (Tsang, 2023). Discontinuing the discharge could have a short-term negative impact to those species, but they are expected to return to their pre-discharge baseline condition (i.e., prior to January 2022).

### **MBTA-Protected Birds**

MBTA-protected birds would be impacted if active nests are disturbed or damaged during vegetation removal. Construction at the ROI may temporarily displace some of the observed MBTA species, and forest-dwelling species would permanently lose nesting and foraging habitat. The temporary displacement of these individuals is not expected to affect individuals' survival or overall species' populations. To minimize impacts to MBTA-protected birds, nest surveys would be conducted a maximum of seven days before construction. Active nests would be left in place, undisturbed, and a 100-foot buffer established until chicks have fledged, which may take up to eight weeks. If nesting birds are found directly adjacent/abutting the site that could possibly be impacted by construction activities due to proximity, the sightings would be immediately reported to the JBPHH Natural Resources Manager at 808-404-1558 for further guidance. A qualified biologist would monitor active nests during construction activities to reduce the chances of nest abandonment by temporarily shutting down

construction activities that disrupt the normal daily patterns of the birds. Activities would resume when birds have voluntarily left the area.

Outdoor lighting would follow the Dark Skies Instruction (Commander Navy Region Hawaii Instruction 5090.9) to avoid all night lighting whenever possible, and to install only full cutoff exterior down-lighting fixtures for all new construction (Navy, 2022).

### **Threatened and Endangered Species**

No state or federally listed threatened or endangered plants, amphibians, reptiles, marine, or aquatic species occur in the ROI and, therefore, none would be affected by the Preferred Alternative.

The only threatened and endangered species observed in the ROI is the Hawaiian hoary bat, with the most recent observations occurring over the course of a year of monitoring in 2014. No other threatened or endangered species have been observed, and habitat is poor for most protected bird species.

Temporary impacts on threatened and endangered terrestrial species could occur from noise and habitat disturbances associated with construction activities. However, threatened and endangered terrestrial species on RHBFSF would already be habituated to high levels of noise associated with the adjacent interstate highways. Increases in noise levels from construction activities to the ambient noise environment would be negligible and temporary.

Permanent loss of 8.9 acres of non-native scrub forest would occur under the Preferred Alternative. The scrub forest to be removed does not provide high-quality habitat for protected species. Therefore, habitat removal would be negligible and would not negatively impact habitat use by any threatened or endangered species. Construction activities would result in short-term impacts from disturbance to terrestrial wildlife but would not further threaten the existence of any protected species or critical/sensitive habitats. Additionally, installation personnel would continue to manage habitats according to the JBPHH Integrated Natural Resources Management Plan, which is designed to protect and benefit threatened and endangered species.

No temporary or permanent areas of standing water would be created by the action; therefore, species that prefer water habitats would not be affected during construction or operations including Hawaiian stilt.

Although not observed at the site, white terns are tolerant of people and noise and could nest within the kiawe and koa haole forest. Construction of the Preferred Alternative would permanently remove a small area of potential nesting habitat for white terns and constitute a long-term indirect impact. However, nesting sites are not likely to be a limiting factor for long-term survival of white terns. A direct impact would occur if eggs or chicks were disturbed. To avoid direct impacts to white terns, nest surveys would be conducted by a qualified biologist a maximum of seven days before construction. If a white tern egg or chick is discovered within the construction footprint, a 100-foot buffer would be established and work would not begin until the chick has fledged, which may take between 12 and 15 weeks.

Seabirds including the Hawaiian petrel, band-rumped storm petrel, and Newell's shearwater, may traverse the project area at night during the breeding, nesting, and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. The proposed project would shield all lights, so the bulb may only be seen from below, as allowable by safety, security, and anti-terrorism force protection requirements and nighttime construction would be generally restricted to daylight hours except for occasions where night work is required (e.g.,

connections to existing utilities), so seabird fallout and other negative impacts to seabirds is unlikely. To further minimize potential negative impacts, Shearwater Fallout Season Response Guidelines for JBPHH will be placed on construction site note/safety boards so that all crew on site can respond appropriately in cases of shearwater fallout during nighttime construction. Additionally, appropriate supplies (cardboard box, towel, dropoff location and contact) will be provided to nighttime construction crew to care for any downed seabirds. Therefore, the effect to seabirds is discountable.

Although not observed within the ROI, the Hawaiian short-eared owl may use some habitat in the ROI. In the short term, the human noise and disturbance associated with construction activities could temporarily displace owls from roosting or foraging habitats. This displacement could alter an individual's typical foraging and roosting patterns, forcing it to expend energy to search for new foraging and roosting locations.

The permanent removal of roosting and foraging habitat would constitute a long-term indirect impact. To minimize impacts to the Hawaiian short-eared owl, nest surveys would be conducted a maximum of seven days prior to construction. Regular on-site staff would be trained to identify this species and know the appropriate measures to be taken if the species is present. If a Hawaiian short-eared owl is observed in the area during construction activities, all activities within 100 feet of the species would cease, and work would not continue until the species leaves the area on its own accord. If a Hawaiian short-eared owl nest is discovered, all activities within 100 feet of the nest would cease, and the JBPHH Natural Resources Manager would be contacted. Work would not resume until directed by the JBPHH Natural Resources Manager.

The Hawaiian hoary bat is considered ubiquitous on Oahu and therefore has the potential to occur within the ROI. In the short term, the human noise and disturbance associated with construction activities could temporarily displace bats from roosting or foraging habitats. This displacement could alter an individual's typical foraging and roosting patterns, forcing it to expend energy to search for new foraging and roosting locations. Clearing of vegetation greater than 15 feet in height at the site would not take place during the pupping season, June 1 through September 15, when juvenile bats that are not yet capable of flying may be present in the trees. If any bat pups are discovered in the construction zone, outside the season, vegetation clearing would stop and move 100 yards away. Construction would not resume until the bat pups have departed the area of their own accord.

The permanent removal of roosting habitat could constitute a long-term indirect impact. Approximately 8.9 acres of non-native scrub forest would be removed under the Preferred Alternative. However, available roosting habitat with similar vegetation is available nearby within RHBFSF, and the Hawaiian hoary bat does not appear to be limited by roosting habitat availability. Direct impacts to bats would occur if a juvenile bat that is too small to fly, but too large to be carried by a parent, was present in a tree that is cut down.

Hawaiian hoary bats forage for insects from as low as three feet to heights greater than 500 feet above the ground. At these lower levels, foraging bats cannot detect barbed wire fences which can cause injury or mortality. The USGS has estimated a mortality rate of bats colliding with barbed wire fencing. They estimate 0.013 bats killed per mile of barbed wire per year (USFWS, 2014). The Preferred Alternative would include the installation of approximately 4,200 feet (0.8 miles) of three-strand barbed wire security fencing located on federal property. Bat mortalities are estimated at approximately 0.624 bats over the 20-year estimated lifetime of the fence (calculated as follows: 0.013 [annual mortality rate] x

0.8 miles [total length of fence with barbed wire] x 3 strands of barbed wire x 20 years [estimated lifetime of the fence] = 0.624 bat mortalities).

In accordance with Section 7 of the ESA, the Navy consulted with the USFWS regarding the Preferred Alternative. In a letter to the USFWS dated January 7, 2025, the Navy determined that the Preferred Alternative may affect but is not likely to adversely affect the Hawaiian stilt, band-rumped storm petrel, Hawaiian petrel, Newell's shearwater, and Hawaiian hoary bat, or jeopardize the continued existence of these species. USFWS concurred with the Navy's determination in a letter dated February 27, 2025 (Appendix C).

### **3.5.3.3 Alternative 2: GAC Water Treatment Facility with Packed Tower Aerators**

Alternative 2 would be constructed within the same project footprint as the Preferred Alternative. It would result in the same amount of vegetation clearing, include the same length of barbed wire fencing, and implement the same avoidance and minimization measures to reduce potential impacts to protected species.

Therefore, implementation of Alternative 2 would result in less than significant impacts to terrestrial biological resources.

## **3.6 Infrastructure**

This section discusses utilities infrastructure including potable water, wastewater, and electricity.

### **3.6.1 Regulatory Setting**

Antiterrorism Force Protection Standards have been adopted by the DoD through Instruction number 2000.16 of October 2006. The standards require all DoD Components to adopt and adhere to common criteria and minimum construction standards to mitigate antiterrorism vulnerabilities and terrorist threats.

HAR Section 11-20-30 outlines the authority of the Director of HDOH to approve or deny the construction of a new or modified public water system used to deliver water to any user. The Proposed Action will require approval from the Director of HDOH to proceed.

The Proposed Action would require a connection to the City and County of Honolulu (City) sanitary sewer system via the Army's sanitary sewer system for their Red Hill Housing Complex. The connection to the sewer systems requires the approval of Aqua Engineers for the Army sewer system and a Sewer Connection Permit from the City Department of Planning and Permitting Wastewater Branch for the City sewer system.

### **3.6.2 Affected Environment**

The ROI for the infrastructure analysis includes the Proposed Action project area and infrastructure points of connection for the water, wastewater, and electrical utilities. The following discussions provide a description of the existing conditions for each of the above-listed categories under infrastructure. Under the No Action Alternative, the existing conditions discussed below would persist.

#### **3.6.2.1 Potable Water**

The Red Hill Shaft and Pump Station previously provided potable water to JBPHH, and other communities serviced by the Navy's water distribution system. The Red Hill Shaft and Pump Station currently continue to draw water from the aquifer where it is treated to environmentally safe levels and

then discharged into Halawa Stream. The Proposed Action would restore the Red Hill Shaft as a source of safe, potable water for JBPHH.

### **3.6.2.2 Wastewater**

The City maintains a municipal sanitary sewer system across Oahu. The nearest connection point to this system is located beyond the Army's Red Hill Housing complex on Forward Avenue near Ala Kapuna Street. The sanitary sewer system does not currently service the proposed water treatment facility site. JBPHH's Fort Kamehameha wastewater treatment system does not provide service in the vicinity of RHBFSF.

### **3.6.2.3 Energy**

The project area, including the Red Hill Shaft Pump Station, is currently served by existing overhead electrical lines from a Hawaiian Electric Company (HECO) point of connection along the H-201 ROW.

## **3.6.3 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.

### **3.6.3.1 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not occur, and the Red Hill Shaft would not be restored as a source of potable water for JBPHH and communities serviced by the Navy drinking water system. The Navy would continue to rely on its other wells to serve the drinking water system. However, the Navy would continue to implement water conservation measures to attempt to stay within their permitted withdrawal rates. Under the No Action Alternative, there would be no impact to wastewater or energy. Therefore, implementation of the No Action Alternative would result in less than significant impacts to infrastructure.

### **3.6.3.2 Preferred Alternative: GAC Water Treatment Facility**

#### **Potable Water**

The Preferred Alternative would treat water from the Red Hill Shaft to meet NPDWR and HDOH safe drinking water standards. It would include the connection of the interim GAC water treatment system to the Navy drinking water system in the interim period. The permanent water treatment facility would include the construction of new water pipelines to route the raw well water through the proposed permanent water treatment facility and to connect the permanent water treatment facility to the Navy drinking water system. The restoration of the Red Hill Shaft as a potable water source would increase redundancy within the Navy's drinking water system and decrease reliance on the Navy's other water sources. Therefore, the implementation of the Preferred Alternative would result in a beneficial impact on potable water infrastructure.

#### **Wastewater**

The Preferred Alternative would include a connection to the City and County of Honolulu's sanitary sewer system. New sewer lines would be constructed from the proposed permanent water treatment facility along Icarus Way and Forward Avenue to the point of connection with the City and County of

Honolulu's sanitary sewer system near Ala Kupuna Street. This connection would require an agreement with the Army and a sewer connection permit from the City Department of Planning and Permitting.

At the proposed water treatment facility, wastewater service would be provided for a restroom and a wash water transfer tank. The wash water transfer tank is proposed to receive and attenuate wash water from backwashing the GAC media prior to discharge into the sanitary sewer system. Backwashing the GAC media is only required during installation of new media and during periodic maintenance. GAC media has an expected life span of several years, so the backwash process would be infrequent. Wash water volumes from the site are expected to be within existing sewer capacity. Additionally, when the backwash process does take place, the wash water transfer tank would allow the Navy to convey the wash water to the City's sanitary sewer in an incremental fashion so it wouldn't overburden the sewer system.

Therefore, the implementation of the Preferred Alternative would result in less than significant impacts on wastewater infrastructure.

### **Energy**

Implementation of the Preferred Alternative would include the construction of a new, underground conduit and electrical point of connection with the HECO grid. The point of connection would be from an existing HECO manhole along the H-201 ROW, and electrical system improvements would be undertaken within the proposed water treatment facility site. In addition to commercial power, the Preferred Alternative would provide diesel emergency generators for the proposed water treatment facility and Red Hill Pump Station. The generators would be sized to power the entire water treatment facility and pump station in the event of a disruption in commercial service. The proposed improvements would increase the overall electrical demand from RHBFSF, but HECO has confirmed that the increased demand is within the existing capacity of the electrical grid. Additionally, the Navy is coordinating directly with HECO regarding the increase in demand, the new point of connection. Therefore, the implementation of the Preferred Alternative would result in less than significant impacts on energy infrastructure.

#### **3.6.3.3 Alternative 2: GAC Water Treatment Facility with Packed Tower Aerators**

Alternative 2 would be the same as the Preferred Alternative except it would also include PTAs and primary feeder pumps. Operating this equipment would increase the energy demand for the facility, but it is still anticipated to be within the existing capacity of the HECO grid, and the Navy would continue coordination with HECO on the proposed improvements. Impacts to water and wastewater infrastructure would be the same as for the Preferred Alternative.

Therefore, implementation of Alternative 2 would result in beneficial impacts on water infrastructure, and less than significant impacts on wastewater and energy infrastructure.

### **3.7 Air Quality**

This discussion of air quality includes criteria pollutants, standards, sources, and permitting. 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.

### 3.7.1 Regulatory Setting

#### 3.7.1.1 Criteria Pollutants and National Ambient Air Quality Standards

The CAA is the primary federal statute governing the control of air quality. The CAA designates six pollutants as “criteria pollutants” for which the EPA has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. The criteria pollutants are carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone, suspended particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>), fine particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>), and lead. CO, SO<sub>2</sub>, NO<sub>2</sub>, lead, and some particulates are emitted directly into the atmosphere from emissions sources. Ozone and some NO<sub>2</sub> and particulates are formed through atmospheric chemical reactions from other pollutant emissions (called precursors) that are influenced by weather, ultraviolet light, and other atmospheric processes.

NAAQS are classified as primary or secondary. Primary standards protect against adverse human health effects; secondary standards are designed to protect public welfare, such as preventing damage to farm crops, vegetation, and 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.

States may also establish their own ambient air quality standards that are more stringent than those set by federal law. HDOH provides details regarding ambient air pollution standards in consideration of public health, safety, and welfare in the State of Hawaii, and has set their own state standards (HAR Section 11-59).

Areas that are in compliance with the NAAQS are designated as “attainment areas”. Areas that do not meet NAAQS for criteria pollutants are designated “nonattainment areas” for that pollutant. Areas that are under “attainment” status are under the EPA’s designation based solely off NAAQS, where states have the latitude to establish ambient air quality standards of their own, they do not form the basis of attainment status determinations. The State of Hawaii has established its own ambient air quality standards, while there are some that are more stringent than the corresponding federal standards, the majority are less stringent.

In addition to the NAAQS for criteria pollutants, 188 federal hazardous air pollutants (HAPs), which are regulated under Section 112(b) of the 1990 CAA Amendments, are subject to National Emission Standards for Hazardous Air Pollutants when emitted from stationary sources (40 CFR parts 61 and 63).

#### 3.7.1.2 General Conformity

The EPA 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 [tpy]) vary by pollutant and also depend on the severity of the nonattainment status for the air quality management area in question.

A conformity applicability analysis is the first step of a conformity evaluation and assesses if a federal action must be supported by a conformity determination. This is typically done by quantifying applicable direct and indirect emissions that are projected to result due to implementation of the federal action.

Indirect emissions are those emissions caused by the federal action and originating in the region of interest, but which can occur at a later time or in a different location from the action itself and are reasonably foreseeable. The federal agency can control and will maintain control over the indirect action due to a continuing program responsibility of the federal agency. Reasonably foreseeable emissions are projected future direct and indirect emissions that are identified at the time the conformity evaluation is performed. The location of such emissions is known, and the emissions are quantifiable, as described and documented by the federal agency based on its own information and after reviewing any information presented to the federal agency. If the results of the applicability analysis indicate that the total emissions would not exceed *de minimis* emissions thresholds, then the conformity evaluation process is completed. *De minimis* threshold emissions are presented in Table 3-4.

**Table 3-5 General Conformity *de minimis* levels**

<b>Pollutant</b>	<b>Area Type</b>	<b>tpy</b>
Ozone (VOC or NOx)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NOx)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon monoxide, SO <sub>2</sub> and NO <sub>2</sub>	All nonattainment & maintenance	100
PM <sub>10</sub>	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
PM <sub>2.5</sub> Direct emissions, SO <sub>2</sub> , NOx (unless determined not to be a significant precursor), VOC or ammonia (if determined to be significant precursors)	All nonattainment & maintenance	100
Lead (Pb)	All nonattainment & maintenance	25

Source: EPA, 2023

There are no non-attainment or maintenance areas in the State of Hawaii, therefore, General Conformity does not apply. However, this analysis uses the General Conformity thresholds as a significance benchmark for direct and indirect emissions from the proposed action and alternatives.

### 3.7.1.3 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 pre-construction 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. In general, permits for sources in attainment areas and for other pollutants regulated under the major source program are referred to as Prevention of Significant Deterioration

(PSD) permits, while permits for major sources emitting nonattainment pollutants and located in nonattainment areas are referred to as nonattainment new source review permits. In addition, a proposed project may have to meet the requirements of nonattainment new source review for the pollutants for which the area is designated as nonattainment and PSD for the pollutants for which the area is attainment. PSD permitting can also apply to a new major stationary source (or any significant net emissions increase associated with a modification to an existing major stationary source) that is constructed within 6.2 miles of a Class I area, and which would increase the 24-hour average concentration of any regulated pollutant in the Class I area by 1 microgram per cubic meter ( $\mu\text{g}/\text{m}^3$ ) or more. Neither of the Class I areas in the State of Hawaii are within 6.2 miles of the proposed action or alternative. Navy installations shall comply with applicable permit requirements under the PSD program per 40 CFR section 51.166.

### **Title V (Operating Permit)**

The Title V Operating Permit Program consolidates all CAA requirements applicable to the operation of a stationary source, including requirements from the State Implementation Plan, preconstruction permits, and the air toxics program. It applies to stationary sources of air pollution that exceed the major stationary source emission thresholds, which in Hawaii are a potential to emit 100 tpy of any criteria pollutant, 10 tpy of any single HAP, or 25 tpy of any two or more HAPs, as well as other non-major sources designated by EPA. The program includes a requirement for payment of permit fees to finance the operating permit program whether implemented by EPA or a state or local regulator. Navy installations subject to Title V permitting shall comply with the requirements of the Title V Operating Permit Program, which are detailed in 40 CFR Part 70 and all specific requirements contained in their individual permits. The proposed water treatment facility would be owned and operated by the Navy, and subsequently a part of JBPHH's Title V Operating Permit as part of their stationary source inventory.

### **3.7.2 Affected Environment**

The ROI for assessing air quality impacts is the air basin in which the project is located- the State of Hawaii Air Quality Control Region. The project area lies within Honolulu County, Hawaii. Downwind locations are not anticipated to be affected by increased criteria pollutant emissions from the Proposed Action. The impacts to air quality includes emissions from motor vehicles and heavy-duty trucks, fossil fuel-powered equipment, as well as increased criteria pollutant or fugitive dust during construction.

The climate at RHBFSF affects the dispersion of air pollutants and the resulting air quality. The surrounding climate is maritime and chiefly controlled by trade winds, where the average hourly wind speed experiences some seasonal variation over the course of the year. The windier summer months have an average wind speed of 14.4 miles per hour, the calmer winter season has an average wind speed of 12.4 miles per hour (WeatherSpark, 2023).

### **3.7.3 Environmental Consequences**

As indicated in the General Conformity discussion above, although the project location will not be subject to General Conformity, the potential effects on ambient air quality from the Proposed Action and alternatives are based on estimated direct and indirect emissions associated with the action alternatives and comparison to the General Conformity *de minimis* thresholds. Ultimately, the comparison of the estimated emissions and the General Conformity *de minimis* thresholds will be the analysis supporting the conclusions.

The U.S. Air Force *Air Conformity Applicability Model* (ACAM) was used to estimate direct and indirect air emissions from the preferred alternative in accordance with Environmental Compliance and Pollution Prevention, the Environmental Impact Analysis Process (32 CFR 989), and the General Conformity Rule (40 CFR Part 93 Subpart B). Results of the ACAM analysis are presented (Appendix E).

### **3.7.3.1 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 significant impacts to air quality or air impacts in the vicinity of RHBFSF would occur with implementation of the No Action Alternative.

### **3.7.3.2 Preferred Alternative: GAC Water Treatment Facility**

The Preferred Alternative includes the construction of new facilities, utilities, infrastructure, and associated site improvements to support the permanent water treatment facility and the Red Hill Shaft Pump Station and connection of both the permanent and interim GAC water treatment facilities to the Navy drinking water system. Construction activities are estimated to last three years, and would include site grading and leveling, building construction, and paving activities. The Preferred Alternative would not introduce any new significant air emission units. New stationary air emissions sources include two diesel-fueled emergency generators. Both stationary engines are below the permitting threshold for the State of Hawaii. In the event of a power outage, the two generators would be temporarily operated to meet the water treatment plant electrical requirements.

#### **Construction Period**

The Preferred Alternative would generate short-term, temporary indirect air emissions (e.g., fugitive dust, exhaust emissions from construction equipment and vehicles) and other air quality impacts (e.g., transportation of equipment to project area, increase in local traffic from construction crew) during the construction period. Construction activities include site improvements (grading, retaining walls, and utilities) and the installation of new facilities, including reinforced concrete structures, an open-air steel structure, road paving/resurfacing post-construction, and security fencing along the perimeter of the treatment facility. Best management practices would be employed to minimize particulate emissions during the construction period. The construction contractor would prepare and adhere to a dust control plan to avoid or minimize offsite impacts from fugitive dust emissions. The specific dust control measures used would depend, in part, on the amount and nature of earthwork that is needed, soil type, wind and precipitation conditions, and proximity to other activities. Examples of BMPs include watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of open-bodied trucks. Other dust control measures to consider include limiting the area that is disturbed at any given time and/or mulching or chemically stabilizing inactive areas that have been worked. Exhaust emissions can be mitigated by minimizing the idling of diesel-powered equipment.

During the construction phase, the direct and indirect air emissions are not expected to result in violations of any of the federal and state standards, as these emissions are expected to be below the benchmark thresholds. The project would adhere to local construction specifications and BMPs to control fugitive dust and reduce negative air quality impacts.

#### **Operational Period**

After construction is completed, normal operations equivalent to that of the onsite water treatment system is expected to resume. Operation of the proposed facilities would not result in increased motor vehicle traffic and therefore it is not expected to generate notable additional emissions or dust.

Diesel generators would provide emergency power, with operation expected to occur only a few hours per year during power outages and scheduled maintenance testing. The primary air pollutants in the exhaust would include VOC, NOx, CO, sulfur oxides and particulates. There may also be some evaporative losses of VOC but these should be insignificant due to the low volatility of diesel fuel. The estimated annual emissions from the emergency generators would be minimal compared to area-wide emissions (Table 3-6). These emergency generators would have negligible impacts on air quality.

Under this alternative, the Navy must notify HDOH of any changes in emissions sources in compliance with its Title V permits, such as adding emergency generators. However, the anticipated air quality impacts are not expected to interfere with the attainment of NAAQS, increase the frequency or severity of the current air quality, or appreciably increase human health risks from air pollutant exposure in areas where sensitive receptors and/or public presence are expected.

**Table 3-6 Estimated Air Pollution Emissions from Proposed Emergency Diesel Generators**

<i>Air Pollutant</i>	<i>Emissions Rate (tons/year)</i>
Volatile Organic Compounds	0.1
Nitrogen Oxides	4.6
Carbon Monoxide	1.2
Sulfur Oxides	0.0
Particulate Matter - 10	0.1
Particulate Matter - 2.5	0.1

Note: Emissions are based on EPA emissions factors for uncontrolled gasoline and diesel industrial engines. This analysis assumes two engines below 2,000 kW would be operating a maximum of 100 hours a year. Because the generators would only be operated on an emergency basis during temporary power outages, 100 hours per year is deemed a conservative estimate to account for routine testing as well as irregular emergency use

### General Conformity

Emissions from construction and operational activities would be minor and no exceedance of reference thresholds is anticipated; thus, construction would not result in significant air quality impacts and is exempt from the Clean Air Act's General Conformity Rule.

Implementation of the Preferred Alternative would not result in significant impacts to air quality.

### 3.7.3.3 Alternative 2: GAC Water Treatment Facility with Packed Tower Aerators

The Alternative 2 is expected to have the same potential impacts as the Preferred Alternative with the additional inclusion of the construction and regular operation of a total of six PTAs.

During the construction phase(s) of infrastructure improvements, the impacts would be almost the same as the Preferred Alternative. The direct and indirect air emissions are not expected to result in violations of any of the federal and state standards, as these emissions are expected to be below the benchmark thresholds. The project is expected to adhere to local construction specifications and best construction practices to reduce negative air quality impacts during the construction phases.

The operation of the six PTAs is designed to remove VOC's, as well as other contaminants from water, where the air stream and oxidizer would allow some discharge of emissions into the atmosphere. The EPA's Work Breakdown Structure Model for a PTA treatment for ground water and drinking water worksheet (version release March 2023) was used to estimate the system emissions for the operation of Alternative 2. The emissions from a PTA vary depending on many factors, including the design flow, unit configurations, concentrations, and other factors. The proposed PTAs and primary feeder pumps would fit within the same water treatment facility footprint as the Preferred Alternative, and the PTA heights are estimated at 40 feet with an estimated diameter of 12 feet. With this information, one PTA is estimated to release 0.0011787 pounds per day (lbs/day) of VOC emissions. These calculations were extrapolated to account for one calendar year of emissions. Based on this approach, all six towers are estimated to release 2.58 lbs/year of VOC emissions. The emissions from the PTAs would be expected to remain below *de minimis* emission thresholds. (Note: Indirect assumptions were made based on system designs and where values were not certain, EPA default values were used to estimate total emissions. The calculated annual VOC emissions reported above is a conservative estimate).

Other than the VOC emissions described above, the emissions and impacts would be almost the same as the Preferred Alternative. The water treatment facility proposed in Alternative 2 is expected to have greater operational efficiency than the existing onsite water treatment system. The number of truck trips to and from the facility is not expected to increase, and it is not expected to generate notable additional emissions or dust, thus, operation would not result in significant long-term, direct, or indirect air quality impacts.

## 3.8 Noise

This discussion of noise includes the types or sources of noise and the associated sensitive receptors in the human environment.

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
- 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.

### 3.8.1 Basics of Sound and A-Weighted Sound Level

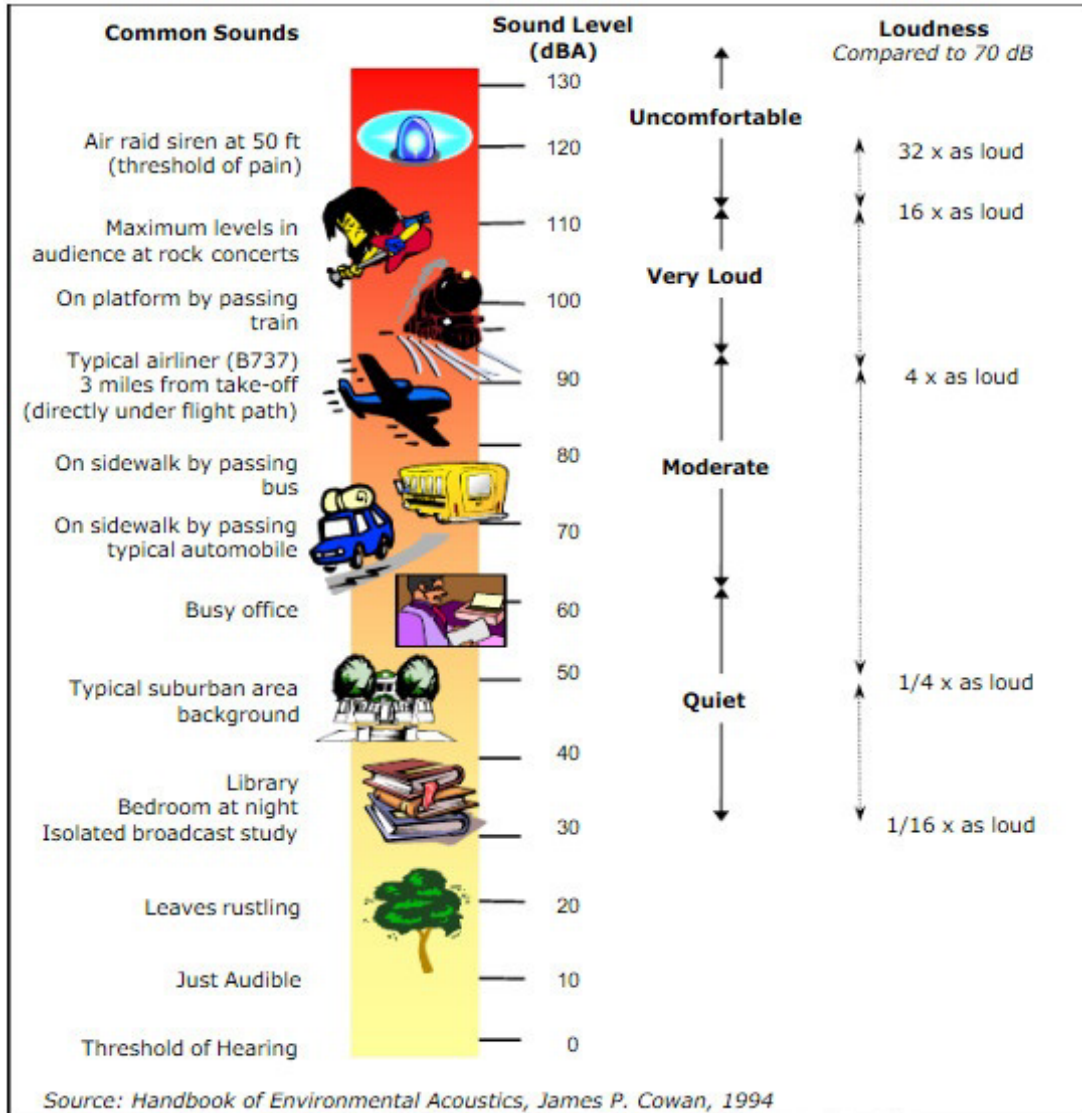
The loudest sounds that can be comfortably heard by the human ear have intensities a trillion times higher than those of sounds barely heard. Because of this vast range, it is unwieldy to use a linear scale to represent the intensity of sound. As a result, a logarithmic unit known as dB is used to represent the intensity of a sound, also referred to as the sound level. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 and 140 dB are felt as pain (Berglund and Lindvall, 1995).

All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second, or Hertz. 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 (dBA), which places less weight on very low and very high frequencies in order to replicate human hearing sensitivity. The general range of human hearing is from 20 to 20,000 cycles per second, or Hertz; humans hear best in the range of 1,000 to 4,000 Hertz. A-weighting is a frequency-dependent adjustment of sound level used to approximate the natural range and sensitivity of the human auditory system. Table 3-6 provides a comparison of how the human ear perceives changes in loudness on the logarithmic scale.

**Table 3-7 Subjective Responses to Changes in A-Weighted Decibels**

<i>Change</i>	<i>Change in Perceived Loudness</i>
3 dB	Barely perceptible
5 dB	Quite noticeable
10 dB	Dramatic – twice or half as loud
20 dB	Striking – fourfold change

Figure 3-4 (Cowan, 1994) 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. A variety of noise metrics have been developed to describe noise over different time periods, as discussed below.



**Figure 3-4 A-Weighted Sound Levels from Typical Sources**

### 3.8.2 Regulatory Setting

HDOH regulates excessive noise sources, including equipment related to operational noise and construction activity under HRS Chapter 342F (Noise Pollution) and HAR Section 11-46 (Community Noise Control). As a federal agency, the Navy considers HDOH noise provisions as local best practices when evaluating potential impacts to noise sensitive uses and would exert best efforts to comply with applicable State noise regulations. HAR Section 11-46 specifies maximum permissible sound levels for three classes of zoning districts (Table 3-7).

**Table 3-8 Maximum Permissible Sound Levels in dBA**

<b>Zoning District</b>	<b>Description</b>	<b>Daytime (7 am to 10 pm)</b>	<b>Nighttime (10 pm to 7 am)</b>
Class A	Lands zoned residential, conservation, preservation, public space, open space, or similar type.	55 dBA	45 dBA
Class B	Lands zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type.	60 dBA	50 dBA
Class C	Lands zoned agriculture, country, industrial, or similar type.	70 dBA	70 dBA

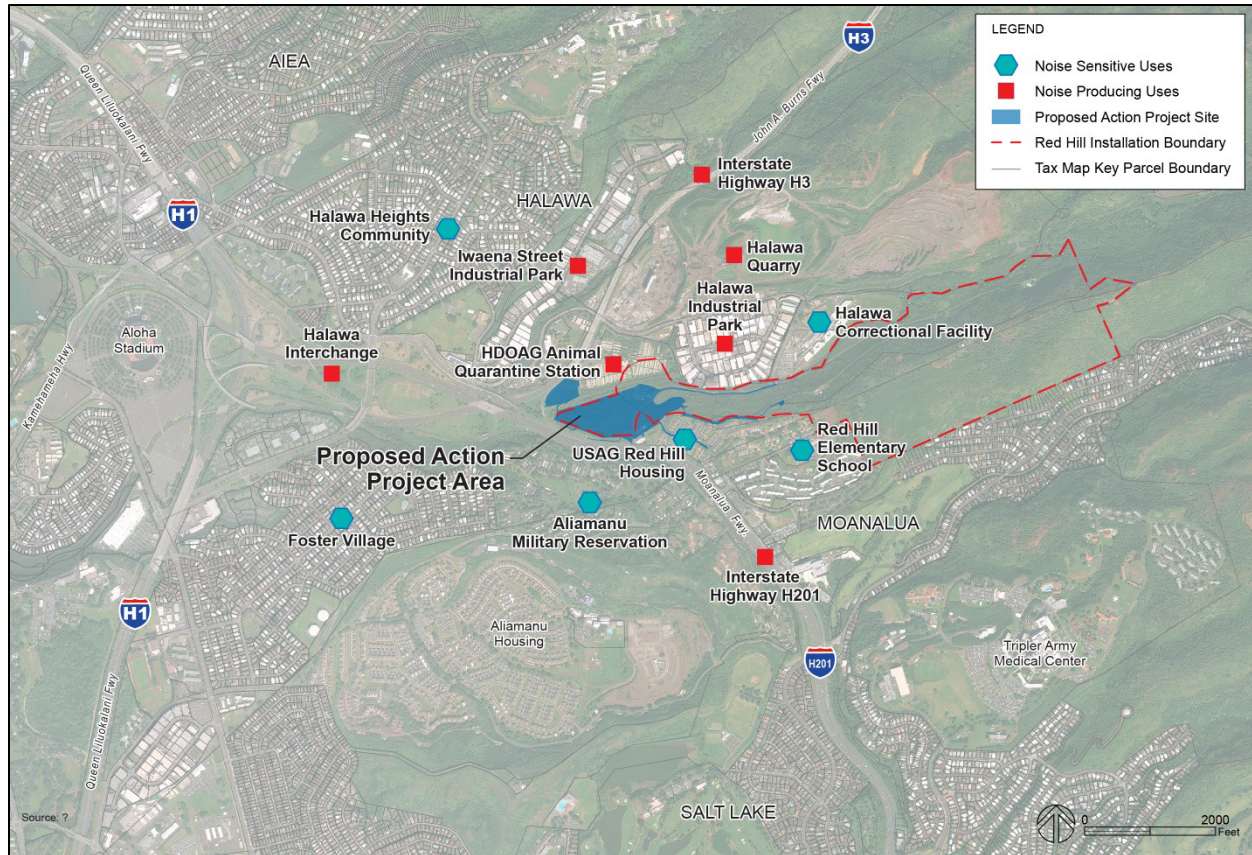
Source: HAR Section 11-46-4

### 3.8.3 Affected Environment

The ROI for noise encompasses areas in the vicinity of the Proposed Action project area that would be impacted by noise generated from project-related activities including Halawa Valley, and the Army’s Red Hill Housing. Many components may generate noise and warrant analysis as contributors to the total noise impact. The predominant noise sources in the ROI include traffic noise associated with the H-201 and H-3 highways and the nearby Halawa Interchange as well as operations at the Halawa Quarry and other industrial uses within Halawa Valley (Figure 3-5).

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.

For the Proposed Action, the nearest noise sensitive receptors are the existing homes within the Army’s Red Hill Housing community, especially those along Forward Avenue and Icarus Way. Red Hill Elementary School and the Aliamanu Military Reservation Housing are other noise sensitive receptors located in the ROI (Figure 3-5).



**Figure 3-5 Location of Noise Sensitive Uses in the Vicinity of the Project Area**

### 3.8.4 Environmental Consequences

This section estimates potential noise levels and impacts from the Proposed Action and alternatives to noise-sensitive receptor sites.

#### 3.8.4.1 No Action Alternative

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

#### 3.8.4.2 Preferred Alternative: GAC Water Treatment Facility

##### Construction Period

During project construction, there would be short-term, temporary noise impacts to the noise environment in the vicinity of the Proposed Action project area. The greatest noise impacts would be to residential dwellings in the Army’s Red Hill Housing area. The nearest homes would be located approximately 130 feet from the Proposed Action upper site and approximately 800 feet from the Proposed Action lower site (Figure 3-5). Additionally, trenching would be required for new utility connections along Icarus Way and Forward Avenue through the Red Hill Housing, and along the H-3 ROW. The dominant noise sources during construction would be from the operation of construction equipment, which would be conducted during normal daytime working hours.

A planning level general assessment of construction noise impacts was conducted for the Preferred Alternative to estimate construction noise impacts to noise sensitive receptors. Typical noise emission levels of construction equipment are reported in Federal Highways Administration (FHWA) construction noise level guidance (FHWA, 2006). For the purposes of this analysis, the loudest equipment to be used during construction was used to determine the potential impacts to nearby noise sensitive receptors as a worse-case scenario.

For the Preferred Alternative the loudest construction equipment expected to be used would likely be a rock drill, excavator, and jackhammer which would be used during grading and earthwork to prepare the upper and lower sites. Rock drills, excavators, and jackhammers all have a measured maximum noise level ( $L_{max}$ ) of 85 dBA at a reference distance of 50 feet (FHWA, 2006). For each doubling of the reference distance from the source, there is a 6 dBA decrease in sound level. The nearest noise sensitive receptor is a residence along Madrona Place that would be approximately 130 feet from the nearest rock drilling and excavation activity at the Proposed Action upper site. A calculation of the reduction in atmospheric sound level from reference distance to the nearest noise sensitive receptors indicated that noise from the rock drilling and excavation would be attenuated to about 77 dBA at the nearest home along Madrona Place. (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 a “moderate” noise level. Typical sound level reductions of buildings are estimated at 24 dB in warm climates with closed windows (EPA, 1978). Using the EPA typical sound level reductions of buildings (i.e., 24 dBA), the rock drilling and excavation noise levels would be reduced to about 53 dBA at the nearest home along Madrona Place, which could be perceived as “quiet” noise level.

Red Hill Elementary School is another noise sensitive receptor in the ROI. It is located approximately 650 feet south of the proposed Fire Water Storage Tank site. At this distance the noise levels associated with the loudest construction equipment (i.e., rock drills, excavators, and jackhammers) are estimated at 63 dBA. This noise level is generally perceived as a “quiet” to “moderately loud” noise level. However, additional noise attenuation would be provided by classroom buildings which would reduce noise to a “quiet” level. Additionally, construction activities at the Fire Water Storage Tank site are expected to be relatively limited in duration, and therefore, are expected to have a negligible effect on the noise environment at Red Hill Elementary.

Additionally, the contractor would implement noise mitigation practices during construction including ensuring correctly installed mufflers are functioning on all construction equipment and locating stationary noise-generating equipment as far as practical from existing noise-sensitive land uses.

### **Operational Period**

Operation of the permanent water treatment facility would generate negligible impacts on the noise environment. The GAC filters and associated equipment at the proposed water treatment facility generally run at low noise levels. The emergency generators would be housed within dedicated structures and would not impact the ambient noise environment. Occasional maintenance efforts could generate noise impacts, but they would be temporary and short-lived.

Therefore, the implementation of the Preferred Alternative would result in less than significant impacts to the noise environment.

### **3.8.4.3 Alternative 2: GAC Water Treatment Facility with Packed Tower Aerators**

Alternative 2 would be constructed within the same project footprint as the Preferred Alternative and would have similar impacts to the noise environment. Construction of the PTAs and primary feeder pumps would add an additional construction task and the feeder pumps would generate a marginal increase in operational noise associated with the facility. However, the PTAs and feeder pumps would be located well within RHBFSF and away from noise sensitive receptors. The same BMPs would be implemented to minimize and avoid potential construction noise impacts to noise sensitive uses in the project vicinity.

Therefore, the implementation of Alternative 2 would result in less than significant impacts to the noise environment.

### **3.9 Summary of Potential Impacts to Resources 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 3-6 and 3-7, respectively.

**Table 3-9 Summary of Potential Impacts to Resource Areas**

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Alternative 1 (Preferred Alternative)</b>	<b>Alternative 2</b>
Public Health and Safety	<p>No impact</p> <p>The onsite GAC water treatment system, intended only for short-term operation, will continue to operate and treated water will continue to be discharged to Halawa Stream.</p>	<p>Beneficial impact</p> <p>Standard security measures would be implemented to secure equipment and prevent public access into the construction and operation areas, and compliance with occupational safety and health regulations, standards, and instructions would minimize the potential for workplace accidents.</p> <p>Operations would maintain the groundwater capture zone within the aquifer underlying RHBFSF and would restore the Red Hill Shaft as a source of safe, potable water to the users of the Navy drinking water system, in accordance with the long-term actions outlined in the Red Hill Shaft Recovery and Monitoring Plan.</p>	<p>Beneficial impact</p> <p>Impacts to public health and safety would be the same as for the Preferred Alternative.</p>
Water Resources	<p>Less than significant impact</p> <p>Water pumped from the Red Hill Shaft would continue to be treated then discharged into Halawa Stream to maintain the groundwater capture zone within the underlying aquifer. Consequently, the Red Hill Shaft would not be restored as a source of safe, potable water for the users of the Navy drinking water system.</p>	<p>Beneficial impact</p> <p>The project would be subject to a NPDES permit and would implement a SWPPP and erosion control BMPs to avoid or minimize potential impacts associated with temporary increased runoff and erosion during construction. The project would implement permanent LID features to mitigate the impact of development on stormwater runoff and protect stormwater quality. There would be no increase in existing stormwater peak discharge rates to offsite areas, and the existing drainage patterns would be maintained to the extent possible.</p> <p>Once operational, the project would restore the beneficial use of the Red Hill Shaft as a safe, potable drinking water source. The Navy would no longer discharge up to 5 MGD to Halawa Stream. Instead, this water would be used to supply the Navy drinking water system and would therefore reduce groundwater withdrawal at other Navy drinking water wells.</p>	<p>Beneficial impact</p> <p>Impacts to water resources would be the same as for the Preferred Alternative.</p>

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Alternative 1 (Preferred Alternative)</b>	<b>Alternative 2</b>
Hazardous Materials and Wastes	<p>Less than significant impact</p> <p>The spent GAC media from the onsite GAC system would be tested for toxicity. If it exceeds hazardous waste thresholds, an appropriate disposal facility would be identified, and the waste transported to the appropriate facility.</p>	<p>Less than significant impact</p> <p>Use of hazardous materials (i.e., fuel, oil, etc.) and generation of hazardous wastes during construction would be transported, stored, handled, and disposed of in accordance with federal and state regulations. Excess soil and shallow groundwater (if encountered), must be properly characterized, handled, stored, managed, and disposed of as CERCLA-waste in accordance with JBPHH policy, and federal and state regulations.</p> <p>The spent GAC media would be tested for toxicity. If it exceeds hazardous waste thresholds, an appropriate disposal facility would be identified, and the waste would be transported to an appropriate facility. Diesel fuel would be stored onsite to power emergency generators. Only aboveground fuel storage containers would be utilized, and they would have secondary containment to prevent a release.</p>	<p>Less than significant impact</p> <p>Impacts with hazardous materials and wastes would be the same as for the Preferred Alternative.</p>

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Alternative 1 (Preferred Alternative)</b>	<b>Alternative 2</b>
Cultural Resources	No impact	<p>Less than significant impact</p> <p>A large portion of the project area was heavily modified during the 20<sup>th</sup> century due to agriculture and ranching use during the plantation era and construction-related activities associated with the construction of the RHBFSF, nearby freeways, the channelization of Halawa Stream, and the installation infrastructure. In addition to the NRHP-eligible RHBFSF, an archaeological inventory survey conducted for the Proposed Action identified two sites within the federal portion of the APE that the Navy is treating as eligible listing in the National Register of Historic Places (NRHP), pending consultation with SHPO. The Preferred Alternative would result in the removal or disturbance of these two sites: Site 50-80-13-7785 and Temporary Site 2. Site 50-80-13-7785 is a complex of seven features associated with earlier agricultural uses. Temporary Site 2 is a complex of three features (a retaining wall, a concrete structure, and a road alignment) associated with plantation era use of the project area.</p> <p>Pursuant to Section 106 of NHPA, and in accordance with Stipulations VI and IX of the 2012 Programmatic Agreement among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer Regarding Navy Undertakings in Hawaii, as amended in 2024, the Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would have no adverse effect on the RHBFSF but would adversely affect two sites within the APE. Accordingly, the Navy prepared an MOA to resolve adverse effects. Upon completion of consultations, the MOA was agreed to and signed by the Navy and SHPO in February 2026 (Appendix B). Through implementation of the mitigation requirements stipulated in the MOA the Preferred Alternative would result in less than significant impacts to cultural resources.</p>	<p>Less than significant impact</p> <p>Impacts to cultural resources would be the same as for the Preferred Alternative.</p>

<i>Resource Area</i>	<i>No Action Alternative</i>	<i>Alternative 1 (Preferred Alternative)</i>	<i>Alternative 2</i>
Terrestrial Biological Resources	No impact	<p>Less than significant impact</p> <p>The Preferred Alternative would include approximately 8.9 acres of permanent vegetation removal, primarily non-native scrub forest. The project location does not include critical habitat, but BMPs would be implemented to avoid or minimize potential impacts to protected species.</p> <p>In accordance with Section 7 of the ESA, the Navy consulted with the USFWS regarding the Preferred Alternative. In a letter to the USFWS dated January 7, 2025, the Navy determined that the Preferred Alternative may affect but is not likely to adversely affect the Hawaiian Stilt, Band-rumped Storm-Petrel, Hawaiian Petrel, Newell’s Shearwater, and Hawaiian hoary bat, or jeopardize the continued existence of these species. USFWS concurred with the Navy’s determination in a letter dated February 27, 2025 (Appendix C).</p>	<p>Less than significant impact</p> <p>Impacts to terrestrial biological resources would be the same as for the Preferred Alternative.</p>

<b>Resource Area</b>	<b>No Action Alternative</b>	<b>Alternative 1 (Preferred Alternative)</b>	<b>Alternative 2</b>
Infrastructure	<p>Water: Less than significant impact</p> <p>The Red Hill Shaft would not be restored as a source of potable water for JBPHH and communities serviced by the Navy drinking water system. The Navy would continue to rely on its other wells to serve the drinking water system. The Navy would continue to implement water conservation measures to stay within their permitted withdrawal rates.</p> <p>Wastewater: No Impact</p> <p>Energy: No Impact</p>	<p>Water: Beneficial impact</p> <p>The restoration of the Red Hill Shaft as a potable water source would increase redundancy within the Navy’s drinking water system and decrease reliance on the Navy’s other water sources.</p> <p>Wastewater: Less than significant impact</p> <p>Wastewater volumes from the site are expected to be within existing sewer capacity. The sanitary sewer connection would require an agreement with the Army and a sewer connection permit from the City and County of Honolulu Department of Planning and Permitting for use of their systems.</p> <p>Energy: Less than significant impact</p> <p>The project would require a new point of connection from the HECO grid. Energy demand is within HECO’s existing grid capacity and the Navy is coordinating with HECO on the anticipated demand and point of connection. Proposed undergrounding of the new electrical circuits would improve the new systems’ reliability and resilience.</p>	<p>Water: Beneficial impact</p> <p>Impacts to water infrastructure would be the same as for the Preferred Alternative.</p> <p>Wastewater: Less than significant impact</p> <p>Impacts to wastewater infrastructure would be the same as for the Preferred Alternative.</p> <p>Energy: Less than significant impact</p> <p>Alternative 2 would require additional energy to run the PTAs and primary feeder pumps, but energy demand is still expected to be within HECO’s existing grid capacity.</p>
Air Quality	No Impact	<p>Less than significant impact</p> <p>The Preferred Alternative would generate short-term, temporary indirect air emissions during the construction period (e.g., fugitive dust, exhaust emissions from construction equipment and vehicles, etc.). During the operational phase, temporary, minor emissions would be generated from vehicle trips to the site and running the emergency generators.</p>	<p>Less than significant impact</p> <p>Alternative 2 would have similar air quality impacts as the Preferred Alternative, except that there would be additional VOC emissions from running the PTAs. An air quality permit from HDOH would be required.</p>

<i>Resource Area</i>	<i>No Action Alternative</i>	<i>Alternative 1 (Preferred Alternative)</i>	<i>Alternative 2</i>
Noise	No Impact	<p>Less than significant impact</p> <p>Construction would result in short-term increases in daytime noise. Noise impacts would be greatest at the nearest residences along Madrona Place within the Army’s Red Hill Housing neighborhood. Noise from construction would comply with applicable federal, state, and local regulations.</p> <p>Operation of the proposed permanent water treatment facility would generate negligible impacts on the noise environment. The GAC filters and associated equipment at the proposed water treatment facility generally run at low noise levels. The emergency generators would be housed within dedicated structures and would not impact the ambient noise environment.</p>	<p>Less than significant impact</p> <p>Impacts to the noise environment would be slightly greater than for the Preferred Alternative because of the construction of additional components (i.e., PTAs and feeder pumps), and additional operating noise from the feeder pumps.</p>

## 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. To determine the scope of environmental impact analyses, agencies shall consider cumulative actions, which when viewed with other Proposed Actions have cumulatively significant impacts and should therefore be discussed in the same impact analysis document.

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 Environmental Impact Statements 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 Action locale. 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 exists 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. 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 informed 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 Past, Present, and Reasonably Foreseeable Actions**

<i>Title</i>	<i>Description</i>	<i>Implementation Timeframe</i>
Red Hill Interim GAC Water Treatment System	<p>The Navy is replacing the existing onsite GAC water treatment system with an interim GAC water treatment system. The interim GAC system will be located within RHBFSF installation boundary near the H-201 Interstate Freeway, approximately 600 feet southwest of the existing onsite GAC system. PCB-impacted soils were identified in a portion of the interim GAC water treatment system site. The Navy is coordinating with the EPA on cleanup and BMPs will be implemented to prevent off-site migration of soils.</p> <p>The interim GAC water treatment system will have the same capacity as the existing onsite system to treat water from the Red Hill Shaft. The interim GAC water treatment system would treat water from the Red Hill Shaft in compliance with NPDWR and HDOH Safe Drinking Water Standards. This EA is analyzing the impact of connecting the interim GAC water treatment system to the Navy’s water distribution system.</p>	2023 –2026
Reactivation of the Navy Aiea-Halawa Shaft	<p>The Navy is planning to reconnect the Navy Aiea-Halawa Shaft (NAHS) to its water distribution system. The reactivation of the NAHS will include the installation of a GAC/Ion Exchange water treatment system (NAVFAC Hawaii, 2024b). The treatment system is being installed to proactively pursue compliance with forthcoming EPA regulations regarding PFAS/PFOAs in drinking water.</p>	2026

<i>Title</i>	<i>Description</i>	<i>Implementation Timeframe</i>
Red Hill Shaft Recovery and Monitoring	In response to contamination of drinking water supplies, the Navy installed an onsite GAC water treatment system near the Red Hill Shaft, which has pumped up to approximately 5 MGD of water through the treatment system and then discharging the treated water into Halawa stream. The Navy samples water quality before and after treatment to evaluate the effectiveness of the treatment system and to ensure that water discharged into Halawa stream meets NPDES permit effluent limits. Recovery and monitoring efforts also include expansion of the groundwater monitoring well network at RHBFSF and Red Hill Shaft. The Navy is using data collected from the monitoring wells to identify and track possible contamination migration.	January 2022-Ongoing (Navy, HDOH, and EPA, 2022)
RHBFSF Defueling and Fuel Relocation	The Navy completed the gravity-based defueling of RHBFSF at JBPHH and the relocation of the flowable fuel to other DoD fuel supply locations in the Pacific Region or sale of the fuel to commercial entities utilizing DoD contracting authorities.	Oct 2023-January 2024
RHBFSF Soil Contamination Remediation	The Navy remediated areas near the Adit 3 exterior entrance to RHBFSF that were contaminated during the November 2021 fuel release. The Navy conducted a site assessment and soil borings in January and April 2022, followed by excavations of soil and removal of a leach tank in May 2022 with confirmation sampling. Based on results of sampling, the Navy completed a second round of excavations in September-October 2022. The Navy continues to coordinate with HDOH and EPA on remediation activities as part of the Tank Closure Plan and the associated site assessment (Navy, 2024).	April 2022-Ongoing
RHBFSF PFAS Remedial Investigation	The Navy is currently conducting a remedial investigation (RI) for PFAS at RHBFSF. The purpose of the RI is to evaluate the nature and extent of potential PFAS exposure at the site, and to characterize potential risks to human health and the environment associated with it.	June 2024 - Ongoing
RHBFSF Oily Waste Disposal Facility Risk Evaluation and Response Actions	The Navy is conducting a site investigation, environmental risk evaluation, and response actions required to remediate and close the former oily waste disposal facility at RHBFSF.	July 2016-August 2024
RHBFSF Fuel Line Clearing	Joint Task Force Red Hill (JTF-RH) completed a fuel line clearing operation that removed an estimated 1,058,187 gallons of fuel from the pipelines connecting RHBFSF with fuel points on JBPHH. Fuel was removed using gravity flow and pumps for fuel transfer from low points. The fuel removed from the pipelines remained on JBPHH for operational use.	October-November 2022

<i>Title</i>	<i>Description</i>	<i>Implementation Timeframe</i>
RHBFSF Repair	JTF-RH has completed 253 repairs to RHBFSF, the underground pump house, and the fuel pipelines that was used for defueling. Repairs included but were not limited to: replacing and repairing pipe components, valves, fittings, and seals; inspecting and repairing dents in pipes; adding or repairing pipe supports and braces; and replacing deficient pressure gauges. A third party will validate the quality of the completed repairs.	December 2022-June 2023; Repairs completed prior to defueling
RHBFSF Closure	The Navy has ceased operating the RHBFSF underground fuel storage tanks, four fuel surge tanks, and associated valves and piping systems for fueling purposes, following the Hawaii underground storage tank regulations, HAR Chapter 11-280.1. The Navy submitted a Tank Closure Plan to EPA and HDOH (Navy, 2022b). In coordination with EPA and HDOH, the Navy has prepared three supplements to the Tank Closure Plan, with the most recent being submitted in June 2024 (Navy, 2024). Closure also includes management of sludge and waste material and site assessment.	January 2024-August 2027
RHBFSF Beneficial Reuse	The U.S. Government is evaluating options for beneficial non-fuel reuse of RHBFSF tanks using an inclusive, science-based approach that will collect ideas from interested parties. Studies collecting ideas from various community, academic, and political stakeholders are ongoing. The Navy will closely coordinate with HDOH and EPA on the final proposed beneficial non-fuel reuse of the facility.	Beneficial non-fuel reuse plans would be implemented after Tank Closure Operations conclude.
New Aloha Stadium and Entertainment District	The New Aloha Stadium and Entertainment District Project (NASED) involves the construction of a new stadium and includes the mixed-use development of approximately 98 acres of current Aloha Stadium properties identified by TMK (1) 9-9-003 :061 and neighboring TMK: (1) 9-9-003:055, 070, and 071 in Halawa.	Development expected to commence as early as 2026
Relocation of the Animal Quarantine Station	The HDOA is preparing to relocate its Animal Quarantine Station to a new site located along the west side of the H-3 Freeway, between the Freeway and Halawa Valley Street.	Undetermined
New Oahu Community Correctional Center	The State of Hawaii Department of Corrections and Rehabilitation is evaluating options for the development of a new community correctional center to replace the aging Oahu Community Correctional Center (OCCC). The new facility is proposed to be constructed on the site of the HDOA Animal Quarantine Station (adjacent to RHBFSF and the Proposed Action).	Undetermined

## 4.4 Cumulative Impact Analysis

Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data is 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.

### 4.4.1 Public Health and Safety

#### 4.4.1.1 Description of Geographic Study Area

The ROI for the public health and safety analysis includes areas at RHBFSF, the adjacent State of Hawaii-owned properties, and the Army's Red Hill Housing where the Proposed Action would take place, and those areas serviced by the Navy's drinking water system, including JBPHH and outlying residential communities such as Aliamanu Military Reservation, Red Hill Housing, and Catlin Park, among others (Figure 3-1).

#### 4.4.1.2 Relevant Past, Present, and Future Actions

- Red Hill Interim Modified GAC Water Treatment System
- Reactivation of Navy Aiea-Halawa Shaft (NAHS)
- RHSRMP
- RHBFSF Defueling and Fuel Relocation
- RHBFSF Soil Contamination Remediation
- RHBFSF PFAS Remedial Investigation
- RHBFSF OWDF Risk Evaluation and Response Actions
- RHBFSF Fuel Line Clearing
- RHBFSF Repair
- RHBFSF Closure
- Relocation of the Animal Quarantine Station
- New Aloha Stadium Entertainment District (NASED)
- New Oahu Community Correctional Center (OCCC)

#### 4.4.1.3 Cumulative Impact Analysis

The cumulative public health and safety impacts from past, present, and future actions within the ROI would be less than significant because the actions are all remedial in nature, with the intent to correct for the November 2021 release event, remediate the Red Hill Shaft, and remove harmful contaminants from the region. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts on public health and safety within the ROI.

The Navy's reactivation of NAHS will provide a supplemental source of water to the Navy's drinking water system which currently relies solely upon the Waiawa Shaft. Additionally, the installation of a GAC/Ion Exchange water treatment system at the NAHS would allow the Navy to preemptively address

PFAS contamination and comply with forthcoming EPA regulations. The addition of the NAHS as a supplemental water source will enhance water resiliency at JBPHH and is part of the Navy's continued commitment to providing the community with safe drinking water.

PFAS contamination is an emerging, widespread issue on Oahu. It has been detected at a range of DoD and Honolulu Board of Water Supply wells around the island. There is no evidence to suggest that the PFAS contamination at NAHS is related to the November 2022 AFFF release or other potential contaminant migration from Red Hill. The Navy's ongoing groundwater monitoring and modeling efforts do not show evidence of a hydraulic connection between NAHS and Red Hill Shaft. This is supported by the HDOH decision to reduce the pumping rate from 4.2 to 1.8 MGD at Red Hill Shaft, and the subsequent monitoring results that do not indicate contaminant migration. Therefore, reactivation of the NAHS when considered cumulatively with the reactivation of the Red Hill Shaft, would have a beneficial impact on public health and safety by substantially increasing the resilience and safety of the Navy's drinking water system which serves approximately 93,000 users.

Other cumulative public health and safety impacts that would occur with implementation of the alternatives would include the removal of hazardous fuel materials from RHBFSF and recover and remediate the Red Hill Shaft. When combined with the Proposed Action, the cumulative public health and safety impacts would have a beneficial impact to the ROI by restoring a source of safe, clean drinking water which meets NPDWR and HDOH Safe Drinking Water Standards. Cumulative impacts to drinking water are discussed in more detail in Section 4.4.2 below.

#### **4.4.2 Water Resources**

##### **4.4.2.1 Description of Geographic Study Area**

The ROI for water resources includes the Waimalu system of the Pearl Harbor Aquifer and the Halawa Stream sub-watershed of the Pearl Harbor watershed.

##### **4.4.2.2 Relevant Past, Present, and Future Actions**

- Red Hill Interim Modified GAC Water Treatment System
- Reconnection of NAHS
- Red Hill Shaft Recovery and Monitoring Plan
- RHBFSF Defueling and Fuel Relocation
- RHBFSF Soil Contamination Remediation
- RHBFSF PFAS Remedial Investigation
- RHBFSF OWDF Risk Evaluation and Response Actions
- RHBFSF Fuel Line Clearing
- RHBFSF Repair
- RHBFSF Closure

##### **4.4.2.3 Cumulative Impact Analysis**

The above actions involving soil and groundwater clean-up, recovery, remediation, and monitoring at RHBFSF would cumulatively result in a reduction of risk to, and improved quality of, groundwater and drinking water supplies on Oahu. RHBFSF defueling and closure will eliminate the potential for future fuel releases from the facility.

The interim GAC water treatment system would replace the existing onsite GAC water treatment system to ensure the Navy will continue to pump water from the Red Hill Shaft to maintain the groundwater capture zone until the Proposed Action is implemented.

The interim GAC water treatment system will continue to discharge water to Halawa Stream when it becomes operational (similar to the existing onsite treatment system). This practice will only be discontinued with HDOH approval and the implementation of the Proposed Action to connect the facility to the Navy drinking water system. If that were to occur, stream flows would revert to conditions prior to the onsite GAC water treatment system discharge.

The Navy's reactivation of NAHS would require final approval by HDOH prior to placing the well back into service and pumping rates would be within the water use permit allocation for the well (NAVFAH Hawaii, 2024b). Similar to reactivating the Red Hill Shaft, pumping at NAHS would offset pumping at the Navy's Waiawa Shaft, so there would be no additional cumulative effect to groundwater yield. Additionally, the Navy's ongoing groundwater monitoring and modeling efforts do not show evidence of a hydraulic connection between NAHS and Red Hill Shaft. This is supported by the HDOH decision to reduce the pumping rate from 4.2 to 1.8 MGD at Red Hill Shaft, and the subsequent monitoring results that do not indicate contaminant migration. Therefore, reactivation of NAHS when considered cumulatively with the reactivation of the Red Hill Shaft would not result in significant changes to groundwater quality or the potential migration of contaminants within the aquifer.

Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts to water resources within the ROI.

#### **4.4.3 Hazardous Materials and Wastes**

##### **4.4.3.1 Description of Geographic Study Area**

The ROI for hazardous materials and hazardous wastes includes the Proposed Action project area and adjacent areas to allow for a comprehensive analysis of potential cumulative impacts with hazardous materials and wastes associated with the past, present, and reasonably foreseeable future actions.

##### **4.4.3.2 Relevant Past, Present, and Future Actions**

- Red Hill Interim GAC Water Treatment System
- RHBFSF Soil Contamination Remediation
- RHBFSF PFAS Remedial Investigation
- RHBFSF OWDF Risk Evaluation and Response Actions
- RHBFSF Defueling

##### **4.4.3.3 Cumulative Impact Analysis**

Cumulative impacts associated with hazardous materials and wastes from past, present, and future actions within the ROI would be less than significant because all of the actions are related to remediation efforts or the removal of fuel from RHBFSF. The Preferred Alternative would include use and disposal of hazardous materials and wastes during construction and operations (i.e., fuel, oil, spent GAC media etc.), but all hazardous materials and wastes would be transported, stored, handled, and disposed of in accordance with federal and state regulations.

Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts with hazardous materials and wastes within the ROI.

#### **4.4.4 Cultural Resources**

##### **4.4.4.1 Description of Geographic Study Area**

The ROI for cultural resources includes the Proposed Action APE (Figure 3-3) and adjacent areas to allow for a comprehensive analysis of potential cumulative impacts to cultural resources associated with the past, present, and reasonably foreseeable future actions.

##### **4.4.4.2 Relevant Past, Present, and Future Actions**

- Red Hill Interim Modified GAC Water Treatment System
- RHBFSF Beneficial Reuse
- Relocation of the Animal Quarantine Station
- New OCCC

##### **4.4.4.3 Cumulative Impact Analysis**

The Red Hill interim GAC water treatment system would require approximately 1.6 acres of vegetation clearing and ground disturbance in the vicinity of the Proposed Action. The project area for the interim GAC water treatment system was included in the archaeological inventory survey for the Proposed Action and no historic sites were identified in that vicinity of the interim GAC water treatment system.

The RHBFSF Beneficial Reuse could include actions with the potential to impact cultural resources. Plans for potential reuse have not been finalized, and therefore, it is infeasible to evaluate potential impacts at this time. Since reuse would be located on federal land, it would be subject to review under Section 106 of the NHPA, and potential impacts to cultural resources would be addressed through that consultation process.

Potential impacts to cultural resources from the relocation of the Animal Quarantine Station and the construction of the New OCCC at the existing Animal Quarantine Station site were determined to be unlikely to impact cultural resources as long as the proposed archaeological monitoring is implemented (PBR Hawaii, 2018).

The Proposed Action would impact two sites identified in the archaeological inventory survey. In accordance with Section 106 of the NHPA, the Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. Through consultation and implementation of mitigation pursuant to Section 106, the Navy will resolve effects to historic properties. Similar to the Proposed Action, the reasonably foreseeable future actions have either already conducted consultation with the SHPO or would be required to conduct consultation with the SHPO to resolve potential effects on historic properties. Thus, incremental mitigation of the potential effects of the individual projects are anticipated to result in less than significant cumulative effects on cultural resources in the ROI.

#### **4.4.5 Terrestrial Biological Resources**

##### **4.4.5.1 Description of Geographic Study Area**

The ROI for terrestrial biological resources includes the Proposed Action project area where construction- and operations-related actions would occur, as well as adjacent areas, to allow for a

comprehensive analysis of potential cumulative impacts to terrestrial biological resources associated with the past, present, and reasonably foreseeable future actions.

#### **4.4.5.2 Relevant Past, Present, and Future Actions**

- Red Hill Interim Modified GAC Water Treatment System
- Red Hill Shaft Recovery and Monitoring

#### **4.4.5.3 Cumulative Impact Analysis**

The Red Hill Interim GAC water treatment system would require clearing of approximately 1.6 acres of vegetation. Combined with the Proposed Action, the two projects would clear approximately 10.5 acres of primarily non-native scrub forest and non-native shrubs, which would represent a negligible impact on terrestrial biological resources. Additionally, the interim GAC water treatment system would implement the same BMPs as the Proposed Action to avoid and minimize potential impacts to protected species.

The RHSRMP has included biological monitoring of the Halawa Stream to determine the effects of the current discharge of up to 5 MGD to the stream. Monitoring results suggest that the discharge has resulted in increases in both native and non-native fish species downstream of the discharge point (Tsang, 2023). The Proposed Action would cease the discharge of water to the Halawa Stream and revert the stream to historical flow rates.

Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts to terrestrial biological resources within the ROI.

#### **4.4.6 Infrastructure**

##### **4.4.6.1 Description of Geographic Study Area**

The ROI, or area where impacts are assumed likely to occur, for the infrastructure analysis varies based on the type of infrastructure analyzed. The ROI in its broadest sense is inclusive of the entire service area of the Navy's water distribution system. The cumulative impacts of the relevant past, present, and future actions are limited to RHBFSF.

##### **4.4.6.2 Relevant Past, Present, and Future Actions**

- RHBFSF Beneficial Reuse
- Relocation of the Animal Quarantine Station
- NASED
- New OCCC

##### **4.4.6.3 Cumulative Impact Analysis**

The potential beneficial reuse of RHBFSF could require infrastructure service, but not enough information is available at this time to determine the extent of type of infrastructure service that would be required.

The proposed relocated Animal Quarantine Station, NASED, and new OCCC would be major new developments in the project vicinity and would require infrastructure to support the new development. The State would coordinate closely with the respective utilities to evaluate capacity and points of connection, and the addition of the proposed water treatment facility is not anticipated to affect the

feasibility of infrastructure development for the relocated Animal Quarantine Facility, NASED, or new OCCC.

Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts on infrastructure within the ROI.

#### **4.4.7 Air Quality**

##### **4.4.7.1 Description of Geographic Study Area**

The ROI for assessing air quality impacts is the air basin in which the project is located- the State of Hawaii Air Quality Control Region.

##### **4.4.7.2 Relevant Past, Present, and Future Actions**

- RHBFSF Beneficial Reuse
- Relocation of the Animal Quarantine Station
- NASED
- New OCCC

##### **4.4.7.3 Cumulative Impact Analysis**

Depending on the implementation timeline for the RHBFSF Beneficial Reuse, relocation of the Animal Quarantine Station, NASED, and the new OCCC, construction of the facilities could overlap with construction of the Proposed Action, contributing to typical construction-period air emissions in the project area (i.e., fugitive dust, tail pipe emissions from construction vehicles, etc.). However, it is expected that all construction activities would comply with standard BMPs to control fugitive dust and limit emissions.

Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant air quality impacts within the ROI.

#### **4.4.8 Noise**

##### **4.4.8.1 Description of Geographic Study Area**

The ROI for noise encompasses areas in the vicinity of the Proposed Action and the past, present, and reasonably foreseeable future actions that would be impacted by project-related activities including RHBFSF, Halawa Valley, and the Army's Red Hill Housing. The predominant noise sources in the ROI include traffic noise associated with the H-201 and H-3 highways and the nearby Halawa Interchange as well as operations at the Halawa Quarry and other industrial uses within Halawa Valley.

##### **4.4.8.2 Relevant Past, Present, and Future Actions**

- RHBFSF Beneficial Reuse
- Relocation of the Animal Quarantine Station
- NASED
- New OCCC

##### **4.4.8.3 Cumulative Impact Analysis**

Depending on the implementation timeline for the RHBFSF Beneficial Reuse, relocation of the Animal Quarantine Station, NASED, and the new OCCC, construction of the facilities could overlap with construction of the Proposed Action contributing to typical construction-period noise impacts in the

project area. The relocated Animal Quarantine Station and the new OCCC would be located to the north of RHBFSF in an existing industrial area in Halawa Valley, on the opposite side of RHBFSF from the nearest noise sensitive receptors. NASED is located approximately one mile west of RHBFSF across the H-1/H-201/H-3 interchange. Additionally, construction of the relocated Animal Quarantine Station, NASED, and new OCCC would require a Construction Noise Permits and the associated mitigation and scheduling requirements to minimize noise impacts.

RHBFSF is located primarily underground, so it is assumed that construction work to support beneficial reuse would mostly take place underground and would have negligible effects on the noise environment.

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.

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## 5 Other Considerations Required by NEPA

This chapter discusses the Proposed Action’s conformance with relevant Federal laws, plans, policies, and regulations. Conformance with State and county laws, plans, policies, and regulations is addressed in Appendix F.

### 5.1 Consistency with Other Federal Laws, Plans, Policies, and Regulations

In accordance with NEPA and Navy procedures for implementing NEPA, this analysis of environmental consequences includes 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 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 Laws Applicable to the Proposed Action**

<i>Federal, State, Local, and Regional Land Use Plans, Policies, and Controls</i>	<i>Status of Compliance</i>
National Environmental Policy Act (NEPA) and Navy procedures for Implementing NEPA	Final EA completed.
Clean Air Act	Complies
Clean Water Act	NPDES permit to be obtained prior to construction.
Coastal Zone Management Act	Complies. The Navy has completed a Consistency Determination with OPSD CZMP. OPSD concurred with the Navy’s determination that the preferred alternative is consistent to the maximum extent practicable with the policies of the Hawaii CZM program.
National Historic Preservation Act	Complies. The Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would adversely affect two sites within the APE and prepared an MOA to resolve adverse effects. Upon completion of consultations, the MOA was agreed to and signed by the Navy and SHPO in February 2026, and it will be implemented to ensure compliance for the proposed action.
Endangered Species Act	Complies. The Navy has consulted the USFWS. The USFWS concurred that the Preferred Alternative may affect, but is not likely to adversely affect ESA species.
Migratory Bird Treaty Act	Complies.
Comprehensive Environmental Response, Compensation, and Liability Act	Complies.
Emergency Planning and Community Right-to-Know Act	Complies.
Resource Conservation and Recovery Act	Complies.
Toxic Substances Control Act	Complies.
Executive Order 12088, Federal Compliance with Pollution Control Standards	Complies.
Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks	Complies.

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## 6 List of Parties Contacted

### 6.1 Pre-Assessment Consultation

An informational letter was sent on May 24, 2024, to 79 elected officials, agencies, organizations, and individuals to obtain comments on the proposed project during the pre-assessment consultation process to prepare the EA. A total of seven responses were received. The parties contacted are listed in Table 7-1 below. The parties that provided written comments are marked with “x.” The comments are provided in Appendix A, and relevant comments are addressed in this EA.

### 6.2 Public Review of the Draft EA

The Navy published a notice of availability of the Draft EA in the *Honolulu Star-Advertiser* (March 21, 23, and 24, 2025) and in the OPSD’s *The Environmental Notice* (March 23, 2025). The Navy distributed the notice of availability of the Draft EA to the same distribution list as the pre-assessment consultation, including elected officials, government agencies, neighborhood boards, Native Hawaiian Organizations, utilities, and community organizations.

The Navy announced the availability of the EA at the Pearl City Neighborhood Board meeting on March 25, 2025. The Navy provided an email notification to the Aiea Neighborhood Board ahead of their April 8, 2025 meeting and to the Aliamanu-Salt Lake Neighborhood Board and Ewa Neighborhood Board ahead of their April 10, 2025 meetings. The *Star-Advertiser* published a newspaper article discussing the availability of the Draft EA on April 14, 2025, and Hawaii News Now published a news report discussing the availability of the draft EA on April 16, 2025. Additionally, the Navy communicated the NOA on the NAVFAC Pacific NEPA Information website at <https://pacific.navfac.navy.mil/About-Us/National-Environmental-Policy-Act-NEPA-Information/>, the Red Hill Highlights newsletter, and Navy social media platforms.

Twenty public comments were received on the Draft EA, from nineteen different individuals. One commenter submitted two comment letters. Individuals and organizations that provided public comments are identified below in Table 7-1. A total of 108 separate comments were extracted for analysis; these were sorted into 32 generalized categories and responses were prepared for each of these generalized categories. A list of the commentors, a table of consolidated responses to public comments, and copies of the individual public comment letters is provided in Appendix A-2. Relevant comments are addressed in this Final EA.

**Table 6-1 List of Parties Contacted**

<i>Agency, Organization, or Individual</i>	<i>Pre-Assessment Consultation Written response (X)</i>	<i>Draft EA Written response (X)</i>
<b><i>Elected Officials</i></b>		
<i>Federal</i>		
U.S. Senator Mazie Hirono		
U.S. Senator Brian Schatz		
U.S. Representative Jill Tokuda		
U.S. Representative Ed Case		
<i>State of Hawai'i</i>		
Governor Josh Green		

<b>Agency, Organization, or Individual</b>	<b>Pre-Assessment Consultation Written response (X)</b>	<b>Draft EA Written response (X)</b>
Lt. Governor Sylvia Luke		
2024 Speaker of the House of Representatives Scott Saiki		
2025 Speaker of the House of Representatives Nadine Nakamura		
President of the Senate Ron Kouchi		
Senator Donna Mercado Kim		
Senator Henry J.C. Aquino		
Senator Brandon J.C. Elefante		
Senator Kurt Fevella		
Senator Glenn Wakai		
Representative Micah Aiu		
Representative Garner Shimizu		
Representative Cory M. Chun		
Representative Shirley Ann Templo		
Representative Sonny Ganaden		
Representative Linda Ichiyama, Chair of Special Committee on Red Hill		
Representative Sam Satoru Kong		
Representative Julie Reyes Oda		
Representative Rose Martinez		
Representative Gregg Takayama		
<i>City and County of Honolulu</i>		
Mayor Rick Blangiardi	X	
Council Chair Tommy Waters		
Council Floor Leader Radiant Cordero		
Councilmember Val Aquino Okimoto		
Councilmember Augie Tulba		
<i>Neighborhood Boards</i>		
Neighborhood Board No. 20 (Aiea) (via Chair Stephen Wood)		
Neighborhood Board No. 18 (Aliamanu-Salt Lake) (via Chair David Yomes)		
Neighborhood Board No. 21 (Pearl City) (via Chair Larry Veray)		
Neighborhood Board No. 23 (Ewa) (via Chairs Mitchell Tynanes [2024] & John Clark III [2025])		
<b><i>Federal Agencies</i></b>		
Commander, US Army Garrison Hawaii		
Commander, US Coast Guard Fourteenth District		
Hickam Housing Management Office		
Navy Housing Service Center		
U.S. Army Corps of Engineers, Honolulu District		
U.S. Environmental Protection Agency Region 9		X
U.S. Fish and Wildlife Service	X	

<i>Agency, Organization, or Individual</i>	<i>Pre-Assessment Consultation Written response (X)</i>	<i>Draft EA Written response (X)</i>
U.S. Geological Survey, Pacific Islands Water Science Center		
<b><u>State Agencies</u></b>		
Department of Accounting and General Services	X	
Department of Agriculture		
Department of Corrections and Rehabilitation		
Department of Education		
Department of Hawaiian Homelands		
Department of Health		
Department of Land and Natural Resources, Commission on Water Resource Management		
Department of Land and Natural Resources, Land Division		X
Department of Land and Natural Resources, Division of Forestry and Wildlife		X
Department of Land and Natural Resources, State Historic Preservation Division		
Department of Transportation		
Office of Hawaiian Affairs		
Office of Planning and Sustainable Development		
University of Hawaii Water Resources Research Center		
<b><u>Honolulu County Agencies</u></b>		
Honolulu Board of Water Supply		X
Department of Environmental Services		
Department of Planning and Permitting	X	
Department of Transportation Services		
Honolulu Fire Department	X	
Honolulu Police Department	X	X
Neighborhood Board Commission		
Oahu Historic Preservation Commission		
Office of Climate Change, Sustainability, and Resilience		
<b><u>Native Hawaiian Organizations</u></b>		
Association of Hawaiian Civic Clubs		
Ali'i Pauahi Hawaiian Civic Club		
Council for Native Hawaiian Advancement		
Ka Lāhui Hawai'i		X
<b><u>Utilities</u></b>		
Hawaiian Electric Company	X	
Hawaiian Telcom		
Hawai'i Gas		
Spectrum		
<b><u>Community Organizations</u></b>		
Aiea Community Association		

* Commenter submitted two separate Draft EA comment letters. <i>Agency, Organization, or Individual</i>	<i>Pre-Assessment Consultation Written response (X)</i>	<i>Draft EA Written response (X)</i>
Chamber of Commerce of Hawai'i		
Earthjustice		
Environmental Caucus of the Democratic Party of Hawai'i		X*
Hickam Communities LLC		
Island Palms Communities		
Kapilina Beach Homes		
Moanalua Valley Community Association		
Oahu Water Protectors		
Ohana Military Communities		
Red Hill Community Representation Initiative		
Sierra Club of Hawai'i		
Life of the Land		
Wai Ola Alliance		X
<b><i>Individuals</i></b>		
Kimberley Chavez		X
Stacey Enderton		X
Susan Gorman-Chang		X
Debbie Hagemann		X
Kimmer Horsen		X
Jennie Ann Manoi		X
Malia Marquez		X
Susan Pcola-Davis		X
Tara Rojas		X
Noel Shaw		X
Whitney White		X
Meredith Wilson		X

## 7 References

- AECOS. (2016). *Botanical Surveys of U.S. Navy Properties in Support of an Integrated Natural Resources Management Plan at Joint Base Pearl Harbor-Hickam, Oahu, Hawaii*.
- Agency, U. E. (2023, January 9). *Ground Water and Drinking Water*. Retrieved from United States Environmental Protection Agency: <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>
- Ayers, W. S. (1971). *Archaeological Survey and Excavations in Kamani-Nui Valley, Moanalua Ahupua'a, [and] South Halawa Valley, Halawa Ahupua'a*. Departmental Report Series 70-8. Bishop Museum Anthropology Department, Honolulu.
- Chambers, B. V., & Leppard, T. P. (2025). *Archaeological Inventory Survey at the Red Hill Fuel Facility, Joint Base Pearl Harbor-Hickam, Oahu, Hawaii*. Prepared for Naval Facilities Engineering Command.
- City and County of Honolulu, Department of Planning and Permitting. (2004). *Primary Urban Center Development Plan*. Retrieved from [https://www.honolulu.gov/rep/site/dpp/pd/pd\\_docs/PUCDP\\_2004.pdf](https://www.honolulu.gov/rep/site/dpp/pd/pd_docs/PUCDP_2004.pdf)
- City and County of Honolulu, Department of Planning and Permitting. (2021). *Oahu General Plan*. Retrieved from [https://www.honolulu.gov/rep/site/dpp/pd/pd\\_docs/General\\_Plan\\_RESO\\_21-23\\_CD1\\_For\\_DISTRIBUTION.pdf](https://www.honolulu.gov/rep/site/dpp/pd/pd_docs/General_Plan_RESO_21-23_CD1_For_DISTRIBUTION.pdf)
- Cowan, J. P. (1994). *Handbook of Environmental Acoustics*. New York: John Wiley & Sons.
- Department of Defense. (2009, June 16). Memorandum from the Under Secretary of Defense. *Methodology for Assessing Hearing Loss Risk and Impacts in DoD Environmental Impact Analysis*. Washington, DC.
- Department of Defense. (2012). *Defense Environmental Restoration Program (DERP) Management Manual*. .
- Department of the Navy. (2021). *Final Site Assessment Work Plan Red Hill Oily Waste Disposal Facility*.
- Department of the Navy. (2022). *Integrated Natural Resources Management Plan for Joint Base Pearl Harbor-Hickam, Oahu, Hawaii*.
- Department of the Navy. (2024). *Red Hill Tank Closure Plan Supplemental #3*. Retrieved from [https://cnrh.cnic.navy.mil/Portals/79/CNRH/Documents/red\\_hill/Closure%20Plan/Enclosure%20\(1\)%20-%20Tank%20Closure%20Plan%20Supplement%203%20-%20Site%20Assessment%20and%20Release%20Response%20Actions.pdf?ver=srjeCoBbDap4HAKB9Z5gGQ%3d%3d](https://cnrh.cnic.navy.mil/Portals/79/CNRH/Documents/red_hill/Closure%20Plan/Enclosure%20(1)%20-%20Tank%20Closure%20Plan%20Supplement%203%20-%20Site%20Assessment%20and%20Release%20Response%20Actions.pdf?ver=srjeCoBbDap4HAKB9Z5gGQ%3d%3d)
- Department of the Navy, Office of the Assistant Secretary of the Navy for Energy, Installations, and Environment. (May 2022). *Department of the Navy Climate Action 2030*. Washington, DC.
- Filimoehala, C., & Allen, J. (2015). *Archaeological Inventory Survey of the Red Hill Fuel Facility, Joint Base Pearl Harbor-Hickam, Oahu, Hawaii*. *Tax Map Key (TMK): (1) 1-1-012:003 and 004 (both,*

- portions); and TMK (1) 9-9-010:001, 006, 026 (all, portions), and 50. International Archaeology, LLC.: Prepared for Commander, Pacific Division, Naval Facilities Engineering Command.
- Hamer Environmental. (2016). *Avian Point Counts at Eleven Sites Within Joint Base Pearl Harbor Hickam*.
- Historic American Engineering Record. (2015). *U.S. Naval Base, Pearl Harbor, Red Hill Underground Fuel Storage System*. National Park Service, U.S. Department of the Interior.
- Joint Base Pearl Harbor-Hickam. (n.d.). Retrieved from JBPHH Safe Waters: [www.jbphh-safewaters.org](http://www.jbphh-safewaters.org)
- Joint Base Pearl Harbor-Hickam. (2018). *Joint Base Pearl Harbor-Hickam Green Waste Policy*.
- Joint Base Pearl Harbor-Hickam. (2024, 11 01). *Groundwater Monitoring Dashboard*. Retrieved from JBPHH Safe Waters:  
<https://app.powerbi.com/view?r=eyJrIjojNmJkZTE5MGUtZjFmNC00YjVklWixN2QtZjE1MDBIM2U1OTU1IiwidCI6ImUyYzE5MDhiLTl2NzltNGE0Ni05M2ZkLTdmMDhkYTExNjZiNSlsmMiOjJ9>
- McLean, J., Cleveland, S., Lucas, M., Longman, R., Giambelluca, T., Leigh, J., & Jacobs, G. (2020). The Hawai'i Rainfall Analysis and Mapping Application (HI-RAMA): Decision Support and Data Visualization for Statewide Rainfall Data. In *Practice and Experience in Advanced Research Computing. Practice and Experience in Advanced Research 239–45*.
- Naval Facilities Engineering Systems Command Hawaii. (2023). *Final Report of Findings, Red Hill Shaft Flow, September 19, 2023*. Retrieved from  
[https://health.hawaii.gov/ust/files/2023/12/REDACTED-Final-Report-of-Findings-Red-Hill-Shaft-Flow-Optimization-Study-September-19-2023\\_Redacted\\_508.pdf](https://health.hawaii.gov/ust/files/2023/12/REDACTED-Final-Report-of-Findings-Red-Hill-Shaft-Flow-Optimization-Study-September-19-2023_Redacted_508.pdf)
- Naval Facilities Engineering Systems Command Hawaii. (2024a). *Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances Release Red Hill Bulk Fuel Storage Facility*. Retrieved from  
[https://jbphh-safewaters.org/public/library/StreamResource.axd?DSN=pub&Mode=FileImage\\_Inline&ID=33614](https://jbphh-safewaters.org/public/library/StreamResource.axd?DSN=pub&Mode=FileImage_Inline&ID=33614)
- Naval Facilities Engineering Systems Command Hawaii. (2024b). *Navy Aiea Halawa Shaft Reactivation Plan*. Retrieved from [https://jbphh-safewaters.org/public/NAH\\_Shaft\\_Reactivation\\_Plan\\_27MAR2025.pdf](https://jbphh-safewaters.org/public/NAH_Shaft_Reactivation_Plan_27MAR2025.pdf)
- Naval Facilities Engineering Systems Command, Pacific. (2021). *Biological Evaluation for the Joint Intelligence Operations Center, Makalapa Compound, Joint Base Pearl Harbor-Hickam*.
- Navy Closure Task Force-Red Hill. (2025). *Status Update - April 2025*. Retrieved from  
<https://www.navyclosuretaskforce.navy.mil/Portals/101/NCTF-RH%20Actions%20Summary%20April%202025.pdf>
- Navy, State of Hawaii Department of Health, and the United States Environmental Protection Agency. (2022). *Red Hill Shaft Recovery and Monitoring Plan*. JBPHH, Oahu, Hawaii.
- PBR Hawaii & Associates, Inc. (2018). *Replacement of Oahu Community Correctional Center, Expansion of Women's Community Correctional Center, and New Department of Agriculture Animal Quarantine Station*. State of Hawaii Department of Accounting and General Services.

- Rechtman, R. B., & Henry, J. D. (1998). *Archaeological Reconnaissance Survey—Red Hill Fuel Storage Area and Ewa Drum Filling and Fuel Storage Area—Lands of Waipi’o, Wai’awa, Hālawā, ‘Ewa District and Moanalua, Honolulu District, Island of O’ahu*. Paul H. Rosendahl, Ph.D., Inc. (PHRI), Hilo: Prepared for U.S. Department of the Navy, Naval Facilities Engineering Command, Pearl Harbor.
- State of Hawaii Commission on Water Resource Management. (2022). *CWRM Staff Updates on Timeframe for Water Use Permit Modification Process and Enforcement Recommendations*. Retrieved from <https://files.hawaii.gov/dlnr/cwrmsubmittal/2022/sb20220920D1.pdf>
- State of Hawaii Department of Health. (2023). *Estimates of Contaminant Types and Concentrations in Joint Base Pearl Harbor Hickam Drinking Water System Following November 2021 Release of Jet Fuel from Red Hill Fuel Facility*.
- State of Hawaii Department of Health. (2024). *2024 State of Hawaii Water Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress Pursuant to §303(d) and §305(b), Clean Water Act (P.L. 97-117)*. Honolulu, Hawaii.
- State of Hawaii Department of Health. (2024). *Interim Soil and Water Environmental Action Levels (EALs) for Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs)*. Retrieved from <https://health.hawaii.gov/heer/files/2024/07/PFASSEALGuidanceHIDOHApril2024Rev070524.pdf>
- State of Hawaii Department of Land and Natural Resources. (2015). *Hawaii's State Wildlife Action Plan*.
- The Water Research Foundation. (2019). *Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation*. Co-sponsored by: Honolulu Board of Water Supply.
- Tsang, Y. (2023). *Ecological Monitoring in Halawa Stream, Oahu*. Tsang Stream Lab, University of Hawaii at Manoa.
- U.S. Environmental Protection Agency. (2023, May 5). *About Red Hill Fuel Releases*. Retrieved from United States Environmental Protection Agency: <https://www.epa.gov/red-hill/about-red-hill-fuel-releases>
- U.S. Environmental Protection Agency. (2023). *General Conformity De Minimis Tables*. Retrieved from <https://www.epa.gov/general-conformity/de-minimis-tables>
- U.S. Environmental Protection Agency. (2024). *Best Available Technologies and Small System Compliance Technologies for Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water*. Retrieved from [https://www.epa.gov/system/files/documents/2024-04/2024-final-pfas-bat-ssct\\_final-508.pdf](https://www.epa.gov/system/files/documents/2024-04/2024-final-pfas-bat-ssct_final-508.pdf)
- United States Geological Survey. (2025, January 9). *National Water Information System: Web Interface*. Retrieved from <https://waterdata.usgs.gov/nwis>
- Vanderwerf, E. A. (2003). Distribution, abundance, and breeding biology of white terns on Oahu, Hawaii. *The Wilson Bulletin*, 115(3), 258-262.
- Vernon, N. I., Orr, M. E., & Collins, S. (2016). *Native Hawaiian Traditional Cultural Places Study for Joint Base Pearl Harbor-Hickam, O’ahu Island, Hawai’i*. Prepared for Naval Facilities Engineering Command, Pacific.

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## 8 List of Preparers

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

### **U.S. Department of the Navy**

Wendy Dauberman Zerby

Education: B.S. Biology and M.S. Environmental Engineering Water Resource Management and Planning

Years of Experience: 15

Responsible for: EA Project Manager

Justin Fujimoto

Education: B.S. Natural Resources and Environmental Management

Years of Experience: 13

Responsible for: Terrestrial Biological Resources

Jeff Pantaleo

Education: M.A. Anthropology

Years of Experience: 40

Responsible for: Cultural Resources

Jeff Fong

Education: A.S. Engineering, B.A. Anthropology, and M.A. Bioarchaeology, Osteology

Years of Experience: 20

Responsible for: Cultural Resources

### **HHF Planners (Prime Contractor)**

Thomas A. Fee, AICP, LEED AP ND

B.A., Economics and Master of Urban and Regional Planning

Years of Experience: 40

Project Role: Principal in charge; Overall Quality Assurance/Quality Control

John Hagihara, AICP

B.A., Economics and Master of Urban and Regional Planning

Years of Experience: 11

Project Role: NEPA EA Project Manager, Lead Author

Geoffry Spangler, AICP

B.A., Anthropology and Master of Urban and Regional Planning

Years of Experience: 4

Project Role: Environmental Planner

### **HHF Planners Subcontractors**

Sheila Uyeoka, PE (HDR, Inc.)

Education: B.S., Civil Engineering

Years of Experience: 30

Project Role: Engineering

Eric Harlow (EA Engineering, Science, and Technology, Inc., PBC)  
B.S., Geology; B.S., Natural Resource Management; M.S., Hydrology  
Years of Experience: 18 years  
Project Role: Biologist

Chris Filimoehala (International Archaeology, LLC)  
Education: B.A., Anthropology and History; M.A., Anthropology; Ph.D., Anthropology;  
Years of Experience: 17  
Project Role: Archaeologist

## **Appendix A**

### **Public and Agency Participation**

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## Appendix A-1 Pre-Assessment Consultation

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**Pre-Assessment Consultation**

An informational letter was sent on May 24, 2024 to 79 elected officials, agencies, organizations, and individuals to obtain comments on the proposed project during the pre-assessment consultation process to prepare the EA. A total of seven responses were received. Table A-1 lists a summary of the comments that were received and provides a description of how those comments were addressed in the EA. The full comments are provided following the table.

**Table A-1 Pre-Assessment Consultation Comments Received**

<b><i>Agency, Organization, or Individual</i></b>	<b><i>Summary of the comment received</i></b>	<b><i>How the comment was addressed in the Draft EA.</i></b>
<b><i>Elected Officials</i></b>		
<b><i>City and County of Honolulu</i></b>		
Mayor Rick Blangiardi	Confirmation of receipt.	No response necessary.
<b><i>Federal Agencies</i></b>		
U.S. Fish and Wildlife Service (USFWS)	The applicant should utilize the Information for Planning and Consultation (IPaC) online portal to obtain an official species list for Endangered Species Act Section 7 Consultation.	The Navy utilized the IPaC portal and has entered into informal consultation with the USFWS regarding the Proposed Action. See Section 3.5.3.2 in the Draft EA.
<b><i>State Agencies</i></b>		
Department of Accounting and General Services (DAGS)	There are several State projects in the vicinity of the Proposed Action that may coincide with the construction of the Proposed Action, including the relocation of the Animal Quarantine Station, the relocation of the Oahu Community Correctional Center, various repair and maintenance activities, and the development of the New Aloha Stadium and Entertainment District. DAGS requests continued engagement with the Navy as the project progresses.	Potential cumulative impacts from the Proposed Action and other reasonably foreseeable future actions is provided in Section 4.4 of the Draft EA. The Navy will continue to coordinate with DAGS and other relevant State agencies as the Proposed Action moves forward.
<b><i>Honolulu County Agencies</i></b>		
Department of Planning and Permitting (DPP)	Confirmation of receipt.	No response necessary.
Honolulu Fire Department (HFD)	Fire department access and fire protection water supply should be provided in accordance National Fire Protection Association (NFPA) 1; 2018 Edition, and civil drawings should be submitted to the City's Department of Planning and Permitting.	The Proposed Action, including fire department access and fire protection water supply, will comply with NFPA 1; 2018 edition. See Table 2-3 for a description of fire protection for the Proposed Action.

<b><i>Agency, Organization, or Individual</i></b>	<b><i>Summary of the comment received</i></b>	<b><i>How the comment was addressed in the Draft EA.</i></b>
Honolulu Police Department (HPD)	<p>Recommends that all necessary lights, signs, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project. Additionally, adequate notification should be made to area businesses and residents prior to possible road closures, as any impact to pedestrian and/or vehicular traffic or construction-related debris could lead to complaints. Lastly, the HPD recommends a long-term plan to mitigate the tracking of dirt, gravel, and debris to minimize potential environmental impacts from all affected areas, including the shoreline resources.</p>	<p>The construction contractor would be required to comply with the Navy’s safety program, as well as occupational safety and health regulations, standards, and instructions. See Section 3.1.3.2 of the Draft EA. No road closures are anticipated as part of the Proposed Action. The Proposed Action includes the preparation of a SWPPP and erosion control BMPs to avoid or minimize potential impacts associated with temporary increased runoff and erosion during construction. See Section 3.2.3.2 of the Draft EA.</p>
<b><u>Utilities</u></b>		
Hawaiian Electric Company	<p>Should Hawaiian Electric have existing easements and facilities in the project area, they will need continued access for maintenance of their facilities.</p>	<p>The Navy is coordinating with Hawaiian Electric on the Proposed Access. See Section 3.6.3.2 of the Draft EA.</p>

**From:** [Watson, Brenda](#)  
**To:** [RedHillEA](#)  
**Subject:** RE: Red Hill Water Treatment Facilities  
**Date:** Thursday, June 6, 2024 8:25:49 AM

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[This message was sent from an outside source.]  
Received, thank you.



**Brenda Watson**  
Office of Mayor Rick Blangiardi  
*Ke Ke'ena o ka Meia 'o Rick Blangiardi*  
City and County of Honolulu  
Direct: (808) 768-4141 | [brenda.watson@honolulu.gov](mailto:brenda.watson@honolulu.gov)

---

**From:** RedHillEA <[RedHillEA@hhf.com](mailto:RedHillEA@hhf.com)>  
**Sent:** Tuesday, June 4, 2024 7:32 AM  
**To:** Watson, Brenda <[brenda.watson@honolulu.gov](mailto:brenda.watson@honolulu.gov)>  
**Subject:** RE: Red Hill Water Treatment Facilities

CAUTION: Email received from an EXTERNAL sender. Please confirm the content is safe prior to opening attachments or links.

Hi Ms. Watson,

Please see attached for the early consultation letter package. The location map is provided on page 4 of the PDF (Enclosure 2).

The Navy is requesting comments by June 22, 2024.

Thank you and please let me know if you have any more questions.

Regards,

**HHF Planners**  
**40 Years in Hawai'i**

o 808.545.2055  
733 Bishop St. Ste. 2590 | Honolulu, HI 96813  
[www.hhf.com](http://www.hhf.com)

---

**From:** Watson, Brenda <[brenda.watson@honolulu.gov](mailto:brenda.watson@honolulu.gov)>  
**Sent:** Friday, May 31, 2024 9:25 AM  
**To:** RedHillEA <[RedHillEA@hhf.com](mailto:RedHillEA@hhf.com)>  
**Subject:** Red Hill Water Treatment Facilities

[This message was sent from an outside source.]

Good Morning,

Reaching out in reference to a letter received (via postal mail) regarding the Red Hill Water Treatment Facilities, Environmental Assessment Pre-Assessment Consultation.

Is there a deadline? If so, please provide date. Also, it states in the letter a regional location map was enclosed, however, we did not receive. Can you please email me a copy of the map at your earliest convenience?

Thank you for your time on this matter.



**Brenda Watson**

Office of Mayor Rick Blangiardi

*Ke Ke'ena o ka Meia 'o Rick Blangiardi*

City and County of Honolulu

Direct: (808) 768-4141 | [brenda.watson@honolulu.gov](mailto:brenda.watson@honolulu.gov)

---

**From:** Pe'a, Ryan <ryan\_pea@fws.gov>  
**Sent:** Friday, June 21, 2024 9:10 AM  
**To:** RedHillEA  
**Subject:** Comments on the Pre-assessment Consultation for the Red Hill Water Treatment Facilities Environmental Assessment  
**Attachments:** IPaC Info Letter\_Species List Instructions\_PIFWO\_20Apr2022\_Final.pdf

[This message was sent from an outside source.]

Aloha HHF Planners,

The Pacific Islands Fish and Wildlife Office (PIFWO) received your email on May 24, 2024 regarding the pre-assessment consultation for the preparation of an Environmental Assessment for the proposed Red Hill Water Treatment Facilities.

We wanted to let you know that PIFWO is transitioning to the use of the Information for Planning and Consultation (IPaC) online portal, <https://ipac.ecosphere.fws.gov/>, for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species and designated critical habitat in their project area. Using IPaC expedites the process for species list distribution and takes minimal time. For this project, we recommend you use the attached instructions to generate a species list on IPaC and implement the applicable avoidance and minimization measures into your project design.

Feel free to share these instructions with additional project partners and contact me should you have any questions or concerns regarding this response.

Mahalo,  
Ryan

--

Ryan Pe'a  
Fish and Wildlife Biologist - DoD Coordinator

U.S. Fish and Wildlife Service  
Pacific Islands Fish & Wildlife Office  
300 Ala Moana Blvd, Rm 3-122  
Honolulu, HI 96850  
Office: 808-210-6294  
Fax: 808-792-9580



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, Hawai'i 96850

Subject: IPaC generated official species list for the Pacific Islands Fish and Wildlife Office

Dear Action Agency or Applicant:

The Pacific Islands Fish and Wildlife Office (PIFWO) is transitioning to the Information for Planning and Consultation (IPaC) online portal, <https://ipac.ecosphere.fws.gov/> for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species, designated critical habitat, and avoidance and minimization measures to consider in your general project design. IPaC has been used by continental USFWS offices to provide official species lists and avoidance and minimization guidance since 2017. Using IPaC expedites the process for species list distribution. Obtaining a species list in IPaC is relatively straightforward and takes minimal time to complete. Step by step instructions are included below.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of your species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change the species list. Verification can be completed by visiting the IPaC website at regular intervals during project planning and implementation. An updated list may be requested through the IPaC system by completing the same process used to obtain the initial species list.

We hope this process provides efficiencies to our partners in obtaining a species list. For federal action agencies, it also opens additional IPaC functionality that the PIFWO office is still working on, such as the use of Determination Keys for informal section 7 programmatic consultations. We will let our agency partners know when that functionality becomes available.

If you have questions about a species list obtained through the IPaC system or need assistance in completing an IPaC species list request, please contact the Service at 808-792-9400 or via email at [pifwo\\_admin@fws.gov](mailto:pifwo_admin@fws.gov). We appreciate your efforts to conserve listed species across the Pacific Islands.

INTERIOR REGION 9  
COLUMBIA-PACIFIC NORTHWEST

IDAHO, MONTANA\*, OREGON\*, WASHINGTON

\*PARTIAL

INTERIOR REGION 12  
PACIFIC ISLANDS

AMERICAN SĀMOA, GUAM, HAWAI'I, NORTHERN  
MARIANA ISLANDS

## Instructions for Action Agencies and partners to obtain an official species list in IPaC

- Navigate to <https://ipac.ecosphere.fws.gov/>
- You can get an unofficial species list without logging in. However, if you want an official species list you will need to log in first using your Login.gov account. If you don't have an IPaC account, they are easy to create.



Log in

LOGIN.GOV LOGIN

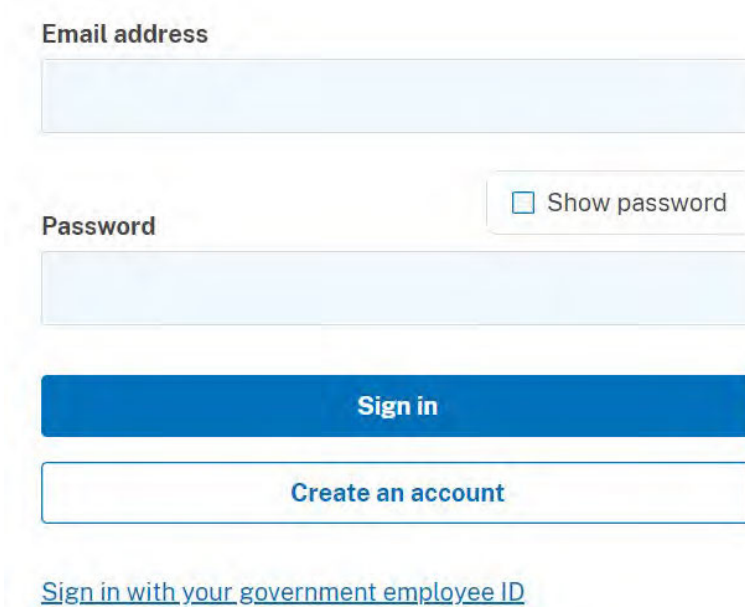
You can use your Login.gov profile as your IPaC account. You will need to allow IPaC to read your basic profile information.

LOG IN WITH  LOGIN.GOV

IPAC LOGIN

> [Why do I need an IPaC account?](#)

Select Log in with Login.gov and sign in using your email and password.



Email address

Password

Show password

Sign in

Create an account

[Sign in with your government employee ID](#)

If you have a PIV or CAC card, you can sign in using that method as well.

## Sign in with your PIV or CAC

Make sure **you have a Login.gov account** and **you've set up PIV/CAC** as a two-factor authentication method.

**Insert your PIV/CAC**

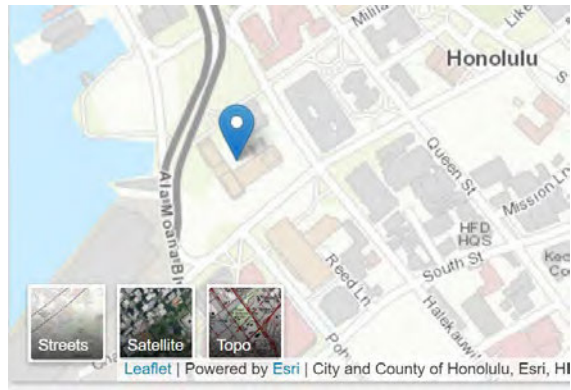
[Cancel](#)

- Once you log in, select “Get Started”.

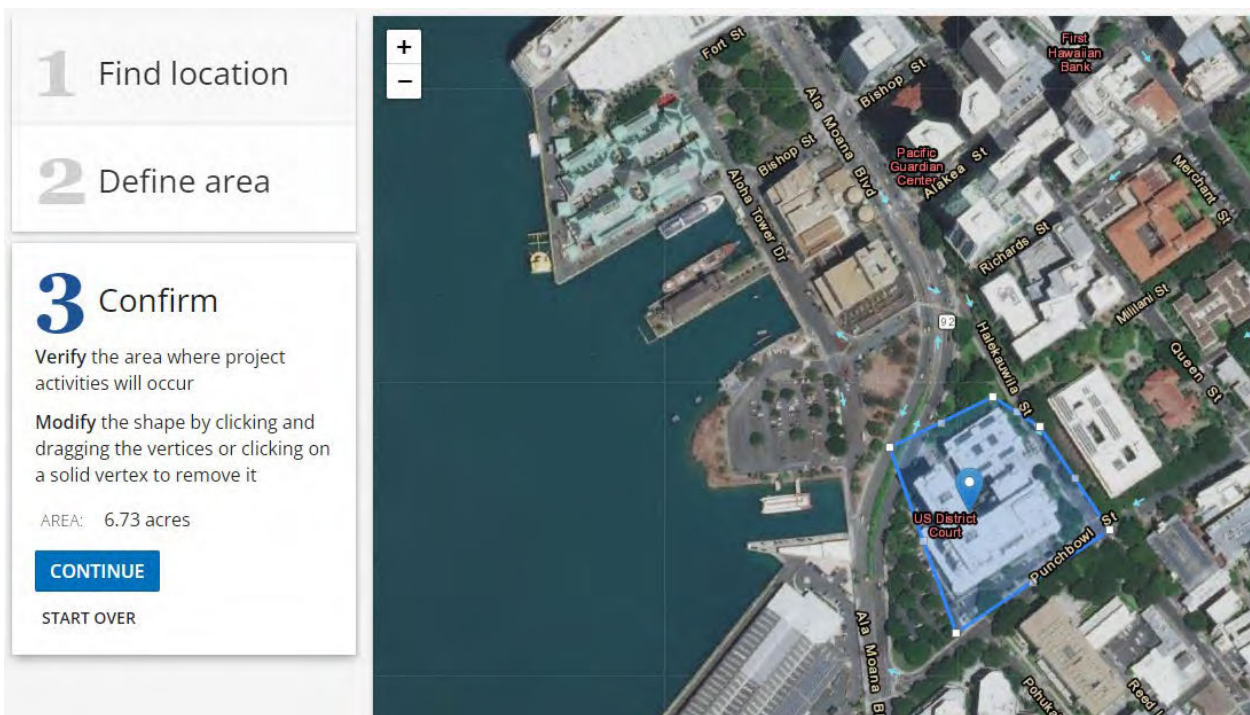
The screenshot shows the IPaC homepage. At the top, there is a navigation bar with the U.S. Fish & Wildlife Service logo, the text "IPaC Information for Planning and Consultation", and the user name "EMMA GOSLINER". Below the navigation bar, there is a large banner image of a coastal landscape with a lighthouse. The text on the banner reads "IPaC is a project planning tool that streamlines the USFWS environmental review process". At the bottom of the banner, there are two buttons: "GET STARTED" and "MY PROJECTS".

- Define the action area: Identify the location of the proposed action by uploading an existing shapefile or by entering an address or coordinates of the action area. Once identified on the map, you can manually draw the action area using the drawing tools.

The screenshot shows the "Define area" step of the IPaC process. On the left, there is a sidebar with the "1 Find location" step selected. The main area is titled "2 Define area" and contains the following text: "Draw the area where activities will occur". Below this, there is a section "Select a drawing tool" with three options: "SKETCH", "POLYGON", and "LINE". At the bottom, there is a section "Other options:" with two options: "UPLOAD SHAPE FILE" and "SELECT BY STATE OR COUNTY". On the right, there is a map of Honolulu with a blue location pin.



To help identify your action area you can choose between multiple base maps available.



Press continue when you have finished drawing or uploading the action area location.

- The species information on the page that follows is not official. However, it identifies the project County, local Fish and Wildlife Field Office, species covered under NOAA Fisheries as well as Migratory Bird Treaty Act species. The list can be viewed in Thumbnail or List format.
- Once the species list populates you will see images of the species that may occur on, near, or transgress across your project. Click on SPECIES GUIDELINES on your top right to see Avoidance and Minimization measures to incorporate into your General Project Design Guidelines.

**Explore location**  
 LOCAL OFFICE: PACIFIC ISLANDS FISH AND WILDL. OFC

LOCATION: Honolulu County, Hawaii  
 CHANGE LOCATION

**Resources**

- ENDANGERED SPECIES 20
- MIGRATORY BIRDS 5
- FACILITIES
- WETLANDS !

PRINT RESOURCE LIST

**What's next?**  
 Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.  
 DEFINE PROJECT

**Endangered species**

Listed species (1) and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries (2)).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).


Additional information on endangered species data is provided [below](#).

The following species are potentially affected by activities in this location:

THUMBNAILS LIST SPECIES GUIDELINES

**Mammals**

**Endangered**



Hawaiian Hoary Bat  
*Lasiurus cinereus semotus*  
 Wherever found

- Continue with the following steps to comply with the requirements of ESA section 7 to obtain an **official species list**.
- Select Define Project

**What's next?**  
 Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.  
 DEFINE PROJECT

**Define project**  
 Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.

Project name: \_\_\_\_\_

Project description: \_\_\_\_\_  
Describe the location, size, scope, and timing of the project.


SAVE CANCEL

Enter the Project Name and a brief description of the project (a description is not mandatory, but recommended for future coordination with the Service). Click SAVE at bottom of page.

- At the bottom of the What's next box on the right, click Request Species List

## Test Project

Testing



LOCATION Honolulu County, Hawaii

CREATED March 17, 2022

1 MEMBER 2 DOCUMENTS

### What's next?

**ESA REVIEW**  
Review this project's effects on listed species pursuant to the Endangered Species Act (ESA), as part of the overall regulatory review.

[START REVIEW](#)

**SPECIES LIST**  
Requesting an official species list is now part of IPaC's ESA Review.

[REQUEST SPECIES LIST](#)

### Local office

Pacific Islands Fish And Wildlife Office

- on the following screen, click Yes, Request Species List

## Endangered Species Act Review

[← BACK](#)
[EXIT REVIEW](#)

**1** Request an official species list

2 Evaluate determination keys  
No Dkeys for project.

**3** Analyze project (optional)

**4** Download documentation

### Step 1: Request an official species list

An official species list is a letter from the local U.S. Fish and Wildlife Service field office that assists in the evaluation of potential impacts of your project. It includes a list of species that should be considered under [Section 7](#) of the Endangered Species Act, a project tracking number, and other pertinent information from the field office.

#### Does this project require an official species list?

Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action" ([Section 7](#) of the Endangered Species Act).

This requirement applies to projects that are **conducted, permitted, funded, or licensed** by any Federal agency.

YES, REQUEST A SPECIES LIST

SKIP / DOES NOT APPLY

- Fill out the contact information for yourself or your agency. Contractors, state partners, and any other project proponents may request a species list and should be covered using the dropdown menus.

Tell us about the project and your organization or agency

Is this project being conducted, permitted, funded, or licensed by a Federal agency?

- Yes
- No

What kind of organization are you working for directly?



The screenshot shows a dropdown menu with the following options: Federal Agency, Tribe (highlighted in blue), State Agency, Federal Agency, Territory Agency, City, County, and Non-Governmental Organization.

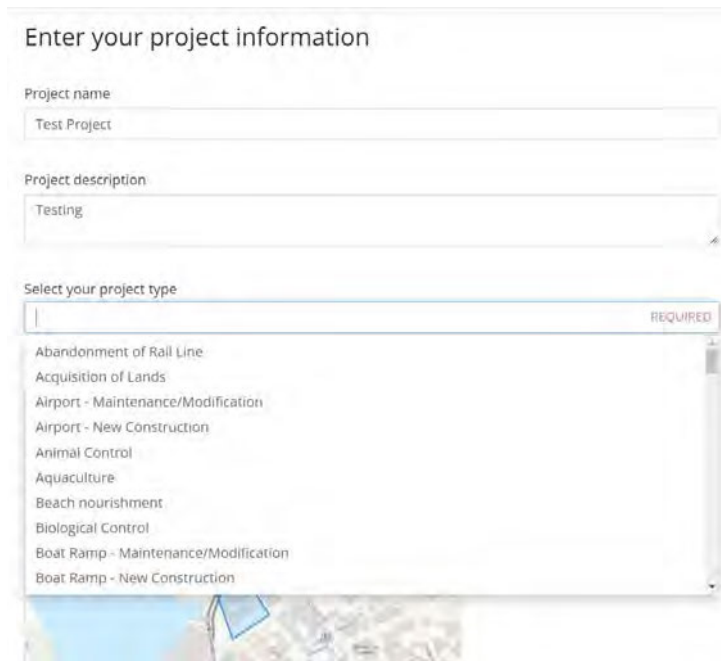
- From the pull-down menu for Classify Type of Project, select the project type that best fits the proposed action.

Enter your project information

Project name  
Test Project

Project description  
Testing

Select your project type REQUIRED



The screenshot shows a dropdown menu with the following options: Abandonment of Rail Line, Acquisition of Lands, Airport - Maintenance/Modification, Airport - New Construction, Animal Control, Aquaculture, Beach nourishment, Biological Control, Boat Ramp - Maintenance/Modification, and Boat Ramp - New Construction.

- Once all required sections are filled out, press **SUBMIT OFFICIAL SPECIES LIST REQUEST**

Location



[SUBMIT OFFICIAL SPECIES LIST REQUEST](#)

- An Official Species List should be generated and available for download in a couple of seconds.
- If you need additional information on a species, click on their name that is hot-linked to their species information page. A brief overview of the species' status, description and critical habitat will appear as well as a link to their ECOS species profile.

A screenshot of a web application interface. On the left is a sidebar with a 'Resources' section containing 'ENDANGERED SPECIES 20', 'MIGRATORY BIRDS 5', 'FACILITIES', and 'WETLANDS !'. Below this is a 'What's next?' section with a 'DEFINE PROJECT' button. The main content area displays information for the 'Liiwi' (Drepanis coccinea). It features a photo of a bright red bird being held. Below the photo, the 'STATUS' is listed as 'Threatened: A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.' The 'DESCRIPTION' states: 'The liwi is an Hawaiian forest bird in the endemic honeycreeper subfamily of the Fringillidae (finch family). liwi are medium-sized forest birds (total body length is approximately 14 centimeters (cm) (5.5 inches (in)) with bright scarlet feathers, black wings and tail, and a small white patch on the inner secondary flight feathers. The bill is long, deeply...'. On the right side of the main content area, there is a vertical panel with a photo of a hand holding a bird and the text 'Endangered' and 'Hawaii Akepa Drepanis coccinea wherever found'.

JOSH GREEN, M.D.  
GOVERNOR  
KE KIA'AINA



KEITH A. REGAN  
COMPTROLLER  
KA LUNA HO'OMALU HANA LAULĀ  
MEOH-LENG SILLIMAN  
DEPUTY COMPTROLLER  
KA HOPE LUNA HO'OMALU HANA LAULĀ

**STATE OF HAWAII | KA MOKU'ĀINA O HAWAII'**  
**DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWÉ LAULĀ**  
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P) 24.130

**JUN 19 2024**

James Rueben Sullivan, Captain, CEC, U.S. Navy  
c/o HHF Planners  
733 Bishop Street, Suite 2590  
Honolulu, Hawaii 96813

Attention: Red Hill Water Treatment Facilities EA

Dear Captain Sullivan:

Subject: Environmental Assessment Pre-Assessment Consultation  
Red Hill Water Treatment Facilities  
Halawa, Oahu, Hawaii  
TMK: (1) 9-9-010:050, 006 (POR.), and 001 (POR.)

Thank you for the opportunity to provide comments on the Red Hill Water Treatment Facilities (hereinafter "Project"). Construction for the Project is anticipated to have direct and indirect impacts on Department of Accounting and General Services (DAGS) activities for the following:

1. The design and construction for the relocation of the Department of Agriculture's Animal Quarantine Station to the west side of the H3 freeway. The construction phase of the new Animal Quarantine Station will likely coincide with the construction phase of the Project.
2. The proposed relocation of the Oahu Community Correctional Center (OCCC) to the Animal Quarantine Station site. The schedule for the design and construction of the new OCCC has not yet been determined. Accordingly, direct and indirect impacts from the Project are yet to be determined.
3. The implementation of various repair and maintenance activities for the Department of Agriculture and Department of Health which may coincide with the construction phase of the Project.

Captain Sullivan  
(P)24.130  
Page 2

4. The New Aloha Stadium and Entertainment District Project (NASED) which involves the construction of a new stadium and includes the mixed-use development of approximately 98 acres of current Aloha Stadium properties identified by TMK (1) 9-9-003:061 and neighboring TMK: (1) 9-9-003:055, 070, and 071 in Halawa. The construction phase for NASED will likely coincide with the construction phase of the Project. As the Halawa Stream crosses through the NASED property, we presume that the discontinuation of the current discharge of treated water into the stream would not negatively impact the NASED project.

As noted above, the construction phase of the Project will affect various DAGS activities in the area. Accordingly, we request continued engagement as the Project progresses. We also recommend continued consultation with the Department of Agriculture, Department of Health, Department of Land and Natural Resources, State Department of Transportation, and Department of Corrections and Rehabilitation, all of whom have facilities which may be affected during the construction phase of the Project.

If you have any questions, your staff may call Joseph Earing, Planning Branch Chief, at (808) 586-0500, or email at [joseph.m.earing@hawaii.gov](mailto:joseph.m.earing@hawaii.gov).

Sincerely,



GORDON S. WOOD  
Public Works Administrator

LM/DE/DD:mc

- c: Isaac Maeda, DOA Animal Industry Division  
Varick Hotema, DOH  
Wayne Takara, DCR  
Ryan Andrews, Aloha Stadium  
Eric Nishimoto, DAGS-PMB

**From:** [Department of Planning and Permitting](#)  
**To:** [RedHillEA](#)  
**Subject:** Automatic reply: Pre-assessment Consultation for the Red Hill Water Treatment Facilities Environmental Assessment  
**Date:** Friday, May 24, 2024 4:25:18 PM

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[This message was sent from an outside source.]

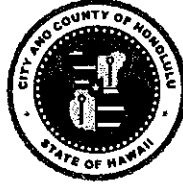
This is an automatic response that the City & County of Honolulu's Department of Planning and Permitting, [dpp@honolulu.gov](mailto:dpp@honolulu.gov), is in receipt of your email. For inquiries, a response will be forthcoming as soon as staff is able to provide you with the information you seek.

Aloha, Department of Planning and Permitting, City and County of Honolulu

**HONOLULU FIRE DEPARTMENT  
KA 'OIHANA KINAI AHI O HONOLULU  
CITY AND COUNTY OF HONOLULU**

636 SOUTH STREET • HONOLULU, HAWAII 96813  
PHONE: (808) 723-7139 • FAX: (808) 723-7111 • WEBSITE: honolulu.gov

RICK BLANGIARDI  
MAYOR  
MEIA



SHELDON K. HAO  
FIRE CHIEF  
LUNA NUI KINAI AHI

JASON SAMALA  
DEPUTY FIRE CHIEF  
HOPE LUNA NUI KINAI AHI

June 10, 2024

HHF Planners  
733 Bishop Street, Suite 2590  
Honolulu, Hawai'i 96813  
Attention: Red Hill Water Treatment  
Facilities Environmental Assessment

Ladies and Gentlemen:

Subject: Red Hill Water Treatment Facilities  
Environmental Assessment Preassessment Consultation  
Hālawā, O'ahu, Hawai'i  
Tax Map Key: 9-9-010: 050, 006 (Portion), and 001 (Portion)

In response to a letter from Captain James Sullivan, CEC of the United States Navy, Regional Manager, received on May 29, 2024, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied with on any land within the jurisdiction of the City and County of Honolulu (City):

1. Fire department access roads shall be in accordance with National Fire Protection Association (NFPA) 1; 2018 Edition, Section 18.2.3.
2. A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2018 Edition, Section 18.2.3.2.1.)
3. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (NFPA 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1, as amended.)

4. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1; 2018 Edition, Sections 18.3 and 18.4.
5. Submit civil drawings to the City's Department of Planning and Permitting (DPP), which will be routed to the HFD, as needed, by the DPP.

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

Should you have questions, please contact Battalion Chief Jean-Claude Bisch of our Fire Prevention Bureau at 808-723-7151 or [jbisch@honolulu.gov](mailto:jbisch@honolulu.gov).

Sincerely,



CRAIG UCHIMURA  
Assistant Chief

CU/MD:bh

cc: Captain James Sullivan



HONOLULU POLICE DEPARTMENT  
KA 'OIHANA MĀKA'I O HONOLULU  
**CITY AND COUNTY OF HONOLULU**

801 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96813  
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RICK BLANGIARDI  
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ARTHUR J. LOGAN  
CHIEF  
KAHU MĀKA'I

KEITH K. HORIKAWA  
RADE K. VANIC  
DEPUTY CHIEFS  
HOPE LUNA NUI MĀKA'I

OUR REFERENCE **EO-SH**

June 18, 2024

**SENT VIA EMAIL**

HHF Planners  
RedHillEA@hhf.com

To Whom It May Concern:

This is in response to the letter dated May 23, 2024, from Captain James Rueben Sullivan of the U.S. Navy requesting comments regarding the Environmental Pre-Assessment Consultation for the Red Hill Water Treatment Facilities in Hālawā.

The Honolulu Police Department (HPD) recommends that all necessary lights, signs, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project. Additionally, adequate notification should be made to area businesses and residents prior to possible road closures, as any impact to pedestrian and/or vehicular traffic or construction-related debris could lead to complaints. Lastly, the HPD recommends a long-term plan to mitigate the tracking of dirt, gravel, and debris to minimize potential environmental impacts from all affected areas, including the shoreline resources.

If there are any questions, please call Major Randall Platt of District 3 (Pearl City) at (808) 723-8803.

Sincerely,

  
GLENN HAYASHI  
Assistant Chief of Police  
Support Services Bureau

**From:** [Nagata, Sarah](#)  
**To:** [RedHillEA](#)  
**Cc:** [Liu, Rouen](#)  
**Subject:** Red Hill Water Treatment Facilities, Environmental Assessment Pre-Assessment Consultation  
**Date:** Thursday, June 6, 2024 5:19:54 PM

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Aloha HHF Planners,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project Red Hill Water Treatment Facilities, Environmental Assessment Pre-Assessment Consultation. Should Hawaiian Electric have existing easements and facilities in the project area, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed project comes to fruition, please continue to keep us informed.

Mahalo,  
Sarah

**Sarah Nagata**

Permits Engineer, Transmission & Distribution

**Hawaiian Electric**

PO Box 2750 / Honolulu, HI 96840

O: [808.543.7046](tel:808.543.7046)

M: [808.772.3281](tel:808.772.3281)

E: [sarah.nagata@hawaiianelectric.com](mailto:sarah.nagata@hawaiianelectric.com)

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## Appendix A-2

### Draft EA Public Comments

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## Public Review Comments on the Draft Environmental Assessment

The Navy published a notice of availability of the Draft EA in the Honolulu Star-Advertiser (March 21, 23, and 24, 2025) and in The Environmental Notice (March 23, 2025). The Navy distributed the notice of availability of the Draft EA to the same distribution list as the pre-assessment consultation, including elected officials, government agencies, neighborhood boards, Native Hawaiian Organizations, utilities, and community organizations. The Navy announced the availability of the EA at the Pearl City Neighborhood Board meeting on March 25, 2025. The Navy provided an email notification to the Aiea Neighborhood Board ahead of their April 8, 2025 meeting and to the Aliamanu-Salt Lake Neighborhood Board and Ewa Neighborhood Board ahead of their April 10, 2025 meetings. The Star-Advertiser published a newspaper article discussing the availability of the Draft EA on April 14, 2025, and Hawaii News Now published a news report discussing the availability of the draft EA on April 16, 2025. Additionally, the Navy communicated the NOA on the NAVFAC Pacific NEPA Information website at <https://pacific.navfac.navy.mil/About-Us/National-Environmental-Policy-Act-NEPA-Information/>, the Red Hill Highlights newsletter, and Navy social media platforms.

Twenty public comments were received on the Draft EA, from nineteen different individuals. One commenter submitted two comment letters. A total of 108 separate comments were extracted for analysis; these were sorted into 32 generalized categories and responses were prepared for each of these generalized categories. A list of the commentors is provided in Table A-2. A table of consolidated responses is provided as Table A-3. Copies of the public comments, coded to the generalized responses, follow Table A-3.

**Table A-2 List of Commenters on the Draft EA**

<b>#</b>	<b>Commenter</b>	<b>Affiliation</b>
<b>Government Agencies</b>		
1	Glenn Hayashi, Assistant Chief of Police	Honolulu Police Department
2	Ernest Lau, Manager and Chief Engineer	Honolulu Board of Water Supply
3	Francisco Dóñez, Manager	U.S. Environmental Protection Agency Region 9
4	Russell Tsuji, Land Administrator	State of Hawaii Board of Land and Natural Resources
5	Jason Omich, Wildlife Program Manager	State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife
<b>Organizations</b>		
5	Melodie Aduja and Alan Burdick, Co-Chairs	Environmental Caucus of the Democratic Party of Hawaii (two separate comment letters)
6	Kristina Hambley, Counsel	Wai Ola Alliance
7	Ka Lāhui Hawai'i	Ka Lāhui Hawai'i
<b>Individuals</b>		
8	Kimmer Horsen, Bighorse	
9	Stacey Enderton	
10	Kimberley Chavez	
11	Whitney White	
12	Debbie Hagemann	
13	Susan Gorman-Chang	
14	Meredith Wilson	
15	Tara Rojas	
16	Malia Lum-Kawaihoa Marquez	
17	Susan Pcola-Davis	
18	Jennie Ann Mano'i	
19	Noel Kaleikalaunuoka'oa'i'o Shaw	

**Table A-3 Responses to Public Comments Received on the Draft EA**

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
1	An EIS should be completed for the Proposed Action.	<p>Honolulu Board of Water Supply (BWS),</p> <p>Environmental Caucus of the Hawaii Democratic Party,</p> <p>Ka Lāhui Hawai‘i</p> <p>Wai Ola Alliance,</p> <p>Tara Rojas,</p> <p>Malia Marquez</p>	<p>The analysis in the Environmental Assessment (EA) indicates that the Proposed Action would not have a significant effect on the natural or human environment, therefore an Environmental Impact Statement is not warranted (See Appendix F). Operation of the Proposed Action would maintain the groundwater capture zone within the aquifer underlying the Red Hill Bulk Fuel Storage Facility (RHBFSF) and would restore the Red Hill Shaft as a source of safe, potable water to the users of the Navy drinking water system, in accordance with the long-term actions outlined in the Red Hill Shaft Recovery and Monitoring Plan. Doing so restores critical resiliency to the Navy’s water system at JBPHH. Both the permanent water treatment facility and the interim granular activated carbon (GAC) water treatment system would treat water from the Red Hill Shaft to meet National Primary Drinking Water Regulations (NPDWR) and State of Hawaii Department of Health (HDOH) Safe Drinking Water Standards before it is distributed to the Navy drinking water system. The Navy would no longer discharge up to 5 MGD to Halawa Stream and would therefore reduce groundwater withdrawal at other Navy drinking water wells reducing pressure on Oahu’s groundwater resources.</p> <p>In accordance with Section 7 of the Endangered Species Act (ESA), the Navy consulted with the U.S. Fish and Wildlife Service (USFWS) regarding the Preferred Alternative. In a letter to the USFWS dated January 7, 2025, the Navy determined that the Preferred Alternative may affect, but is not likely to adversely affect the Hawaiian Stilt, Band-rumped Storm-Petrel, Hawaiian Petrel, Newell’s Shearwater, and Hawaiian hoary bat, or jeopardize the continued existence of these species.</p> <p>In accordance with Section 106 of the National Historic Preservation Act (NHPA), the Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative and prepared a Memorandum of Agreement (MOA) to resolve adverse effects. The MOA was agreed to and signed by the Navy and SHPO in February 2026.</p>	<p>Adequately covered in the EA, no revision necessary. See Appendix F.</p>

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
2	Transparency and public engagement	Environmental Caucus of the Hawaii Democratic Party, Stacey Enderton, Susan Gorman-Chang, Tara Rojas, Malia Marquez, Jennie Ann Manoi, Noel Shaw	<p>The Navy is committed to transparency and clear communication with the public, government agencies, and community organizations. The Navy has developed and maintained the <a href="http://www.jbphh-safewaters.org">www.jbphh-safewaters.org</a> website to facilitate public access to drinking water and groundwater sampling data. The Navy continues to update this website with sample results as available for public reference. The Navy continues to provide updates about operations at Red Hill to the public and stakeholders in numerous, recurring community forums as an additional resource for the public.</p> <p>The preparation and fielding of this EA incorporates multiple means by which the public can engage with and influence the development of the action. First, the Pre-Assessment Early Consultation period enables government agencies, nonprofits, and local community groups the opportunity to provide initial comments on an action. Early consultation was conducted for the Proposed Action, which ran from May 24, 2024 to June 23, 2024 and included a range of elected officials, government agencies, Native Hawaiian organizations, and other community organizations. Additionally, the publication of the Draft EA was another opportunity for the Navy to consult with the public and incorporate their feedback into the Final EA.</p>	<p>Section 3.2.3.2 revised to indicate the Navy’s commitment to maintaining public access to drinking and groundwater sampling data.</p> <p>Section 1.8 revised to include a description of the Pre-Assessment Early Consultation process.</p>

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
3	Navy's commitment to environmental remediation	Honolulu BWS, Environmental Caucus of the Hawaii Democratic Party, Ka Lāhui Hawai'i Stacey Enderton, Meredith Wilson, Tara Rojas, Malia Marquez, Noel Shaw	<p>The Proposed Action is only one part of a much broader environmental remediation effort at Red Hill that the Navy is undertaking in close coordination with regulatory agencies. For over a decade, the Navy has conducted environmental monitoring and modeling activities around RHBFSF, including the installation of groundwater monitoring wells, establishment of a groundwater monitoring program, and the development of a groundwater flow model. In response to the November 2021 release at Red Hill and the subsequent commitment to close the RHBFSF permanently, the Navy significantly increased and enhanced environmental efforts, including increased monitoring, expanding its groundwater monitoring well network, and initiating several remediation projects. Today, the Navy continues to conduct extensive environmental monitoring at Red Hill. The Provision of a water treatment facility achieves multiple environmental objectives, including: sustaining long term water quality monitoring of groundwater conditions at Red Hill (e.g. Red Hill Shaft); sustaining a capture zone at Red Hill Shaft to draw prospective fuel-related contaminants which may emerge and remediating via treatment; in addition to, mitigating discharge of our groundwater resource into the Halawa Stream.</p> <p>This EA considers environmental impacts of the Proposed Action within the context of the larger remediation effort. As stated in the EA (Section 1.1), the proposed project is consistent with the Navy's commitment to carry out long-term actions agreed upon by the U.S. Environmental Protection Agency (EPA), HDOH, and the Navy in the January 2022 RHRMP. The Navy remains committed to their efforts to remediate, recover, and protect the environment surrounding Red Hill.</p> <p>Additionally, the Navy is working to safely and expeditiously execute the permanent decommissioning of the RHBFSF in compliance with the 2023 Administrative Consent Order (ACO). The proposed water treatment facility is consistent with the ACO and the Navy's objective to permanently close the RHBFSF.</p> <p>The Proposed Action is part of the Navy's plan to facilitate both of these commitments while returning the Red Hill Shaft to working condition as quickly and safely as possible. Once the Red Hill Shaft is reconnected to the Navy drinking water system, the discharge of water into Halawa Stream would be discontinued.</p> <p>More information on the Navy's environmental remediation in response to fuel releases at Red Hill is available at the following website, <a href="https://jbphh-safewaters.org">https://jbphh-safewaters.org</a>.</p>	Section 1.2 revised to include a description of the Navy's commitment to environmental remediation.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
4	Cultural Resources, HRS Chapter 6E, and Ka Pa‘akai Analysis	Environmental Caucus of the Hawaii Democratic Party, Ka Lāhui Hawai‘i, Wai Ola Alliance, Susan Gorman-Chang, Tara Rojas, Malia Marquez, Noel Shaw	<p>The Proposed Action would primarily occur on Navy-owned property and is subject to the requirements outlined in Section 106 of the National Historic Preservation Act (NHPA) and the 2012 Programmatic Agreement (PA) Among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer (SHPO) Regarding Navy Undertakings in Hawaii, as amended in 2024. The archaeological inventory survey for the Proposed Action identified two sites within the federal portion of the area of potential effects (APE) that are recommended eligible for listing in the National Register of Historic Places (NRHP) including Site 50-80-13-7785 and Temporary Site (TS)-2. Three previously identified archaeological sites (Sites 50-80-13-7782, 7783, &amp; 7784) and one newly identified site (TS-7) were determined to be outside of the APE and would not be affected by the Preferred Alternative. The Navy determined the Preferred Alternative would result in an adverse effect to Site 50-80-13-7785 and Temporary Site-2. The Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative and prepared an MOA to resolve adverse effects. The MOA was agreed to and signed by the Navy and SHPO in February 2026.</p> <p>A portion of the Proposed Action would take place on property owned by the State of Hawaii, including the optional staging area, construction access roads, perimeter fence clear zones, and a utility connection corridor. These portions of the Proposed Action are subject to review under Hawaii Revised Statutes (HRS) Chapter 6E. The Hawaii Department of Transportation (HDOT) is conducting HRS Chapter 6E consultation for portions of the project occurring on State land (Section 3.4.3.2). The consultation process will be completed prior to initiating project components within State property.</p> <p>The portion of the project within federal property is not subject to the requirements of a Ka Pa‘akai assessment. The components of the project within State property occur primarily on HDOT controlled lands, including a staging area, access roads, clear zone vegetation maintenance, and utility connection corridor. HDOT has prepared an HRS Chapter 343 exemption for the project components on State land (i.e., construction staging/access and utility connections). -The Navy did include the Office of Hawaiian Affairs and Native Hawaiian Organizations in the distribution for the EA Pre-consultation Assessment and Draft EA public review, and no responses were received.</p>	Section 3.4.3.2 revised to include a description of the resolution of the NHPA Section 106 consultation.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
5	Purpose and Need Statement	Honolulu BWS, U.S. EPA Region 9	<p>Section 1.2 (Background) of the Final EA has been updated to include additional information on the November 2021 fuel release, the results of groundwater monitoring, and the reduction in the Red Hill Shaft pumping as of April 2024. Section 1.4 Purpose of and Need for the Proposed Action has been updated to include the critical necessity for restoring Red Hill Shaft as a drinking water source, for water resiliency.</p> <p>The rationale for creating/maintaining the capture zone, providing GAC treatment and ultimately, returning the Red Hill shaft to service was clearly articulated in the RHRMP (Jan 2022), which was endorsed by the Navy, EPA and HDOH – as documented in the EA. The Navy has been conducting groundwater monitoring and has published the data on its safe waters website, <a href="http://www.jbphh-safewaters.org">www.jbphh-safewaters.org</a>. Groundwater monitoring for the Red Hill Shaft has not detected any level of total petroleum hydrocarbon (TPH) contamination since November 2023. All available data have been carefully considered in the Navy’s design of the proposed permanent water treatment facility. Extensive groundwater and water quality monitoring conducted by the Navy in 2024-2025 has not detected the presence of fuel-related contaminants at Red Hill Shaft.</p>	<p>Section 1.2 (Background) revised to include additional information on the Navy’s groundwater monitoring and coordination with regulatory agencies since the November 2021 fuel release.</p> <p>Section 1.4 (Purpose of and Need for the Proposed Action) revised to include additional discussion on the purpose of the Proposed Action.</p>

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
6	Per- and Polyflouroalkyl substances (e.g., PFAS, PFOA, etc.)	Honolulu BWS, U.S. EPA Region 9,  Environmental Caucus of the Hawaii Democratic Party, Ka Lāhui Hawai‘i, Wai Ola Alliance	<p>On April 26, 2024, the EPA published a final federal National Primary Drinking Water Regulation (NPDWR) establishing drinking water standards for certain PFAS under the Safe Drinking Water Act (SDWA) to be met by 2029. This rule applies to public drinking water systems. EPA’s drinking water rule includes enforceable maximum contaminant levels (MCL) for five PFAS: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX), and perfluorohexane sulfonic acid (PFHxS).</p> <p>On December 4, 2024, DoD published “Policy for Per- and Polyfluoroalkyl Substances Monitoring and Treatment in DoD-Owned Drinking Water Systems in the United States.” That memorandum describes DoD’s plans to consistently evaluate, achieve, and maintain water quality levels at or below EPA’s PFAS MCLs for all DoD-owned on-base drinking water systems, including the Navy drinking water system on Oahu.</p> <p>Between December 2022 and December 2023, the Navy completed a baseline PFAS sampling event of groundwater monitoring wells at RHBFSF to help inform future site investigation. PFAS/PFOAs have been detected at low levels (below MCL) in samples of water collected from the Red Hill Shaft. Additionally, the Navy has voluntarily completed extensive monitoring of the Red Hill Shaft over the past year (2024-2025) and has detected trace levels of PFAS below regulatory standards. Water sampling results for the Red Hill Shaft (RHMW2254-01) are available at the following website: <a href="http://www.jbphh-safewaters.org">www.jbphh-safewaters.org</a>. In 2024, the Navy closely coordinated with regulators to initiate a PFAS Remedial Investigation (RI) at Red Hill through the regulatory framework of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in order to identify and address PFAS at the Red Hill Bulk Fuel Storage Facility site. This effort is currently ongoing.</p> <p>GAC water treatment systems are recognized by the EPA as the best available technology for removing PFAS from drinking water. Therefore, the implementation of the Proposed Action would support the DoD commitment to maintaining water quality levels at or below the EPA’s PFAS MCLs. Additionally, as described in Section (3.2.3.2) the Navy would continue to operate the facilities in compliance with safe drinking water standards and best practices.</p>	<p>Section 3.2.2.1 revised to include a summary of PFAS sampling results for RHMW2254-01.</p> <p>Section 3.2.3.2 revised to include statement that GAC is recognized by the EPA as the best available technology for removing PFAS from drinking water.</p>

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
7	Public Health and Safety	Honolulu BWS	<p>The Navy has been actively pumping water from the Red Hill Shaft since January 2022 to maintain a groundwater capture zone within the aquifer underlying the Red Hill Bulk Fuel Storage Facility in accordance with the RHSRMP. Groundwater monitoring data collected by the Navy over the past several years provide no evidence of potential contaminant migration from the RHBFSF.</p> <p>Impacts to public health associated with the November 2021 fuel release are beyond the scope of this EA. For the Proposed Action, GAC water treatment systems are recognized by the EPA as the best available technology for removing contaminants from drinking water (<a href="https://www.epa.gov/system/files/documents/2024-04/2024-final-pfas-bat-ssct_final-508.pdf">https://www.epa.gov/system/files/documents/2024-04/2024-final-pfas-bat-ssct_final-508.pdf</a>). This is demonstrated by the post-treatment testing of the water discharged to Halawa Stream, which has shown no detections of TPH since the onsite water treatment system was placed into service in January 2022. The proposed water treatment facility would use similar GAC treatment technology to treat the water drawn from the Red Hill Shaft to meet National Primary Drinking Water Regulations and State safe drinking water standards to improve the resilience of the Navy drinking water system to provide safe, clean water to its users.</p>	<p>Section 3.2.3.2 revised to include additional information on the effectiveness of GAC water treatment systems.</p>

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
8	Groundwater flow modeling and groundwater monitoring	Honolulu BWS, Stacey Enderton, Meredith Wilson	<p>Section 3.2 of the Final EA (water resources) has been updated with additional information on groundwater monitoring at RHBFSF and modeling the flow of groundwater in the underlying aquifer.</p> <p>Since January 2022, and at the direction of HDOH, the Navy has continuously pumped water from Red Hill Shaft to create a capture zone to reduce the potential spread of groundwater contamination. Throughout this period, the Navy has conducted an extensive groundwater monitoring program to monitor for a comprehensive analyte list, including fuel constituents. As of January 2026, the Navy’s groundwater monitoring well network consists of 48 groundwater monitoring locations in and around the Red Hill facility, and the Navy continues to plan and install additional monitoring wells. Groundwater monitoring data collected by the Navy over the past several years provide no evidence of potential contaminant migration from the RHBFSF.</p> <p>Between January 2022 and April 2024, the Navy pumped approximately 4.2 MGD from Red Hill Shaft. In April 2024, HDOH approved the Navy’s proposal to reduce pumping at Red Hill Shaft to 1.8 MGD based on previous groundwater monitoring results and implementation of the Revised Consolidated Groundwater Sampling Plan. Since April 2024, the Navy has pumped approximately 1.8 MGD from Red Hill Shaft and the ongoing groundwater monitoring has not detected evidence of contaminant migration.</p> <p>The Navy continues to refine its groundwater flow model; the Navy submitted an updated model to the regulatory authorities in September 2024, and intends to produce another model update in the future. To date, the Navy’s model aligns with the results obtained from the Navy’s extensive groundwater monitoring program.</p>	Section 3.2 of the Final EA (water resources) revised include additional information on groundwater monitoring and groundwater flow modeling.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
9	Include PFAS in the hazardous materials analysis.	Honolulu BWS, U.S. EPA Region 9	<p>Section 3.3 of the Final EA (Hazardous Materials and Wastes) has been updated with additional information related to known PFAS-impacted sites at RHBFSF, status of cleanups, and potential impacts associated with the Proposed Action.</p> <p>On November 29, 2022, approximately 1,100 gallons of aqueous film-forming foam (AFFF) concentrate were released from the upgraded fire suppression system at the entrance of Adit 6 at RHBFSF (EPA Region 9, 2023). Adit 6 is located approximately 3,000 feet north east of the nearest proposed improvements for the Proposed Action (the fire protection water tank). Between December 2022 to December 2023, the Navy (in coordination with the EPA and HDOH) completed baseline PFAS sampling of groundwater monitoring wells to help inform future site investigation. Low levels of PFAS were detected (under EPA maximum contaminant levels [MCL]), at groundwater monitoring locations including at the Red Hill Shaft. All data was published to the Navy’s safe waters website, <a href="http://www.jbphh-safewaters.org">www.jbphh-safewaters.org</a>.</p> <p>Following the baseline sampling and pursuant to CERCLA, the Navy closely coordinated with regulators to expedite and commence a PFAS remedial investigation at Red Hill, which is currently in progress at the time of this assessment.</p> <p>There have been no known releases of AFFF within the project area for the proposed water treatment facility (NAVFAC Hawaii, 2024). Additionally, GAC water treatment systems are recognized by the EPA as the best available technology for removing PFAS from drinking water and underscores the prudence of the Navy’s goal of constructing and operating a permanent GAC treatment facility to service its JBPHH consumers.</p> <p>The Navy does not concur with the BWS request to extend the ROI to include the entire sole source aquifer which underlies the Proposed Action. The Proposed Action is not expected to introduce new hazardous materials and wastes into the aquifer, and the Navy’s groundwater monitoring and modeling indicates that there is no evidence of contaminant migration within the aquifer.</p>	Section 3.3 revised to include additional information on PFAS at RHBFSF.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
10	Questions regarding the granular activated carbon (GAC) system	U.S. EPA Region 9, Environmental Caucus of the Hawaii Democratic Party, Wai Ola Alliance, Susan Gorman-Chang	<p>Section 2.3.2.4 of the EA has been updated to include additional information on the GAC media. Based on breakthrough modeling, the granular activated carbon (GAC) media at the proposed water treatment facility has an expected lifespan of several years. A specific timeframe cannot be narrowed down as many factors, including those beyond the Navy's control, can impact the service life of the GAC media (i.e., usage rates, type of GAC media used, and concentration of contaminants in the untreated water). Media lifespan will be periodically monitored by qualified technicians to ensure GAC media is replaced well in advance of saturation.</p> <p>Prior to placing new GAC media into service, best practice requires the media to be backwashed to remove fine, inert particles that can be dispersed throughout the GAC media. The GAC media would also be backwashed periodically during its service lifespan (estimated at two to three times per year). Backwashing the GAC media is intended to “unpack” the GAC media from consolidation that takes place over prolonged periods of downward flow. The source of the backwash water for initial setup will be treated water from the interim Modified GAC water treatment system. The source of backwash water for subsequent backwash events will be treated water from the permanent water treatment facility.</p> <p>In the GAC treatment process, contaminants are adsorbed to the GAC media. The only way to remove contaminants from the GAC media is via extreme heat or a significant change in water chemistry, which is highly unlikely. Therefore, backwashing by itself would not cause adsorbed contaminants to be released from the media during backwashing.</p> <p>For the Proposed Action, the backwash wastewater would be collected in the wash water waste tank where it would be field tested prior to discharge to confirm that water quality is within the City’s requirement for acceptance of industrial waste discharges. The Navy will obtain an Industrial Waste Discharge Permit from the City and will comply with any permit requirements. Testing of the backwash wastewater will confirm that it is safe to dispose of in the City sewer system and would not require a Resource Conservation Recovery Act (RCRA) discharge permit.</p>	Section 2.3.2.4 revised to include additional detail on GAC media lifespan and the backwashing process

#	<i>Generalized Topic</i>	<i>Commenters who raised this topic</i>	<i>Response</i>	<i>Revisions to the EA</i>
11	Spent GAC media	Environmental Caucus of the Democratic Party of Hawai'i, Wai Ola Alliance	Section 3.3.2.2 of the Final EA has been revised as follows, "Prior to disposal, the GAC media will be sampled and analyzed in accordance with regulatory standards to determine disposal requirements. If the material is deemed hazardous, waste will be disposed of in accordance with applicable regulations at an appropriate, permitted facility."	Section 3.3.2.2 revised to include the statement about sending spent carbon to a GAC reactivation facility.
12	Water treatment facility operations	U.S. EPA Region 9, Meredith Wilson, Susan Pcola-Davis	A Water Treatment Plant Operator (WTPO) Level 1 license (issued by HI DOH) is required to operate the proposed interim water treatment system and water treatment facility. The Final EA has been updated to include the WTPO Level 1 requirement.  Additionally, the Navy will implement and conduct hydrocarbon monitoring as part of the water treatment system operation.  Approval to Operate from DOH is also required prior to operation of the system to supply drinking water to the system.	Section 2.3.2.4 revised to identify the WTPO Level 1 requirement for operators.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
13	General Questions regarding the water treatment facility	Susan Pcola-Davis	<p>“What is sodium hypochlorite used for?”</p> <p>Chlorine bleach is commonly used to disinfect drinking water due to its broad-spectrum efficacy in killing microorganisms that occur naturally in groundwater, such as bacteria or algae. The Navy uses the compound to ensure the water is safe for human consumption. The solution will be generated onsite from a salt brine. Both the chlorine solution and the salt brine have non-hazardous concentrations and do not necessitate special storage requirements</p> <p>What materials are being used for the proposed water lines?</p> <p>The proposed waterlines would be constructed of ductile iron pipe, with a short section being stainless steel. Other ancillary water lines would be constructed of ductile iron pipe or high density polyethylene.</p> <p>Is there a “failsafe” for the fire protection system?</p> <p>The fire suppression system will be designed to activate on demand (i.e., via a standard manual fire alarm handle) and automatically (i.e., via heat sensors should a fire occur in a sensitive area of the facility). The fire suppression system will be designed to meet applicable standards and regulations, and will not involve AFFF.</p>	<p>Table 2-1 revised to include additional detail for sodium hypochlorite and</p> <p>Table 2-3 revised to include additional detail on water lines and fire protection.</p>

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
14	General Opposition to Project	Ka Lāhui Hawai‘i, Kimmer Horsen, Stacey Enderton, Kimberley Chavez, Debbie Hagemann, Jennie Ann Manoi, Whitney White	<p>The Proposed Action is necessary to restore the Red Hill Shaft as a drinking water source in order to achieve adequate resiliency and redundancy to the Navy’s water system for consumers and numerous Department of Defense activities at JBPHH; as well as, provide effective treatment, and therefore remediation, of any contaminants which may migrate into the Red Hill Shaft groundwater source, as proposed in the 2022 Red Hill Shaft Recovery and Monitoring Plan. The use of GAC treatment systems is a proven, safe, and effective technology for removing organic contaminants from water. The technology is also used by other water system operators (including the Honolulu Board of Water Supply). The water supplied by the water treatment facility would meet National Primary Drinking Water Regulations and the State of Hawaii, Department of Health's Safe Drinking Water Standards. The water treatment facility would work in concert with the Navy's continued remediation of the aquifer underlying the Red Hill Bulk Fuel Storage Facility. The Navy recognizes the controversial nature of the Proposed Action, and has determined that the provision of a treatment facility at Red Hill is most appropriate; and has subsequently worked to ensure that the facility is designed to deliver safe drinking water to consumers.</p> <p>The EA includes detailed analysis of environmental resources potentially affected by the Proposed Action, including public health and safety, water resources, hazardous materials and wastes, cultural resources, terrestrial biological resources, infrastructure, air quality, and noise (see Chapter 3 of the EA).</p>	Adequately covered in the EA, no revision necessary.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
15	Alternative Analysis / Support for Action Alternative 2	U.S. EPA Region 9, Susan Gorman-Chang, Susan Pcola-Davis	<p>Action Alternative 2 adds Packed Tower Aerators (PTAs) to the base design of the water treatment facility. These towers would aerate the water during treatment, creating bubbles within the water to remove contaminants.</p> <p>Per Section 2.3.3 of the EA, PTAs were originally considered by the Navy for the proposed water treatment facility because they are effective at removing significant concentrations of hydrocarbon contamination from drinking water and when used ahead of the GAC filters, they can greatly extend the life of the GAC filters. However, groundwater monitoring for the Red Hill Shaft has not detected any level of total petroleum hydrocarbon (TPH) contamination since November 2023, and because the Red Hill fuel storage tanks have been defueled, removing the primary contamination source, the incorporation of PTAs would not provide an additional benefit in drinking water quality. Therefore, Alternative 2 is not the Preferred Alternative. Moving forward, the Navy would continue to operate the facilities in compliance with safe drinking water standards and best practices including regular testing and reporting consistent with EPA and HDOH requirements. If warranted in the future, additional technologies or measures may be incorporated into the system within the existing site footprint.</p>	Adequately covered in the EA, no revision necessary. See Section 2.3.3
16	The EA fails to satisfy the substantive requirements of NEPA	Honolulu BWS	<p>The Navy has prepared this EA in accordance with the National Environmental Policy Act (NEPA). EAs are intended to be concise documents that provide sufficient evidence and analysis for determining whether to prepare an EIS or if a Finding of No Significant Impact is applicable. The EA includes appropriate resource regulatory and statutory conclusions as supported by the environmental impact analysis presented.</p> <p>As required by NEPA, the Navy released the Draft EA for public review and comment. The Navy has considered and addressed all substantive comments received during the public comment period and has determined that a Finding of No Significant Impact is applicable for the Proposed Action.</p>	Adequately covered in the EA, no revision necessary.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
17	Cumulative Impacts Assessment	Honolulu BWS, Environmental Caucus of the Hawaii Democratic Party, Susan Pcola-Davis	<p>The Navy stands by its characterization of the Proposed Action as remedial in nature. In accordance with the RHSRMP, the Navy has been pumping water from Red Hill Shaft since January 2022, treating the water with the onsite GAC water treatment system, and discharging to Halawa Stream. Monitoring of both raw water and treated discharge water has been continuous and results have assured the Navy that diverting the treated flows currently discharged to Halawa Stream back to the Navy’s distribution system is a safe and prudent action. Constructing the proposed water treatment facility and reconnecting the Red Hill Shaft to the Navy drinking water system would stop the discharge of water resources and will restore necessary resiliency and redundancy to the Navy’s water system.</p> <p>Chapter 4 of the EA includes a thorough review of cumulative impacts (i.e., effects of the Proposed Action combined with the past, present, and reasonably foreseeable future projects), following best practices and cites key relevant technical data supporting the findings of no significant effect for each of the eight resource areas analyzed in depth. Section 4.4 of the EA states that “Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data was not available and a qualitative analysis was undertaken.”</p> <p>For over a decade, the Navy has conducted environmental monitoring and modeling activities around the RHBFSF, including the installation of groundwater monitoring wells, establishment of a groundwater monitoring program, and the development of a groundwater flow model. In response to the November 2021 release at Red Hill and the Department of Defense’s subsequent decision to close the RHBFSF, the Navy significantly increased and enhanced environmental efforts, including increased monitoring, expanding its groundwater monitoring well network, and initiating several remediation projects. The Navy coordinates extensively with the U.S. Environmental Protection Agency (EPA) and HDOH on all groundwater monitoring, modeling, and remediation activities at Red Hill.</p>	Adequately covered in the EA, no revision necessary. See Chapter 4.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
18	Navy Aiea-Halawa Shaft	Honolulu Board of Water Supply , Environmental Caucus of the Hawaii Democratic Party	<p>The cumulative impact analysis (Chapter 4) has been updated to include the reactivation of the Navy Aiea-Halawa Shaft (NAHS) as a reasonably foreseeable action and to include it as part of the cumulative impacts analysis. The Navy has determined that the reactivation and operation of the NAHS will have no impact to the Red Hill Shaft, nor has been impacted by conditions at Red Hill, as demonstrated by groundwater monitoring data collected over the past several years.</p> <p>The Navy obtained conditional approval from the HI DOH to reactivate the NAHS and restore a supplemental water source for the Navy’s drinking water system. A key part of the plan is the installation of a granular activated carbon (GAC) filtration system prior to connecting NAHS to the water distribution system, to preemptively address potential PFAS contamination and comply with forthcoming EPA regulations. The addition of the NAHS as a supplemental water source will enhance water resiliency at JBPHH and is part of the Navy’s continued commitment to providing the community with safe drinking water.</p> <p>The reactivation of NAHS is a wholly separate, independent action from the proposed water treatment facility at Red Hill, and was reviewed under a separate NEPA compliance process. The Navy’s ongoing groundwater monitoring and modeling efforts do not show evidence of a hydraulic connection between NAHS and Red Hill Shaft.</p>	<p>Table 4-1 revised to include NAHS as a reasonably foreseeable action.</p> <p>Sections 4.4.1 and 4.4.2 revised to include NAHS as part of the cumulative impacts analysis.</p>
19	Proposed mitigation measures outlined in the EA lack specificity and enforceability.	Environmental Caucus of the Hawaii Democratic Party	Please see Section 2.5 of the EA for an explanation of the difference between best management practices (BMPs) and mitigation measures. Table 2-4 lists the BMPs that would be implemented as requirements for the Proposed Action. BMPs are inherently part of the Proposed Action and are not considered as potential mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action. The Proposed Action was found to have no significant impacts to environmental resources.	Adequately covered in the EA, no revision necessary. See Section 2.5 and Table 2-4.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
20	Land Use and Permits	Environmental Caucus of the Hawaii Democratic Party, Susan Gorman-Chang	Please see Section 5.2.3 of the EA. As described in this section, the proposed fire protection water tank (less than one percent of the total project area) is proposed to be located in a portion of RHBFSF within the State Conservation Land Use District. However, this area is located on Navy-owned property, and federal actions on federal lands are not subject to the State Land Use Code. Therefore, the Navy is not required to obtain a Conservation District Use Permit. As noted in Section 5.2.3, the proposed use (fire protection water tank and underground supply line) is considered an approved use in the Conservation District General Subzone.	Adequately covered in the EA, no revision necessary. See Section 5.2.3.
21	Additional diagrams requested	Susan Pcola-Davis	The Navy is unable to release detailed diagrams of the proposed water treatment facility due to operational security considerations. Descriptions of the Preferred Alternative facilities is provided in Section 2.3.2.1, and a description of operations is provided in Section 2.3.2.4.	Adequately covered in the EA, no revision necessary. See Sections 2.3.2.1 for facilities and Section 2.3.2.4 for operations.
22	Utilities and Infrastructure (location of water lines)	U.S. EPA Region 9	The Preferred Alternative would construct a new raw water transmission line to convey water from the Red Hill Shaft Pump Station to the permanent water treatment facility. A new finished water line would then convey the treated water from the permanent water treatment facility to the Navy's existing drinking water distribution main. Additional ancillary water lines would be constructed as necessary to support operations at the permanent water treatment facility and to connect the interim GAC water treatment system to the Navy drinking water system. All proposed water lines would be constructed within federal property and would be drinking water compliant. The EA has been updated to include a statement that all water transmission lines are located within federal property.	Table 2-3 revised to include additional information on water lines.

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
23	Stormwater management	U.S. EPA Region 9	<p>As described in Table 2-3 of the EA, stormwater at the site would be managed according to guidelines in Unified Facilities Criteria 3-210-10 Low Impact Development (LID). LID features would be implemented to provide infiltration areas and underground detention basins within the site.</p> <p>Per Section 3.2.3.2, and Table 5-1, the Proposed Action would be subject to compliance with a National Pollutant Discharge Elimination System (NPDES) permit.</p>	Adequately covered in the EA, no revision necessary. See Table 2-3, Section 3.2.3.2, and Table 5-1.
24	Construction traffic and safety	Honolulu Police Department	<p>Table 2-4 of the EA has been updated to include the following BMPs recommended by the Honolulu Police Department:</p> <ul style="list-style-type: none"> <li>• Notification of area residents, businesses, and schools prior to the start of the construction process;</li> <li>• Installation and maintenance of all necessary lights, signs, barricades, and other safety equipment during construction; and</li> <li>• Acquiring police services as needed to ensure traffic flow is not adversely affected by the construction process.</li> </ul>	Table 2-4 revised to include construction traffic and safety BMPs

25	Clarify EA language	U.S. EPA Region 9, Susan Gorman-Chang, Meredith Wilson	<p>Several comments that the Navy received included requests to clarify terminology. These clarification have been incorporated into the Final EA and are provided here as well:</p> <p>*Section 3.1.2 "Add Kapilina Beach Homes to the affected environment." The Final EA clarifies that that the affected environment includes all areas serviced by the Navy's drinking water distribution system, including Kapilina Beach Homes at Iroquois Point.</p> <p>* "Define "Fuel Contamination." Fuel contamination within this Final EA means any artificially produced organic compound which has leaked into groundwater from the Red Hill Bulk Fuel Storage Facility. This definition includes fuel from the November 2021 spill event.</p> <p>*Section 1.7 revised to include citations for National Primary Drinking Water Regulations (NPDWR) and State of Hawaii Department of Health (HDOH) Safe Drinking Water Standards, and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)</p> <p>*Section 3.2.2.1 "Correct Red Hill Shaft No." The Red Hill Shaft No. is corrected in this Final EA.</p> <p>*Section 3.3.2.1 revised to include fuel additives and potential disinfection byproducts in the list of health risks associated with the JP-5 release.</p> <p>* "The use of term 'environment' should include human and ecological impacts unless otherwise defined." Appendix F specifically references the significance criteria defined in Hawaii Administrative Rules Section 11-200.1-13. In significance criteria 11, an environmentally sensitive area is defined as a "floodplain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters." The Proposed Action is not located within any of these areas.</p> <p>* "Clarify groundwater remediation efforts and how the water treatment facility complements these efforts." The proposed water treatment facility is one facet of the Navy's environmental remediation efforts at Red Hill. The construction and operation of the proposed water treatment facility contributes to the Navy's remediation efforts by maintaining the groundwater capture zone, treating any contaminants which may become present in the groundwater in the Red Hill Shaft, and returning the Red Hill Shaft to operation as a source of safe drinking water for Navy customers instead of discharging the water to Halawa Stream.</p>	Revision to EA text. (See response column).
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#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
			<p>* "Add footnote to Appendix E clarifying PM10 exceedance in 2024 and why it is not anticipated to persist." The exceedance was reported in error. The estimated PM10 emissions in 2024 (187 tons/year) were below the insignificance indicator (250 tons/year). Additionally, the PM10 emissions are primarily related to construction emissions and would not persist in the long-term.</p> <p>* Remove the following statement in Section 5.2.4.1, "As the proposed water treatment facility operates, gradually the fuel plume within the aquifer underlying RHBFSF should be removed from both the environment and the water supply through the use of the GAC vessels." Statement removed.</p>	
26	No Comment	State of Hawaii Department of Land and Natural Resources	N/A	N/A
27	Potential impacts to the Hawaiian hoary bat	State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife	DoN will follow the conservation measures identified in the USFWS Informal consultation to avoid and/or minimize potential adverse effects to the Hawaiian hoary bat.	N/A

#	Generalized Topic	Commenters who raised this topic	Response	Revisions to the EA
28	Night lighting and potential impacts to seabirds	State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife	As described in Table 2-4, Outdoor lighting would follow the Dark Skies Instruction (Commander Navy Region Hawaii Instruction 5090.9) to avoid night lighting whenever possible, and to install only full cutoff exterior down-lighting fixtures for all new construction.  Additionally, two additional BMPs were added to Table 2-4 to address care for any downed seabirds. These BMPs include the following:  1. Shearwater Fallout Season Response Guidelines for JBPHH will be placed on construction site note/safety boards so that all crew on site can respond appropriately in cases of shearwater fallout during nighttime construction.  2. Appropriate supplies (cardboard box, towel, dropoff location and contact) will be provided to nighttime construction crew to care for any downed seabirds.	New BMPs added to Table 2-4.
29	Potential impacts to the <i>pueo</i> (Hawaiian short-eared owl) and the <i>manu-o-Kū</i> (white tern)	State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife	Table 2-4 includes a BMP for pre-construction nest surveys and protocols for protected bird species. The BMP was revised to include notification to the JBPHH natural resources manager if protected bird species are found.	Table 2-4 BMP on pre-construction nest surveys revised to include notification to the JBPHH natural resources manager if protected bird species are found.
30	Wildfire safety	State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife	See Section 3.5.3.2 of the EA includes a description of the fire breaks that are maintained at the RHBFSF and the additional security fencing and cleared zones included in the Proposed Action that would provide additional fire breaks.	N/A

#	<i>Generalized Topic</i>	<i>Commenters who raised this topic</i>	<i>Response</i>	<i>Revisions to the EA</i>
31	Invasive species and green waste	State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife	The Navy coordinates with Oahu Invasive Species Council on invasive species and would comply with all federal statutes and regulations regarding biosecurity.	Table 2-4 and Section 3.5.3.2 revised to clarify that no green waste would be exported from Oahu or imported to Oahu.
32	Re-vegetation and landscaping with native plants	State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife	The Proposed Action does not include landscaping. Re-vegetation would be limited to temporarily cleared areas in the HDOT ROW. Those areas are currently grassed and would be revegetated in coordination with HDOT preferences.	Section 3.5.3.2 revised to clarify that re-vegetation is limited to areas within the HDOT ROW.

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

## **1. Honolulu Police Department**

HONOLULU POLICE DEPARTMENT  
KA 'OIHANA MĀKA'I O HONOLULU  
**CITY AND COUNTY OF HONOLULU**

801 SOUTH BERETANIA STREET - HONOLULU, HAWAII 96813  
TELEPHONE: (808) 529-3111 • WEBSITE: [www.honoluluupd.org](http://www.honoluluupd.org)

RICK BLANGIARDI  
MAYOR  
MEIA



ARTHUR J. LOGAN  
CHIEF  
KAHU MĀKA'I

KEITH K. HORIKAWA  
RADE K. VANIC  
DEPUTY CHIEFS  
HOPE LUNA NUI MĀKA'I

OUR REFERENCE **EO-SH**

April 8, 2025

SENT VIA EMAIL

ATTN: Red Hill Water Treatment Facility  
RedHillEA@hmf.com

Dear EA Project Manager:

This is in response to the correspondence received on March 21, 2025, requesting input for the proposed construction and operation of a new water treatment facility to reconnect water from the Navy's Red Hill Shaft to the Joint Base Pearl Harbor-Hickam drinking water system and discontinue the discharge of water into the Hālawā Stream.

Based on the information provided, the Honolulu Police Department (HPD) recommends adequate notification be made to area residents, businesses, and schools due to the potential ingress and egress of construction vehicles, equipment, and deliveries. The HPD also recommends all necessary lights, signs, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project. Lastly, the HPD recommends acquiring police services to ensure traffic flow is not adversely affected.

If there are any questions, please call Major Elgin Arquero of District 5 (Kalihi) at (808) 723-8208 or Acting Major Denise Nakabayashi or District 3 (Pearl City) at (808) 723-8800.

Sincerely,

A handwritten signature in black ink, appearing to read 'Glenn Hayashi', is written over a horizontal line.

For **GLENN HAYASHI**  
Assistant Chief of Police  
Support Services Bureau

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

## **2. U.S. Environmental Protection Agency Region IX**



**REGION 9**

SAN FRANCISCO, CA 94105

April 18, 2025

Captain Robert Kleinman

Department of the Navy, Naval Facilities Engineering Systems Command (NAVFAC) Hawai'i /EV21  
Building 55  
400 Marshall Road  
Joint Base Pearl Harbor-Hickam, Hawai'i 96860-3139

Subject: EPA comments on the Draft Environmental Assessment for Red Hill Water Treatment Facility, City and County of Honolulu, Oahu, Hawai'i

Dear Captain Robert Kleinman:

The U.S. Environmental Protection Agency has reviewed the above-referenced document pursuant to the National Environmental Policy Act (42 U.S.C. Section 4331 *et seq.*) and our NEPA review authority under Section 309 of the Clean Air Act. The EPA recognizes the ongoing coordination with the Department of the Navy and the Hawai'i Department of Health regarding the protection of human health, and we appreciate the opportunity to provide feedback on the proposed Red Hill Water Treatment Facility.

The Navy, in coordination with HDOH, has prepared a Draft Environmental Assessment analyzing the construction and operation of a new water treatment facility to reconnect the Navy's Red Hill Shaft to the Joint Base Pearl Harbor-Hickam drinking water system and discontinue the discharge of water into Halawa Stream. The project is consistent with the Navy's commitment agreed upon in the January 2022 Red Hill Shaft Recovery and Monitoring Plan, which calls for the recovery and remediation of the Red Hill Shaft drinking water quality by removing any fuel contamination and by creating a contaminant capture zone in the vicinity of the Red Hill Shaft. The Draft EA acknowledges longer term actions may include the permitting, design, and construction to return the well to service as a safe, potable water source. The Draft EA describes two action alternatives and a "no action" alternative. Please consider the following recommendations as the Navy is preparing the Final EA and Finding of No Significant Impact.

**Project Need and Relevant Laws**

In Section ES.1, the Draft EA states that "the permanent water treatment facility and the interim granulated activated carbon (GAC) water treatment facility would treat water from the Red Hill Shaft to meet National Primary Drinking Water Regulations (NPDWR) and HDOH Safe Drinking Water Standards before it is distributed to the Navy drinking water system" (p. ES-1). However, the National

Primary Drinking Water Regulations are not listed as an applicable law in Section 1.7, *Relevant Laws and Regulations*. Furthermore, the EPA notes that the HDOH Safe Drinking Water Standards do not yet include several rules from the NPDWR relating to per- and polyfluoroalkyl substances (PFAS) in drinking water. Thus, the EPA currently retains primary enforcement authority for these rules.

Additionally, the Draft EA states that “the Red Hill Oily Waste Disposal Facility was impacted solely by petroleum hydrocarbons (TPH), and therefore would be regulated by the HDOH pursuant to the Hawai’i Environmental Response Law rather than by the EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)” (p. 3-13). We note that the Final EA would benefit from a broader discussion of recent history of drinking water contamination and facility closure due to the introduction of petroleum hydrocarbons, and how that impacts the need for the project and description of the project setting. Section 3.3.2.4 of the Draft EA states that “the Defense Environmental Restoration Program was created at Joint Base Pearl Harbor Hawai’i to identify areas on base that are considered environmental concerns under federal laws. The goal of the Defense Environmental Restoration Program is to identify, investigate, and clean up contamination from CERCLA hazardous substances or pollutants or contaminants” (p. 3-14). The EPA is overseeing the PFAS investigation at Red Hill pursuant to the Pearl Harbor Federal Facility Agreement.

As stated above, the Draft EA notes the need to meet NPDWR and the State of Hawai’i HDOH Safe Drinking Water Standards before it is distributed to the Navy drinking water system; and it also states that the purpose and need for the proposed action is to “restore the Red Hill Shaft as a valuable drinking water source for the Joint Base Pearl Harbor-Hickam, in compliance with NPDWR and HDOH Safe Drinking Water Standards” (ES-2). We note that the new permanent treatment facility needs to consider potential contamination of jet fuel and petroleum hydrocarbons which are not fully captured by existing NPDWR and HDOH standards.

***Recommendations for the Final EA:*** The EPA recommends the Navy provide a citation to the NPDWR and HDOH standards and to CERCLA. Please also include a short summary of the site’s recent history of being closed due to jet fuel contamination in the Project Need section and Section 3.1.1 and/or 3.2.1. The EPA recommends the Navy update the Final EA to confirm the need to provide clean drinking water that does not contain jet fuel, in addition to meeting NPDWR and HDOH Safe Drinking Water Standards.

### **Hazardous Materials**

We note that Section 3.3.2.3 of the Draft EA states that “[n]o construction and demolition debris containing hazardous materials such as asbestos containing materials, lead based paint, or polychlorinated biphenyls is expected to be generated by the Preferred Alternative” (p. 3-14). The EPA notes that PFAS are not included in the hazardous waste analysis, yet the Navy is conducting a remedial investigation into PFAS contamination at Red Hill. Available data indicates there is a potential PFAS source on the former oily waste disposal facility operated by the Navy which is in immediate proximity to the proposed treatment plant. To complete their investigation and potentially remediate PFAS sources, the Navy will need physical access to areas on the site of the proposed treatment facility. Existing data on PFAS contamination should be evaluated in the context of the construction project to determine if there are critical areas on the site where access needs to be preserved for environmental

sampling, monitoring well installation, and, potentially, remedial actions. Alternatively, an expedited investigation of conditions on the proposed water treatment facility site can be conducted in advance of facility construction to assure there is no conflict with the CERCLA investigation and any remedy that may be required. Further, because the proposed construction activity may expose workers to hazardous materials, providing additional detailed information about the physical location of potential PFAS-contaminated sites may offer critical information to inform safe construction and demolition practices.

***Recommendations for the Final EA:*** The EPA recommends the Navy identify a process for preserving access to PFAS-impacted sites and indicate whether an expedited investigation in advance of facility construction is necessary to accommodate the Navy’s hazardous materials analysis. We also recommend considering PFAS in the hazardous materials analysis, and identifying the locations of known PFAS impacted sites and status of cleanups. Additionally, the EPA recommends identifying methods to protect construction workers from hazardous materials, including PFAS, in the project area.

### **Granular Activated Carbon Treatment (GAC)**

#### *Granular Activated Carbon Treatment Service Life*

In Section 3.3.2.2, the Draft EA states that “new GAC media would need to be installed and old GAC media removed and disposed of every few years” (p. 3-13). It is unclear exactly how often the GAC media would need to be removed and what threshold the Navy would use to determine removal is warranted. The Navy may be able to provide estimates of when the GAC media will near the end of service life by considering the rate at which water is being pumped from the aquifer for usage on the base and comparing it to known information from the manufacturer. Additionally, the Navy may also consider testing for contaminants in the water after it has gone through the water treatment facility to determine when contaminant breakthrough occurs, which would indicate the need to replace the GAC media.

***Recommendation for the Final EA:*** The EPA recommends that the Navy estimate service lifetimes for the GAC media and identify thresholds for servicing.

#### *Backwash Contamination and Optimizing Treatment*

In Section 2.3.2.4, the Draft EA states that “the GAC media needs to be backwashed to remove fine, inert particles” and that “[t]he waste water generated by backwashing the GAC media would be conveyed to the City and County of Honolulu’s sanitary sewer system” (p. 2-8). Additionally, the Draft EA states that “elevated concentrations of total petroleum hydrocarbons diesel range organics were reported by the laboratory” that was involved in monitoring events for one of the basal aquifer wells in the Red Hill Facility (p. 3-13). The GAC media used to treat the water may entrain these constituents, among others, throughout its lifetime. The backwash may then mobilize these constituents and transport them to the wastewater system. Identifying what potential constituents may be flowing into the sanitary sewer system may help the City and County of Honolulu appropriately treat the entering backwash water and reduce the public’s exposure to these constituents. We also recommend coordination with the City and County of Honolulu, the HDOH, and the EPA to ensure the backwash effluent entering wastewater is compliant all applicable pretreatment standards and requirements.

The GAC treatment may have the co-benefit of reducing the concentration of PFAS in the treated water to safe drinking levels as well as reducing TPH. The EPA notes that groundwater sampling near the Red Hill Shaft found PFAS in the basal groundwater aquifer at levels exceeding the applicable Maximum Contaminant Levels for PFOS and PFOA. There may be a GAC treatment optimization that maximizes PFAS removal and TPH. Additionally, in Section 2.3.2.4, the Draft EA states that “additional enhanced treatment technologies such as anion exchange or high-pressure membrane treatment” may be used in addition to the GAC treatment, and that “the proposed permanent water treatment facility has been designed to accommodate potential future enhanced treatment technologies within the existing site footprint” (p. 2-8). However, the conditions or thresholds that would necessitate additional treatment are not discussed. Disclosing these conditions or thresholds may help the public understand the limitations of the GAC treatment and may inform what data or sampling efforts are needed to make a decision regarding enhanced treatment.

***Recommendations for the Final EA:*** The EPA recommends the Navy describe current and future monitoring, and identify other potential constituents that may be present in the backwash that would enter the wastewater system, including pollutants such as TPH and PFAS. Describe the coordination with the local sanitary sewer operators, and describe the potential mitigating actions that would likely be employed to ensure the backwash water entering the sanitary sewer system is safe. Identify any applicable treatment system for the disposed backwash, a monitoring plan for regularly sampling for the presence of harmful pollutants, including TPH and PFAS, and how information regarding ongoing sampling would be communicated to the public. Discuss the type of wastewater treatment being considered for the backwash to demonstrate its effectiveness to remove the pollutants identified, as well as the conditions or thresholds that would necessitate enhanced treatment and data or sampling needs that would support the decision for enhanced treatment. Consider GAC treatment options that could meet the maximum contaminant level goal for PFAS and optimize removal of all contaminants. Further, please provide additional description of why the packed tower aerator alternative was not further considered, given the ability of that alternative to address potential TPH in drinking water.

#### **Mitigation of Stormwater Runoff Due to Increased Impervious Surfaces**

The project area is sited adjacent to Halawa Stream which flows into the water of Pearl Harbor. Section 3.2.3.2 of the document states that the Preferred Alternative would increase impervious surfaces, involve substantial earthwork during construction (grading, clearing, and grubbing of the project site to create a level building pad), and increase stormwater runoff. Earthwork activities would occur proximate to the channel of Halawa Stream and could result in impacts to the stream and downstream waters and ecosystems if erosion and stormwater are not properly managed (p. 5-9). We appreciate that the description of the Proposed Action mentions that it would limit stormwater discharge to pre-development levels. However, it is unclear based on the following statement what the specific features are for mitigating stormwater discharge: “[l]ow Impact Development features would be implemented to match the existing stormwater discharge rate to offsite areas, and the existing drainage patterns would be maintained to the extent possible” (p. 3-11). We note that should the project design disturb

greater than 1 acre, a Hawai'i Construction General National Pollutant Discharge Elimination System (NPDES) Permit would be required.

**Recommendations for the Final EA:** In the Final EA, please disclose the specific features that are distinct from standard operating procedures/best management practices that will be implemented to mitigate stormwater discharge. We recommend consulting the EPA *Bioretention Design Handbook*,<sup>1</sup> which includes information about the latest approaches and lessons learned for bioretention design, construction, inspection, and operation and maintenance. Include the development of maintenance contracts in the mitigation measures to ensure these features are maintained for maximum effectiveness. Confirm in the Final EA if a Hawai'i Construction General NPDES Permit will be needed.

### **Utilities and Infrastructure**

Table 3, located within Appendix C of the Draft EA, states that “the Proposed Action would construct a new [REDACTED] raw water transmission line to convey water from the Red Hill Shaft Pump Station to the permanent water treatment facility” and that “[a] new [REDACTED] finished water line would convey the treated water from the permanent water treatment facility to the Navy’s existing drinking water distribution main” (p. 13, Appendix C). The locations of these transmission lines are not indicated in any figures, nor are their locations specified in the Draft EA. As such, it is unclear where these water mains would be located. The EPA understands that utility line locations and points of connection are not shown due to operational security guidelines, as stated in Table 3. A brief, general clarification that the transmission lines are, or are not, within the base boundary may be helpful for the public to understand extent and bounds of the water utilities while maintaining operational security.

**Recommendations for the Final EA:** The EPA recommends clarifying whether the water transmission lines are anticipated to be constructed within the base boundary. Provide further description of the locations of the new water transmission locations, while complying with operational security guidelines.

### **Documenting Operator Training for Potential Chemical and Contaminant Spills**

The Draft EA identifies several measures to monitor and decrease the potential risk of a chemical spill during operation of the water treatment facility, including operator training, on-line instrumentation for monitoring, and remotely operated alarms and valves to prevent contaminated water from entering the Navy water distribution system. However, there is a lack of detail in the Draft EA regarding the required operator training to perform these process control functions and the use of spill response materials (spill kits) during typical operations.

**Recommendations for the Final EA:** We recommend identifying specific operator training guidelines for the handling of potential chemical and contaminant spills, as well as other kinds of contamination prevention measures for contractors in the Final EA. The EPA recommends compiling measures in a stand-alone list that can be shared with contractors, to ensure the safety of workers and implement strategies that decrease the risk of potential chemical spills.

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<sup>1</sup> Available at [https://www.epa.gov/system/files/documents/2023-11/bioretentiondesignhandbook\\_plainnov2023.pdf](https://www.epa.gov/system/files/documents/2023-11/bioretentiondesignhandbook_plainnov2023.pdf)

Thank you for the opportunity to review this Draft EA. We would appreciate receiving an electronic copy of the Final once it is made public. The EPA Region 9's Red Hill team is available to assist with technical support; please reach out to Luis Garcia-Bakarich from our Drinking Water Office for coordination ([garcia-bakarich.luis@epa.gov](mailto:garcia-bakarich.luis@epa.gov); 415-972-3237). If you have any questions about this letter, please contact me at 415-972-3629, or contact Laney Gordon, the lead reviewer for this project, at [gordon.laney@epa.gov](mailto:gordon.laney@epa.gov).

Sincerely,

**FRANCISCO DONEZ**

Digitally signed by FRANCISCO  
DONEZ  
Date: 2025.04.18 15:51:34 -07'00'

Francisco Dóñez  
Manager  
Environmental Review Section 2

cc: Gaudencio C. Lopez, P.E.  
Environmental Management Division, Safe Drinking Water Branch Chief, Hawai'i Department of Health

Joan Corrigan  
Section Supervisor, Hawai'i Department of Health

Jeffrey Tsai  
Emergency Response, Hawai'i Department of Health

Haku Milles  
Department of Design and Construction Director, City and County of Honolulu

Debra Mendes  
Office of Planning and Sustainable Development Program Manager, State of Hawai'i

Dayna Yoshizaki  
Environmental Director, NAVFAC Hawai'i Environmental Division

Wendy Dauberman  
Environmental Program Manager, NAVFAC PAC Environmental Division EV21

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**3. State of Hawaii Department of Land and Natural Resources  
(General)**

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

**SYLVIA LUKE**  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

April 21, 2025

Naval Facilities Engineering Systems Command Hawaii/EV21, Building 55  
400 Marshall Road  
Joint Base Pearl Harbor-Hickam, HI 96860-3139  
ATTN: Red Hill Water Treatment Facility EA Project Manager  
c/o HHF Planners

via email: [redhillEA@hhf.com](mailto:redhillEA@hhf.com)

**SUBJECT: Draft Environmental Assessment for Red Hill Water Treatment Facility at  
Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i**

Dear Sir or Madam,

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

At this time, the DLNR has no comments to offer on the subject matter. Should you have any questions, please feel free to contact Dayna Vierra at (808) 587-0423 or email: [dayna.k.vierra@hawaii.gov](mailto:dayna.k.vierra@hawaii.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

FOR Russell Y. Tsuji  
Land Administrator

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**4. State of Hawaii Department of Land and Natural Resources Division  
of Forestry and Wildlife**

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

March 25, 2025

**MEMORANDUM**

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

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: **Draft Environmental Assessment for Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam, O'ahu, Hawaii'i**

LOCATION: Honolulu, Island of O'ahu

APPLICANT: HHF Planners on behalf of the United States Navy

Transmitted for your review and comment is information on the above-referenced subject matter. Please use the following link to access project information:

<https://pacific.navfac.navy.mil/About-Us/National-Environmental-Policy-Act-NEPA-Information/>

Please submit comments by **April 17, 2025**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions about this request, please contact Dayna Vierra at [dayna.k.vierra@hawaii.gov](mailto:dayna.k.vierra@hawaii.gov). Thank you.

**BRIEF COMMENTS:**

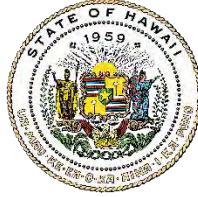
( ) We have no objections.  
 ( ) We have no comments.  
 ( ) We have no additional comments.  
 Comments are included/attached.

Signed: *JDM*  
 Print Name: JASON D. OMICK, Wildlife Program Mgr.  
 Division: Forestry and Wildlife  
 Date: Jul 9, 2025

Attachments

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

DAWN N.S. CHANG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
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RYAN K.P. KANAKA'OLE  
FIRST DEPUTY

CIARA W.K. KAHAHANE  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

July 3, 2025

Log no. 4950

**MEMORANDUM**

**TO:** IAN HIROKAWA, Acting Land Administrator  
Land Division

**FROM:** JASON D. OMICK, Wildlife Program Manager  
Division of Forestry and Wildlife

**SUBJECT: Comment on an Environmental Assessment for Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i.**

The Department of Land and Natural Resources—Division of Forestry and Wildlife (DOFAW) has received Land Division's request for comment on an Environmental Assessment (EA) for the Red Hill water treatment facility at Joint Base Pearl Harbor-Hickam, Hālawā/Moanalua, Oahu; impacting TMKs (1) 9-9-010:001, 005, & 006; and (1) 1-1-012:003 & 004. This project consists of constructing a new, permanent on-site granular activated carbon (GAC) water treatment facility and the associated utilities, infrastructure, and necessary site improvements.

DOFAW has concluded that the project site is not located near any protected Federal lands; however, it is adjacent to the Honolulu Watershed Forest Reserve and within ca. 1.3 miles of the State administrated Keaīwa Heiau State Recreation Area. These areas protect important botanical assests that not only provide critical habitat for native wildlife, but increase aquifer recharge as well. Additionally, the worksite is at the urban-wildland interface—where most fire ignitions occur. Therefore, DOFAW requests that special attention is paid to the recommendations made at the end of this letter regarding fire prevention and planning, forest pathogens, and invasive species.

The Division notes that there is potential for several State listed species, protected under HRS § 195D, to found within the proposed project area. These include: **1)** 'ōpe'ape'a, or Hawaiian hoary bat (*Lasiurus semotus*); **2)** several species of seabirds; in the right conditions **3)** pueo or Hawaiian short eared owl (*Asio flammeus sandwichensis*); and **4)** manu o Kū or white tern (*Gygis alba*). The Division concurs with

the best management practices (BMPs) included in the EA to minimize impact to 'ōpe'ape'a and seabirds. Additional guidance for these species and others is included in this letter.

The State listed 'ōpe'ape'a or Hawaiian hoary bat (*Lasiurus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. The use of barbed wire should be avoided in any construction. 'Ōpe'ape'a can become ensnared in this type of fencing during flight and mortalities have been documented as a result. The EA indicates that the use of barbed wire is unavoidable; therefore, the applicant will need to enter consultation with DOFAW to acquire an Incidental Take License (ITL) given the likelihood that take of 'ōpe'ape'a will occur. DOFAW HCP staff have reached out to the consultant and provided them with an application packet for a State ITL and encouraged discussion with the Division as the project moves forward.

DOFAW concurs with the avoidance and minimization measures proposed in the EA for seabirds; though, additional information is provided to improve these BMPs. If nighttime construction is required during the seabird fledgling season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting <https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/>

Permanent lighting found at facilities also poses a risk of seabird attraction, and as such should be eliminated or minimized to the greatest extent possible to protect seabird flyways and preserve the night sky. If lighting is needed please review <https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf> for illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai'i.

The State endangered pueo or Hawaiian short-eared owl (*Asio flammeus sandwichensis*) could potentially occur in the project vicinity. While BMPs are in place for this species additional guidance is provided here. Pueo are most active during dawn and dusk twilights. Remove and exclude non-native mammals such as mongoose, cats, dogs, and ungulates from the nesting area. Minimize habitat alterations and disturbance during pueo breeding season. These birds' nest on the ground, and active nests have been found year-round. Before any potentially disturbing activities—like clearing vegetation, especially ground-based disturbance, DOFAW recommends a qualified biologist conduct surveys during crepuscular hours. Observation surveys should be done at those times from vantage points where they can see the whole project area for 2-3 nights before construction is to start. If any breeding displays are observed, it is likely there could be a nest. If pueo nests are detected in the area, a buffer zone should be established in which no activity occurs within a minimum buffer distance of 100 meters until the nesting cycle is complete, and the chicks are capable of flight. **O'ahu Branch DOFAW staff should be notified at (808) 973-9778** of any nests or adult displayed breeding behavior.

The State threatened manu-o-Kū or White Tern (*Gygis alba*) is known to nest in the vicinity of the proposed project. While BMPs are in place for this species additional guidance is provided here. If tree trimming or removal is planned, DOFAW strongly recommends a qualified biologist survey for the presence of White Terns prior to any action that could disturb the trees. White Tern pairs typically lay their single egg on a tree branch with no nest. Eggs and chicks can be dislodged by construction equipment or workers that contact trees in which White Terns are nesting. As such, a tree protection program should be in place for any mature trees with nesting or roosting White Terns. For more information regarding detailed Best Management Practices when conducting tree care activities with manu-o-Kū present, please visit [https://www.whiteterms.org/uploads/8/6/3/2/86323044/mok tree care guidelines 19062 2.pdf](https://www.whiteterms.org/uploads/8/6/3/2/86323044/mok_tree_care_guidelines_19062_2.pdf). If a nest is discovered, please notify the **O'ahu Branch DOFAW at (808) 973-9778** for assistance.

Due to the arid climate, high fine fuel load (grasses) surrounding the worksite, and risks of wildfire to listed species and native habitats, we recommend coordinating with the **Hawai'i Wildfire Management Organization at (808)-850-0900 or [admin@hawaiiwildfire.org](mailto:admin@hawaiiwildfire.org)**, on how wildfire prevention can be addressed in the project area. When engaging in activities that have a high risk of starting a wildfire—like wielding in/near tall grass, it is recommended that you: **1)** wet down the area before starting your task, **2)** continuously wet down the area as needed, **3)** have a fire extinguisher on hand, and **4)** in the event that your vision is impaired, (i.e. welding goggles) have a spotter to watch for fire ignitions. Additionally, do not park any vehicles in or near tall grass as heat from the engine/exhaust may ignite dry vegetation.

To prevent the spread of Rapid 'Ōhi'a Death (ROD), DOFAW requests that removal, pruning/trimming, and potentially injury to 'ōhi'a trees be avoided as much as possible. Wounds serve as entry points for ROD fungus and increase the odds that the tree will be infected and die. Also, clean gear/tools, clothes, footwear, and vehicles before and after use. Make sure to removal all loose soil from the aforementioned items, spray gear/tools with 70% rubbing alcohol, and wash clothes with hot water and soap. Wash tires and undercarriages of all vehicles/machinery with a high-pressure water source. If 'ōhi'a trees must be removed or pruned/trimmed, please conduct these activities on a still day to minimize blown sawdust and use a sharp saw to create chips rather than dust. Seal all wounds to these trees with a stump seal product (e.g., Spectricide, etc.). For more information, please consult <https://cms.ctahr.hawaii.edu/rod>.

We recommend consulting the **O'ahu Invasive Species Committee (OISC) at (808) 266-7994** to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. Soil and plant material may contain detrimental fungal pathogens (like Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, and Coconut Rhinoceros Beetle), or invasive plant propagules (e.g., Albizia, Pampas Grass, Fireweed, etc.) that will harm our native ecosystems, and the unique native found within them. Therefore, DOFAW advances the guidance that all equipment and personal items—to include clothing and foot ware

should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. Additionally, DOFAW recommends minimizing the movement of plant or soil material between worksites. Suspect pests should be reported through the statewide pest hotline. Photos, videos, and locations can be shared at [www.643pest.org](http://www.643pest.org) or call: 743-PEST. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

The invasive coconut rhinoceros beetle (*Oryctes rhinoceros*) or CRB is widespread on the island of O'ahu. CRB have been detected on other islands with moderate infestation on Kaua'i, one incipient site on Hawai'i Island, and only one positive site on Maui in 2023. Hawai'i Department of Agriculture interim rule 24-1 restricts the movement of CRB-host material from the island of O'ahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes **1)** entire dead trees; **2)** mulch, compost, trimmings, fruit and vegetative scraps, and **3)** decaying stumps. CRB host plants include the live palm plants in the following genera: *Washingtonia*, *Livistona*, and *Pritchardia* (all commonly known as fan palms), *Cocos* (coconut palms), *Phoenix* (date palms), and *Roystonea* (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. Inspection and/or treatment approved by HDOA is mandatory before inter-island transport. For more information regarding CRB, please visit <https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/coconut-rhinoceros-beetle/>.

DOFAW recommends using native plant species for landscaping that are appropriate for the area, e.g., plants for which climate conditions are suitable for them to thrive, plants that historically occurred there, etc. Please do not plant invasive species. DOFAW also recommends referring to [www.plantpono.org](http://www.plantpono.org) for guidance on the selection and evaluation of landscaping plants and to determine the potential invasiveness of plants proposed for use in the project.

Mahalo for contacting our office to receive guidance regarding the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. DOFAW requests continued communication for this project focused on the development of a potential ITL, or new fencing plan that does not utilize barbed wire. If you have any questions, please contact Jesse W. Adams, Protected Species Habitat Conservation Planning Associate, at [jesse.w.adams.researcher@hawaii.gov](mailto:jesse.w.adams.researcher@hawaii.gov) or call (808) 265-3276.

Sincerely,



JASON D. OMICK  
Wildlife Program Manager

## **5. Board of Water Supply**

**BOARD OF WATER SUPPLY  
KA 'OIHANA WAI**

**CITY AND COUNTY OF HONOLULU**

630 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96843  
Phone: (808) 748-5000 • www.boardofwatersupply.com

RICK BLANGIARDI  
MAYOR  
MEIA

ERNEST Y. W. LAU, P.E.  
MANAGER AND CHIEF ENGINEER  
MANAKIA A ME KAHU WILIKI

ERWIN KAWATA  
DEPUTY MANAGER  
HOPE MANAKIA



NĀ'ĀLEHU ANTHONY, Chair  
JONATHAN KANESHIRO, Vice Chair  
BRYAN P. ANDAYA  
LANCE WILHELM  
KĒHAULANI PU'U  
EDWIN H. SNIFFEN, Ex-Officio  
GENE C. ALBANO, P.E., Ex-Officio

April 17, 2025

Red Hill Water Treatment Facility EA Project Manager  
Naval Facilities Engineering System Command Hawaii/EV21, Building 55  
400 Marshall Road  
Joint Base Pearl Harbor-Hickam, HI 96860-3139  
RedHillEA@HHF.com

***Re: Comments on the Draft Environmental Assessment (EA) for Red Hill Water Treatment Facility, Joint Base Pearl-Harbor Hickam, O'ahu***

Dear Sir or Madam:

The Honolulu Board of Water Supply (BWS) appreciates the opportunity to provide comments on the Draft Environment Assessment for Red Hill Water Treatment Facility Joint Base Pearl-Harbor, O'ahu (EA). The draft EA includes an assessment of certain potential impacts associated with constructing and operating a permanent water treatment facility, and connecting an interim water treatment facility, to treat and deliver Red Hill Shaft water to the Navy's drinking water system (Proposed Action). In the draft EA, the Navy assumes without explanation or analysis that permanent treatment of water from the Red Hill Shaft well is necessary; this conclusion is reached without identification of the specific contaminants present at the well or consideration of the level of contamination present in the aquifer. The National Environmental Policy Act (NEPA) requires agencies to identify in any environmental document, including EAs, the purpose and need for a proposed project and failure to do so renders the subject document invalid.<sup>1</sup> Without an identified purpose for the Proposed Action, members of the public cannot meaningfully evaluate the acceptability of the Proposed Action and

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<sup>1</sup> The Navy has included a purpose and need section in the draft EA. This section, however, assumes without evidentiary support that treatment is necessary to create a capture zone for contaminants that would otherwise potentially move through the aquifer and that treatment is necessary to render the water suitable for any beneficial purpose including serving as drinking water. Without any meaningful understanding of the contaminants that the Navy understands must be present and need to be treated, it is impossible to understand why construction of the proposed facilities is needed.

Navy decisionmakers cannot meaningfully consider whether to proceed with the Proposed Action.<sup>2</sup> It deprives the BWS and the public of the ability to meaningfully comment on draft EA or evaluate the Proposed Action. Further, as is detailed below, the Navy's analysis in the draft EA does not include a thorough evaluation of all potential environmental effects of the Proposed Action and such analysis is not possible unless and until the Navy identifies the contaminants that are present and the treatment which is necessary to render the Red Hill Shaft water supply safe for potable uses. Until such analysis is done and the public is given the opportunity to review and comment thereon, the requirements of the National Environmental Policy Act (NEPA) cannot be met. Accordingly, the BWS requests that the Navy further consider the potential impacts of the Proposed Act on the environment and public interest as described below prior to taking any further related actions.

### **I. Navy's NEPA Requirements**

NEPA requires all federal agencies to evaluate and disclose to the public the potential environmental impacts of proposed actions. 42 U.S.C. § 4332(C). Agencies must "carefully consider . . . detailed information concerning significant environmental impacts" and NEPA "guarantees that relevant information will be made available" to the public. *Dep't of Transp. v. Public Citizens*, 541 U.S. 752, 768 (2004) (quoting *Robertson v. Metho Valley Citizen Council*, 490 U.S. 332, 349 (1989)). A cornerstone of this analysis is the identification of the purpose and need for the proposed action as this defines the critical components of that action as well as the potential alternatives thereto. The NEPA analysis must also consider the whole of the action and evaluate all potential significant direct, indirect and cumulative impacts thereof. NEPA requires agencies to take a "hard look" at all potential environmental consequences of a proposed action. The NEPA document must include sufficient evidence and analysis to support the agency's conclusions and findings. Where some information that is essential to an environmental analysis is missing, an agency has an obligation to obtain the information where the cost associated with gathering it are not unreasonable.

Here, the Navy's Proposed Action is to construct a permanent water treatment facility that can serve potable water from the Red Hill Shaft well to the Navy's water supply system that meets all applicable water quality standards. To satisfy NEPA, the Navy must first identify why the installation of the proposed treatment facilities is necessary. The Navy must then determine whether the proposal and potential alternatives thereto are technical feasible and identify *all* impacts that could result from the Proposed Action, including those which are separate in space and time from the proposed activities but

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<sup>2</sup> Based on discussions with members of Congress and Navy personnel, the BWS understands that the construction of the proposed facilities may cost in excess of five hundred million dollars. The BWS is at a loss to understand how the Navy can determine whether such funds should be dedicated to this proposal without any quantification of the nature of the underlying contamination problem to be addressed.

are a reasonably foreseeable result thereof. As is discussed below, the Navy has not met these requirements.

## **II. The Navy's Proposal Is Missing Critical Components and the Analysis in the EA Fails to Satisfy the Substantive Requirements of NEPA**

The Navy is proposing to reconnect the Red Hill Shaft to the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water system. The Shaft will be connected to the drinking water system through a granular activated carbon (GAC) water treatment facility that will treat 5 million gallons per day of groundwater, the same amount as currently being treated at the existing emergency GAC water treatment facility. Under the Proposed Action the treated effluent will be utilized for potable purposes rather than being discharged into the South Hālawā Stream as is the current practice. While the BWS supports the Navy's efforts to put this treated water to beneficial uses and recognizes the need for the Navy to address water supply concerns related to its drinking water system, we are surprised by the timing and scope of the Proposed Action as well as the paucity of real analysis in the draft EA. As is detailed below, the draft EA does not adequately consider the scope of contamination present under baseline conditions, nor does it address all the potential impacts associated with the Proposed Action. Such information is necessary for the Navy's decisionmakers to evaluate the proposal and for the public to meaningful participate in the approval process. There is a substantial risk that the unanalyzed significant impacts may occur if the Proposed Action proceeds in reliance on the draft EA. This is a risk that the public should not be made not bear and that NEPA prohibits.

First, and most surprisingly, the EA does not provide discussion of why a permanent treatment facility is needed at this location nor does it describe the existing water quality conditions in the project area. Without this baseline information, it is impossible to determine what the treatment facility is being designed to address or the level of treatment that will be necessary to ensure that the effluent meets appropriate water quality standards, factors which establish the design parameters for the treatment facility as well as the impacts associated with such operations. The analysis also does not consider the feasibility of treating the effluent at Red Hill Shaft to a level that meets all appropriate federal and state drinking water standards. All this information is essential to assess the Proposed Action, identify and consider potential impacts associated therewith, and consider alternatives thereto – the overriding purpose of the NEPA process.

Instead of including a considered evaluation of the need for the proposed treatment facility and the impacts associated with providing the level of treatment necessary, the draft EA raises a number of questions. Has the Navy assessed the current condition of the aquifer? What data is available regarding the extent and location of contaminants in the vicinity of Red Hill Shaft as well as the larger aquifer? What level of treatment is

necessary to meet drinking water standards? Does the Navy have data that supports the conclusion that this level of treatment can consistently be provided? What actions will the Navy take if it cannot meet these standards? These are just a few of the questions that the reader of the draft EA is left to consider without guidance. Rather than addressing these and other related issues and analyzing potential impacts, the EA simply claims in conclusory fashion that water from Red Hill Shaft which is treated through the GAC facility will meet National Primary Drinking Water Regulations (NPDWR) and State of Hawaii Department of Health (HDOH) Safe Drinking Water standards before it is introduced into the Navy's drinking water system. This conclusory assessment is not sufficient. The EA needs to include a roadmap for the analysis that was conducted to determine that the Proposed Action is necessary and that it will not result in detrimental impacts as well as the data that supports these determinations. The Navy should also explain how the range of potential impacts considered were identified. Such information is not currently included or referenced in the draft EA. Without detailed support, neither the Navy's decisionmakers nor the public can evaluate whether the Proposed Action is an acceptable proposal or whether there are alternatives to the proposal which would minimize impacts and be environmentally preferable. The Navy needs to revise the draft EA to include such considerations to satisfy the requirements of NEPA.

Second, based on numerous statements by Navy representatives, the BWS understood that the Navy would not bring the Red Hill Shaft supply back online until a number of studies and analysis had been completed. Specifically *Red Hill Shaft Recovery and Monitoring Plan* (Jan. 2022) (Monitoring Plan) states:

Recovery of potable water systems is also a major focus of the overall project<sup>3</sup>. Before the Red Hill Shaft well can be brought back into service, attention will need to be given to other nearby water sources that have been taken offline in an abundance of caution. Criteria will need to be developed to provide assurances that restarting withdrawals from these sources will not threaten the water quality of those sources and will not compromise remediation activities at the Red Hill Shaft.

Monitoring Plan Section 2 at 18.

Despite the express recognition that bringing Red Hill Shaft online could impact water quality, including water quality at nearby water sources, and aquifer remediation efforts, the EA does not even mention much less analyze such impacts. This is a glaring omission. Moreover, the failure to address these impacts is surprising given that the

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<sup>3</sup> The Monitoring Plan describes the overall project as being total recovery and remediation of Red Hill Shaft.

Monitoring Plan is expressly incorporated into the EA. Accordingly, NEPA requires that these impacts be addressed.

Finally, the BWS is concerned that the Navy has decided to proceed with re-establishing the Red Hill Shaft well as a potable water supply without simultaneously addressing the larger question of aquifer remediation. The BWS appreciates that the Navy has consistently recognized publicly that it is responsible for completing environmental remediation to address the spills from the Red Hill Bulk Fuel Storage Facility, both historic and recent. In the Monitoring Plan, which is incorporated into the draft EA by reference, the overall project being implemented includes actions related to both environmental remediation and re-establishing potable water supply. These actions are necessarily linked because the efforts to carry out one of the actions will inevitably impact the efforts of to carry out the other action. This linkage is appropriate and irrefutable. Therefore, to fully assess the impacts of the Proposed Project, it is critical to consider the impacts associated with the larger environmental remediation efforts which must be carried out to address contamination of the sole source aquifer. At a minimum, the Navy decisionmakers and the public should be made aware of the cumulative effects of the larger remediation project and construction and operation of the water treatment facilities discussed in the EA. The draft EA fails to meet the requirements of NEPA as it does not include such a discussion.

### **III. Specific Areas of Impacts Requiring Further Evaluation**

The analysis underlying the draft EA is artificially limited and thus insufficient to evaluate the potential environmental impacts associated with the Proposed Action as required by NEPA. The scope of the analysis for each considered resource is defined by the scope of the activities identified as being part of the Proposed Action, the region of impact (ROI) which bounds the geography of the analysis, and the types of effects which are considered potential direct, indirect or cumulative impacts. If any of these parameters are artificially limited, the scope of the analysis will also be so limited. Here, the Navy did limit each of these parameters for one or more resource. To establish the scope of the analysis, the Navy identified the Proposed Action to include only: (1) construction and operation of a permanent water treatment facility and related infrastructure; and (2) connection of the interim treatment facility (currently under construction) to the Navy's drinking water system and operation of interim facility. The scope of the Proposed Action did not include any activities necessary to remediate the underlying aquifer or to respond to contaminants mobilized by the Proposed Action. The ROI and the types of effects analyzed are identified on a resource-by-resource basis. Following is a discussion of some of the deficiencies the BWS has identified with the Navy's analysis of specific resources in the draft EA.

#### *A. Public Health Concerns*

The draft EA recognizes that the Proposed Action has the potential to impact public health and safety. However, the consideration of public health concerns is overly

narrow and, therefore, excludes a broad range of potential impacts that must be considered to constitute the “hard look” that NEPA requires.

In the draft EA, the Navy assumed that the ROI for public health and safety impacts is limited to the immediate vicinity where the proposed water treatment facilities will be located and the service area for the treated effluent introduced into the JPBHH drinking water system. Specifically, the draft EA ROI for public health includes “the former RHBFSF, the adjacent State of Hawaii-owned properties, and the Army’s Red Hill Housing where the Proposed Act would take place, and those areas served by the Navy’s drinking water system, including JBPHH and outlying residential communities such as Aliamanu Military Reservation, Red Hill Housing, and Catlin Park, among others.” EA at 3.1.2. As previously discussed, the operation of the Red Hill Shaft well has the potential to impact nearby water systems as well as the condition in the overall aquifer. Such effects could implicate public health concerns related to the availability of drinking water and the quality of available drinking water to individuals located outside the EA’s identified ROI. Therefore, the ROI for public health and safety issues should be expanded to include users of the larger aquifer, including the BWS and its customers and should consider a broad range of potential public health considerations. The analysis in the EA is deficient without such consideration.

Although the EA indicates that it considered all impacts associated with “availability of drinking water, the quality of said drinking water, workforce safety, and environmental health and safety risks to children and to the general public” (EA at 3.1), the EA did not identify *any* potential health and/or safety risks to the Navy’s water users which could result from the introduction of the Red Hill Shaft treated effluent into the potable water system nor did it acknowledge that the assessment of potential impacts was limited by paucity of certain information critical to identifying and evaluating the potential for impacts associated with contamination from the Red Hill Bulk Fuel Storage Facility like an approved groundwater model, an approved fate and transport model, contaminant plume mapping, etc. This type of impact, which has been the focus of significant known public controversy, apparently did not even merit mention in the draft EA. It has long been recognized that NEPA requires agencies to closely scrutinize issues which, like here, involve significant public controversy or where the some of the effects of the action are unknown. See, e.g. *National Parks & Conservation Ass v. Babbitt*, 241 F.3d 722, 737 (9<sup>th</sup> Cir. 2001). Thus, NEPA here requires consideration of this issue or further explanation as to why such analysis is not necessary.

#### *B. Impacts to Water Resources*

The EA analysis assumes that the potential for impacts to water resources here is largely dependent on the presence of contaminants in and around Red Hill Shaft and the movement of such contaminants within the vicinity of the Proposed Action. The Navy has previously recognized that withdrawal of groundwater can impact movement of contaminants within the aquifer. See, e.g. Monitoring Plan. Moreover, the fact that one of the purposes of the Proposed Action is to conduct pumping to maintain the

"capture zone" for contaminants in the project area demonstrates that activities that involve withdrawal of groundwater have the potential to impact movement of contaminants and that the Navy believes that contaminants are present in the vicinity of Red Hill Shaft at a level of which requires treatment. Thus, NEPA requires the careful consideration of the potential consequences of the continued pumping of groundwater as a part of the Proposed Project on the availability and quality of groundwater resources.

Despite the recognition that pumping can move contaminants and impact groundwater quality, the draft EA concludes that implementation of the Proposed Action will not result in any impacts to water quality. This finding is based in part of the finding in the draft EA that "since the Red Hill fuel storage tanks have been defueled the primary groundwater contamination source has been removed." While the removal of fuel from the Red Hill tanks has eliminated a significant source of groundwater contamination, it has not removed all the related contamination. It is well documented that there have been numerous leaks from the Red Hill Bulk Fuel Storage Facility and that the Navy has not adequately characterize the fate of the released fuel and other contaminants. Again, the fact that the Navy recognizes the need to maintain the capture zone in this area even after the Red Hill tanks have been largely defueled demonstrates that there are contaminants present in the Proposed Action area. This conclusion is further reinforced by the Navy's recent proposal to install a GAC treatment facility at its Aiea-Hālawa Shaft, which would only be necessary if contaminants were present in aquifer at concerning levels and that reactivating the Aiea-Hālawa Shaft would be likely to mobilize such contaminants. Failure to analyze the impact that the movement of contaminants could have on groundwater resources and human health renders the EA's analysis inadequate.

Further, it is not clear whether the EA sufficiently describes all the components necessary to treat the water to the standards proposed. In the analysis of potential impacts to water resources, the EA notes that operating the Proposed Action in compliance with safe drinking water standards could require further actions including "the installation of additional enhanced treatment technologies such as high-pressure membrane treatment (e.g. nanofiltration or reverse osmosis)." EA at 3.2.3.2. The draft EA, however, fails to discuss why such measures would be required and consider the impacts of implementing such measures and/or the potential significance of the failure to implement such measures. This information is necessary to understand the scope of the activities which will likely be carried out and the impacts associated therewith.

### *C. Hazardous Materials*

The EA's consideration of impacts associated with hazardous materials is also deficient as it does not consider impacts associated with all potential hazardous substances that might be present in the Project area and potentially impacted by implementation of the Proposed Action. Most significantly, the EA does not include any consideration of the presence of hazardous materials commonly called "forever chemicals," including per-

and polyfluoroalkyl substances (PFAS). There are numerous documented releases of PFAS from the Red Hill Bulk Fuel Storage Facility and PFAS is known to be present in the vicinity of the Proposed Action. See, e.g., EPA Letter to J. Tamashiro, Environmental Restoration Manager, NAVFAC Hawaii requesting that the Navy collect additional PFAS groundwater samples due to need to address sources of PFAS in the immediate vicinity of the Red Hill Shaft. (T. Russi, Feb. 19, 2025). The failure to consider and analyze the potential impacts associated with mobilization of such hazardous materials in the aquifer as well as potential to introduce such chemicals into the JBPHH water system is a significant error. Given that such hazardous materials are highly mobile, the ROI for hazardous materials and hazardous wastes should be the entire sole source aquifer which underlies the Proposed Action and not limited to just the area in the immediate vicinity of the Proposed Action project area as identified in the EA. Further, the EA needs to identify and analyze the types of environmental consequences that mobilizing PFAS in the vicinity of the project could have. Failure to include such analysis renders the draft EA deficient.

#### **IV. Cumulative Impacts**

NEPA requires agencies to consider the cumulative impacts of proposed actions together with the impacts associated with reasonably foreseeable actions in the project area. In the draft EA, the Navy recognizes that implementation of the Monitoring Plan and other Red Hill remediation activities could result in impacts that would overlap with those associated with the Proposed Action and should therefore be considered in a cumulative impacts analysis. However, for each resource analyzed, the draft EA concluded without support that the impacts will be less than significant given that the proposed actions are all remedial in nature. Actions which are remedial in nature can also have negative environmental impacts and such effects must be analyzed in a NEPA document. The question that must be answered is not whether an action is remedial but rather whether it has any effects which when considered with other projects could be significant. The cursory "analysis" in the draft EA is deficient as it fails to even consider the potential overlap of actions which could impact the direction of groundwater flow and any contaminants located in the aquifer. Failure to engage in any analysis of these potential cumulative impacts equates to failure to satisfy the requirements of NEPA.

#### **V. Conclusion**

The BWS appreciates the opportunity to participate in the consideration of the draft EA. Determining the best way to address all the consequences of the releases of fuel and other contaminants from the Red Hill Bulk Fuel Storage Facility is a major undertaking with serious consequences for the people of O'ahu, critical water resources, and the interest for generations to come. It is therefore essential that the Navy thoroughly assess the consequences of proposed actions such as those under consideration here and that the public have the opportunity to meaningfully participate in the decision-making process. The draft EA's analysis is not sufficient because in numerous respects

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has been artificially limited, it includes conclusions which are not supported by referenced data, and it fails to consider many potentially significant impacts. Upon completion of a revised document, the Navy should then be able to determine whether further study is required through the development of an Environmental Impact Statement or whether an EA can suffice.

If you have any questions, please feel free to contact me at (808) 748-5061.

Very truly yours,



ERNEST Y.W. LAU, P.E.  
Manager and Chief Engineer

cc: Nā'ālehu Anthony, Chair, Board of Water Supply

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**6. Board of Water Supply (Supplemental)**

**BOARD OF WATER SUPPLY  
KA 'OIHANA WAI**

**CITY AND COUNTY OF HONOLULU**

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April 17, 2025

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RedHillEA@HHF.com

***Re: Comments on the Draft Environmental Assessment (EA) for Red Hill Water Treatment Facility, Joint Base Pearl-Harbor Hickam, O'ahu***

Dear Sir or Madam:

The Honolulu Board of Water Supply (BWS) appreciates the opportunity to provide comments on the Draft Environment Assessment for Red Hill Water Treatment Facility Joint Base Pearl-Harbor, O'ahu (EA). The draft EA includes an assessment of certain potential impacts associated with constructing and operating a permanent water treatment facility, and connecting an interim water treatment facility, to treat and deliver Red Hill Shaft water to the Navy's drinking water system (Proposed Action). In the draft EA, the Navy assumes without explanation or analysis that permanent treatment of water from the Red Hill Shaft well is necessary; this conclusion is reached without identification of the specific contaminants present at the well or consideration of the level of contamination present in the aquifer. The National Environmental Policy Act (NEPA) requires agencies to identify in any environmental document, including EAs, the purpose and need for a proposed project and failure to do so renders the subject document invalid.<sup>1</sup> Without an identified purpose for the Proposed Action, members of the public cannot meaningfully evaluate the acceptability of the Proposed Action and

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<sup>1</sup> The Navy has included a purpose and need section in the draft EA. This section, however, assumes without evidentiary support that treatment is necessary to create a capture zone for contaminants that would otherwise potentially move through the aquifer and that treatment is necessary to render the water suitable for any beneficial purpose including serving as drinking water. Without any meaningful understanding of the contaminants that the Navy understands must be present and need to be treated, it is impossible to understand why construction of the proposed facilities is needed.

Navy decisionmakers cannot meaningfully consider whether to proceed with the Proposed Action.<sup>2</sup> It deprives the BWS and the public of the ability to meaningfully comment on draft EA or evaluate the Proposed Action. Further, as is detailed below, the Navy's analysis in the draft EA does not include a thorough evaluation of all potential environmental effects of the Proposed Action and such analysis is not possible unless and until the Navy identifies the contaminants that are present and the treatment which is necessary to render the Red Hill Shaft water supply safe for potable uses. Until such analysis is done and the public is given the opportunity to review and comment thereon, the requirements of the National Environmental Policy Act (NEPA) cannot be met. Accordingly, the BWS requests that the Navy further consider the potential impacts of the Proposed Act on the environment and public interest as described below prior to taking any further related actions.

### **I. Navy's NEPA Requirements**

NEPA requires all federal agencies to evaluate and disclose to the public the potential environmental impacts of proposed actions. 42 U.S.C. § 4332(C). Agencies must "carefully consider . . . detailed information concerning significant environmental impacts" and NEPA "guarantees that relevant information will be made available" to the public. *Dep't of Transp. v. Public Citizens*, 541 U.S. 752, 768 (2004) (quoting *Robertson v. Metho Valley Citizen Council*, 490 U.S. 332, 349 (1989)). A cornerstone of this analysis is the identification of the purpose and need for the proposed action as this defines the critical components of that action as well as the potential alternatives thereto. The NEPA analysis must also consider the whole of the action and evaluate all potential significant direct, indirect and cumulative impacts thereof. NEPA requires agencies to take a "hard look" at all potential environmental consequences of a proposed action. The NEPA document must include sufficient evidence and analysis to support the agency's conclusions and findings. Where some information that is essential to an environmental analysis is missing, an agency has an obligation to obtain the information where the cost associated with gathering it are not unreasonable.

Here, the Navy's Proposed Action is to construct a permanent water treatment facility that can serve potable water from the Red Hill Shaft well to the Navy's water supply system that meets all applicable water quality standards. To satisfy NEPA, the Navy must first identify why the installation of the proposed treatment facilities is necessary. The Navy must then determine whether the proposal and potential alternatives thereto are technical feasible and identify *all* impacts that could result from the Proposed Action, including those which are separate in space and time from the proposed activities but

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are a reasonably foreseeable result thereof. As is discussed below, the Navy has not met these requirements.

**II. The Navy's Proposal Is Missing Critical Components and the Analysis in the EA Fails to Satisfy the Substantive Requirements of NEPA**

The Navy is proposing to reconnect the Red Hill Shaft to the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water system. The Shaft will be connected to the drinking water system through a granular activated carbon (GAC) water treatment facility that will treat 5 million gallons per day of groundwater, the same amount as currently being treated at the existing emergency GAC water treatment facility. Under the Proposed Action the treated effluent will be utilized for potable purposes rather than being discharged into the South Hālawā Stream as is the current practice. While the BWS supports the Navy's efforts to put this treated water to beneficial uses and recognizes the need for the Navy to address water supply concerns related to its drinking water system, we are surprised by the timing and scope of the Proposed Action as well as the paucity of real analysis in the draft EA. As is detailed below, the draft EA does not adequately consider the scope of contamination present under baseline conditions, nor does it address all the potential impacts associated with the Proposed Action. Such information is necessary for the Navy's decisionmakers to evaluate the proposal and for the public to meaningful participate in the approval process. There is a substantial risk that the unanalyzed significant impacts may occur if the Proposed Action proceeds in reliance on the draft EA. This is a risk that the public should not be made not bear and that NEPA prohibits.

First, and most surprisingly, the EA does not provide discussion of why a permanent treatment facility is needed at this location nor does it describe the existing water quality conditions in the project area. Without this baseline information, it is impossible to determine what the treatment facility is being designed to address or the level of treatment that will be necessary to ensure that the effluent meets appropriate water quality standards, factors which establish the design parameters for the treatment facility as well as the impacts associated with such operations. The analysis also does not consider the feasibility of treating the effluent at Red Hill Shaft to a level that meets all appropriate federal and state drinking water standards. All this information is essential to assess the Proposed Action, identify and consider potential impacts associated therewith, and consider alternatives thereto – the overriding purpose of the NEPA process.

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The EA analysis assumes that the potential for impacts to water resources here is largely dependent on the presence of contaminants in and around Red Hill Shaft and the movement of such contaminants within the vicinity of the Proposed Action. The Navy has previously recognized that withdrawal of groundwater can impact movement of contaminants within the aquifer. See, e.g. Monitoring Plan. Moreover, the fact that one of the purposes of the Proposed Action is to conduct pumping to maintain the

"capture zone" for contaminants in the project area demonstrates that activities that involve withdrawal of groundwater have the potential to impact movement of contaminants and that the Navy believes that contaminants are present in the vicinity of Red Hill Shaft at a level of which requires treatment. Thus, NEPA requires the careful consideration of the potential consequences of the continued pumping of groundwater as a part of the Proposed Project on the availability and quality of groundwater resources.

Despite the recognition that pumping can move contaminants and impact groundwater quality, the draft EA concludes that implementation of the Proposed Action will not result in any impacts to water quality. This finding is based in part of the finding in the draft EA that "since the Red Hill fuel storage tanks have been defueled the primary groundwater contamination source has been removed." While the removal of fuel from the Red Hill tanks has eliminated a significant source of groundwater contamination, it has not removed all the related contamination. It is well documented that there have been numerous leaks from the Red Hill Bulk Fuel Storage Facility and that the Navy has not adequately characterize the fate of the released fuel and other contaminants. Again, the fact that the Navy recognizes the need to maintain the capture zone in this area even after the Red Hill tanks have been largely defueled demonstrates that there are contaminants present in the Proposed Action area. This conclusion is further reinforced by the Navy's recent proposal to install a GAC treatment facility at its Aiea-Hālawa Shaft, which would only be necessary if contaminants were present in aquifer at concerning levels and that reactivating the Aiea-Hālawa Shaft would be likely to mobilize such contaminants. Failure to analyze the impact that the movement of contaminants could have on groundwater resources and human health renders the EA's analysis inadequate.

Further, it is not clear whether the EA sufficiently describes all the components necessary to treat the water to the standards proposed. In the analysis of potential impacts to water resources, the EA notes that operating the Proposed Action in compliance with safe drinking water standards could require further actions including "the installation of additional enhanced treatment technologies such as high-pressure membrane treatment (e.g. nanofiltration or reverse osmosis)." EA at 3.2.3.2. The draft EA, however, fails to discuss why such measures would be required and consider the impacts of implementing such measures and/or the potential significance of the failure to implement such measures. This information is necessary to understand the scope of the activities which will likely be carried out and the impacts associated therewith.

### *C. Hazardous Materials*

The EA's consideration of impacts associated with hazardous materials is also deficient as it does not consider impacts associated with all potential hazardous substances that might be present in the Project area and potentially impacted by implementation of the Proposed Action. Most significantly, the EA does not include any consideration of the presence of hazardous materials commonly called "forever chemicals," including per-

and polyfluoroalkyl substances (PFAS). There are numerous documented releases of PFAS from the Red Hill Bulk Fuel Storage Facility and PFAS is known to be present in the vicinity of the Proposed Action. See, e.g., EPA Letter to J. Tamashiro, Environmental Restoration Manager, NAVFAC Hawaii requesting that the Navy collect additional PFAS groundwater samples due to need to address sources of PFAS in the immediate vicinity of the Red Hill Shaft. (T. Russi, Feb. 19, 2025). The failure to consider and analyze the potential impacts associated with mobilization of such hazardous materials in the aquifer as well as potential to introduce such chemicals into the JBPHH water system is a significant error. Given that such hazardous materials are highly mobile, the ROI for hazardous materials and hazardous wastes should be the entire sole source aquifer which underlies the Proposed Action and not limited to just the area in the immediate vicinity of the Proposed Action project area as identified in the EA. Further, the EA needs to identify and analyze the types of environmental consequences that mobilizing PFAS in the vicinity of the project could have. Failure to include such analysis renders the draft EA deficient.

#### **IV. Cumulative Impacts**

NEPA requires agencies to consider the cumulative impacts of proposed actions together with the impacts associated with reasonably foreseeable actions in the project area. In the draft EA, the Navy recognizes that implementation of the Monitoring Plan and other Red Hill remediation activities could result in impacts that would overlap with those associated with the Proposed Action and should therefore be considered in a cumulative impacts analysis. However, for each resource analyzed, the draft EA concluded without support that the impacts will be less than significant given that the proposed actions are all remedial in nature. Actions which are remedial in nature can also have negative environmental impacts and such effects must be analyzed in a NEPA document. The question that must be answered is not whether an action is remedial but rather whether it has any effects which when considered with other projects could be significant. The cursory "analysis" in the draft EA is deficient as it fails to even consider the potential overlap of actions which could impact the direction of groundwater flow and any contaminants located in the aquifer. Failure to engage in any analysis of these potential cumulative impacts equates to failure to satisfy the requirements of NEPA.

#### **V. Conclusion**

The BWS appreciates the opportunity to participate in the consideration of the draft EA. Determining the best way to address all the consequences of the releases of fuel and other contaminants from the Red Hill Bulk Fuel Storage Facility is a major undertaking with serious consequences for the people of O'ahu, critical water resources, and the interest for generations to come. It is therefore essential that the Navy thoroughly assess the consequences of proposed actions such as those under consideration here and that the public have the opportunity to meaningfully participate in the decision-making process. The draft EA's analysis is not sufficient because in numerous respects

Red Hill Water Treatment Facility EA Project Manager

April 17, 2025

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has been artificially limited, it includes conclusions which are not supported by referenced data, and it fails to consider many potentially significant impacts. Upon completion of a revised document, the Navy should then be able to determine whether further study is required through the development of an Environmental Impact Statement or whether an EA can suffice.

If you have any questions, please feel free to contact me at (808) 748-5061.

Very truly yours,



ERNEST Y.W. LAU, P.E.  
Manager and Chief Engineer

cc: Nā'ālehu Anthony, Chair, Board of Water Supply

Rear Admiral Stephen Barnett  
Commander  
Navy Region Hawai'i  
850 Ticonderoga Street, Suite 110  
Joint Base Pearl Harbor-Hickam, Hawai'i 96860

Josh F.W. Cook  
Pacific Southwest Regional Administrator (Region 9)  
EPA  
75 Hathorne St  
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Kathleen Ho  
Deputy Director  
Hawai'i State Department of Health  
Environmental Health Administration  
1250 Punchbowl Street  
Honolulu, Hawai'i 96813

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

## **7. Hawaii Democratic Party Environmental Caucus**



# Environmental Caucus of The Democratic Party of Hawai'i

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March 30, 2025

**Email:** [RedHillEA@hhf.com](mailto:RedHillEA@hhf.com)

**ATTN: Red Hill Water Treatment Facility EA Project Manager**

Naval Facilities Engineering Systems Command Hawaii/EV21 Building 55  
400 Marshall Road  
Joint Base Pearl Harbor-Hickam, HI 96860-3139

**From:** Environmental Caucus of the Democratic Party of Hawai'i

**Subject:** Comprehensive Opposition Comments on Draft Environmental Assessment for Red Hill Water Treatment Facility

Dear Project Manager,

The Environmental Caucus of the Democratic Party of Hawai'i, respectfully submit these comments in strong opposition to the Draft Environmental Assessment (EA) for the Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam (JBPHH), Oahu, dated March 2025.

## **Detailed Concerns and Recommendations**

- **Necessity of a Full Environmental Impact Statement (EIS):**
  - The Draft EA does not provide adequate analysis of long-term risks to the aquifer, ecosystems, public health, or cultural resources.
  - A Finding of No Significant Impact (FONSI) is premature and unfounded given the complexity and severity of issues surrounding this project.
  - Only a comprehensive EIS can ensure the Navy addresses the far-reaching environmental, social, and cultural impacts, and it must be completed before any further decisions are made.
- **Long-Term Environmental Risks:**
  - Without a detailed evaluation, there is a heightened risk of exacerbating Hawai'i's fragile water systems through contamination or mismanagement.
  - An EIS would help identify and mitigate these risks properly.

- **Community Involvement and Transparency:**
  - The Draft EA fails to address the legitimate concerns of Native Hawaiian groups and local residents reliant on the aquifer for drinking water.
  - Greater transparency and meaningful engagement with affected communities are crucial, and an EIS would provide opportunities for such involvement.
- **Mitigation Strategies:**
  - Proposed mitigation measures outlined in the EA lack specificity and enforceability.
  - An EIS would allow for comprehensive planning of effective mitigation strategies to protect public health and ensure environmental safety.
- **Cumulative Impacts Assessment:**
  - The Draft EA neglects cumulative impacts from other overlapping projects and activities.
  - **An EIS would provide the detailed analysis necessary to understand how these activities interact and affect Hawai'i's environment.**
- **Stop Wasting Red Hill Shaft Water & Commit to Remediation:**
  - The Navy must stop discharging Red Hill Shaft water into Hālawa Stream but cannot use the proposed GAC treatment system to absolve itself from its responsibility to remediate the environment.
  - Regular progress reporting on remediation efforts and monitoring contaminants is critical.
- **Ka Pa‘akai Analysis for Cultural Preservation:**
  - The state DOT must conduct a Ka Pa‘akai analysis to evaluate potential impacts on Native Hawaiian traditional and customary practices.
  - The results of this analysis must inform decisions regarding project development.
- **Consultation with OHA and Compliance with HRS Chapter 6E:**
  - The Office of Hawaiian Affairs (OHA) must be consulted to assess risks to historic properties and ‘iwi kūpuna, especially since the project site is adjacent to a known leina.
  - Compliance with HRS Chapter 6E is legally required and must be completed prior to proceeding.

- **Testing and Handling of PFAS Contamination:**
  - Soil testing for PFAS contamination is mandatory due to the history of spills and detections.
  - Enhanced Best Management Practices (BMPs) must be implemented to prevent mobilizing toxins.
- **Emissions and Public Health Risks:**
  - Construction and operation emissions could disproportionately impact sensitive populations, such as inmates at Hālawā Correctional Facility and nearby military families.
  - An EIS would provide a comprehensive analysis of these risks.
- **Source of Wash Water for GAC Filters:**
  - The source of wash water for preparing GAC filters must be clarified.
  - If sourced from Red Hill Shaft, the potential contamination must be addressed.
- **Regulatory Integrity and Accountability:**
  - The Navy must not use the contamination crisis it caused to justify shortcuts or inadequate compliance.
  - Restoration and accountability must remain central to the process, supported by a full EIS.
- **Need for CDUP Consideration:**
  - Portions of the project may fall within the conservation district, requiring a Conservation District Use Permit (CDUP).

## **Conclusion**

We strongly urge the Department of the Navy to conduct a full Environmental Impact Statement (EIS) to adequately address the extensive environmental, cultural, and public health concerns associated with this project. Long-term environmental protection, cultural preservation, public health safeguards, and regulatory integrity must be prioritized to uphold Hawai‘i’s natural resources and the well-being of its residents.

Thank you for the opportunity to provide these comments.

Sincerely,

Melodie Aduja and Alan Burdick

Co-chairs, Environmental Caucus of the Democratic Party of Hawai‘i



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**8. Hawaii Democratic Party Environmental Caucus (Supplemental)**



# Environmental Caucus of The Democratic Party of Hawai'i

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April 20, 2025

Email: [RedHillEA@hhf.com](mailto:RedHillEA@hhf.com)

**ATTN: Red Hill Water Treatment Facility EA Project Manager**

Naval Facilities Engineering Systems Command Hawaii/EV21 Building 55  
400 Marshall Road  
Joint Base Pearl Harbor-Hickam, HI 96860-3139

**Supplemental Public Comments in Opposition to the Draft Environmental Assessment for  
Red Hill Water Treatment Facility at JBPHH Dated March 2025**

**To:** Naval Facilities Engineering Systems Command Pacific Environmental Planning Division  
Email: [RedHillEA@hhf.com](mailto:RedHillEA@hhf.com)

**Cc:** Melodie Aduja, Co-Chair, Environmental Caucus, Democratic Party of Hawai'i  
Email: [legislativepriorities@gmail.com](mailto:legislativepriorities@gmail.com)  
Alan Burdick, Co-Chair, Environmental Caucus, Democratic Party of Hawai'i  
Email: [burdick808@gmail.com](mailto:burdick808@gmail.com)

Dear Naval Facilities Engineering Command Pacific,

As Co-Chairs of the Environmental Caucus of the Democratic Party of Hawai'i, we respectfully submit these supplemental public comments in opposition to the Draft Environmental Assessment (EA) for the proposed Red Hill Water Treatment Facility at JBPHH. This submission highlights critical deficiencies in the EA, including regulatory violations, mismanagement of hazardous materials, the omission of crucial contamination concerns, and the lack of a full Environmental Impact Statement (EIS). Additionally, we strongly oppose the application of a Categorical Exclusion (CatEX) for the Navy Aiea-Halawa (NAH) Shaft due to extraordinary circumstances and its profound cultural significance.

## **1. RCRA Permit and Compliance for Back-Flushing Operations**

Section 2.3.2.4 of the EA proposes back-flushing into public or base wastewater treatment systems. This practice is prohibited under the Resource Conservation and Recovery Act (RCRA) regulations, as it involves the disposal of potentially hazardous waste. Testing protocols must be clearly outlined to demonstrate that no hazardous waste is attached to back-flushed materials.

Any materials determined to be hazardous require appropriate testing and disposal in compliance with RCRA standards.

## **2. Misclassification and Sustainable Management of Spent Carbon**

Section 3.3.2.2 of the EA inaccurately suggests treating spent carbon as hazardous waste. Spent carbon qualifies as “environmental media” under the media rule and should be sent to permitted thermal desorption facilities for treatment and reuse. This sustainable approach reduces environmental impact and aligns with best practices in waste management.

## **3. Inclusion of PFAS/PFOA Treatment**

The omission of PFAS/PFOA considerations in the EA is a critical oversight, given the enforceable Maximum Contaminant Levels (MCLs) for these hazardous substances. The facility must integrate specific measures for detecting, treating, and safely disposing of PFAS/PFOA, which pose serious risks to public health and water resources.

## **4. Necessity for an EIS**

The current EA fails to adequately evaluate the significant environmental, public health, and cultural impacts associated with the Red Hill and Navy Aiea-Halawa (NAH) shafts. The preparation of a comprehensive Environmental Impact Statement (EIS) is essential to:

- **Address Long-Term Contamination Risks:** The Red Hill Shaft has a history of fuel leaks and contamination, posing substantial risks to O‘ahu’s aquifer and water resources. An EIS would provide a thorough analysis of these risks and outline mitigation strategies.
- **Evaluate PFAS/PFOA Contamination:** Both shafts require detailed assessments of PFAS/PFOA contamination, given the enforceable Maximum Contaminant Levels (MCLs) for these hazardous substances. An EIS would ensure that detection, treatment, and disposal methods are adequately addressed.
- **Analyze Cumulative Impacts:** The interconnected nature of O‘ahu’s aquifer and ecosystems necessitates an evaluation of cumulative impacts on water resources, marine environments, and nearby communities.
- **Incorporate Hawaiian Cultural Significance:** The land and water resources associated with the NAH and Red Hill shafts hold profound spiritual and cultural importance to Native Hawaiians. These areas are integral to traditional practices, beliefs, and the stewardship of natural resources passed down through generations. Exploiting these resources without a comprehensive environmental review disregards cultural heritage and violates the principles of environmental justice.
- **Enhance Transparency and Public Trust:** Given the high level of public concern surrounding these facilities, an EIS would provide greater transparency and allow for robust public participation in the decision-making process.

## 5. Inapplicability of CatEX for the NAH Shaft

The Navy Aiea-Halawa (NAH) Shaft cannot be categorically excluded from rigorous environmental review due to:

- **Extraordinary Circumstances:** The NAH Shaft is located near sensitive environmental resources, including O‘ahu’s aquifer, which is vital for drinking water. The potential contamination and environmental risks qualify as extraordinary circumstances, rendering CatEX inapplicable.
- **Hazardous Substances:** The presence of PFAS/PFOA and other hazardous materials in the NAH Shaft requires thorough environmental analysis and mitigation strategies, which CatEX does not provide.
- **Hawaiian Cultural Significance:** The NAH Shaft is situated in an area of profound cultural importance to Native Hawaiians. The land and water resources are deeply tied to spiritual practices and traditional values, representing the interconnectedness of life and the stewardship of natural resources. Ignoring these cultural dimensions in the environmental review process further disqualifies the NAH Shaft from CatEX.
- **Public and Environmental Impact:** The socio-economic and environmental consequences of the NAH Shaft’s operation demand a detailed review to ensure compliance with environmental and public safety standards.

## Conclusion

The proposed Draft EA is insufficient to address the significant environmental, regulatory, and cultural concerns associated with the Red Hill and NAH shafts. We strongly urge the Navy to prepare a full Environmental Impact Statement (EIS) for both shafts and to adopt more comprehensive environmental safeguards to protect Hawai‘i’s precious natural resources, cultural heritage, and public health.

Thank you for considering these critical issues.

Sincerely,

Melodie Aduja and Alan Burdick  
Co-Chairs, Environmental Caucus of the Democratic Party of Hawai‘i

## **9. Ka Lāhui Hawai‘i**

**From:** Lāhui  
**To:** [RedHillEA](#)  
**Subject:** Ka Lāhui Hawai'i Testimony  
**Date:** Sunday, April 20, 2025 10:48:30 PM

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[This message was sent from an outside source.]

TESTIMONY OF KA LĀHUI HAWAI'I  
IN OPPOSITION TO A FINDING OF NO SIGNIFICANT IMPACT (FONSI)  
DRAFT ENVIRONMENTAL ASSESSMENT – RED HILL WATER TREATMENT FACILITY  
Submitted to: Department of the Navy  
Public Comment Deadline: April 20, 2025

Aloha,

Ka Lāhui Hawai'i submits this testimony to express serious concerns regarding the Draft Environmental Assessment (EA) for the proposed Red Hill Water Treatment Facility. While we support stopping the wasteful discharge of treated water into Hālawā Stream, the reopening of the Red Hill Shaft for drinking water use—just a few years after it was contaminated by a military-caused fuel disaster—must not proceed without deeper environmental, cultural, and public health review.

This project is part of the Red Hill Shaft Recovery and Monitoring Plan and seeks to return water from the Red Hill Shaft to the Navy's drinking water system via new Granular Activated Carbon (GAC) treatment. However, the Draft EA does not address key concerns raised by our community, especially Native Hawaiians whose rights, cultural practices, and ancestral remains may be directly affected.

#### 1. A Treatment Plant Does Not Equal Full Remediation

While GAC filtration may meet minimum drinking water standards, it does not remove PFAS or address long-term contamination in the aquifer or vadose zone. The Navy must continue long-term remediation and not use this project to bypass its cleanup obligations.

#### 2. Ka Pa'akai Analysis and OHA Consultation Are Required

The Draft EA fails to include a full Ka Pa'akai analysis to evaluate impacts on Native Hawaiian customary and traditional practices. The proposed site is adjacent to a known leina, and ground disturbance may impact iwi kūpuna. The Navy must consult with the Office of Hawaiian Affairs (OHA) and comply with HRS Chapter 6E before any ground is broken.

#### 3. Monitoring Must Be Legally Enforceable

The Navy claims it will monitor for PFAS and petroleum, but these measures must be incorporated under the enforceable 2023 Administrative Consent Order. The public must have access to all data through regular reporting to ensure accountability.

#### 4. Emissions Impact Vulnerable Populations

The EA acknowledges emissions from emergency generators and construction but does not evaluate impacts on nearby residents or incarcerated people at Hālawā Correctional Facility. Cumulative health impacts must be considered before a FONSI can be justified.

#### 5. Full EIS Is Required

Given the cultural, environmental, and health implications of reopening a contaminated well, this project requires a full Environmental Impact Statement (EIS). The EA's conclusion that there will be "no significant impact" is

unfounded and undermines public trust.

## CONCLUSION

Ka Lāhui Hawai'i calls on the Department of the Navy and its permitting agencies to halt the issuance of a FONSI and initiate a full Environmental Impact Statement process. The Red Hill fuel disaster caused immense harm to our lands, waters, and people. No well should be reopened, and no project approved, without full remediation, independent oversight, cultural protections, and public transparency.

Respectfully submitted,  
Ka Lāhui Hawai'i

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**10. Wai Ola Alliance**



Red Hill Water Treatment Facility EA Project Manager  
Naval Facilities Engineering Systems Command (NAVFAC) Hawaii/EV21  
Building 55  
400 Marshall Road  
Joint Base Pearl Harbor-Hickam, HI 96860-3139

**Via Electronic Mail**

April 20, 2025

**RE: Public Comment by Wai Ola Alliance on the March 2025 Draft Environmental Assessment for the Red Hill Water Treatment Facility**

Dear Naval Facilities Engineering Command Pacific:

Wai Ola Alliance, a community-based environmental advocacy organization committed to the protection of O‘ahu’s water resources, thanks you for the opportunity to comment on the Draft Environmental Assessment (“Draft EA”) for the proposed Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam (JBPHH) dated March 2025. Unfortunately, the Draft EA, as currently written, violates the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4321 et seq, and endangers the health and safety of the environment and individuals who rely on the JBPHH drinking water system.

The Draft EA raises significant issues relating to compliance with the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et. seq., (“RCRA”), and specifically wastewater treatment and hazardous waste classification. The Draft EA also fails to address recent regulatory developments concerning per- and polyfluoroalkyl substances (“PFAS/PFOA”), which are now subject to federally enforceable Maximum Contaminant Levels (“MCLs”). Finally, the Navy’s failure to conduct a thorough analysis of cultural impacts prior to its Finding of No Significant Impact (“FONSI”) violates HRS Chapter 6E. Given these shortcomings, the Draft EA cannot serve as the basis for a FONSI for assessed resource areas, including public health and safety, water resources, hazardous materials and wastes, and cultural resources. The EA as written therefore fails to comply with NEPA, and the Department of the Navy (the “Navy”) must prepare an Environmental Impact Statement (“EIS”) to replace the EA.

## **I. NEPA Legal Background**

NEPA requires that all federal agencies assess and disclose the environmental impacts of any “major Federal action significantly affecting the quality of the human environment” (42 U.S.C. § 4332(2)(C)). This includes identifying: (1) the environmental consequences; (2) reasonable alternatives; (3) mitigation measures; and (4) cumulative impacts of the proposed action.

NEPA’s implementing regulations (40 C.F.R. Parts 1500–1508) emphasize the requirement for a robust and transparent public process that is grounded in scientific integrity. An Environmental Assessment may only be used in lieu of an EIS if the agency can demonstrate, through thorough analysis, that the project will have no significant environmental impacts. This EA fails to meet that standard.

## **II. Legal and Technical Deficiencies in the Draft EA**

### **A. Improper Backflushing Practices May Violate RCRA – Section 2.3.2.4**

Section 2.3.2.4 of the Draft EA describes an operational plan to backflush filtration media into the public or base wastewater treatment system. This proposal will violate RCRA. Backflushing fine particulate matter potentially contaminated with hazardous waste into a wastewater system constitutes unauthorized hazardous waste disposal and requires the Navy to obtain a RCRA hazardous waste treatment/disposal permit, and or a pre-treatment permit pursuant to the Clean Water Act, 33 U.S.C. §1251 et seq., (CWA) meeting pretreatment standards.

The Draft EA must, at minimum, require the Navy to demonstrate through a prescribed water testing protocol that no hazardous wastes are adhered to the backflushed material before discharging the backflush filtration media into the public or base wastewater treatment system. Flushed material found to contain contaminants must be characterized and disposed of accordingly, including at a permitted hazardous waste facility if contaminants constitute hazardous waste. Operations Section 3.3.2.2. The Draft EA fails to address these regulatory obligations and provides no data or testing protocols to ensure compliance with RCRA and the CWA.

### **B. Mischaracterization of Spent Carbon – Section 3.3.2.2**

In Section 3.3.2.2, the Draft EA suggests that spent carbon used in the treatment system may be treated as hazardous waste. This assertion is both technically incorrect and environmentally counterproductive.

Under EPA’s “media rule,” environmental media (such as spent carbon) may be excluded from hazardous waste designation when managed at a permitted treatment unit. The EA fails to

consider non-hazardous alternatives for carbon management, such as thermal regeneration and reuse. This omission also reflects the EA's failure to analyze reasonable alternatives, as required by NEPA.

### **C. Omission of PFAS/PFOA Contaminant Analysis and MCL Compliance**

Despite documented discharges of PFAS/PFOA to the aquifer from Navy operations, widespread public concern, and a growing scientific consensus, the Draft EA does not discuss the presence or treatment of PFAS/PFOA compounds in the extracted shaft water or soil. The omission of PFAS analysis from the Draft EA constitutes a failure to consider foreseeable environmental impacts in violation of NEPA and in conflict the regulation's core purpose to minimize environmental harm.

As of April 2024, the U.S. EPA has finalized Maximum Contaminant Levels (MCLs) for multiple PFAS compounds, including PFOA and PFOS, at extremely low thresholds. These MCLs are legally enforceable under the Safe Drinking Water Act.

The water treatment plan(s) proposed by the Draft EA must account for potential PFAS contamination, especially given the documented petroleum releases at Red Hill, which included PFAS-laden firefighting foam. Soil at and near the shafts must also be tested for PFAS, and contaminated materials disposed of accordingly.

### **III. Cultural Impact Analysis**

Under NEPA, an EA must assess impacts to cultural resources. The Draft EA has determined that the water treatment facility will have a less than significant impact on cultural resources. However, this determination was made prior to the Hawaii Department of Transportation's Ka Pa'akai analysis of potential impact to place-based Native Hawaiian traditional and customary practices. The finding of no significant impact was also made prior to the Navy's consultation with the Office of Hawaiian Affairs regarding potential impact to historic properties or 'iwi kūpuna. The Navy's failure to conduct this required analysis violates HRS Chapter 6E and renders the FONSI premature.

### **IV. Conclusion and Request for an Environmental Impact Statement**

In sum, the Draft EA does not meet the requirements of NEPA, RCRA, or HRS Chapter 6E and cannot serve as the basis for a FONSI. The Navy's proposed actions have the potential to cause significant environmental harm if not properly mitigated and publicly scrutinized.

Accordingly, NEPA requires that the Navy:



1. Reject the current Draft EA as legally insufficient;
2. Initiate preparation of a full Environmental Impact Statement (EIS);
3. Ensure that all future documents incorporate complete pollutant analysis, including PFAS, and comply with RCRA, Safe Drinking Water Act, and CWA requirements; and
4. Complete the required cultural impact analysis prior to making an impact determination.

Sincerely,

/s/ Kristina Hambley

Kristina Hambley

Daniel Cooper

Counsel for Wai Ola Alliance

cc.

U.S. Environmental Protection Agency  
Region 9, Hawaii  
Prince Kuhio Federal Building,  
300 Ala Moana Blvd #5, Honolulu, HI 96850

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**11. Kimberly Chavez, Private Citizen**

**From:** [Kimberley Chavez](#)  
**To:** [RedHillEA](#)  
**Subject:** Red Hill  
**Date:** Wednesday, April 16, 2025 12:35:00 AM

---

[This message was sent from an outside source.]

Under no circumstance should the Navy be allowed to open Red Hill. They have proven over and over that they will lie to us and they do not care about our aina. Red Hill should only be open if and when Ernie Lau has inspected it and all his questions are answered. If Red Hill is to open again, then it needs to have someone NOT in the military overseeing the pumps so this never happens again.

Kimberley A Chavez

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**12. Stacey Enderton, Private Citizen**

**From:** [Stacey Enderton](#)  
**To:** [RedHillEA](#)  
**Subject:** Urgent concern regarding Redhill water  
**Date:** Wednesday, April 16, 2025 10:12:14 AM

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[This message was sent from an outside source.]

I am writing to express deep concern over the decision to reopen the water source serving our community, despite the unresolved issues stemming from the Red Hill fuel contamination crisis.

While restoring water access is crucial, doing so without fully addressing the root causes of the contamination poses serious health and environmental risks. The facility's permanent closure is not expected until 2027, and concerns about residual contamination remain.

We request transparency regarding:

- The current status of remediation efforts at Red Hill
- Recent water quality testing results
- Independent verification of safety standards
- Plans for ongoing monitoring and public reporting

Until these concerns are adequately addressed, we urge you to reconsider reopening the water source or, at a minimum, implement stringent safeguards and clear communication protocols.

Thank you for your attention to this urgent matter. We look forward to your response and to working together to ensure the safety and well-being of all residents.

Thank you,

Stacey Enderton

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(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**13. Susan Gorman-Chang, Private Citizen**

Date: April 16, 2025  
Susan Gorman-Chang

Aloha,

Mahalo for considering my written comments for the **Draft Environmental Assessment (EA) for Red Hill Water Treatment Facility at Joint Base Pearl Harbor Hickam, Oahu**

I am advocating for Action Alternative 2, which includes six packed tower aerators (PTA) and six primary feeder pumps. As stated in the EA, these PTA would increase the life of the GAC filters, which both creates less toxic waste in terms of used filters, and is much needed to ensure clean, safe water. The EA states that it considers the addition of PTA before the GAC filters *“would not provide an additional benefit in drinking water quality” because “groundwater monitoring for the Red Hill Shaft has documented low levels of hydrocarbon contamination, and because the Red Hill fuel storage tanks have been defueled, removing the primary contamination source.”* Please note that this statement is carefully worded to say that the Red Hill fuel storage tanks are the “primary contamination source”, and therefore not the ONLY contaminant source. Furthermore, the statement admits there have been low levels of HYDROCARBON CONTAMINATION in the groundwater. The Navy has never identified or clearly explained what the other, non-primary, sources of hydrocarbons in our water supply are, where they are emanating from, whether they will continue to leak into our water system, how they got into the water system and whether more of these hydrocarbons can be expected to continue to show up in the water system. For these reasons, I think the cautionary approach would be to build and utilize both the PTA and GAC filter systems together. With the health of families on the line, it is imperative to do everything that is technologically feasible at this point. There are too many unknowns to do otherwise

There is technology that can capture the VOCs emissions from the PTA under Alternative Action # 2. Alternative Action # 2 may be more expensive; however, let us remind ourselves that it was the Navy who poisoned the water by allowing the Red Hill Jet Fuel Storage Underground Tank Facility to decay through negligence and lack of oversight of themselves and their contractors. The users of this water deserve a water treatment plant that has built with the utmost precaution; it is the least the perpetrator can do to try and make us at least partially whole again.

On page 45, under **Affected Environment**, please add Kapilina Beach Homes to the list of names Aliamanu Military Reservation, Red Hill Housing and Catlin Park.

On page 55 it states, *“new GAC media would need to be installed and old GAC media removed and disposed of every few years.”* I would like to see cited best practices or studies cited that recommend an exact number of months that the GAC be replaced to ensure the highest level of water filtration. I further request that a yearly audit be conducted by an

independent third party hired by the Hawaii Department of Health to verify compliance with the best practices schedule of old GAC removal and new GAC installation.

Page 59 refers to Table 3-1, stating “*None of these sites are considered eligible for NRHP.*” Table 3-1 lists four sites, one of which is a Traditional Hawaiian Complex, Pre-contact, Linear retaining wall and large L shaped mound. Please explain why this site # Site 50-80-10- 7783 is not eligible for NRHP. Please provide a professional written opinion from a Native Hawaiian Practitioner that this site is or is not eligible for NRHP.

Page 89 states, “*Preferred Alternative would result in less than significant impacts to cultural resources*”. Please have this investigated by a Native Hawaiian Practitioner to see if they agree or disagree with this statement, and provide their documentation supporting their professional opinion on this matter.

Page 91 states, “*Alternative 2 would have similar air quality impacts as the Preferred Alternative, except that there would be additional VOC emissions from running the PTAs. An air quality permit from HDOH would be required.*” The VOC emissions can be contained or mitigated and an air quality permit needed from the HDOH should not be a reason not to select Alternative 2.

Page 107 states, “*As the proposed water treatment facility operates, gradually the fuel plume within the aquifer underlying the former RHBFSF should be removed from both the environment and the water supply through the use of the GAC vessels.*” This is highly speculative, considering that no one including the Navy knows where the plume has, is and will be traveling in our aquifer! Note the sentence uses the word “should” not “will.” Please remove the sentence, in italics above, from this document.

Page 114 states, “*Regular testing of treated water would ensure that the water meets the relevant safe drinking water standards before distribution to customers.*” Please create a website that the public can easily and quickly, in real time, see the results of these tests, specifying chemicals and compounds and acolytes tested for, amount found in the sample of each and date and time and location within the GAC facility the sample was taken.

Page 117 states, “*The LUO does not provide any specific uses or development standards for parcels zoned as F-1 Military and Federal Preservation District, instead deferring these items to the judgment of the federal government and its agencies.*” Please list the exact federal government entities and agencies make these decisions for these parcels of land.

Mahalo,

Susan Gorman-Chang

Ewa Beach Resident

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**14. Debbie Hagemann, Private Citizen**

**From:** [Debbie Hagemann](#)  
**To:** [RedHillEA](#)  
**Subject:** Don't do it  
**Date:** Wednesday, April 16, 2025 5:53:54 PM

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[This message was sent from an outside source.]

As a precaution to the people that live in the area, do not open the Red Hill water system. It's dangerous and we don't need more trama!

Debbie Hagemann

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**15. Kimmer Horsen, Private Citizen**

**From:** [Kimmer Horses](#)  
**To:** [RedHillEA](#)  
**Subject:** DO NOT UTILIZE contaminatedPFAS shafts !!  
**Date:** Wednesday, April 16, 2025 9:31:58 AM

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[This message was sent from an outside source.]

To the NAVY EIS representative,

On May 6, 2021, jet fuel from the Red Hill tanks spilled and some of it entered a drain that was part of the facility's fire suppression line. It sat there until Nov. 20, 2021, when a worker near the Red Hill water well — which is inside the fuel facility as well — accidentally ruptured the line, spilling the fuel into a tunnel. Navy officers at the facility did not report the spill to regulators or the public — or that the worker had been hospitalized — and hoped that they had contained it.

But fuel had entered the well and was being pumped into the water system. Within a week, residents began complaining about fuel and chemical odors. On Nov. 28, 2021, the Navy shut down the Red Hill as complaints rolled in, but still did not tell the public. The DOH put out an advisory for the water system, but Navy officials insisted publicly that the water was safe and asked the DOH to rescind the advisory. On Dec. 2, 2021, the Navy acknowledged that its waterline was tainted and also went on to shut down its Aiea-Halawa Shaft after finding traces of contamination.

Ever since, the Navy has depended entirely on its Waiawa Shaft for water as the only source for its water line — something the DOH has warned likely isn't safe.

But as DOH and Navy move forward, representatives of both the BWS and CRI have expressed concern about how and when information gets released. The DOH granted the Navy conditional approval to pursue reactivating its Aiea- Halawa Shaft in a February letter, but didn't tell the CRI until March and did not put out a media release.

“I'm very concerned that the Department of Health hasn't let anyone know,” CRI member Ilima DeCosta said at the group's March meeting. “So even if the Navy is not going to let it be known, I'm concerned that the Department of Health is not letting customers know.”

Joyce Lin, a BWS engineer who attended the meeting, said that while it was sensible that the DOH and Navy want to make sure the system isn't dependent on just the Waiawa Shaft, “they should really inform their customers about turning their water back on, specifically from Aiea-Halawa Shaft.”

In a statement to the Honolulu Star-Advertiser, the DOH said that “while state law does not require such an announcement, the Department of Health strongly encourages the Navy to share this information with the public.”

In an email, Navy Closure Task Force Red Hill told the Star-Advertiser that the task force is working closely with DOH to begin the reactivation process and that it received conditional approval from the regulator on Feb. 10. and that throughout April “as part of this conditional approval, NCTF-RH will be undergoing a pilot study of the Granular Activated Carbon treatment system at this site to collect valuable data that will demonstrate the effectiveness of the treatment system.”

The task force also pledged in its statement that the public would be informed before the Aiea-Halawa Shaft is reconnected to the Navy’s drinking water system.

12 conditions needed

DOH said in its statement that it had completed a forensic investigation of “low-level concentrations total petroleum hydrocarbons” in 2024, including intermittent detections at Navy Aiea-Halawa Shaft, and found that “no fuel compounds were associated with the detections.”

“TPH testing can indicate the presence of petroleum- related substances, but they’re not always directly linked to fuel,” the DOH stated. “In this case, the forensic testing was found to be a result of naturally occurring organic compounds in soil or water (like plant resins or humic substances), which can mimic petroleum hydrocarbons in test results.”

But the DOH’s conditional approval still requires the Navy to meet 12 conditions before its Aiea-Halawa Shaft can be reactivated as a drinking water source. Among them, the Navy has to report on the effectiveness of sampling results and of efforts to remove Per- and polyfluoroalkyl substances, contaminants known as “forever chemicals” that have been associated with firefighting foam the military uses to put out fuel fires.

The DOH also will require the Navy to report any conditions that could contaminate the well within 24 hours and the Navy must provide at least 10 days’ notice to DOH of any plans to reactivate it. But the BWS is still concerned about it calls troubling unknowns.

“There is concern from the Board of Water Supply in terms of uncertainty on the impacts of the underground water flow, because (the Navy’s) Aiea-Halawa Shaft is to the west of our Board of Water Supply Halawa Shaft (and) the Red Hill Shaft is actually east of our Halawa Shaft,” Lin said during the March CRI meeting. “So in a sense, our Board of Water Supply Halawa Shaft is kind of sandwiched between the two sources. So turning on at Aiea-Halawa Shaft, would it draw contaminants across the valley from the Red Hill Shaft all the way over to Aiea-Halawa Shaft? We’re not sure.”

Lin said that she talked to DOH and Navy officials at a recent Red Hill open house who told her they thought that was unlikely, but Lin also told the CRI that she was worried the prospect wasn’t ruled out entirely. When asked by the CRI to categorize her concern on a scale of 1 to 10, she replied “I would say I’m pretty concerned close to 10, if not 10, just because there’s so much uncertainty.”

In its statement to the Star-Advertiser, the DOH insisted that “the Navy’s groundwater flow model that referenced BWS is flawed. The model has since been retracted by the Navy and has never been accepted by regulatory agencies. While work on a revised groundwater flow model remains ongoing, there appear to be several factors that would naturally or by design prevent water from the vicinity of the Red Hill Shaft.”

The DOH argued that when the Aiea-Halawa Shaft is in operation “it pulls in saltier water, not fresher water from the Red Hill region,” that rock formations in the area that “intrude into the water table form a barrier between the Navy Aiea-Halawa Shaft and the Red Hill region,” and that “a draw from the Bulk Fuel facility in the makai direction would pass through Red Hill Shaft where a capture zone through pump and treatment would intercept the contaminant.”

The DOH also said that both the Navy and BWS continue to install groundwater monitoring wells between Red Hill and the Navy’s Aiea-Halawa Shaft and that “the monitoring well network will continue to be regularly tested for indications of contaminant migration — which have not been observed thus far.”

### Interim facility

More ambitious, but likely much further off, is the Navy’s plan to put its Red Hill Shaft back into service. Gallons of jet fuel poured into the shaft and Navy divers sent into the well itself reported encountering heavy contamination. The Navy has been using large granular activated carbon — or GAC — filters to remove contaminated water and dump it into the nearby Halawa stream for years.

The Navy has said that the water it has discharged is safe for the environment, but it has been unable to find a way to purify the well itself. The draft environmental assessment says that the plan is “to construct and operate a new water treatment facility to reconnect water from the Navy’s Red Hill Shaft to the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water system and discontinue the discharge of water into Halawa Stream.”

The plan calls for an interim treatment facility, which would filter the water using GAC and is already under construction and expected to be completed in 2026 according to the Navy’s draft environmental assessment. No timeline was given for the completion of a permanent water treatment plant.

The military is required by the National Environmental Policy Act to conduct an environmental assessment for any major project and to solicit public feedback. If the assessment that determines a project has the potential to significantly impact communities, it then has to craft a formal Environmental Impact Statement laying out those potential impacts and submit to another round of community comments and feedback.

Last year the EPA slapped the Navy and the Defense Logistics Agency with a \$5,000 a fine for violating the federal consent order for not attending the CRI’s public December meeting. The military is required to show up at least once a quarter.

But more recently the EPA agreed to rescind the fine if the military agreed to come back to the table with the CRI. The CRI has criticized the decision, asserting that the small fine was mostly symbolic and that rescinding it symbolically absolves military officials who knowingly violated the consent decree.

In March the Trump administration’s new EPA’s Administrator, Lee Zeldin, toured the Red Hill facility and met with both Navy and DOH officials as part of a trip to Hawaii that also included a stop on Maui to discuss cleanup efforts in Lahaina after the deadly 2023 fire that destroyed the town. U.S. Rep. Jill Tokuda, who sits on the House Armed Services Committee, told the Star-Advertiser that she sees Zeldin’s visit to Red Hill and meetings with DOH as a positive step.

“As we change administration I think it’s important that we not lose ground, and we understand that this is not just about draining out the fuel,” Tokuda said. “This is about everything that is required, to make sure that we are continuously monitoring with fidelity and that we’re treating and remediating the way the public expects us to.”

The Trump administration has vowed to roll back environmental regulations and projects, with the EPA announcing significant cuts. Meanwhile Trump's Defense Secretary Pete Hegseth also has promised to shut down as many military environmental programs as possible, arguing they have distracted the military from its warfighting mission. That has led some in Hawaii to wonder what that could mean for Red Hill cleanup and environmental standards.

“Here in Congress that there is both awareness, concern and commitment when it comes to Red Hill — this is a bipartisan commitment,” Tokuda said. “In order to ensure readiness, we need to make sure that we are literally not poisoning our service members water, right? Service members and their families were sickened by this.”

Respectfully,

Kimmer Horsesen, Bighorse

US Army GWOT Veteran

Macro Social Worker

Hawaiian Cultural Studies Practitioner

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**16. Jennie Ann Manoi, Private Citizen**

**From:** Jennie Ann Mano'i  
**To:** [RedHillEA](#)  
**Subject:** Opposition to the Reactivation of the Red Hill & Aiea-Halsey Shafts  
**Date:** Sunday, April 20, 2025 9:32:18 PM

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[This message was sent from an outside source.]

Dear Red Hill EA Project Manager,

I am writing as a concerned resident of Hawai'i to express my strong opposition for any efforts to reopen the Red Hill and Aiea-Halawa water shafts.

The 2021 fuel leak, which contaminated a major source of our island's drinking water and endangered the health of thousands of residents, clearly demonstrated the severe risks posed by storing fuel above a vital aquifer. Families became sick. Children were hospitalized. Trust was broken.

The shafts were shut down for a reason: it was no longer safe. The trust between the military and the people of Hawai'i was seriously damaged, and any move to reopen this facility would only deepen that wound.

Now, the idea of reactivation—despite ongoing community concerns and incomplete evidence of full remediation—feels not only premature, but deeply disrespectful to those who were harmed. Water is life. Once an aquifer is contaminated, it may never fully recover.

Reopening the water shafts prematurely is deeply irresponsible and not only risks our public health, but would deeply undermine community trust — something that has already been shaken by years of mismanagement.

Questions remain about long-term safety. We need assurance backed by independent testing, transparent data, and time — not pressure to rush back to “normal” at the expense of our health.

The people of Hawai'i deserve absolute assurance that our water is clean, safe, and protected—not just reassurances on paper, but real, long-term proof backed by independent experts. Until then, the shafts must remain offline.

Please honor the pain this community has endured, do no harm, and choose to protect rather than risk our most essential resource.

I respectfully urge the Navy to prioritize the health and safety for the people of Hawai'i by keeping the Red Hill and Aiea-Halawa shafts offline and exploring alternative water sources that do not pose such high risk.

Sincerely,

Jennie Ann Mano'i

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**17. Malia Marquez, Private Citizen**

**From:** Malia Marquez  
**To:** [RedHillEA](#)  
**Subject:** Draft EA for Red Hill water treatment  
**Date:** Sunday, April 20, 2025 6:48:12 PM

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[This message was sent from an outside source.]

Aloha Kākou,

The Navy has been solely responsible for the contamination of our water aquifer, yet they are still lagging on the clean up, NOT transparent and seems to be dodging their kuleana to provide detailed, PONO clean up efforts in this draft EA. The GAC treatment system does NOT replace the Navys kuleana to fully clean up fuel and PFAS contamination.

Red Hill water remediation is still required and our cultural and burial site inspection is still incomplete? What's the hold up on this and why are we allowing them to take so long? Monitoring for fuel and PFAS must be publicly accessible and legally enforceable to ensure accountability!

We demand a full ENVIRONMENTAL IMPACT STATEMENT on this projects risks to our water, culture and public health and safety! The draft EA fails to evaluate how construction and emissions may affect (yet again) nearby residents and incarcerated persons. We do not need more people poisoned from their ill planned attempts to clean up their mess.

The Navy MUST consult OHA (Office of Hawaiian Affairs) to conduct a Ka Pa'akai analysis, and comply with HRS chapter 6E before moving forward. This draft EA treatment plan is missing some crucial points. It's LONG overdue and should be done correctly.

Me ka ha'aha'a,  
Malia Lum-Kawaihoa Marquez  
Maunalua, O'ahu

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**18. Susan Pcola-Davis, Private Citizen**

### EXECUTIVE SUMMARY ES.3

a. **Alternative 1 (preferred Alternative):**

**Strongly Support with request to use PTAs for the construction of a new, permanent water treatment facility (See below).**

**DISAGREE NON USE FOR THE CONSTRUCTION OF A NEW, PERMANENT WATER TREATMENT FACILITY.**

**This does not apply to the construction of a new, permanent water treatment facility.** *However, groundwater monitoring for the Red Hill Shaft has documented low levels of hydrocarbon contamination, and because the Red Hill fuel storage tanks have been defueled, removing the primary contamination source, the incorporation of PTAs would not provide an additional benefit in drinking water quality.*

**Description Alternative 1 (Preferred Alternative)** would include **the construction of a new, permanent water treatment facility** and the associated utilities, infrastructure, and site improvements, as well as the connection of an interim GAC water treatment facility (currently under installation at Red Hill) to the Navy drinking water system. Both the permanent water treatment facility and the interim GAC water treatment facility would treat water from the Red Hill Shaft to meet NPDWR and HDOH Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

**PTAs (Packed Tower Aerators (Best Management Practice): These can serve a purpose for the construction of a new, permanent water treatment facility.**

*Action Alternative 2 is the same as the Preferred Alternative except it would also **include six packed tower aerators (PTA) and six primary feeder pumps.***

*For groundwater treatment, this process is typically conducted in packed columns or low-profile tray strippers. The PTA design is the most commonly used aerator due to its lower cost, higher design capacity, and lower air requirement. The PTAs and primary feeder pumps would fit within the same*

water treatment facility footprint as the Preferred Alternative. PTAs were originally considered by the Navy for the proposed water treatment facility because they are effective at removing significant concentrations of hydrocarbon contamination from drinking water and when used ahead of the GAC filters, **they can greatly extend the life of the GAC filter.**

**b. Executive Summary TABLE ES.2**

**Infrastructure: Use of PTAs for new treatment facility use of energy would not impact the grid.**

*Alternative 2 would require additional energy to run the PTAs and primary feeder pumps, but energy demand is still expected to be within HECO's existing grid capacity.*

**Facilities proposed for preferred Alternative (Table 2-1): Items to be explained in full or show diagrams, one need proof of concept:**

- GAC Pressure Vessels and Canopy: [REDACTED] GAC Pressure Vessels), and ancillary equipment would be installed as part of the permanent water treatment facility.
- Wash Water Transfer Tank: The wash water transfer tank is proposed to receive and attenuate wash water from backwashing the GAC media prior to discharge into the sanitary sewer system. The tank would have capacity to hold [REDACTED].
- Chemical Feed Building: A [REDACTED] building is proposed for the housing of chemical feed systems [REDACTED] [REDACTED] and for general operations at the water treatment facility.

What is **sodium hypochlorite** used for?

- Generator Building 1: A [REDACTED] structure would house [REDACTED] [REDACTED]. The generator building would be [REDACTED].
- Neutralization Building: A [REDACTED] structure would house [REDACTED] [REDACTED].

- Generator Building 2: A [REDACTED] structure would house [REDACTED]  
[REDACTED]. The generator building would be [REDACTED]  
[REDACTED]
- Fire Protection Water Storage Tank: **NEEDS PROOF OF CONCEPT**  
A 250,000-gallon, aboveground concrete, non-potable fire protection water storage tank would be constructed [REDACTED]  
[REDACTED]  
[REDACTED]

**Executive Summary TABLE ES.3:**

**Utilities and Infrastructure for the Preferred Alternative**

- Water: The Preferred Alternative would construct a **new [REDACTED] raw water transmission line** to convey water from the Red Hill Shaft Pump Station to the permanent water treatment facility. A **new [REDACTED] finished water line** would convey the treated water from the permanent water treatment facility to the Navy’s existing drinking water distribution main.

Additional **ancillary water lines** would be constructed as necessary to support operations at the permanent water treatment facility and to connect the interim GAC water treatment facility to the Navy drinking water system.

**What are the materials being used for these lines? (Best Management Practice used?)**

- Fire Protection: A 250,000-gallon aboveground concrete, non-potable fire water storage tank would be constructed at an uphill location [REDACTED]  
[REDACTED]. Fire protection for the upper and lower sites would be provided by a new [REDACTED]. [REDACTED]  
[REDACTED]. Fire sprinklers for the proposed buildings would also be fed from the fire protection water system.

**Is there a failsafe?**

**c. 2.3.2.4 Operations**

- In addition, the facility would **contain additional on-line instrumentation to detect fuel contaminants in the water**. If fuel contamination is detected in the raw water, **an alarm would be triggered to alert the operators** to investigate

and take action. The operators would be able to remotely operate valves to prevent contaminated water from entering the Navy water distribution system.

**Who is designing this alert system?**

**GAC Media Life Expectancy:** The GAC media is expected to have a service life of several years, this backwash process would be infrequent.

**What is the exact life expectancy?**

**USE OF PTAs** were originally considered by the Navy for the proposed water treatment facility because they are effective at removing significant concentrations of hydrocarbon contamination from drinking water and when used ahead of the GAC filters, **they can greatly extend the life of the GAC filter.**

- This could also include the installation of additional enhanced treatment technologies such as anion exchange or high-pressure membrane treatment (e.g., nanofiltration or reverse osmosis). The proposed permanent water treatment facility has been designed to accommodate potential future enhanced treatment technologies within the existing site footprint.

**Table 2.4 Best Management Practices:** Review regularly if circumstances change.

**OVERALL**

1. A very thorough Description for the public to understand the project.

2. Suggestions:

Diagrams: Provide diagrams of how the water moves through the temporary and permanent Treatment systems. Include flow through the GAC farm.

Air Quality: Continue using air quality monitoring protocols and sampling. Make available to the public.

Noise: Implement a noise level monitoring system as described on Pg. 3-42. Make available to the public.

3. Past, Present, and Reasonably Foreseeable Actions (Table 4-01)

Results: Location of results, after analyzing the results of the impact of connecting the interim GAC water treatment facility to the Navy's Water Drinking System I.e. public access.

Red Hill Shaft Recovery and Monitoring: Location of data collected from the monitoring wells to identify and track possible contamination migration and evaluate effectiveness of remediation i.e. public access.

RHBFSF Fuel Line Clearing (Pg. 4-3): The public was told that the recovered fuel was shipped, off island. Explain why this states “The fuel removed from the pipelines remained on JBPHH for operational use. **Estimated 1,058,187 gallons.**

**4. Cumulative Impacts: All conclude would not result in significant impacts to water resources within the ROI.**

Assessment using **quantitative data** where available and **qualitative data** for many resources where quantitative is not available.

In addition, where an analysis of potential environmental effects for future actions has not been completed, **assumptions** were made regarding cumulative impacts as related to this EA where possible.

- a. Water Resources Cumulative Impact Analysis (4.4.2): Implementation of proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts to water resources within the ROI (Region of Influence).

**Is Data Qualitative, Quantitative, or Assumption?** \_\_\_\_\_

- b. Hazardous Materials and Wastes (4.4.3): Implementation of proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts with hazardous materials and wastes within the ROI ROI (Region of Influence).

**Is Data Qualitative, Quantitative, or Assumption?** \_\_\_\_\_

- c. Cultural Resources (4.4.4): Potential impacts to cultural resources from the relocation of the Animal Quarantine Station and the construction of the New OCCC at the existing Animal Quarantine Station site would be subject to review under the 2012 PA and potential impacts to cultural resources would be addressed through implementation of the agreement (PBR Hawaii, 2018).

**Data is an Assumption**

- d. Terrestrial Biological Resources (4.4.5): Implementation of proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts to terrestrial biological resources within the ROI (Region of Influence).

**Is Data Qualitative, Quantitative, or Assumption?** \_\_\_\_\_

- e. Infrastructure (4.4.6): Implementation of proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts to infrastructure within the ROI (Region of Influence).

**Is Data Qualitative, Quantitative, or Assumption?** \_\_\_\_\_

- f. Air Quality (4.4.7): Implementation of proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts to air quality within the ROI (Region of Influence).

**Is Data Qualitative, Quantitative, or Assumption?** \_\_\_\_\_

- g. Noise (4.4.8): Implementation of proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts to air quality within the ROI (Region of Influence).

**Is Data Qualitative, Quantitative, or Assumption?** \_\_\_\_\_

**The significance of these questions regards the type of data that showed “would not result in significant impact.”**

(P-716) Red Hill Water Treatment Facility  
Draft Environmental Assessment  
Public Comments

**19. Tara Rojas, Private Citizen**

**From:** [tarahawaii\\_kiai](#)  
**To:** [RedHillEA](#)  
**Subject:** Comments Regarding Draft Environmental Assessment (EA) for Red Hill Water Treatment Facility  
**Date:** Sunday, April 20, 2025 3:47:26 PM

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[This message was sent from an outside source.]

Aloha,

I submit these comments regarding the Draft Environmental Assessment (EA) prepared by the U.S. Navy related to the Red Hill Water Treatment Project.

- 1. Mandatory Comprehensive Remediation:** The Navy's proposal for a Granular Activated Carbon (GAC) treatment system is insufficient under the established principles of legal duty and accountability. According to constitutional obligations and the Maxim of Law "Sic utere tuo ut alienum non laedas" (Use your property so as not to injure another), the Navy retains full responsibility to remediate all fuel and PFAS contaminants comprehensively. The proposed GAC system is an interim measure and does not absolve the Navy from their duty under constitutional environmental protections and public trust doctrines.
- 2. Incomplete Cultural and Burial Site Protection:** The Navy's current cultural and burial site protections are inadequate. Under the Constitutionally protected rights of Indigenous Peoples, reinforced by Hawai'i State Law (HRS Chapter 6E), and the legal doctrine articulated in "Ka Pa'akai O Ka 'Āina v. Land Use Commission," the Navy must complete a full Ka Pa'akai analysis, and properly consult with the Office of Hawaiian Affairs (OHA). The Maxim "Actus legis nemini facit injuriam" (An act of the law wrongs no one) supports that non-compliance with cultural protection laws represents an unlawful act and injury to Kānaka Maoli and cultural practices.
- 3. Mandatory Transparent and Enforceable Monitoring:** To uphold principles of public accountability and transparency as outlined in constitutional governance, monitoring processes for PFAS and petroleum must be publicly accessible, fully transparent, and legally enforceable. According to Black's Law Dictionary (3rd Edition), transparency implies openness, clarity, and accountability, and without legally binding transparency mechanisms, monitoring serves no enforceable purpose.
- 4. Obligation to Address Health Impacts:** The Navy has a constitutional obligation to safeguard public health, which extends explicitly to vulnerable populations, including nearby residents and incarcerated individuals. The EA does not adequately evaluate potential adverse health impacts from construction and resultant emissions. Under constitutional protections afforded to all persons, including incarcerated individuals (recognized as protected persons under the 14th Amendment), it is imperative that comprehensive health impact analyses be conducted and transparently documented.
- 5. Necessity of a Full Environmental Impact Statement (EIS):** Given the significant and recognized risks to water quality, cultural integrity, and public health, the scope of this project demands a thorough Environmental Impact Statement (EIS), not merely an Environmental Assessment. Under the National Environmental Policy Act (NEPA), and consistent with the Maxim of Law "Salus populi suprema lex esto" (The welfare of the

people shall be the supreme law), a complete EIS is required to fulfill the Navy's lawful obligation to thoroughly assess and mitigate all potential risks comprehensively.

In conclusion, these points of law and legal principles underscore that the Navy must fulfill its legal and constitutional obligations fully. I submit these comments to hold the Navy accountable, ensure transparency, protect the environment, public health, and cultural resources, and demand compliance with all pertinent federal and state laws.

Respectfully submitted,

Tara Rojas

**20. Noel Shaw, Private Citizen**

**From:** [Noel Shaw](#)  
**To:** [RedHillEA](#)  
**Subject:** Draft EA for Red Hill Water Treatment  
**Date:** Monday, April 21, 2025 12:22:38 AM

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[This message was sent from an outside source.]

Aloha,

My name is Noel Shaw and I am from Kalawāhine/ Papakōlea Hawaiian Homestead in the island of O'ahu. I'm writing to add comments to the draft environmental adamant for red hill water treatment.

It's important that I remind this space that the Navy has the responsibility to FULLY clean up fuel AND PFAS from the water system. The Navy must bare the full cost of this as they are the entity to whom we can attribute this harm to.

Further, it is important that this assessment does more to assess the cultural significance of the space and ensure its following the law in regarding to burial sites and areas of cultural significance to kanaka oiwi. Failure on the part of the Navy to do this at this stage will result in continued erasure and dispossession of kanaka oiwi to their homelands and life ways.

Lastly, this work needs to be transparent, enforceable, and in a manner that's accessible to those living now and generations to come. We are truly making decisions that may have long term impact on our island home and all who may come next to care for it.

It is important that we do this work with integrity and an eye toward the future.

Nau me ka haahaa,  
Noel

*Noel Kaleikalaunuoka'oia'i'o Shaw*

**619-261-5894**

**21. Whitney White, Private Citizen**

**From:** [Whitney White](#)  
**To:** [RedHillEA](#)  
**Subject:** Red Hill well reopening  
**Date:** Wednesday, April 16, 2025 10:26:28 AM

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[This message was sent from an outside source.]

To whom it may concern,

I am a military spouse living in the AMR community and I am appalled to find out there is talk of reopening the contaminated well. Our family has been living here a year and we have had skin issues related to the water. We had to put water filters on our shower heads to provide \*some\* relief. Our water often smells and tastes funny, leading us to purchase bottled water for drinking, cooking, brushing our teeth... but we still have to wash our clothes, our dishes, and ourselves in this water. There is still contamination, regardless of what your tests are saying. If we weren't here during the "height" of the contamination issue, why are we still experiencing symptoms when we are told the water is clean? People are still suffering, real time from this issue, and who knows the long term effects we will suffer from due to being exposed to whatever is in this water. Please reconsider opening this well again for all of our safety.

Thank you,

A concerned spouse & mom

**22. Meredith Wilson, Private Citizen**

Meredith Wilson - 4/19/2025

Comments on Draft Environmental Assessment for Red Hill Water Treatment Facility at JBP HH

Aloha,

I will provide comments/questions by referencing the page numbers where the information appears:

- 2-8 *"In addition, the facility would contain additional on-line instrumentation to detect fuel contaminants in the water. If fuel contamination is detected in the raw water, an alarm would be triggered to alert the operators to investigate and take action. The operators would be able to remotely operate valves to prevent contaminated water from entering the Navy water distribution system."*

**Please clarify the definition of "fuel contamination" here. How will the existence of fuel be confirmed in order to trigger this technology? Sampling/chromatograms? BTEXMN, TPH, and/or other COPCs at a certain level? Please provide the name of this technology. Why wasn't this technology added to the Public Water System prior to 2021 releases?**

*"The permanent water treatment facility would be operated by Navy personnel based at the Navy's Waiawa Pump Station (approximately seven miles to the northwest). Water treatment operators would be licensed in the State of Hawaii.*

**There should be a licensed operator in charge on site 24-hours a day, not on call. Remote monitoring is not sufficient for operations and/or emergency response.**

- 3-7 *"The monitoring location ID for the Red Hill Shaft is RHMW224-01."*

**Please update this to the correct ID# RHMW2254-01.**

- 3-11 *"Additionally, the proposed facility would also contain on-line instrumentation to better monitor for hydrocarbon contamination."*

**Please explain further what "hydrocarbon contamination" means. Will the full carbon range of petroleum (TPH-d, TPH-g, TPH-o) be monitored and at what frequency?**

- 3-13 *"The health risk associated with the release of JP-5 is based on the following: 1) Individually targeted compounds such as benzene, toluene, ethylbenzene, xylenes, methyl naphthalenes and naphthalene; 2) Non-specific compounds associated with aliphatic and aromatic carbon ranges and 3) Hydrocarbon-related degradation products (HDOH, 2023)."*

**This list is not complete without also including jet fuel additives and potential disinfection byproducts once mixed with fuel. Please acknowledge and include.**

- 3-13 *“The OWDF was located near Adit 3, to the northeast of the of the proposed water treatment facility.”*

*“The RI determined that the site did not pose a threat to human health or the environment, and HDOH provided its concurrence and no further action determination in 2005 (Navy, 2021). However, one of the OWDF basal aquifer wells was included in quarterly long term groundwater monitoring events for the RHBFSF. During events in 2010, 2012, 2013, and 2015, elevated concentrations of total petroleum hydrocarbons (TPH) diesel range organics (TPH-d) were reported by the laboratory. Therefore, further evaluation of TPH-d in the basal groundwater aquifer at the OWDF site is being conducted (Navy, 2021).”*

**Because elevated TPH detections were noted in this area post-HDOH’s premature conclusion that no other threat to human health existed 5 years prior, this emphasizes the importance of groundwater flow modeling & continuing to test for ALL potential chemical constituents of fuel types historically stored here. This testing should take place prior to GAC entry & general groundwater monitoring.**

- 5-5 *“As the proposed water treatment facility operates, gradually the fuel plume within the aquifer underlying the former RHBFSF should be removed from both the environment and the water supply through the use of the GAC vessels.”*

**The use of terms “gradually” and “should be removed” is not clear. The GACs are proposed to filter contaminants prior to entering the drinking water system, not necessarily as a mode of groundwater remediation. Please mention here the other efforts/plans being implemented for aquifer remediation.**

- 5-13 *“Safe drinking water is a critical component of a safe environment, and the Proposed Action would enable the Red Hill Shaft to be returned to service in a safe manner.”*

**This statement directly contradicts with the following on 6-3: “The Proposed Action would not have a substantial adverse effect on nor is it located within an environmentally sensitive area.” The project site is exactly where 2021’s jet fuel-contaminated water crisis took place, an incredibly environmentally sensitive area. The use of term “environment” should include human and ecological impacts unless otherwise defined.**

#### Appendix E

**Please include a footnote of why air pollutant PM10 had an exceedance in 2024 and is not expected to in future years.**

Thank you for your consideration,  
-Meredith Wilson

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## Appendix B

### National Historic Preservation Act Documentation

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DEPARTMENT OF THE NAVY  
JOINT BASE PEARL HARBOR-HICKAM  
850 TICONDEROGA ST STE 200  
PEARL HARBOR HI 96860-5102

5000  
Ser JB4/128  
June 26, 2025

Ms. Dawn Chang  
Hawaii State Historic Preservation Officer  
Department of Land and Natural Resources  
Kalanimoku Building, DLNR Main Office  
1151 Punchbowl Street  
Honolulu, Hawai'i 96813

Dear Ms. Chang:

SUBJECT: NATIONAL HISTORIC PRESERVATION ACT SECTION 106  
CONSULTATION FOR THE CONSTRUCTION OF A WATER TREATMENT  
FACILITY AT THE NAVY'S RED HILL BULK FUEL STORAGE FACILITY,  
HALAWA AHUPUA'A, 'EWA DISTRICT, O'AHU ISLAND,  
TMK (1) 9-9-010:001, 006, 050, AND 054

Pursuant to Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and in accordance with Stipulation VI of the 2012 Programmatic Agreement (PA) among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer Regarding Navy Undertakings in Hawaii, as amended in 2024 (2012 PA), the Navy is initiating consultation to address the adverse effects of the proposed construction of a Red Hill Water Treatment Facility (RHWTF) at the Red Hill Bulk Fuel Storage Facility (RHBFSF), Joint Base Pearl Harbor-Hickam (JBPHH).

### **Project Description**

The Navy proposes to construct a water treatment facility at the RHBFSF, JBPHH. The RHWTF would treat groundwater from the Red Hill well to meet the National Primary Drinking Water Regulations and the State of Hawaii, Department of Health safe drinking water standards.

The project area is bound by Interstates H-201 and H-3 to the south and west, the Hawaii Department of Agriculture (HDOA) Animal Quarantine Facility, Hawaii Department of Public Safety Halawa Correctional Facility, and the Halawa Valley Industrial Park to the north, and the U.S. Army Red Hill Family Housing to the east (enclosures (1) and (2)). The majority of construction for the proposed RHWTF would take place within approximately eight acres of federal property at RHBFSF (Tax Map Keys [TMKs]: 9-9-010: 001, 006, & 050). The adjacent State of Hawaii-owned lands within the project area (comprising approximately 5.2 acres) include a portion of Hawaii Department of Transportation right-of-way (HDOT ROW) and a portion of a HDOA-owned parcel (TMK: 9-9-010: 054). These parcels would be utilized for temporary construction staging and access, a utility connection corridor, and long-term maintenance activities (enclosure 3).

Activities within the federally-owned portion of the project area would involve construction of approximately 26,300 square feet of new facilities for the RHWTF including generator granulated activated carbon pressure vessels, chemical treatment buildings, emergency generator facilities, a new fire protection water tank, associated utilities, and security fencing. These new facilities would be located in an area previously disturbed by the construction of the RHBFSF. Associated ground disturbance would consist of grubbing and grading prior to leveling. The site will then be built up to level the surface for the new facilities. The site will be revetted with 5-foot-wide retaining walls for erosion control. Rock fall mitigation measures would also be installed at the sites (e.g., scaling of cut surfaces, anchored wire mesh, etc.). The new fire protection water tank would be located east of the RHWTF and would require additional grubbing and grading to provide a level surface. The foundation for the water tank would not exceed 30 feet in depth. Extant utilities would be relocated, removed and/or demolished to accommodate the new facility. Other proposed improvements involve the installation of utility lines, including wastewater lines extending from the RHWTF to the southeast connecting to the Red Hill Army Family Housing sewer system, a fire protection water line extending from the RHWTF to the east connecting to the proposed fire protection water tank, and the installation of water transmission lines, electrical infrastructure, and telecommunications infrastructure within Navy property. These utilities will be installed with the excavation of trenches to a maximum depth of 25 feet and vary between 5 to 10 feet wide.

The adjacent HDOT ROW would be utilized for temporary construction staging and access, an electrical utility connection corridor, and long-term maintenance activities. An existing HDOA-owned driveway off of Halawa Valley Street (TMK: 9-9-010: 054) would be utilized for construction-period access to the HDOT ROW. The proposed construction staging area would include a variety of activities such as the clearing and mowing of the groundcover to prepare for temporary use, temporary storage for stockpile material and equipment, placement of a temporary trailer, preparation of a temporary access road, installation of temporary gates, placement of a vehicle washdown station, placement of a water tank, erection of a dust fence and placement of silt sock. While no major ground disturbance is expected in the staging area, there would be minor excavation associated with digging post holes to support a temporary perimeter fence with gating. At conclusion of construction, the staging area would be returned to its pre-construction condition.

The proposed utility connection corridor within the HDOT ROW would involve installation of a 550-foot-long and 5-foot-wide underground electrical line that would require excavation of a new trench from Navy property, across the HDOT ROW to an existing HECO manhole within the HDOT ROW. The trench depth will not exceed 10 feet in depth. In support of the construction activities, existing access roads into the staging area and from the staging area to the project site would be utilized. Additionally, there are areas within HDOT property along the north and west fence lines that would require vegetation clearance, but no ground disturbance is planned.

### **Area of Potential Effects**

The overall area of potential effect (APE) comprises 25.6 acres (see enclosure 2) including 20.4 acres of federal property and 5.2 acres of state property. The proposed location of the

RHWTF would be within a highly disturbed section of the RHBFSF (on federal property). Pursuant to Stipulation VI of the 2012 PA, the Navy is requesting concurrence with the State Historic Preservation Officer on the APE.

### **Identification of Historic Properties**

The project site and surrounding area have been subject to previous archaeological investigations (enclosure 4). International Archaeology, LLC completed an Archaeological Inventory Survey (AIS) including archaeological pedestrian survey of the entire APE and limited subsurface testing. The pedestrian survey identified nine surface features comprising seven sites in the form of a fuel pipeline segment, a retaining wall, a historic road alignment, two concrete pads, a complex of concrete pipeline infrastructure, a culvert, a section of concrete wall, and [REDACTED] (Chambers and Leppard 2025) (enclosure 5). Five of the seven sites were determined to be not eligible for listing in the National Register of Historic Places. Excavations, in the form of four shovel test pits and four mechanically excavated trenches, did not contain archaeological material (Chambers and Leppard 2025). There are three historic properties within the APE: Site 50-80-13-7785 (Filimoehala and Allen 2015); Temporary Site 2 (Chambers and Leppard 2025); and Temporary Site 7 (Chambers and Leppard 2025).

Site 50-80-13-7785 is a complex of six features situated above and below a natural escarpment near the base of the valley slope. The site may be a palimpsest of features from two different periods of activities, consisting of earlier ranching and later mid-20th century military development. The possible ranching features are a retaining wall (Feature E); a mound (Feature F); and a remnant stacked stone wall along the upper edge of the escarpment (Feature H). The military features include a backfilled tunnel, with a concrete slab poured above the mouth (Feature A); a mound, possibly associated with the backfilling of Feature A (Feature B); a concrete slab and associated blocks (Feature C); and a retaining wall associated with former road construction (Feature G).

Temporary Site 2 is a complex of three features—a retaining wall, a concrete structure, and a road alignment—associated with plantation era use of the project area as well as military activity at Red Hill. Feature A is a retaining wall constructed of large basalt boulders, 38 m long and 5.1 m high, sloping to the ground surface at the east and west ends. The wall is dry stacked with a maximum of 8 to 9 courses and oriented east/west. Immediately west of the retaining wall is a partially buried concrete structure, Feature B, measuring 68 cm high and 13.9 m long; only the northeast and southeast corners of the structure are currently exposed with the remainder buried under more than 10 cm of soil. East of, and atop of, Feature B and south of Feature A is Feature C, a former road segment that runs along the top of the escarpment that bisects the western portion of the project area. The road segment measures approximately 20 m long and 4 m wide. The road becomes less distinct on the eastern and western ends because of erosion and vegetation growth.

Temporary Site 7, [REDACTED] is associated with RHBFSF. This site was described in the Historic American Engineering Record (HAER) HI-123 for the Red Hill facility (HAER 2015:78–80). This [REDACTED] was built in 1942 and

still serves its original function of discharging air [REDACTED]. The visible portion of the structure is [REDACTED] wide [REDACTED] and [REDACTED] high ([REDACTED]). The front of the structure is [REDACTED].

All three sites are recommended eligible for listing in the National Register of Historic Places (NRHP). Site 50-80-13-7785 is recommended eligible for listing in the NRHP under Criterion D because it has yielded, or may be likely to yield, information important with regard to historical ranching and military development. Temporary Site 2 is recommended to be eligible under Criteria A and D because of its association with historical plantation activity and World War II (WWII) development and use of the Red Hill facility, and potential to yield important information about the historic-era use of the area. Temporary Site 7 is recommended eligible under Criteria A and C as a contributing feature of the RHBFSF. The RHBFSF is a WWII-era property and represents a major engineering achievement.


**Finding of Effect**

Consistent with Stipulation IX.C of the 2012 PA and 36 C.F.R. § 800.5(a), the Navy has determined the proposed undertaking would adversely affect Site 50-80-13-7785 and Temporary Site 2. Ground disturbing activities associated with the proposed RHWTF will adversely affect the integrity of Site 50-80-13-7785. Features A (tunnel), G (retaining wall), and H (stone wall), will be removed when the ground is leveled for the RHWTF. Construction activities will also result in the removal of Temporary Site 2—a retaining wall, a concrete structure, and a road alignment—associated with plantation era use of the project area as well as military activity at Red Hill.

Temporary Site 7 is located outside of the proposed project’s construction footprint. The Navy has determined there would be no adverse effect to Temporary Site 7. Table 1 summarizes the historic properties and finding of effects.

Table 1. Historic Properties within the APE.

Site	Report	Constituent Elements	NRHP Criteria	Project Effect	Determination of Effect
50-80-13-7785	Filimoehala and Allen 2015	Six features consisting of a remnant stone wall, a tunnel extending into an escarpment, one basalt stone mounds, a concrete slab, and two retaining walls.	D	Removal of features A, G, and H	Adverse effect

Temp. Site 2	Chambers and Leppard 2025	A road alignment, a retaining wall, and a concrete structure.	A, D	Removal of features A, B, C	Adverse effect
Temp. Site 7	Chambers and Leppard 2025		A, C	N/A	No adverse effect

In accordance with Stipulation IX.C of the 2012 PA, the Navy plans to continue consultation with your office and other interested parties to identify measures to avoid, minimize, and mitigate the adverse effect of the proposed undertaking.

Should you have any questions regarding this undertaking, please contact Mr. Jeff Pantaleo, Joint Base Pearl Harbor-Hickam Cultural Resources Manager at (808) 420-0805, or via email at [jeffrey.j.pantaleo.civ@us.navy.mil](mailto:jeffrey.j.pantaleo.civ@us.navy.mil).

Sincerely,

KLEINMAN.ROBE  
RT.DANIEL.12394  
02794  
R. D. KLEINMAN  
CAPT, CEC, USN  
By direction

Digitally signed by  
KLEINMAN.ROBERT.DANIEL.1  
239402794  
Date: 2025.06.26 14:23:43  
-10'00'

- Enclosures:
1. Project location map (CUI)
  2. Project APE on 1999 USGS topographic map (CUI)
  3. Overview of new Red Hill water treatment facility within project area (CUI)
  4. Previous archaeological investigations in the vicinity of the APE (CUI)
  5. Results of pedestrian survey (CUI)

Copy to:

Jessica Puff, State Historic Preservation Division  
Susan Lebo, State Historic Preservation Division  
Stephanie Hacker, State Historic Preservation Division  
Kai Markell, Office of Hawaiian Affairs  
Mr. Shad Kane, O'ahu Council of Hawaiian Civic Clubs  
Kehaulani Lum, President, Ali'i Pauahi Hawaiian Civic Club

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'AINA



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

STATE HISTORIC PRESERVATION DIVISION  
KAKUHIHEWA BUILDING  
601 KAMOKILA BLVD, STE 555  
KAPOLEI, HAWAII 96707

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

RYAN K.P. KANAKA'OLE  
FIRST DEPUTY

CLARA W. K. KAHAHANE  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

August 11, 2025

Captain R. D. Kleinman  
United States Department of the Navy  
Joint Base Pearl Harbor Hickam  
850 Ticonderoga Street Suite 110  
Pearl Harbor Hawai'i 96860-5102  
Email Reply to: Jeffrey.J.Pantaleo.civ@us.navy.mil  
Electronic Transmittal Only, No Hard Copy to Follow

IN REPLY REFER TO:  
Project No.: 2023PR01467  
Doc No.: 2508SH03  
Archaeology  
Architecture

Dear Captain Kleinman:

**SUBJECT: National Historic Preservation Act (NHPA) Section 106 Review –  
Initiation of Consultation and Request for Concurrence with the Effect Determination  
Construct a Water Treatment Facility at the Navy's Red Hill Bulk Fuel Storage Facility  
Navy Ref. No. 5000 Ser JB4/128  
Halawa Ahupua'a, 'Ewa District, Island of O'ahu  
TMK: (1) 9-9-010:001, (1) 9-9-010:006, (1) 9-9-010:050, and (1) 9-9-010:054**

The State Historic Preservation Division (SHPD) received a letter dated June 26, 2025 from the United States Department of the Navy (Navy) to initiate Section 106 consultation and to request the State Historic Preservation Officer's (SHPO's) concurrence with the effect determination for the project to Construct a Red Hill Water Treatment Facility (RHWTF) at the Navy's Red Hill Bulk Fuel Storage Facility (RHBFSF), Joint Base Pearl Harbor-Hickam (JBPHH) on the island of O'ahu. The SHPD received this submittal on June 27, 2025 (HICRIS Submission No. 2023PR01467.004).

The Navy proposes to construct a water treatment facility at the RHBFSF, JBPHH. The RHWTF would treat groundwater from the Red Hill well to meet the National Primary Drinking Water Regulations and the State of Hawaii, Department of Health safe drinking water standards.

The Navy states the majority of construction for the proposed RHWTF will take place within approximately eight acres of federal property at RHBFSF. The adjacent state of Hawaii-owned lands within the project area (comprising approximately 5.2 acres) include a portion of Hawaii Department of Transportation right-of-way (HDOT ROW) and a portion of a HDOT-owned parcel [TMK: (1) 9-9-010:054]. These parcels will be used for temporary construction staging and access, a utility connection corridor, and long-term maintenance activities.

Additionally, the Navy's letter states that activities within the federally-owned portion of the project area would involve construction of approximately 26,300 square feet of new facilities for the RHWTF including generator granulated activated carbon pressure vessels, chemical treatment buildings, emergency generator facilities, a new fire protection water tank, associated utilities, and security fencing. These new facilities will be located in an area previously disturbed by the construction of the RHBFSF. Associated ground disturbance will consist of grubbing and grading prior to leveling. The site will then be built up to level the surface for the new facilities. The site will be revetted with 5-foot-wide retaining walls for erosion control. Rock fall mitigation measures will also be installed at the sites (e.g., scaling of cut surfaces, anchored wire mesh, etc.). The new fire protection water tank will be located

east of the RHWTF and will require additional grubbing and grading to provide a level surface. The foundation for the water tank will not exceed a depth of 30 feet.

Extant utilities will be relocated, removed and/or demolished to accommodate the new facility. Other proposed improvements involve the installation of utility lines, including wastewater lines extending from the RHWTF to the southeast connecting to the Red Hill Army Family Housing sewer system, a fire protection water line extending from the RHWTF to the east connecting to the proposed fire protection water tank, and the installation of water transmission lines, electrical infrastructure, and telecommunications infrastructure within Navy property. These utilities will be installed with the excavation of trenches to a maximum depth of 25 feet and vary between 5 to 10 feet wide.

The adjacent HDOT ROW would be utilized for temporary construction staging and access, an electrical utility connection corridor, and long-term maintenance activities. The proposed construction staging area will include a variety of activities such as the clearing and mowing of the groundcover to prepare for temporary use, temporary storage for stockpile material and equipment, placement of a temporary trailer, preparation of a temporary access road, installation of temporary gates, placement of a vehicle washdown station, placement of a water tank, erection of a dust fence and placement of silt sock. While no major ground disturbance is expected in the staging area, there will be minor excavation associated with digging post holes to support a temporary perimeter fence with gating. At conclusion of construction, the staging area would be returned to its pre-construction condition.

The proposed utility connection corridor within the HDOT ROW will involve installation of a [REDACTED] electrical line that would require excavation of a new trench from Navy property, across the HDOT ROW to an existing HECO manhole within the HDOT ROW. The trench depth will not exceed 10 feet in depth.

The Navy has determined the proposed project is a federal undertaking as defined in 36 CFR 800.16(y) and is therefore subject to Section 106 of the National Historic Preservation Act. The Navy has elected to apply the agreement titled, *Programmatic Agreement Among the Commander Navy Region Hawaii, The Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer Regarding Navy Undertakings in Hawaii*.

The Navy has determined the *area of potential effects* (APE) comprises 25.6 acres including 20.4 acres of federal property and 5.2 acres of state property. The Navy is requesting the SHPO's concurrence with the APE. At this time, the SHPO has no objections to the APE as it is defined. Pursuant to Stipulation VI of the 2012 PA, ... for projects involving new construction or additions; COMNAVREG Hawaii shall consult with the SHPO *prior* to determining the APE.

International Archaeology, LLC completed an Archaeological Inventory Survey (AIS) including archaeological pedestrian survey of the entire APE and limited subsurface testing. The pedestrian survey identified nine surface features comprising seven sites in the form of a fuel pipeline segment, a retaining wall, a historic road alignment, two concrete pads, a complex of concrete pipeline infrastructure, a culvert, a section of concrete wall, [REDACTED] (Chambers and Leppard 2025). Five of the seven sites were determined to be not eligible for listing in the National Register of Historic Places. The Navy reports that excavations, in the form of four shovel test pits and four mechanically excavated trenches, did not contain archaeological material.

Three historic properties were identified within the APE: Site 50-80-13-7785 (Filimoehala and Allen 2015); Temporary Site 2, and Temporary Site 7 (Chambers and Leppard 2025). All three sites are recommended eligible for listing in the National Register of Historic Places (NRHP). Additionally, the RHBFSF, a WWII-era property and represents a major engineering achievement, has been determined eligible for listing in the NRHP.

Site 50-80-13-7785 is a complex of six features situated above and below a natural escarpment near the base of the valley slope. The site may be a palimpsest of features from two different periods of activities, consisting of earlier ranching and later mid-20th century military development. The possible ranching features are a retaining wall (Feature E); a mound (Feature F); and a remnant stacked stone wall along the upper edge of the escarpment (Feature H). The military features include a backfilled tunnel, with a concrete slab poured above the mouth (Feature A); a mound, possibly associated with the backfilling of Feature A (Feature B); a concrete slab and associated blocks (Feature C); and a retaining wall associated with former road construction (Feature G).

Temporary Site 2 is a complex of three features—a retaining wall, a concrete structure, and a road alignment—associated with plantation era use of the project area as well as military activity at Red Hill. Feature A is a retaining wall constructed of large basalt boulders, 38 m long and 5.1 m high, sloping to the ground surface at the east and west ends. The wall is dry stacked with a maximum of 8 to 9 courses and oriented east/west. Immediately west of the retaining wall is a partially buried concrete structure, Feature B, measuring 68 cm high and 13.9 m long; only the northeast and southeast corners of the structure are currently exposed with the remainder buried under more than 10 cm of soil. East of, and atop of, Feature B and south of Feature A is Feature C, a former road segment that runs along the top of the escarpment that bisects the western portion of the project area. The road segment measures approximately 20 m long and 4 m wide. The road becomes less distinct on the eastern and western ends because of erosion and vegetation growth.

Temporary Site 7, [REDACTED] is associated with RHBFSF. This site was described in the Historic American Engineering Record (HAER) HI-123 for the Red Hill facility (HAER 2015:78-80). This [REDACTED] structure was built in 1942 and still serves its original function of discharging air [REDACTED] and [REDACTED]. The visible portion of the structure is [REDACTED]. The front of the structure is [REDACTED].

The Navy has determined the proposed undertaking would adversely affect Site 50-80-13-7785 and Temporary Site 2. Ground disturbing activities associated with the proposed RHWTF will adversely affect the integrity of Site 50-80-13-7785. Features A (tunnel), G (retaining wall), and H (stone wall), will be removed when the ground is leveled for the RHWTF. Construction activities will also result in the removal of Temporary Site 2—a retaining wall, a concrete structure, and a road alignment—associated with plantation era use of the project area as well as military activity at Red Hill. The Navy states Temporary Site 7 is located outside of the proposed project's construction footprint. Therefore, Navy has determined there would be no adverse effect to Temporary Site 7.

The SHPD received a draft Memorandum of Agreement for the proposed undertaking on August 11, 2025 (HICRIS Submission No. 2023PR01467.006).

Stipulation IX.C. *Projects That May Have Adverse Effects*, states, “Consultation will be initiated pursuant to 36 CFR 800.1(c) *Timing* under 36 CFR Section 800.6 ...”. The SHPO has determined that consultation with all parties to the PA is warranted. Accordingly, the SHPO requests that the Navy invite all parties to the PA to consult on the subject undertaking and provide documentation of its efforts to do so, including the results thereof. The SHPO looks forward to continuing Section 106 consultation for the proposed project and pursuant to 36 CFR 800.6(3) and 800.6(4) to receiving the documentation specified in 36 CFR 800.11(e), specifically 36 CFR 800.11(e)(6), in order to proceed in compliance with the PA and the regulations.

**Please submit** all forthcoming information and correspondence related to the subject project to SHPD via HICRIS under Project No. 2023PR01467 using the Project Supplement option.

The Navy is the office of record for this undertaking. Please maintain a copy of this letter with your environmental review record for this undertaking.

Please contact Stephanie Hacker, Historic Preservation Archaeologist IV, at [Stephanie.Hacker@hawaii.gov](mailto:Stephanie.Hacker@hawaii.gov) or at (808) 692-8046 for matters regarding archaeological resources or this letter.

Aloha,



Dawn N. S. Chang, Esq.  
DLNR Chairperson  
State Historic Preservation Officer

Captain Kleinman

August 11, 2025

Page 4

cc: Jeffrey Pantaleo, Navy (jeffrey.j.pantaleo.civ@us.navy.mil)  
Jann Inouye, Navy (jann.h.inouye.civ@us.navy.mil)  
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Gregory M. Ibara, HDOT HWY (gregory.m.ibara@hawaii.gov)  
Trisha K. Watson, Honua Consulting (watson@honuaconsulting.com)

MEMORANDUM OF AGREEMENT  
BETWEEN  
COMMANDER JOINT BASE PEARL HARBOR-HICKAM  
AND  
THE HAWAII STATE HISTORIC PRESERVATION OFFICER  
REGARDING CONSTRUCTION OF A WATER TREATMENT FACILITY  
JOINT BASE PEARL HARBOR-HICKAM, HAWAII

**WHEREAS**, the Commander Joint Base Pearl Harbor-Hickam (JBC) proposes to construct and operate a water treatment facility at Joint Base Pearl Harbor-Hickam (Undertaking); and

**WHEREAS**, a portion of the Undertaking involves Army property, the Army and Navy have designated the Navy as the lead federal agency for this Undertaking, consistent with 36 C.F.R. § 800.2(a)(2); and

**WHEREAS**, with the support of qualified Navy cultural resources professionals, JBC identified the Area of Potential Effects (APE) (Attachment I) and consulted with the Hawaii State Historic Preservation Officer (SHPO) consistent with Stipulation VI of the Programmatic Agreement among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation, and the Hawaii State Historic Preservation Officer Regarding Navy Undertakings in Hawaii, as amended (2012 PA); and

**WHEREAS**, the APE includes Site 50-80-13-7785 and Temporary Site 2, which are considered individually eligible for the National Register of Historic Places (NRHP): Site 50-80-13-7785-7785 under Criterion D for its potential to yield information about historic ranching and military development; Temporary Site 2 under Criterion A for its association with historical plantation activity; and

**WHEREAS**, three historic-era features from Site 50-80-13-7785 (a tunnel/modified cave, retaining wall, and stone wall) and three historic-era features from Temporary Site 2 (a retaining wall, concrete pad, and road alignment) are within the APE and would be removed; and

**WHEREAS**, with the support of qualified Navy cultural resources professionals, JBC reviewed the Undertaking consistent with Stipulation IX of the 2012 PA and has determined the Undertaking will adversely affect Site 50-80-13-7785 and Temporary Site 2; and

**WHEREAS**, underground portions of the Red Hill Bulk Fuel Storage Facility (RHBFSF), a World War II-era complex eligible for the NRHP, are adjacent to the APE; however, the Undertaking will not affect the facility; and

**WHEREAS**, in accordance with 36 C.F.R. § 800.6(a)(1), regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108), JBC has notified the Advisory Council on Historic Preservation (ACHP) of the adverse effects and invited the ACHP to participate in the consultation. The ACHP has elected not to participate in this consultation; and

**WHEREAS**, JBC has consulted with the SHPO in preparing this memorandum of agreement (MOA) to resolve adverse effects in accordance with 36 C.F.R. § 800.6(c); and

**WHEREAS**, JBC has consulted Native Hawaiian Organizations, including the Office of Hawaiian Affairs, the Ali'i Pauahi Hawaiian Civic Club, and the O'ahu Council of Hawaiian Civic Clubs and invited them to participate in this MOA as Concurring Parties; and

**WHEREAS**, JBC has consulted with the National Trust for Historic Preservation and Historic Hawaii Foundation and has invited them to participate in this MOA as Concurring Parties; and

**WHEREAS**, pursuant to 36 C.F.R. § 800.6(b)(1)(iv), JBC will submit a copy of the executed MOA to the ACHP prior to approving the Undertaking.

**NOW, THEREFORE**, JBC and the Hawaii SHPO agree that the Undertaking shall be implemented in accordance with this MOA to resolve the adverse effects of the Undertaking and confirm that JBC has afforded the ACHP an opportunity to comment.

## **STIPULATIONS**

JBC shall ensure the stipulations of this MOA are carried out.

### **I. PROFESSIONAL QUALIFICATIONS**

- A. To support JBC in meeting the stipulations of this MOA, activities associated with the Undertaking shall be carried out by, reviewed by, or conducted under the direct oversight or supervision of a staff member of the Navy with training and professional qualifications appropriate for the resources involved, who meets the Secretary of the Interior's (SOI) Historic Preservation Professional Qualifications Standards (as finalized and adopted in 1983 in Federal Register Vol. 48, No. 190, pp. 44716–44740, and to include the changes proposed in 1997 in Federal Register Vol. 62, No. 119, pp. 33708–33723).
  1. Current United States Department of the Interior guidance is that the 1983 standards should be followed until such time as they are superseded with revised standards. However, JBC has elected to incorporate the 1997 proposed changes to the Secretary of the Interior's (SOI's) Historic Preservation Professional Qualifications Standards for Navy personnel implementing this MOA (<https://www.doi.gov/pam/asset-management/historic-preservation/pqs>).
  2. Activities associated with the Undertaking with the potential to affect archaeological resources shall be carried out by, reviewed by, or conducted under the direct oversight or supervision of a staff member of the Navy with training and professional qualifications in archaeology, while activities with the potential to affect historic architectural properties will be carried out by, reviewed by, or conducted under the

direct oversight or supervision of a staff member of the Navy with training and professional qualifications in architectural history or historic architecture.

## II. MEASURES TO AVOID, MINIMIZE, AND MITIGATE ADVERSE EFFECTS

### A. Documentation and Interpretation

1. JBC shall prepare site documentation consistent with SOI Standards for Archaeological Documentation of Site 50-80-13-7785 and Temporary Site 2. This documentation will include background research on the plantation era/military at Red Hill, area information, site and feature drawings (including plan and sectional views), and scaled photographs.
  - a. JBC shall submit the draft site documentation to SHPO, Concurring Parties, and consulting parties. JBC shall take into account all written comments received within thirty (30) calendar days prior to preparing the final site documentation.
  - b. The final site documentation shall be completed and submitted to SHPO electronically within one (1) year of the execution of this MOA and prior to authorization of ground disturbing work in proximity to Site 50-80-13-7785 and Temporary Site 2.
  - c. JBC will make the final report available electronically to Concurring Parties and consulting parties upon request.

### B. Archaeological Monitoring and Post-Review Discovery

1. To avoid and minimize the risk of inadvertent effects to archaeological resources, JBC shall consult with SHPO to prepare and implement a plan for professional archaeological monitoring of ground disturbing activities associated with the Undertaking prior to commencing any ground disturbing activities. JBC shall submit the archaeological monitoring plan (AMP) to SHPO electronically for review and concurrence and consider all comments received within 30 calendar days of the date of receipt by SHPO.
2. JBC shall notify SHPO when all project fieldwork has been completed and within 90 days of the completion of all fieldwork, a draft archaeological monitoring report will be submitted to SHPO for review. JBC shall take into account all written comments received with thirty (30) calendar days.
3. If unanticipated effects to historic properties are discovered during the Undertaking, JBC shall follow procedures specified in Stipulation XI of the 2012 PA as amended, or other Section 106 program alternatives in effect at the time.

- C. Attachment 2 to the MOA provides a schedule for implementation of these measures. In consultation with SHPO, Concurring Parties, and consulting parties the attachment may be updated without requiring amendment of this MOA.

### **III. REPORTING**

- A. JBC shall provide SHPO, Concurring Parties, and consulting parties with a written summary report detailing work undertaken pursuant the MOA as part of the Navy Region Hawaii annual reporting, or other date agreed to in writing. Such report shall address any proposed updates the schedule in Attachment 2, any problems encountered, and any concerns.
- B. JBC shall take into account all comments provided in writing within 30 calendar days of the date the report is received by the parties.
- C. Once all mitigation commitments in this MOA have been completed, JBC shall provide SHPO with a close-out memorandum within 6 months of completion.

### **IV. DISPUTE RESOLUTION**

Should any Signatory, Concurring Party, consulting party, or a member of the public object to the implementation of this MOA, JBC shall notify the Signatories, Concurring Parties, and consulting parties to this MOA in writing within 30 calendar days and shall initiate consultation to resolve the objection with the goal of reaching agreement.

- A. JBC shall consider written comments received within 30 calendar days regarding the dispute from the Signatories, Concurring Parties, and consulting parties.
- B. If JBC or SHPO determines the objection cannot be resolved, JBC shall forward all documentation relevant to the dispute, including the JBC's proposed resolution, to the ACHP. Consistent with 36 C.F.R. § 800.7, the ACHP shall provide JBC with its advice on the resolution of the objection within 45 calendar days.
- C. Prior to reaching a final decision on the dispute, JBC shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, SHPO, Concurring Parties, and consulting parties and provide them with a copy of this written response.
- D. If the ACHP does not provide its advice regarding the dispute within 45 calendar days, JBC may make a final decision on the dispute and proceed accordingly. The final decision shall be in writing. JBC shall provide a copy of the final decision to the ACHP, other Signatories, Concurring Parties, and consulting parties.

## **V. AMENDMENT**

- A. This MOA may be amended when such an amendment is agreed to in writing by the Signatories. The amendment will be effective on the date a copy signed by the Signatories is filed with the ACHP.
- B. JBC shall provide the amended MOA to Concurring Parties and consulting parties.

## **VI. DURATION**

This MOA shall become effective upon execution by the Signatories and shall remain in effect for five years from the date of execution, with an option to extend or amend, following the process outlined in Stipulation V, if measures to avoid, minimize, and mitigate adverse effects remain incomplete.

## **VII. TERMINATION**

- A. If a Signatory to this MOA determines that its terms will not or cannot be carried out, that party shall notify in writing and consult with the other Signatory to attempt to develop an amendment per Stipulation V. If within 30 calendar days (or another time agreed to by all signatories) and if an amendment cannot be reached, either Signatory may terminate the MOA upon, written notification to the other Signatory.
- B. Upon termination of this MOA, JBC must either (a) execute a new MOA pursuant to 36 C.F.R. § 800.6, or (b) request, take into account, and respond to the comments of the ACHP consistent with 36 C.F.R. § 800.7.
- C. JBC shall notify SHPO, Concurring Parties, and consulting parties of the chosen course of action.

## **VIII. ANTI-DEFICIENCY**

All requirements set forth in the MOA requiring expenditure of Department of Navy funds are subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. §§ 1341, 1342, 1517). If the JBC cannot perform any stipulation set forth in this MOA because of unavailability of funds, JBC will renegotiate that stipulation in accordance with the amendment and termination procedures in Stipulations V and VII.

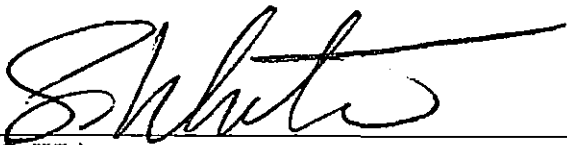
**EXECUTION** of this MOA by JBC and SHPO, and implementation of its terms, evidences that JBC has taken the effects of the Undertaking on historic properties into account and afforded the ACHP an opportunity to comment under Section 106 of the NHPA and its implementing regulations.

**Attachment 1: Area of Potential Effects**


**Attachment 2: Schedule of Deliverables and Reviews**

**SIGNATORIES**

Joint Base Pearl Harbor-Hickam

By:  Date: 3 Feb 26  
S.S. White  
Captain U.S. Navy  
Commander

Hawaii State Historic Preservation Office

By:  Date: 02/06/2026  
Jessica L. Puff, PhD  
Deputy State Historic Preservation Officer  
  
for Dawn N.S. Chang, Esq.  
State Historic Preservation Officer

**CONCURRING PARTIES:**

Office of Hawaiian Affairs

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Summer Sylva

Ali'i Pauahi Hawaiian Civic Club

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Kehaulani Lum

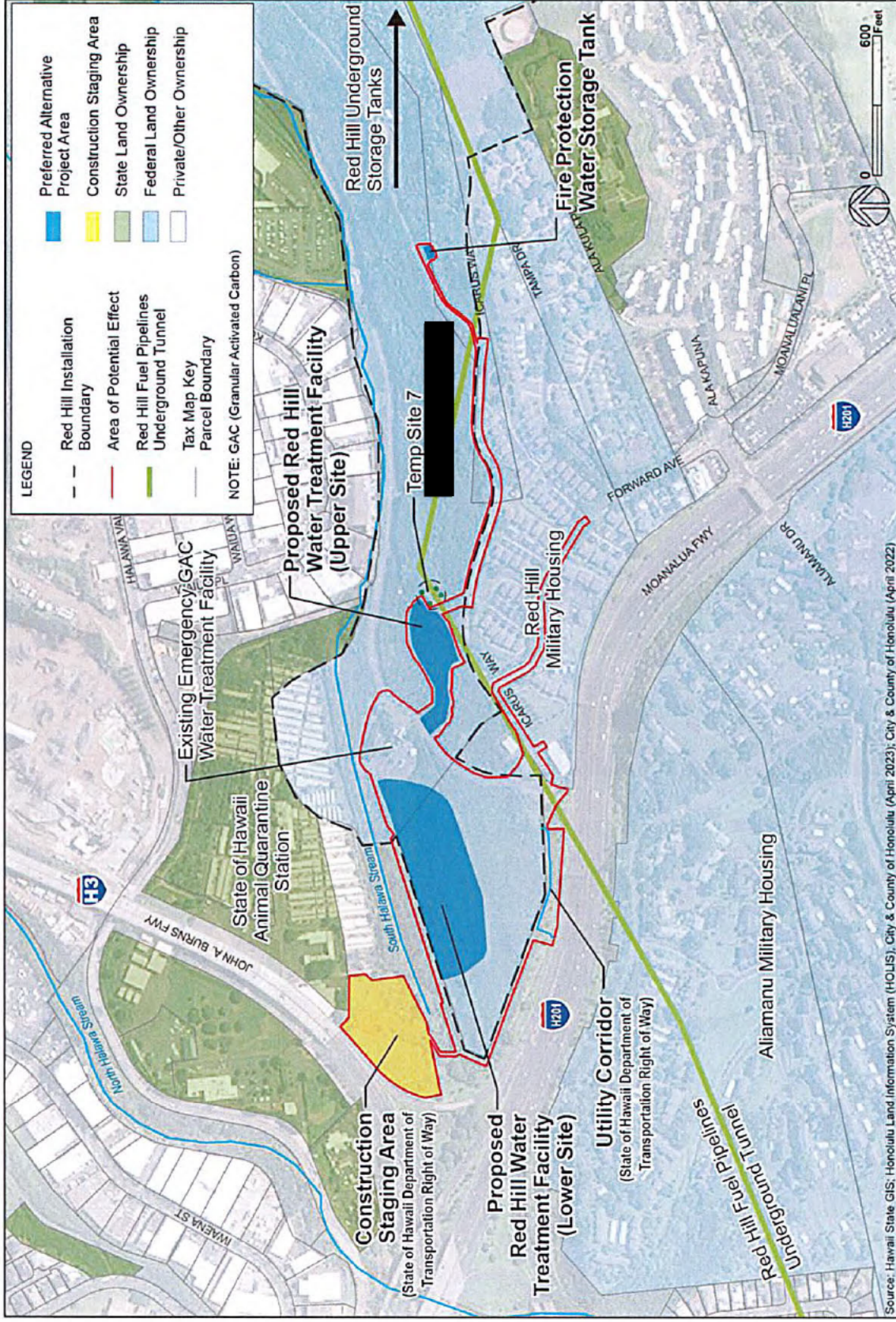
National Trust for Historic Preservation

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Thompson M. Mayes  
Chief Legal Officer and General Counsel

Historic Hawaii Foundation

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Kiersten Faulkner  
Executive Director

JBC Construction of a Water Treatment Facility MOA  
 Attachment 1: Map Showing P-716 Area of Potential Effects



JBC Construction of a Water Treatment Facility MOA  
 Attachment 2: Schedule of Deliverables

Measure	Deliverable	Timing	Reviews
Site Documentation	Draft site documentation	Not more than 6 months after site documentation contract execution	SHPO, Concurring Parties, and consulting parties; 30 cal. day review
	Final site documentation	Not more than 1 year after site documentation contract execution	N/A
Minimize harm to archaeological resources	Draft Archaeological Monitoring Plan	Prior to any ground disturbing work	SHPO, NHOs; 30 cal. day review
	Final Archaeological Monitoring Plan	Prior to any ground disturbing work	N/A
	Notice Of Project Fieldwork Completion	Within 30 days of project fieldwork completion	N/A
	Draft Archaeological Monitoring Report	Within 90 days of fieldwork completion	SHPO, 30 cal. day review
	Final Archaeological Monitoring Report	Not more than 120 days of fieldwork completion	N/A
Status of Undertaking and mitigation measures	Written report	Annually	SHPO, Concurring Parties, and consulting parties; 30 cal. day review
Completion of mitigation commitments	Memorandum	Within 6 months of completion of all mitigation measures	N/A

## Appendix C

# Endangered Species Act Documentation

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**DEPARTMENT OF THE NAVY**  
JOINT BASE PEARL HARBOR-HICKAM  
850 TICONDEROGA ST STE 100  
PEARL HARBOR HI 96860-5102

5090  
Ser JB4/465  
January 7, 2025

Mr. Ryan Pe'a  
Project Leader  
U.S. Fish and Wildlife Service  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard  
Room 3-122, Box 50088  
Honolulu, HI 96850

Dear Mr. Pe'a:

**SUBJECT: BIOLOGICAL ASSESSMENT FOR THE RED HILL WATER TREATMENT FACILITY AT JOINT BASE PEARL HARBOR-HICKAM, OAHU**

Pursuant to Section 7(a)(2) of the Endangered Species Act (ESA), Joint Base Pearl Harbor-Hickam (JBPHH) requests informal consultation related to construction and operation of a permanent water treatment facility at the Red Hill Shaft in Halawa, Oahu.

JBPHH has developed this Biological Assessment to assess the potential impacts to threatened and endangered species from the proposed water treatment facility. Based on the impacts analyzed, JBPHH has made a determination the action may affect, but is not likely to adversely affect the Hawaiian hoary bat, Newell's shearwater, Hawaiian petrel, band-rumped storm-petrel, and Hawaiian stilt. Our determination is based on construction and operations phase conservation measures. JBPHH requests your concurrence with our finding based on the provided Biological Assessment.

Thank you for your consideration of our request for your review and concurrence. Should you have any questions or concerns about the consultation documents, please contact JBPHH Terrestrial Natural Resources Specialist Amanda Snow at [amanda.r.snow6.civ@us.navy.mil](mailto:amanda.r.snow6.civ@us.navy.mil).

Sincerely,

KLEINMAN.ROBER  
T.DANIEL.1239402  
794

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R. D. KLEINMAN  
CAPT, CEC, USN  
By direction

Enclosures: 1. Biological Assessment for the Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam, Oahu

**BIOLOGICAL ASSESSMENT**  
**for**  
**Red Hill Water Treatment Facility**  
**at**  
**Joint Base Pearl Harbor-Hickam, Oahu**

**December 2024**



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## Acronyms and Abbreviations

ATFP	Anti-Terrorism/Force Protection
DNLR	Hawaii Department of Land and Natural Resources
DoD	Department of Defense
ESA	Endangered Species Act of 1973
GAC	granular activated carbon
HDOA	State of Hawaii Department of Agriculture
HDOH	State of Hawaii Department of Health
HDOT	State of Hawaii Department of Transportation
HECO	Hawaiian Electric Company
JBPHH	Joint Base Pearl Harbor-Hickam
LID	Low Impact Development
MW	megawatt
MGD	million gallons per day
NA	not applicable
NAVFAC	Naval Facilities Engineering Systems Command
NLAA	not likely to adversely affect
NPDWR	National Primary Drinking Water Regulations
RHBFSF	Red Hill Bulk Fuel Storage Facility
ROW	Right-of-Way
UFC	Unified Facilities Criteria
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

## 1 Introduction

The Proposed Action is to construct and operate a permanent water treatment facility capable of treating up to [REDACTED] at the Red Hill Shaft in Halawa, Oahu. The Proposed Action would include the construction of new facilities, utilities, infrastructure, and associated site improvements to support the permanent water treatment facility and the Red Hill Shaft Pump Station, as well as the connection of the modified granular activated carbon (GAC) water treatment facility that is currently under construction at Red Hill to the Navy drinking water system.

The purpose of the Proposed Action is to restore the Red Hill Shaft as a valuable drinking water source for the Navy drinking water system, in compliance with National Primary Drinking Water Regulations (NPDWR) and Hawaii Department of Health (HDOH) Safe Drinking Water Standards, and to discontinue discharge of the resource into Halawa Stream. The Proposed Action is needed because potable water from the Red Hill Shaft has been unavailable to support users and activities on the Navy's drinking water system since November 2021 due to the risks to public health posed by consuming water that has become contaminated.

JBPHH has developed this Biological Assessment to assess the potential impacts to threatened and endangered species from the proposed water treatment facility. Based on the impacts analyzed, JBPHH has made a determination the action may affect, but is not likely to adversely affect the Hawaiian hoary bat, Newell's shearwater, Hawaiian petrel, band-rumped storm-petrel, and Hawaiian stilt. Our determination is based on construction and operations phase conservation measures.

### 1.1 Action Location

The Red Hill Bulk Fuel Storage Facility (RHBFSF) installation consists of 226 acres on the ridge which separates the Halawa and Moanalua Valleys of the island of Oahu, Hawaii, located 1.3 miles to the east of Aloha Stadium (Figure 1). The RHBFSF installation is a part of Joint Base Pearl Harbor-Hickam (JBPHH). The Proposed Action would encompass a project area of approximately 25.6 acres on a triangular-shaped portion of the RHBFSF installation, located at the base of a ridge of volcanic rock known as Red Hill. The site is bounded by Interstates H-201 and H-3 to the south and west, the Hawaii Department of Agriculture Animal Quarantine Facility to the north, and the U.S. Army Garrison Hawaii Red Hill Family Housing to the east.

The proposed facilities would be located at three locations within the RHBFSF installation boundary. The proposed permanent water treatment facility would be located at the lower site to the west of the existing emergency GAC water treatment facility and the Lower Access Road. Additional support facilities are proposed [REDACTED]

[REDACTED]. An aboveground fire protection water storage tank would be constructed [REDACTED].

Construction staging would be provided on an adjacent State of Hawaii Department of

Transportation (HDOT) Right of Way (ROW). Access to this staging area would utilize an existing State of Hawaii Department of Agriculture (HDOA)-owned driveway off Halawa Valley Street and a new connection to an existing roadway serving the HDOT ROW. Additional construction access would be provided through the existing RHBFSF Gate. Figure 2 shows the location of the proposed features as well as land ownership and Figure 3 shows the action area.

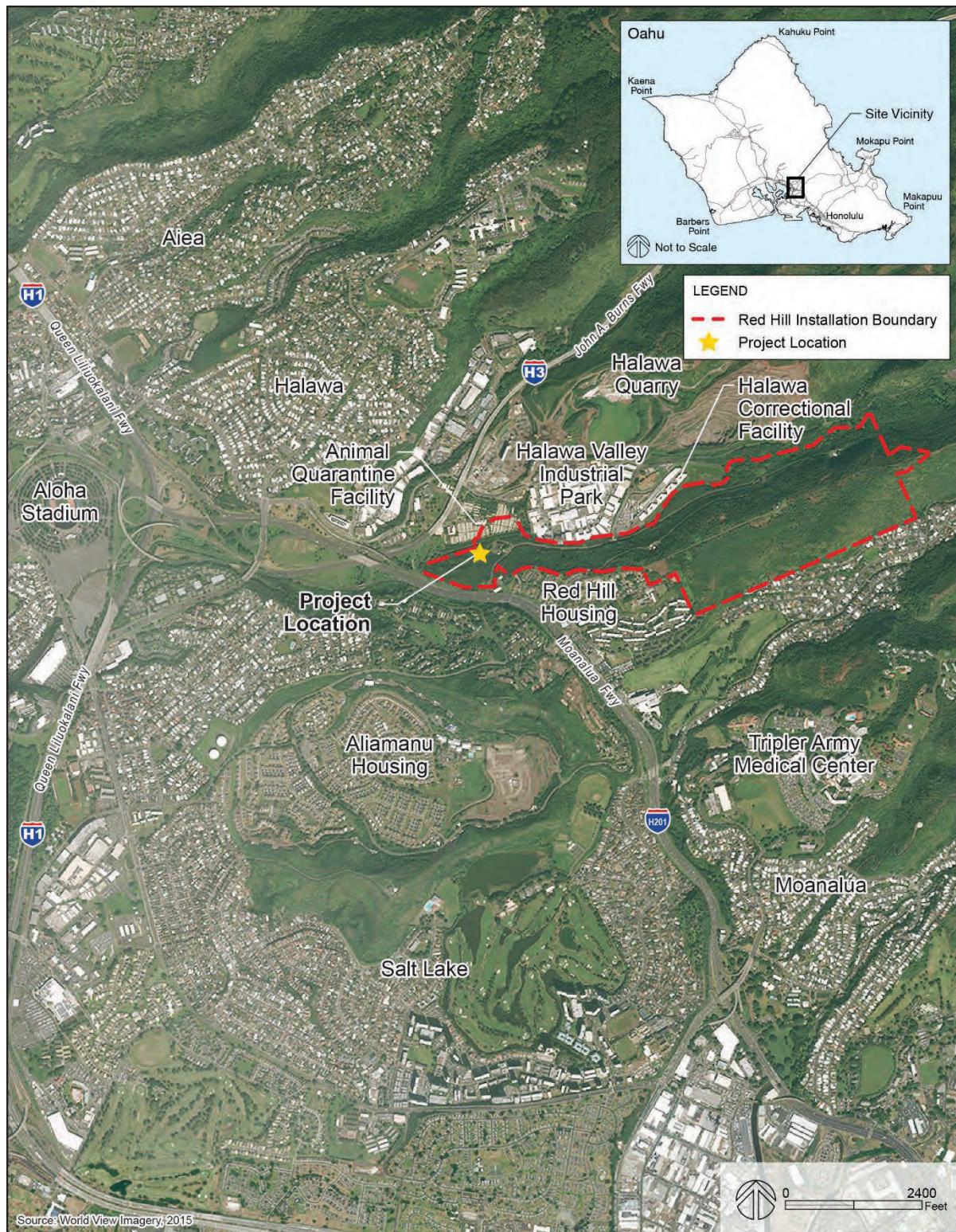
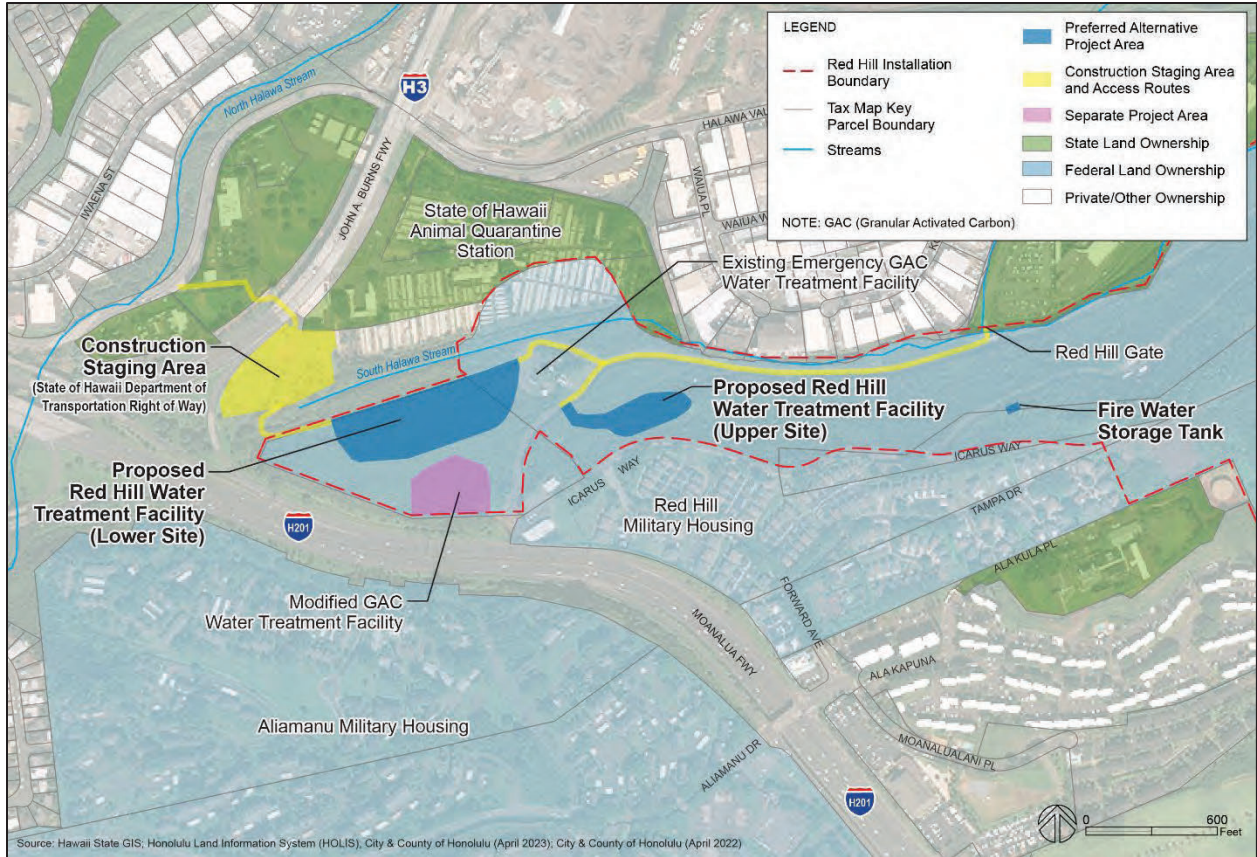
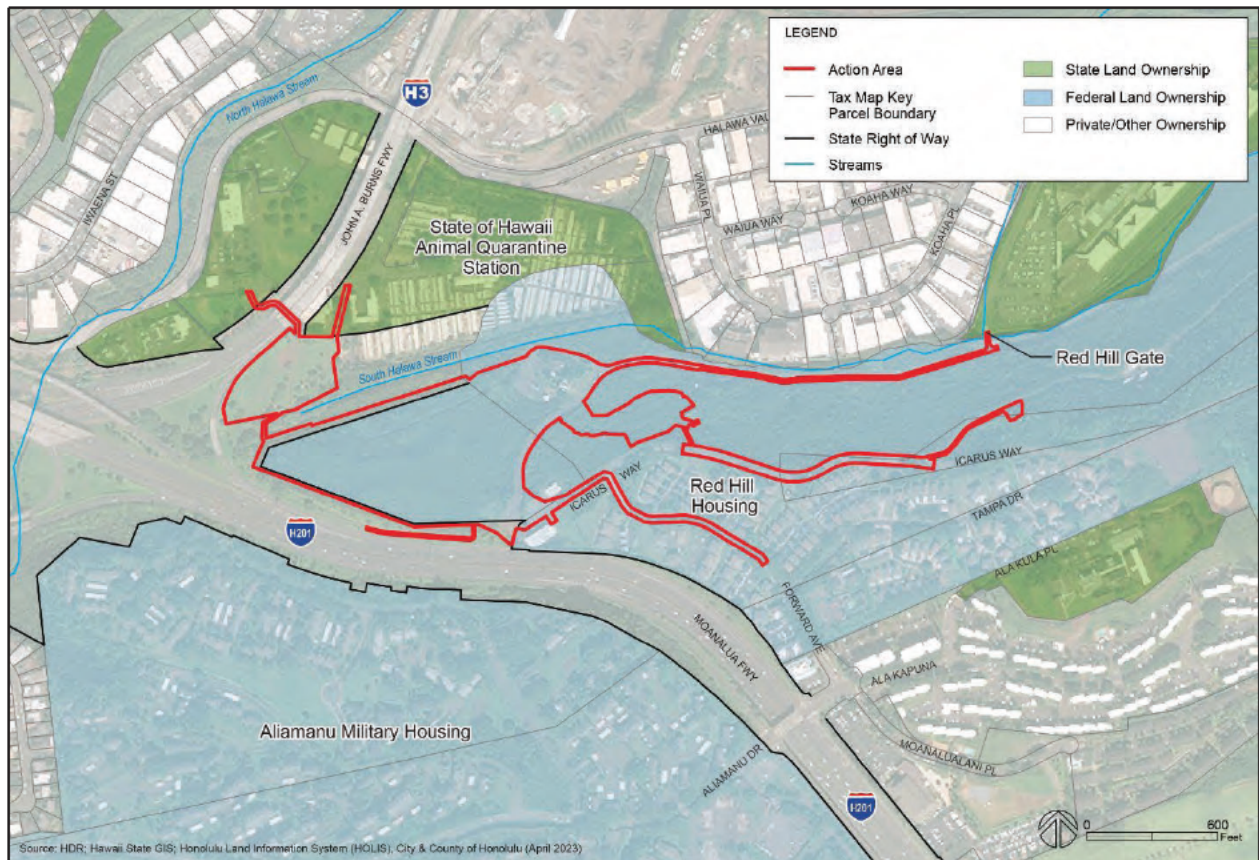


Figure 1. Project Location



**Figure 2. Proposed Action Features and Land Ownership**



**Figure 3. Action Area**

## 1.2 Species Addressed in this Biological Assessment

The Endangered Species Act of 1973 (ESA)-listed species potentially occurring within the action area and their associated critical habitat are listed in Table 1. There is no critical habitat designated in the RHBFSF. This Biological Assessment is being prepared as a requirement of Section 7 of the ESA for interagency informal consultation purposes.

**Table 1. Species Covered Under This Informal Consultation**

Common Name	Scientific Name	ESA Status	Critical Habitat
Hawaiian hoary bat	<i>Lasiurus cinereus semotus</i>	Endangered	N/A
Hawaiian petrel	<i>Pterodroma sandwichensis</i>	Endangered	N/A
Band-rumped storm-petrel	<i>Hydrobates castro</i>	Endangered	N/A
Newell's shearwater	<i>Puffinus auricularis newelli</i>	Threatened	N/A
Hawaiian stilt	<i>Himantopus mexicanus knudseni</i>	Endangered	N/A
Notes: ESA = Endangered Species Act of 1973 N/A = not applicable			

## 2 Details of the Proposed Action

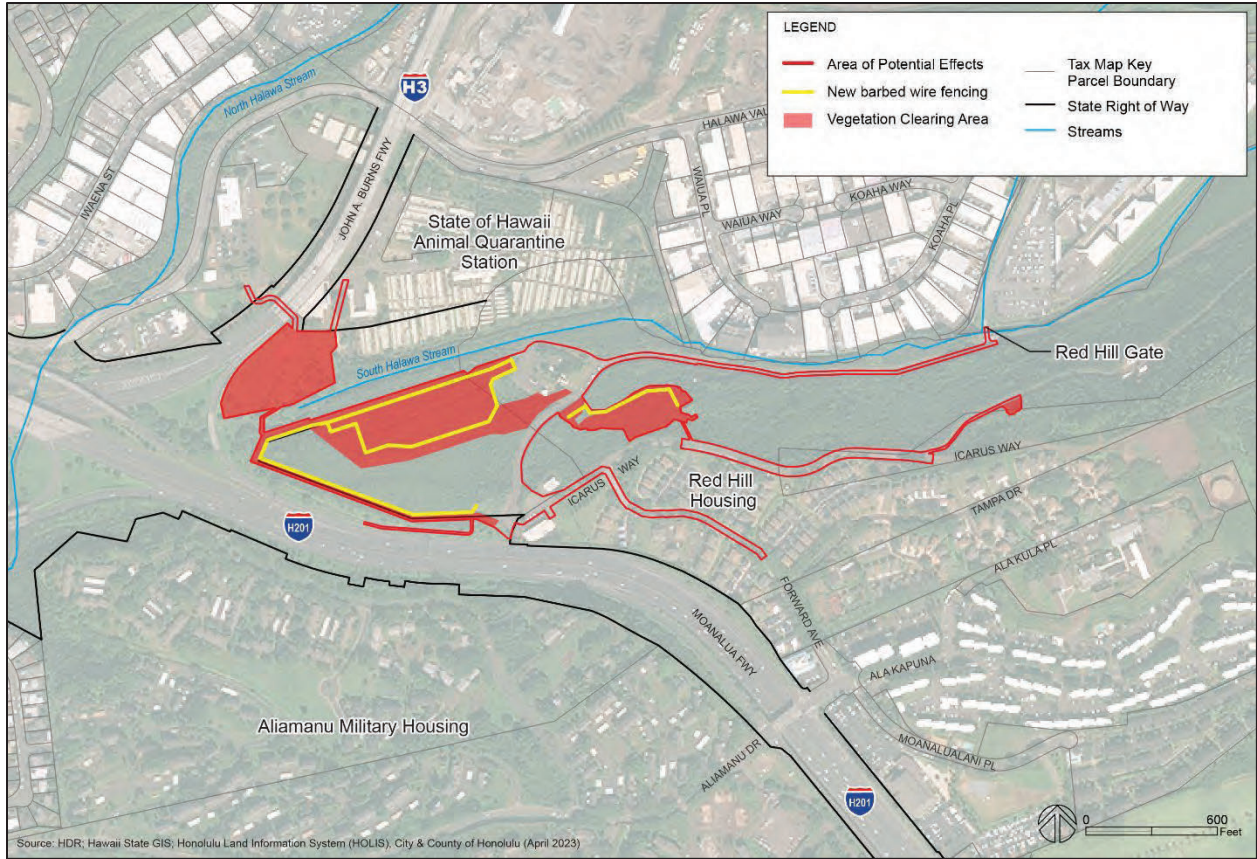
The Proposed Action would encompass an area of 25.6 acres including project areas within RHBFSF, adjacent State of Hawaii-owned properties, and the Army's Red Hill Housing (Figure 3). The Proposed Action would involve the construction of approximately 26,300 square feet of new facilities. Descriptions of the proposed facilities are provided in Table 2.

**Table 2. Proposed Action Facilities**

Site	Facility	Description
Lower Site	GAC Vessels and Canopy	[REDACTED] and ancillary equipment would be installed as part of the water treatment facility. The GAC vessels would be housed under a canopy—an open-air steel structure with metal roofing—to protect them from the elements. The GAC canopy footprint is approximately [REDACTED].
Lower Site	Wash Water Transfer Tank	The wash water transfer tank is proposed to receive and attenuate wash water from backwashing the GAC media prior to discharge into the sanitary sewer system. The tank would have capacity to hold approximately [REDACTED]. The wash water transfer tank footprint is approximately [REDACTED].
Lower Site	Chemical Feed Building	A [REDACTED] building is proposed for the housing of chemical feed systems [REDACTED] and for general operations at the water treatment facility. The building footprint is [REDACTED].
Lower Site	Neutralization Building	A [REDACTED] structure would house chemicals and equipment to neutralize flush water and wash water waste generated during flushing and media change-out activities. The building footprint is [REDACTED].
Lower Site	Generator Building 1	A [REDACTED] structure would house [REDACTED]. The generator building would be [REDACTED]. The building footprint is [REDACTED].
Upper Site	Switchgear Building	A [REDACTED] structure would house [REDACTED] to the permanent water treatment facility. The building footprint is [REDACTED].

**Table 2. Proposed Action Facilities**

Site	Facility	Description
Upper Site	Generator Building 2	A [REDACTED] structure would house [REDACTED]. The generator building would be [REDACTED]. The building footprint is [REDACTED].
Fire Protection Water Storage Tank Site	Non-potable fire protection water storage tank	A 250,000-gallon concrete, non-potable fire water storage tank would be constructed at an uphill location within the RHBFSF installation [REDACTED]. The height of the water storage tank is [REDACTED]. Fire protection for the upper and lower sites would be provided [REDACTED]. Fire sprinklers for the proposed buildings would also be fed from the fire protection water system.
Upper and Lower Site	Security Fencing	The Proposed Action would comply with Unified Facilities Criteria (UFC) 4-022-03 Security Fences and Gates. Security fencing (4,200 feet) would be installed along the perimeter of the proposed water treatment facility site sites and adjacent to the H-201 ROW (Figure 4). The perimeter fence would be approximately eight feet tall, including a three-strand barbed wire top guard. In compliance with UFC requirements, the Navy would clear vegetation and maintain a 30-foot-wide clear zone on the exterior of the perimeter fence.
Upper and Lower Site	Site and Security Lighting	The Proposed Action would include the installation of site lighting at the permanent water treatment facility (upper and lower sites) as well as security lighting along the perimeter security fence. All lighting would be shielded to reduce light pollution and potential impacts to wildlife.
<p>Notes:            GAC = granular activated carbon            RHBFSF = Red Hill Bulk Fuel Storage Facility</p>		



**Figure 4. Proposed Action New Barbed Wire Fencing and Vegetation Clearing Area**

The Proposed Action would include utilities improvements for electrical, telecommunications, water, fire protection, sanitary sewer, and stormwater infrastructure to support the permanent water treatment facility. These improvements are described in Table 3. Specific utility line locations and points of connection are not shown in Figure 2 due to Operational Security guidelines but are included in the action area indicated in Figure 3.

**Table 3. Proposed Action Utilities and Infrastructure**

Improvement	Description
Electrical	<p>The Proposed Action would harden electrical infrastructure at the site to ensure a more resilient and reliable electrical service to RHBFSF, including the proposed permanent water treatment facility. A new underground Hawaiian Electric Company (HECO) electrical service point of connection would be constructed along the H201 ROW, and new underground duct lines would be constructed to provide electrical distribution to and within the project sites. To provide backup to HECO power, the Proposed Action would provide [REDACTED]</p>
Telecommunications	<p>The Proposed Action would connect the proposed permanent water treatment facility to the Navy’s existing telecommunications system. Within the site, the Proposed Action would provide a new, underground telecommunications distribution system to serve the permanent water treatment facility and Red Hill Pump Station. [REDACTED]</p>
Water	<p>The Proposed Action would construct a [REDACTED] raw water transmission line to convey water from the Red Hill Shaft Pump Station to the permanent water treatment facility. A [REDACTED] finished water line would convey the treated water from the permanent water treatment facility to the Navy’s existing drinking water distribution main. Additional ancillary water lines would be constructed as necessary to support operations at the water treatment facility and to connect the modified GAC water treatment facility to the Navy drinking water system.</p>

**Table 3. Proposed Action Utilities and Infrastructure**

Improvement	Description
Sanitary Sewer	The Proposed Action would construct a new domestic wastewater pump station (located at the lower site) and a new sanitary sewage force main. Domestic wastewater from the facility would be pumped to a point of connection within the Red Hill Army Family Housing sewer system. The Proposed Action would also construct a new wash water waste pump station (located at the lower site) and a new wash water waste force main. The wash water waste generated during backwash activities would be pumped to one of two potential points of connection: 1) connect to the Red Hill Army Family Housing sewer system, or 2) connect to the City and County of Honolulu’s sewer system within Forward Avenue near Ala Kupuna Street. These connections would require agreements with the Army and a sewer connection permit from the City and County of Honolulu Department of Planning and Permitting Wastewater Branch
Stormwater	The proposed facilities would increase impervious surfaces within the project site. Stormwater at the site would be managed according to guidelines in Unified Facilities Criteria 3-210-10 Low Impact Development (LID). LID features would be implemented to provide in-ground infiltration areas within the site that would prevent ponding or standing water on the surface. There would be no increase in peak stormwater discharge rates to offsite areas. The existing drainage patterns would be maintained to the maximum extent possible.

**2.1 Construction**

The water treatment facility footprint would be located in a generally undeveloped area of the RHBFSF. The lower site would be grubbed and graded and revetted with mechanically stabilized retaining walls ranging up to 33 feet in height. The upper site would be grubbed, graded, and revetted with concrete retaining walls. Approximately 14.1 acres of vegetation would be cleared during the construction period (Figure 4). This includes 8.9 acres of vegetation to be permanently cleared at the upper site, lower site, fire storage tank, and along the security fencing for the Proposed Action which is scrub forest and consists of non-native shrubs (primarily kiawe [*Prosopis pallida*] and koa haole [*Leucaena leucocephala*]) and non-native grasses. Additionally, the Proposed Action includes the use of a 5.2-acre construction staging area within HDOT ROW adjacent to the H-201 to H-3 off-ramp. The staging area is mowed grass with scattered trees. The trees would not be cut. Any areas temporarily cleared for access or staging areas would be re-vegetated. All green waste generated at the project area will be chipped with excess soil removed and processed according to current JBPHH Green Waste Policy.

Rock fall mitigation measures would also be installed at the sites (e.g., scaling of cut surfaces and anchored wire mesh). Extant utilities would be relocated, removed and/or demolished to accommodate the new facility. Construction would use standard

construction equipment such as backhoes, excavators, bulldozers, and compactors. Construction activities would be restricted to daylight hours and would not occur at night.

Construction access to the Proposed Action site would be provided via two approaches: (1) an existing HDOA-owned driveway off of Halawa Valley Street serving the Animal Quarantine Facility and a new connection to an existing roadway serving the HDOT ROW that continues across Halawa Stream to the permanent water treatment facility site and (2) through the existing RHBFSF Gate via the Lower Access Road. Parking for construction personnel would be provided within the proposed HDOT staging area to the north of the project site. Improvements to the existing access roads are not needed prior to construction and once construction is complete, the roads would be restored to their pre-construction condition.

## **2.2 Operations**

The water treatment facility would utilize GAC for treatment. It is anticipated that the facility [REDACTED] but be limited to an annualized average daily volume of approximately 5 MGD (i.e., within currently permitted groundwater withdrawal rates). The water treatment facility would be designed to meet NPDWR and HDOH Safe Drinking Water Standards. The water treatment facility would be operated by Navy personnel based at the Navy's Waiawa Pump Station (approximately seven miles away to the northwest). More complicated maintenance will be performed by third-party contractors on an as-needed basis.

During typical operations, low-level noises would be emitted from the facility and shielded lights would be activated at night. As described above, no personnel would be on-site on a daily basis. Maintained vegetation around the facilities and within the perimeter fence clear zones would be cut on a regular basis. Chemical storage for the water treatment plant operations would be contained inside a facility building; operator training for the storage and use of the chemicals, as well as the use of spill response materials (spill kits) would be used to mitigate the potential risk from a spill.

Stormwater would drain to covered infiltration basins or be directed offsite following existing drainages resulting in no standing water at the surface and no increase in discharge rates to offsite areas. Stormwater facilities would be maintained as needed to ensure continued function.

## **2.3 Baseline Conditions of the Action Area**

The vegetation community in the study area consists of non-native scrub forest dominated by koa haole up to 20-30 feet tall with an understory of Guinea grass (*Urochloa maxima*) or Chinese violet (*Asystasia gangetica*) (Figure 5). Other conspicuous grasses are rat tail (*Sporobolus cf. indicus*), molasses grass (*Melinis minutiflora*), and Bermuda grass (*Cynodon dactylon*) (AECOS 2016). The South Halawa stream channel is lined with dense kiawe shrubs (Navy, HDOH, and U.S. Environmental Protection Agency [USEPA] 2022). Almost no native species occur in the study area.

The 5.2-acre construction staging area within consists of maintained grass with scattered trees.

South Halawa stream is located on the north side of the study area (Figure 6). The stream is intermittent and flows in a concrete u-shaped channel with no permanent aquatic vegetation or observed aquatic species in the study area. The channel continues for 1.67 miles downstream and has ledges (vertical drops in the channel) downstream of the study area that may restrict upstream movement of aquatic species (Navy, HDOH, and USEPA 2022). The emergency water treatment facility has been discharging up to 5 MGD of treated water into the South Halawa stream since January 2022 and will cease when the new permanent facility becomes operational. There are no other natural ponds, wetlands, standing water, or waterbodies in the study area that host aquatic communities or provide habitat for water birds.



**Figure 5. Overview of the Project Area**



**Figure 6. South Halawa Stream in the Project Area Showing Discharge from the Emergency Water Treatment Facility**

## 2.4 Conservation Measures

The following Conservation Measures in Table 4 would be incorporated into the Proposed Action to avoid impacts to minimize potential effects on federally listed threatened and endangered species.

**Table 4. Conservation Measures**

Conservation Measure	Target Species/ Critical Habitat
<b>Construction, Operations, and Maintenance</b>	
<p>Any trees 15 feet in height or taller will not be trimmed or cleared during the Hawaiian hoary bat pupping season (June 1 through September 15). If any bat pups were to be discovered in the construction zone, outside of this season, vegetation clearing would immediately stop, Navy Facilities Engineering Systems Command (NAVFAC) Hawaii would contact the USFWS within 24 hours, and operations would be moved to a minimum of 300 feet away. Construction would not resume until the bat pups have departed the area on their own accord and/or the USFWS gives additional guidance.</p>	Hawaiian hoary bat
<p>NAVFAC Hawaii will perform spot checks of the site throughout the project and site construction and maintenance staff will be informed of Hawaiian waterbirds/stilts. In the highly unlikely event a Hawaiian waterbird/stilt is seen or a nest is found, the following will be carried out:</p> <ul style="list-style-type: none"> <li>• Project personnel and contractors shall be informed about the presence of endangered species.</li> <li>• In areas where waterbirds are known to be present, post and implement reduced speed limits.</li> <li>• Incorporate water quality best management practices (BMPs) to reduce sedimentation and erosion in aquatic environments into the project design. BMPs may include: silt containment; no trash/debris contamination; keeping fuel vehicles away from the water; preparing a contingency plan for fuel spills; and protecting exposed soil from erosion.</li> <li>• Standing water has the potential to attract Hawaiian waterbirds to the site which could then be impacted by everyday activities at the site. The site is designed to prevent standing water and to reduce the total standing water at the site, and minimize presence of standing water for more than 48 hours.</li> <li>• If an individual, nest, or active brood is found, contact the JBPHH Natural Resources Duty Phone (808-404-1558) who will in turn contact the Service within 48 hours for further guidance.</li> </ul>	Hawaiian stilt

Conservation Measure	Target Species/ Critical Habitat
<ul style="list-style-type: none"> <li>• If an individual is observed within the project site, or flies into the site while construction is occurring, the biological monitor will halt all activities within 100 feet of the individual(s). Work will not resume until the Hawaiian waterbird(s) leave the area on their own accord.</li> <li>• Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks have fledged. No potentially disruptive activities or habitat alteration will occur within this buffer.</li> <li>• A biological monitor that is familiar with the species' biology will be present on the project site during all construction or earth moving activities until the chicks fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.</li> </ul>	<p>Hawaiian stilt (continued)</p>
<p>Navy policy (COMNAVREG Hawai'i Instruction 5090.9) is to avoid all night lighting, and to install only full cutoff exterior down-lighting fixtures for all new construction whenever possible. Exterior lights shall be LED lights with full cut-off fixtures. Lights that are International Dark-sky Association (IDA <a href="http://www.darksky.org">http://www.darksky.org</a>) certified are preferred.</p> <p>The Navy will implement the following avoidance and minimization measures for listed seabird species:</p> <ul style="list-style-type: none"> <li>• Fully shield all outdoor lights so the bulb can only be seen from below.</li> <li>• Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.</li> <li>• Initial construction and/or future site maintenance night work is not anticipated.</li> </ul> <p>Shearwater Fallout Season Response Guidelines for JBPHH flyers will be placed on the construction site note/safety board.</p>	<p>Newell's shearwater, Hawaiian petrel, band-rumped storm-petrel</p>

### 3 Description of Species

#### 3.1 Hawaiian Hoary Bat

The Hawaiian hoary bat was listed as federally endangered on 13 October 1970 and a recovery plan for the species was completed in 1998 (U.S. Fish and Wildlife Service [USFWS] 1998). Critical habitat for this species has not been designated. The Hawaiian hoary bat is a solitary species that has been recorded on all of the main Hawaiian Islands, with the largest populations thought to be on Kauai and Hawaii Island (Amlin and Siddiqi 2015). Accurate estimates of the population are not available but estimates for all islands have ranged from hundreds to a few thousand (USFWS 1998). Most observations of bats have been made between sea level and 7,500 feet in elevation, but their presence has been documented up to 13,198 feet in elevation (Gon et al. 1993).

The preliminary findings from an island-wide study, conducted in 2018 with 83 randomly placed acoustical detectors across Oahu, resulted in 5,135 Hawaiian hoary bat detections between 8 June 2017 and 29 June 2018 (Starcevich et al. 2019 in USFWS 2021a). At least 1 detection was recorded at 61 percent of the 83 sites. The level of detections recorded at each site ranged from 0 to 1,703, suggesting site usage by bats is highly variable. The highest number of detections occurred during the lactation period. Detections occurred across the island though the highest concentrations of detections were in the northern Koolau and Waianae Mountain ranges (Starcevich *et al.* 2019 in USFWS 2021a).

##### 3.1.1 Habitat Use and Ecology

The Hawaiian hoary bat uses a wide variety of habitats including native, non-native, and agricultural areas. Vegetation cover and structure appear to be more important than a particular vegetation species. Hawaiian hoary bats have been known to use eucalyptus (*Eucalyptus globulus*), albizia (*Albizia falcataria*), ironwood (*Casuarina equisetifolia*), ohia (*Metrosieros polymorpha*), koa (*Acacia koa*), and mamane-naio forest (*Sophora chrysophylla* – *Myoporum sandwicense*) for foraging and roosting (Koob 2012).

Rangelands near forest edges, rural yards, agriculture windbreaks, and croplands may also be used for foraging. Transition areas or forest breaks are generally considered good hoary bat habitats (Koob 2012). Hoary bats forage at night on native and non-native insects such as moths, beetles, termites, leafhoppers, and flies (USFWS 1998).

Breeding has been documented on all islands except for Niihau and Kahoolawe (Pacific Rim Conservation 2013). Breeding occurs in the autumn when adults congregate in the lowlands and prepare for mating in what is termed “fall swarming” (Bonaccorso et al. 2012). In mid-June, females give birth to two pups or occasionally one, and the pups are typically dependent on their mother and are unable to fly until late August/early September (USFWS 1998). Roosting primarily occurs in woody vegetation exceeding 15 feet in height (Amlin and Siddiqi 2015).

### **3.1.2 Detection within RHBFSF**

The Red Hill Storage Facility was studied using acoustic detectors from January to December 2014 for a total of 190 recording nights. Bat detections were recorded on two nights, 10 August at 21:39 and 26 August at 21:48, for a detection rate of 0.011 (Bonaccorso et al. 2014). More recently, an island wide study included an acoustic sampling site at the Red Hill location and detected bats twice between June 2017 and October 2019 from 574 nights of data collection resulting in a mean detection rate of 0.0035 detections for each night with data (West 2020).

### **3.1.3 Threats to the Species**

Because accurate population estimates of Hawaiian hoary bats are limited and historical distribution information is lacking, the decline of the species has largely been inferred (USFWS 1998). Observations and species records suggest that bats are absent from historically occupied ranges (USFWS 1998). Because little research has been conducted on this species, factors threatening this species are assumed to be similar to those threatening bat species found in North America (USFWS 1998). The primary factors associated with Hawaiian hoary bat declines are thought to be habitat loss, collision with structures, and possibly pesticide use (USFWS 2010). New threats identified in the 2021 5-year review include wind turbines (collisions), timber harvest (harvest of trees greater than 15 feet during pupping season, mainly on Hawaii and Kauai), coqui frogs (competition for invertebrate food), changes in habitat, and coqui frog range expansion into higher elevations (USFWS 2021).

Roost disturbance is a common threat for all bats worldwide (Koob 2012). For the Hawaiian hoary bat, this could be clearing or pruning trees where bats roost. The availability of roosting sites and suitable roosting habitat are important to pregnant lactating females and fledging bats (USFWS 2010). Disturbing roosting sites when juvenile bats are fledging (July to September) has the highest potential for mortality because young bats are not able to evade disturbance. Bat numbers on Oahu are thought to have decreased significantly, perhaps due to deforestation that occurred in the early nineteenth century (USFWS 1998). Mortality of breeding adults and females may also limit the recovery of the species. Current loss of forests and land conversions from agriculture contribute to habitat loss (USFWS 2010).

The most recent 5-year review for the Hawaiian hoary bat (USFWS 2021) stated that mortality from snagging on barbed wire has been documented, although it is difficult to quantify the impact. One study cited estimated annual rates of 0 to 1.3 fatalities per 100 miles of barbed wire (Zimpfer and Bonaccorso 2010 in USFWS 2021).

### **3.2 Newell's shearwater, Hawaiian petrel, band-rumped storm-petrel**

The Newell's shearwater is a medium sized black and white pelagic seabird that nests in burrows, primarily on Kauai (USFWS 2024). It was listed as threatened in October 1975 with a final recovery plan approved in 1983 and amended in 2019 with updated recovery criteria (USFWS 2024).

The Hawaiian petrel is a medium sized seabird with a dark gray head, wings, and tail with a white forehead and belly. It was listed in March 1967 with a recovery plan approved in 1983 that was amended in August 2019 with updated recovery criteria (USFWS 2024).

The Hawaii distinct population segment of the band-rumped storm-petrel is recognized as a single population that breeds within the Hawaiian Islands primarily on the islands of Kauai and Hawaii (USFWS 2021). It was listed as endangered in October 2016 and a recovery plan for 50 Hawaiian archipelago species was approved in December 2022 that included the band-rumped storm-petrel (USFWS 2024).

Critical habitat has not been designated for these species.

While Newell's shearwater, Hawaiian petrel, and band-rumped storm-petrel do not nest at JBPHH Main Base or Surrounding Areas, they may fly over the study area when moving between suitable nesting habitat in the Waianae and Koolau Mountains and the ocean (NAVFAC 2022).

#### **3.2.1 Habitat use and Ecology**

Newell's shearwaters are primarily pelagic, feeding on fish and squid in equatorial regions. They breed on steep mountainous terrain in areas with dense ferns, that may provide cover from weather and predators. Over 90 percent of the population breeds on Kauai, with some additional nesting sites identified on the islands of Hawaii, Maui, Lanai, and possibly Molokai and Oahu. No burrows have been located on Oahu yet, but acoustic monitors have detected occasional calls at high elevations (USFWS 2017).

The Hawaiian petrel feeds mainly on squid and supplements its diet with fish, crustaceans, and plankton and can range over 6,000 miles to forage during the non-breeding season. They were abundant on all main Hawaiian Islands, but now only breed in remote or high elevation areas on the islands of Hawaii, Maui, Lanai, Oahu, and Kauai (USFWS 2024). Hawaiian petrels nest in burrows at high elevations, typically over 7,200 feet where vegetation can be sparse and consists primarily of grass and ferns (USFWS 1983).

The band-rumped storm-petrel is a small seabird that ranges throughout the Pacific Ocean while foraging for fish and squid from the surface of the water. The Hawaiian population nests on cliffs or high elevation rocky lava fields primarily on the islands of Kauai, Lehua, Lanai, and Hawaii (USFWS 2024).

### **3.2.2 Detection within RHBFSF**

Habitat modeling and acoustic verification detected Newell's shearwater on Mt. Kaala and Poamoho (Young et al. 2019). Newell's shearwater may fly over the action area to reach nesting habitats, but birds have not been documented at JBPHH installations and the potential to occur in the action area is very low to unlikely.

There are no known breeding locations of the Hawaiian petrel on Oahu. However, grounded birds have been recovered on Oahu and recently detected via acoustic monitoring in the lower Kaala region, likely attracted by low frequency sound of a satellite communication facility (Young et al. 2019). The Hawaiian petrel has not been documented at JBPHH installations and the potential to occur in the action area is very low to unlikely.

There are no known breeding locations of the band-rumped storm-petrel on Oahu. The band-rumped storm-petrel has not been documented at JBPHH installations and the potential to occur in the action area is very low to unlikely.

### **3.2.3 Threats to Species**

Threats to the Newell's shearwater include nighttime lighting, collisions with power lines, and predation by introduced predators. Populations declined 94% between 1993 and 2017 and little progress has been made towards addressing the main threats (USFWS 2017).

Threats to the Hawaiian petrel include powerline collisions, light attraction and fallout, predation by introduced predators and newly identified threats include invasive plant species, plastic ingestion, and fisheries issues. The Kauai population declined by 73% between 1993 and 2020 indicating that threats persist, and recovery efforts have made little progress in meeting recovery criteria (USFWS 2022).

Threats to the band-rumped storm-petrel include invasive species, habitat modification, predation, stochastic events, light attraction and fallout, wind farms, fisheries interactions, and inadequate protection (USFWS 2021).

These species are particularly vulnerable to fallout – when fledglings or occasional migrating adult birds are disoriented by artificial light and become grounded. Due to the occasional flyovers and groundings observed on Oahu, they have a low but possible potential to occur in the action area (NAVFAC 2022).

### **3.3 Hawaiian Stilt**

The Hawaiian stilt was listed in October 1970 and is covered by a Recovery Plan published in 2011 (2nd revision, USFWS 2011). Critical habitat for this species has not been designated. Hawaiian stilt has a moderate threat rating and a high potential for recovery (USFWS 2011). The 2020 5-year review suggested that most of the criteria for downlisting the Hawaiian stilt from endangered to threatened had been met, and in

March 2021 the USFWS proposed reclassifying the stilt from endangered to threatened (USFWS 2020, USFWS 2024).

### **3.3.1 Habitat Use and Ecology**

The Hawaiian stilt is a wading bird that nests on exposed mudflats with minimal vegetation that conceals predators. They forage in shallow water on invertebrates and are dependent on early successional wetlands that tend to be located just inland of narrow coastal strand and that are fed by natural or pumped groundwater (USFWS 2020). They are observed around shoreline, estuarine, and freshwater habitats of Pearl Harbor and JBPHH (NAVFAC 2022).

### **3.3.2 Detection within RHBFSF**

The Hawaiian stilt has not been observed at the RHBFSF.

### **3.3.3 Threats to the Species**

Threats to the Hawaiian stilt include loss and degradation of wetland habitat from modifications to local hydrology, change in wetland vegetation due to invasive species, loss of riparian vegetation, and water quality degradation. Predation by introduced species is potentially the greatest threat (USFWS 2011). The 5-year review in 2020 stated that the main threats continued to be predation by nonnative predators and loss of shallow wetland habitat. New threats included uncertainty from sea level rise that could impact nearshore habitats and shift wetland habitats inland. Predator control programs at wetlands where breeding occurs appears to have helped the population stabilize or increase over several decades (USFWS 2020). Other threats include pollution, particularly from urban development, and avian botulism.

## **4 Effects Analysis**

This section presents an analysis of direct and indirect effects on federally protected species due to implementation of the action. Direct effects are the immediate effects of the project on the species or its habitat. Indirect effects are those that are caused by the Proposed Action and are later in time but are reasonably certain to occur.

### **4.1 Hawaiian Hoary Bat**

The primary effects on the Hawaiian hoary bat are expected to occur during the construction phase when vegetation is cleared and during operation from the required security fencing. Other potential effects from operations such as grass cutting, routine maintenance at the facility, and night lighting are not anticipated to have significant effects.

#### **4.1.1 Vegetation Clearing**

The action area contains non-native trees (primarily kiawe and koa haole) forming a canopy at heights greater than 15 feet which may provide suitable habitat for bats to roost. Clearing of 14.1 acres of vegetation may impact bats through the loss of potential roosting habitat. The removal of vegetation during bat pupping season could result in

the mortality of flightless bat pups. Direct harm is unlikely, however, because the clearing or trimming of vegetation taller than 15 feet would only occur outside of the bat pupping season that lasts from 1 June through 15 September (Table 4). If vegetation removal cannot be avoided during this period, thermal infrared surveys may be required, and consultation with the USFWS would be required prior to removal. Once vegetation clearing is finished, bats would be able to occupy surrounding vegetation on the installation that is similar to the project site. Considering the action, biology of the bats, and this avoidance measure to be implemented, the Navy has determined that vegetation clearing associated with this action may affect the Hawaiian hoary bat but is not likely to adversely affect individuals or populations of this species.

#### **4.1.2 Collision with Barbed Wire**

Hawaiian hoary bats forage for insects from as low as 3 feet above the ground. At these lower levels, foraging bats are not able to detect barbed wire fences which can cause injury or mortality. The U.S. Geological Survey has estimated a mortality rate of bats colliding with barbed wire fencing at 0.013 bats killed per mile of barbed wire per year (USFWS 2014).

The project proposes 4,200 feet (0.8 miles) of security fencing topped with 3 strands of barbed wire. The estimated bat mortality is calculated using the following formula:  $0.013$  (mortality rate per mile of barbed wire per year)  $\times$   $0.8$  miles of barbed wire  $\times$   $3$  strands =  $0.0312$  bat mortalities per year, or  $0.624$  bat mortalities over a 20-year period.

Although bat occupancy is estimated to be low or infrequent in the action area based on nearby acoustic monitoring (Bonaccorso et al. 2014, West 2020), the length of barbed wire required is estimated to cause approximately  $0.0312$  bat mortalities per year. Therefore, the Navy has determined that the barbed wire associated with the project may affect but is not likely to adversely affect the Hawaiian hoary bat, or jeopardize the continued existence of the species.

#### **4.2 Hawaiian Seabirds**

Under the Proposed Action, the greatest potential impact to Newell's shearwater, Hawaiian petrel, and band-rumped storm-petrel would be from fallout/disorientation from associated night-lighting during construction and operations. However, the likelihood of the species occurring in the action area is low, and with the conservation measures listed in Table 4, including fully shielded lighting and avoidance of nighttime construction during the seabird fledging period (September through December), the likelihood of potential impacts would be so low as to be negligible. Furthermore, under the Proposed Action, no seabird breeding or foraging habitat would be impacted. Due to the species' unlikely occurrence in the action area, construction and operations activities are not likely to disturb individuals. Therefore, the Proposed Action may affect but is not likely to adversely affect the Newell's shearwater, Hawaiian petrel, and band-rumped storm-petrel.

### 4.3 Hawaiian Stilt

Habitats where Hawaiian stilts have been observed do not occur in the action area. Drainage from the Proposed Action would leave the site following existing drainages or be discharged to covered infiltration basins. No stormwater would be allowed to pond during construction or during operations.

South Halawa stream, which is a concrete channel in the project area, is intermittent (only tends to flow after storm events). Discharge from the emergency water treatment facility into the channel has occurred since January 2022, but will cease when the proposed permanent water treatment facility becomes operational and the flows downstream from the site revert to natural intermittent flows. There are no proposed changes to the South Halawa stream or channel from the project and no addition or removal of aquatic habitats or standing water from either construction or operation of the Proposed Action. The probability of occurrence of Hawaiian stilts on the site is low due to lack of habitat. With implementation of the conservation measures described in Table 4 including ensuring that no temporary or permanent standing water occurs at the site during construction or operations, spot surveys, avoidance of nests, and halting construction activities if a waterbird is observed at the project site, the likelihood of potential impacts would be so low as to be negligible. Therefore, the Proposed Action may affect but is not likely to adversely affect the Hawaiian stilt.

## 5 Determination and Conclusion

For this biological assessment, the Navy examined the potential impacts of constructing the Red Hill Water Treatment Facility on the Hawaiian hoary bat, Newell's shearwater, Hawaiian petrel, and the band-rumped storm-petrel, and Hawaiian stilt. Based on conservation measures that would be implemented and an analysis of potential impacts, the Navy's determinations of effects on these species from the Proposed Action are provided in Table 5. The Navy requests the Service's concurrence with these determinations since any potential for adverse effects to the species are insignificant/discountable.

**Table 5. Effects Determination**

Common Name	Scientific Name	ESA Status	Effects Determination
Hawaiian hoary bat	<i>Lasiurus cinereus semotus</i>	Endangered	NLAA
Hawaiian petrel	<i>Pterodroma sandwichensis</i>	Endangered	NLAA
Band-rumped storm-petrel	<i>Hydrobates castro</i>	Endangered	NLAA
Newell's shearwater	<i>Puffinus auricularis newelli</i>	Threatened	NLAA
Hawaiian stilt	<i>Himantopus mexicanus knudseni</i>	Endangered	NLAA
Notes: NLAA = not likely to adversely affect			

## 6 Works Cited

- AECOS. 2016. Botanical Surveys of U.S. Navy Properties in Support of an Integrated Natural Resources Management Plan at Joint Base Pearl Harbor-Hickam, Oahu, Hawaii.
- Amlin, Angela and A. Siddiqi. 2015. Endangered Species Recovery Committee Hawaiian Hoary Bat Guidance Document. Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife.
- Bonaccorso, F., K. Montoya, and C. Pinzari. 2012. Hawaiian Hoary Bat Acoustic Monitoring Interim Results for February 2012 through July 2012. Pearl Harbor-Hickam (JBPHH), Oahu, Hawaii.
- Bonaccorso, F., K. Montoya, and C. Pinzari. 2014. Hawaiian Hoary Bat Acoustic Monitoring – Lualualei & Red Hill Pearl Harbor-Hickam, Oahu, Hawaii.
- Hawaii Department of Land and Natural Resources (DLNR). 2015. Hawaii's State Wildlife Action Plan. 1 October.
- Gon, S.M. III, L. Honingman, D. Zevin, W. Fulks, and R.E. David. 1993. Vertebrate Inventory Surveys at the Multipurpose Range Complex, Pohakuloa Training Area, Hawaii.
- Koob, A. Gregory. 2012. "Farmers Can Help our Hawaiian Hoary Bats." Hanai Ai/The Food Pacific Rim Conservation. 2013. Focal Species: Hawaiian Hoary Bat or Ōpea'ape'a (*Lasiurus cinereus semotus*). Accessed online at: <https://pacificrimconservation.org/wp-content/uploads/2013/10/Hawaiian%20Hoary%20Bat.pdf>
- Provider: March-April-May. U.S. Department of Agriculture - National Resource Conservation Service.
- Naval Facilities Engineering Systems Command (NAVFAC). 2022. Draft Joint Base Pearl Harbor-Hickam, Oahu Integrated Natural Resources Management Plan. August.
- Navy, State of Hawaii Department of Health, and the U.S. Environmental Protection Agency. (2022). Red Hill Shaft Recovery and Monitoring Plan. JBPHH, Oahu, Hawaii.
- Starcevich, L.A., J. Thompson, T. Rintz, E. Adamczyk, and D. Solick. 2019. Oahu Hawaiian hoary bat occupancy and distribution study. Project update and first year analysis prepared for the Hawaii Endangered Species Recovery Committee by Western EcoSystems Technology, Inc. 33 pp.

- U.S. Fish and Wildlife Service (USFWS). 1983. Hawaiian Dark-Rumped Petrel and Newell's Manx Shearwater Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 57 pp.
- USFWS. 1998. Recovery Plan for the Hawaiian Hoary Bat. U.S. Fish and Wildlife Service, Portland, OR. 50 pp.
- USFWS. 2010. Biological Opinion for Formal Endangered Species Section 7 Consultation on the US Department of Energy Federal Load Guarantee to Kahuku Wind Power. Honolulu, HI.
- USFWS. 2011. Recovery Plan for Hawaiian Waterbirds, Second Revision. U.S. Fish and Wildlife Service, Portland, Oregon. Accessed online at: [https://ecos.fws.gov/docs/recovery\\_plan/Hawaiian%20Waterbirds%20RP%202nd%20Revision.pdf](https://ecos.fws.gov/docs/recovery_plan/Hawaiian%20Waterbirds%20RP%202nd%20Revision.pdf)
- USFWS. 2014. Formal Consultation for Pacific Missile Range Facility Base- wide Infrastructure, Operation, and Maintenance, Kauai. U.S. Fish and Wildlife Service, Honolulu, HI.
- USFWS. 2017. 5-Year Review. Short Form Summary. Newell's Shearwater (*Puffinus auricularis newelli*). Accessed online at: [https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public\\_docs/species\\_nonpublish/2528.pdf](https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/2528.pdf)
- USFWS. 2020. 5-Year Status Review. Ae'o or Hawaiian stilt (*Himantopus mexicanus knudseni*). Accessed online at: [https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public\\_docs/species\\_nonpublish/2994.pdf](https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/2994.pdf)
- USFWS. 2021a. 5-Year Status Review 'ōpe'ape'a or Hawaiian hoary bat (*Lasiurus cinereus semotus*). Accessed online at: [https://ecos.fws.gov/docs/five\\_year\\_review/doc6844.pdf](https://ecos.fws.gov/docs/five_year_review/doc6844.pdf)
- USFWS. 2021b. Species report for the Band-rumped storm-petrel (*Oceanodroma castro*). Pacific Islands Fish and Wildlife Office, Pacific Islands Interior Region 12, Portland OR. 40 pages.
- USFWS. 2022. 5-Year Review. Short Form Summary. Hawaiian petrel (*Pterodroma sandwichensis*). Accessed online at: [https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public\\_docs/species\\_nonpublish/3885.pdf](https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/3885.pdf)
- USFWS. 2024. ECOS Environmental Conservation Only System. Accessed online at: <https://ecos.fws.gov/ecp/>
- Young, L.C., VanderWerf, E.A., McKown, M., Roberts, P., Schlueter, J., Vorsino, A., & Sisco, D. 2019. Evidence of Newell's Shearwaters and Hawaiian Petrels on Oahu, Hawaii. *The Condor: Ornithological Applications*, 121(1).

West EcoSystems Technology, Inc. (West). 2020. Oahu Hawaiian Hoary Bat Occupancy and Distribution Study. Project Update and Second Year Analysis. Prepared for Hawaii Endangered Species Research Committee. February 13.

Zimpfer, J. and F. Bonaccorso. 2010. Barbed wire fences and Hawaiian hoary bats: what we know. Hawaii Conservation Conference Abstract 4-11.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, Hawai'i 96850

In Reply Refer To:  
2025-0054874

February 27, 2025

R. D. KLEINMAN  
CAPT, CEC, USN  
Joint Base Pearl Harbor-Hickam  
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Pearl Harbor, HI 96860-5102

Subject: Informal Consultation for the Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam, O'ahu

Dear Captain Kleinman,

The U.S. Fish and Wildlife Service (Service) received your letter on January 8, 2025 requesting our concurrence with your determination that the proposed Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam (JBPHH), O'ahu may affect, but is not likely to adversely affect the Hawaiian hoary bat or 'ōpe'ape'a (*Lasiurus cinereus semotus*); the endangered Hawaiian stilt or ae'o (*Himantopus mexicanus knudseni*); and the endangered Hawaiian petrel or 'ua'u (*Pterodroma sandwichensis*), the threatened Newell's Townsend's shearwater or 'a'o (*Puffinus auricularis newelli*), and the endangered Hawai'i distinct population segment (DPS) of band-rumped storm petrel or 'akē'akē (*Hydrobates castro*) (hereafter collectively referred to as Hawaiian seabirds). The Service considered all information related to the proposed project received on January 8, 2025, initiating consultation.

The findings and recommendations in this consultation are based on (1) your biological assessment; and (2) other information available to us. A complete administrative record is on file in our Pacific Islands Fish and Wildlife Office in Honolulu, Hawai'i. This response is in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.).

### *Project Description*

The proposed action is to construct and operate a permanent water treatment facility capable of treating up to [REDACTED] at the Red Hill Shaft in Halawa, O'ahu. The proposed action would include the construction of new facilities, utilities, infrastructure, and

### PACIFIC REGION 1

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IDAHO, OREGON\*, WASHINGTON,  
AMERICAN SĀMOA, GUAM, HAWAI'I, NORTHERN MARIANA ISLANDS

\*PARTIAL

associated site improvements to support the permanent water treatment facility and the Red Hill Shaft Pump Station, as well as the connection of the modified granular activated carbon (GAC) water treatment facility that is currently under construction at Red Hill to the Navy drinking water system. In addition to this, 4,200 feet of security barbed wire fencing would be installed along the perimeter of the proposed water treatment facility sites and adjacent to the H-201 ROW.

The purpose of the proposed action is to restore the Red Hill Shaft as a valuable drinking water source for the Navy drinking water system, in compliance with National Primary Drinking Water Regulations (NPDWR) and Hawai'i Department of Health (HDOH) Safe Drinking Water Standards, and to discontinue discharge of the resource into Halawa Stream. The proposed action is needed because potable water from the Red Hill Shaft has been unavailable to support users and activities on the Navy's drinking water system since November 2021 due to the risks to public health posed by consuming water that has become contaminated.

The proposed action would encompass an area of 25.6 acres including project areas within the Red Hill Bulk Fuel Storage Facility (RHBFSF), adjacent State of Hawaii-owned properties, and the Army's Red Hill Housing (Figure 1). The proposed action would involve the construction of approximately 26,300 square feet of new facilities.

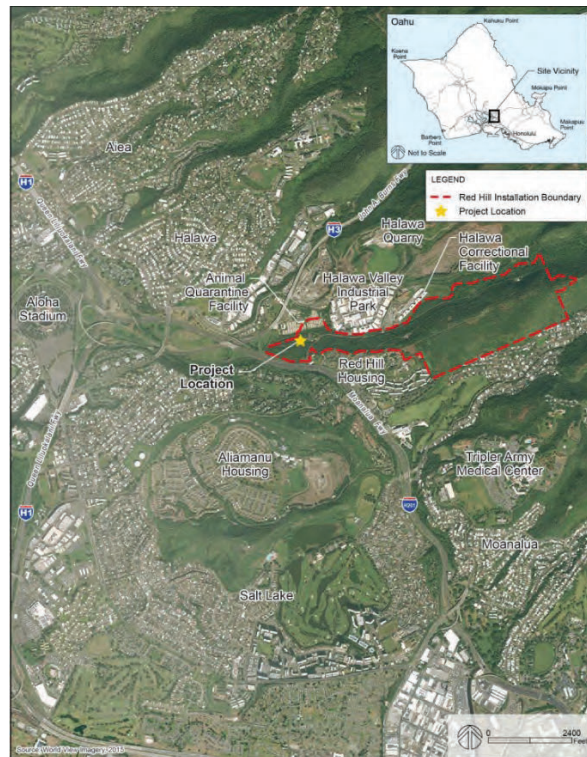


Figure 1. Proposed Action Area within Red Hill Installation Boundary.

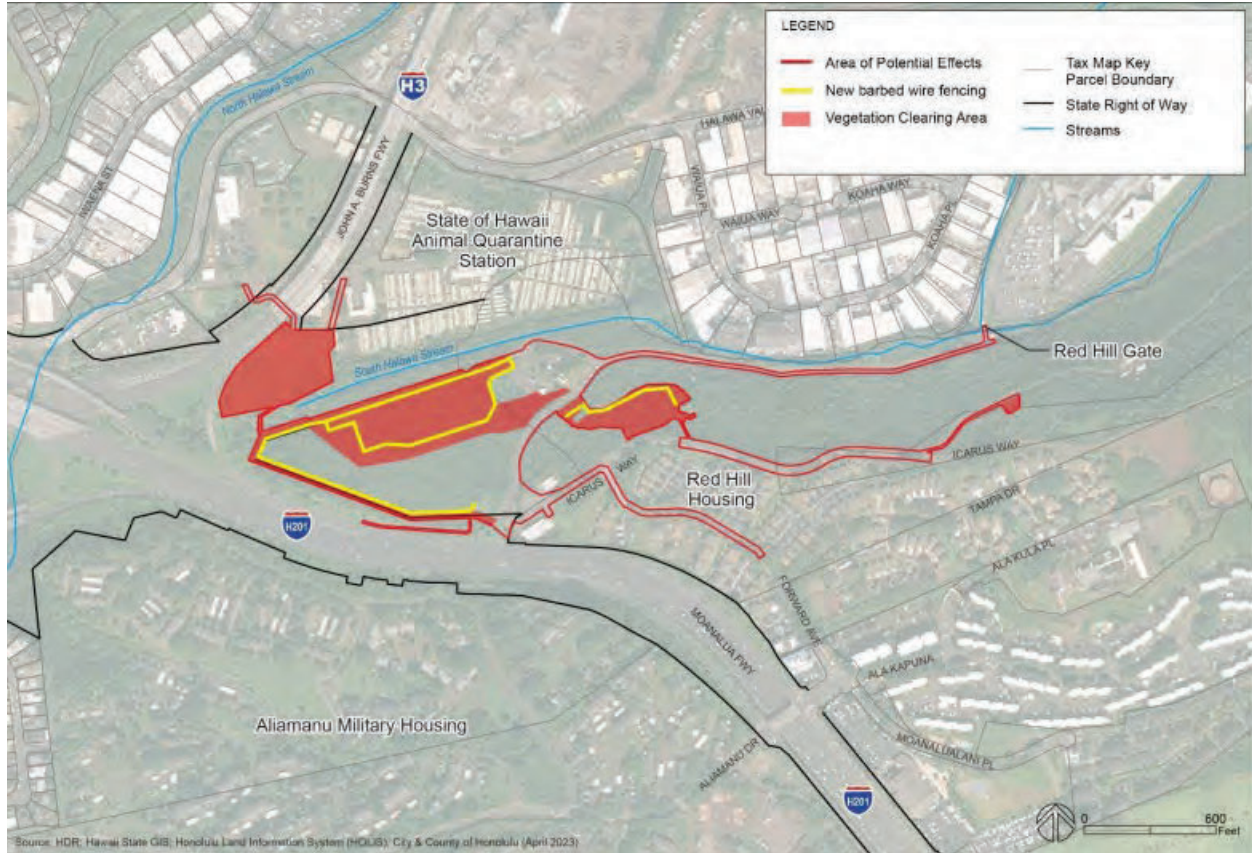


Figure 2. Proposed Action New Barbed Wire Fencing and Vegetation Clearing Area.

Conservation Measures

The following conservation measures will be implemented as a part of the proposed project to avoid and minimize impacts to listed species and their habitats.

*Ōpe‘ape‘a*

- Woody plants greater than 15 feet (ft) tall (which can be used by bats as roosting habitat) will not be disturbed, removed, or trimmed during the bat pupping season (June 1 through September 15).
- If any bat pups were to be discovered in the construction zone, outside of this season, Navy Facilities Engineering Systems Command (NAVFAC) Hawai‘i would contact the Service within 24 hours, and operations would be moved to a minimum of 300 feet away. Construction would not resume until the bat pups have departed the area on their own accord and/or the Service gives additional guidance.

*Ae‘o*

- NAVFAC Hawai‘i will perform spot checks of the site throughout the project and site construction, and maintenance staff will be informed of any ae‘o spotted. In the highly unlikely event an ae‘o is seen or a nest is found, the following will be carried out:

- Project personnel and contractors shall be informed about the presence of endangered species.
- In areas where ae‘o are known to be present, post and implement reduced speed limits.
- Incorporate water quality best management practices (BMPs) to reduce sedimentation and erosion in aquatic environments into the project design. BMPs may include silt containment, no trash/debris contamination, keeping fuel vehicles away from the water, preparing a contingency plan for fuel spills, and protecting exposed soil from erosion.
- Standing water has the potential to attract ae‘o to the site which could then be impacted by everyday activities at the site. The site is designed to prevent standing water and to reduce the total standing water at the site and minimize presence of standing water for more than 48 hours.
- If an individual, nest, or active brood is found, contact the JBPHH Natural Resources Duty Phone (808-404-1558) who will in turn contact the Service within 48 hours for further guidance

#### *Hawaiian seabirds*

- No night work is planned, and all night lighting will be avoided. Full cutoff exterior down-lighting fixtures for all new construction will be installed for all new construction whenever possible. Exterior lights shall be LED lights with full cut-off fixtures. Lights that are International Dark-sky Association certified are preferred.
- The Navy will implement the following avoidance and minimization measures for listed seabird species:
  - Fully shield all outdoor lights so the bulb can only be seen from below.
  - Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
  - Initial construction and/or future site maintenance night work is not anticipated.
- Shearwater Fallout Season Response Guidelines for JBPHH flyers will be placed on the construction site note/safety board.

#### **Analysis of Effects on Listed Species**

##### *Ōpe‘ape‘a*

‘Ōpe‘ape‘a forage for insects from as low as three feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing. When bats forage and consume invertebrates, their sonar is disrupted while they are masticating, making them more prone to colliding with obstacles when flying. Thin strands of barbed wire may be difficult for bats to detect. The project proposes 4,200 feet (0.8 mi.) of security fencing topped with three strands of barbed wire. Although it is possible for bats to collide with the barbed wire fence as their sonar may be disrupted while foraging, no suitable foraging habitat is found nearby the action area for this project. Moreover, ‘ōpe‘ape‘a have been monitored within the Red Hill Storage Facility using acoustic detectors from January to December 2014 for a total of 190 recording nights. However, bat detections were only recorded on two nights, with a low detection rate of 0.011. In addition to this, a recent island wide study included an acoustic sampling site at the Red Hill

location and detected bats twice between June 2017 and October 2019, with a mean detection rate of 0.0035. These extremely low detection rates indicate that bat occurrence in the area is minimal at best. Therefore, considering the lack of suitable foraging habitat and the low density of bats in the area, it is highly unlikely bats would collide with the proposed barbed wire fencing.

‘Ōpe‘ape‘a roosts in both native and non-native woody vegetation across all major Hawaiian Islands and will leave young unattended in trees and shrubs when they forage. Proposed vegetation clearing may impact bats through the loss of potential roosting habitat. When trees or shrubs, 15 ft or taller, are cleared during the pupping season (June 1 through September 15), there is a risk that young bats could inadvertently be harmed or killed since they are too young to move away from their roost tree. However, conservation measures include no clearing of vegetation taller than 15 feet during the bat pupping season. Therefore, with the implementation of vegetation clearing avoidance measures, it is highly unlikely the ‘Ōpe‘ape‘a would be impacted by vegetation clearing. Because impacts to the ‘Ōpe‘ape‘a from the barbed wire fencing and vegetation clearing are highly unlikely to occur, effects are therefore considered discountable.

#### *Ae‘o*

Ae‘o are currently found in a variety of wetland habitats including freshwater marshes, coastal estuaries, ponds, irrigation ditches, and sewage treatment ponds. At Pearl Harbor and JBPHH, ae‘o have been observed around the shoreline, estuarine, and freshwater habitats. However, at RHBFSF, suitable habitat for the ae‘o does not occur within this action area. South Halawa stream, which is a concrete channel near the project area is intermittent and only tends to flow after storm events. There are no proposed changes to the South Halawa stream or channel from the project, and no addition or removal of aquatic habitats from either construction or operation of the proposed action. This project includes conservation measures, such as performing routine spot checks throughout the project site, implementing reduced speed limits in areas where waterbirds are known to be present, and minimizing the potential to attract ae‘o by reducing the amount of standing water. Due to the lack of ae‘o habitat and the implementation of these conservation measures, impacts to ae‘o associated with this project are highly unlikely to occur. Because impacts to the ae‘o are highly unlikely to occur, effects are therefore considered discountable.

#### *Hawaiian seabirds*

Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable to light attraction. The Newell’s Townsend’s shearwater and the Hawaiian petrel have been detected via acoustic monitoring nearby on Mount Ka‘ala and within the lower Ka‘ala region. While no

Hawaiian seabirds have been documented at JBPHH installations, they may fly over the proposed action area when moving between suitable nesting habitat in the Wai‘anae and Ko‘olau Mountains. Based on the conservation measures listed above, no night work is planned for this project, and any new lighting installations will follow minimization measures (e.g., shielded, controlled, timers, etc.). Considering the low presence of Hawaiian seabirds within the project area, and the implementation of the conservation measures above, impacts from lighting associated with this project are highly unlikely to occur. Therefore, by implementing the conservation measures listed above, adverse effects to Hawaiian seabirds are highly unlikely to occur and are considered discountable.

### **Summary**

We have reviewed our data and conducted an effects analysis of your project. Based on the project actions as described above, effects to listed species are extremely unlikely to occur and are considered discountable. Therefore, because impacts from the proposed project are considered discountable, we concur with your determination that the proposed action may affect but is not likely to adversely affect the ‘ōpe‘ape‘a, ae‘o , and Hawaiian seabirds.

We appreciate your efforts to conserve endangered species. If you have any questions regarding this letter, please contact Nikki Imamura, Fish and Wildlife Biologist at 808-792-9400 or email: [nikki\\_imamura@fws.gov](mailto:nikki_imamura@fws.gov). When referring to this project, please include the reference number: 2025-0054874.

Sincerely,

**LORENA  
WADA**

Lorena Wada  
Planning and Consultation Team Manager

 Digitally signed by LORENA WADA  
Date: 2025.02.27 09:05:35 -10'00'

## Appendix D

# Coastal Zone Management Act Consistency Determination

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DEPARTMENT OF THE NAVY  
JOINT BASE PEARL HARBOR-HICKAM  
850 TICONDEROGA ST STE 200  
PEARL HARBOR HI 96860-5102

5090  
Ser JB4/0088  
May 12, 2025

Sent via e-mail

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

Dear Ms. Evans:

SUBJECT: RED HILL WATER TREATMENT FACILITIES, ENVIRONMENTAL  
ASSESSMENT – COASTAL ZONE MANAGEMENT ACT, COASTAL  
CONSISTENCY CONSULTATION

In accordance with Hawai'i State Coastal Zone Management (CZM) Program, the U.S. Navy is initiating consultation for the Coastal Consistency Determination for the proposed construction and operation of a new water treatment facility to reconnect water from the Navy's Red Hill Shaft to the Joint Base Pearl Harbor-Hickam drinking water system and discontinue the discharge of water into Halawa Stream.

Included in this submittal are the following documents:

1. Application for CZM Federal Consistency Review
2. Federal Consistency Assessment Form
3. Coastal Zone Management Act (CZMA) Federal Consistency Review Detailed Project Description which includes the site location map, and project plans.

Thank you for taking the time to review the project information. If you have specific questions about the proposed project, please contact HHF Planners, at [RedHillEA@hhf.com](mailto:RedHillEA@hhf.com).

Sincerely,

A handwritten signature in black ink, appearing to read "R. Kleinman".

ROBERT D. KLEINMAN, P.E.  
Captain, CEC, U.S. Navy  
Public Works Officer (JB4)

- Enclosures:
1. Application for CZM Federal Consistency Review
  2. Federal Consistency Assessment Form
  3. CZMA Federal Consistency Review Project Description



**APPLICATION FOR CZM FEDERAL CONSISTENCY REVIEW**

**Project/Activity Title or Description:** Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam.

**Location:** Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam

**Island:** Oahu

**Tax Map Key:** (1) 9-9-010: 050, 006, & 001

**Applicant or Agency**

CAPT Robert Kleinman, JB4

Name of Applicant or Agency

400 Marshall Road

Mailing Address

Joint Base Pearl Harbor-Hickam, Hawaii, 96860-3139

City / State / Zip Code

(808) 372-0408

Phone

robert.d.kleinman.mil@us.navy.mil

E-mail Address

**Agent or Representative for Applicant**

Agent or Representative for Applicant

Mailing Address

City / State / Zip Code

Phone

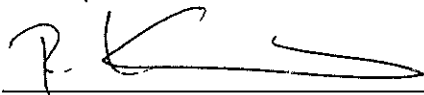
E-mail Address

**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 

Date 12 MAY 2025

**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 \_\_\_\_\_

**Submit Application By:** Email - [Debra.L.Mendes@hawaii.gov](mailto:Debra.L.Mendes@hawaii.gov)

USPS Mail - Office of Planning & Sustainable Development, P.O. Box 2359, Honolulu, Hawaii 96804

**For Questions or Help Contact:** Debra Mendes | Email: [Debra.L.Mendes@hawaii.gov](mailto:Debra.L.Mendes@hawaii.gov) | Phone: (808) 587-2840

**HAWAII CZM PROGRAM  
FEDERAL CONSISTENCY ASSESSMENT FORM**

Federal regulations (15 CFR Part 930) require that an evaluation of consistency with the relevant enforceable policies of the Hawaii Coastal Zone Management (CZM) Program be provided. This assessment form is organized according to the Hawaii CZM objectives and their supporting policies (Hawaii Revised Statutes § 205A-2) to help the Hawaii CZM Program evaluate the consistency of the proposed action. An independent evaluation would need to be submitted in lieu of using this form for a consistency review.

For Help Contact: Debra Mendes | Email: Debra.L.Mendes@hawaii.gov | Phone: (808) 587-2840

**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 restoration of coastal resources that have significant recreational and ecosystem value, including but not limited to coral reefs, surfing sites, fishponds, sand beaches, and coastal dunes, when these resources will be unavoidably damaged by development; or requiring monetary compensation to the State for recreation when restoration 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 that 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 that follows:**

- |  | <u>Yes</u>                          | <u>No</u>                           |
|--|-------------------------------------|-------------------------------------|
| 1. Will the proposed action occur in or adjacent to a dedicated public right-of-way?<br>E.g., public beach access, inland or coastal hiking trail, shared-use path | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. Will the proposed action affect public access to or along the shoreline?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. Is the project parcel adjacent to the shoreline?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 4. Is the project site on or adjacent to a sandy beach?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Is the project site in or adjacent to a state or county park?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 6. Is the project site in or adjacent to a water body such as a stream, river, pond, lake, or ocean?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 7. Will the proposed action occur in or affect an ocean or coastal recreation area, swimming area, surf site, fishing or gathering area, or boating area?          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Discussion:** Explain “Yes” responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

- The Proposed Action occurs on a Navy-owned parcel bounded to the north, south, and west by State of Hawaii Department of Transportation (HDOT) right-of-way (ROW) for Interstates H-201 and H-3. The Proposed Action requires trenching within the grassed shoulder area on the north side of the H-201 ROW to connect to Hawaiian Electric Company’s electrical grid. Additionally, a portion of the HDOT ROW adjacent to Interstate H-201/H-3 off-ramp will be temporarily utilized as a staging and storage area for Proposed Action-related construction. The proposed staging/storage area presently consists of a large, relatively flat and grassy field with peripheral mature trees. No trees will be cut or removed in the staging area during the Proposed Action and the staging area will be restored to its existing conditions following completion of the construction phase of the Proposed Action.

The Proposed Action is located in an upland area and will not impede or hinder public access to the shoreline, inland or coastal hiking trails, or shared-use paths.

- The Proposed Action occurs within the Pearl Harbor watershed adjacent to South Halawa Stream, which flows in a relatively east-to-west direction along the northern edge of the project area. South Halawa Stream is a channelized stream in the vicinity of the project area. Upstream from the project area, the South Halawa Stream has an intermittent flow dependent upon precipitation. Downstream from the project area, the South Halawa Stream has an artificial perennial flow due to the continuous discharge of up to five million gallons per day (MGD) of water from the existing emergency water treatment plant in the project area. The two branches of the Halawa Stream converge at the interchange of Interstates H-201 and H-3, downstream of the project area and drain to an outlet in the Southeast Loch of Pearl Harbor.

The Proposed Action would involve construction of a permanent water treatment facility,

which would require vegetation clearing and ground disturbing activities, including excavation and grading, which have the potential to temporarily increase runoff and erosion that could impact surface water resources. Since the Proposed Action includes ground disturbing activities of over an acre, the Proposed Action would be subject to compliance with a National Pollutant Discharge Elimination System permit. Potential construction impacts would be mitigated through the implementation of a construction Storm Water Pollution Prevention Plan and associated erosion control measures and best management practices such as protection of erodible soils; control of storm water runoff from the construction site; use of sediment basins; use of vegetation and mulch on soil exposed by grading; use of silt fencing and barriers around excavated and cleared areas; and fugitive dust control measures. A spill kit would be kept on site in case of any fuel or hydraulic spills.

The Proposed Action would also comply with Section 438 of the Energy Independence and Security Act of 2007 which limits storm water discharge to pre-development levels. Low impact development features would be implemented to match the existing stormwater discharge rate to offsite areas, and the existing drainage patterns would be maintained to the extent possible.

Completion of the Proposed Action will result in the cessation of the existing discharge of five MGD of water from the emergency water treatment plant into the South Halawa Stream, reverting the stream to its pre-existing and historical condition as an intermittent flow stream. This is not anticipated to have long-term impacts on surface water resources or recreational resources.

## HISTORIC RESOURCES

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

**Policies:**

- 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 that follows:**

- |  | <u>Yes</u>                          | <u>No</u>                           |
|--|-------------------------------------|-------------------------------------|
| 1. Is the project site within a designated historic or cultural district?                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 2. Is the project site listed on or nominated to the Hawaii or National Register of Historic Places? | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 3. Has the project site been surveyed for historic or archaeological resources?                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 4. Has the State Historic Preservation Division been consulted?                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 5. Does the project parcel include undeveloped land which has not been surveyed by an archaeologist? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 6. Is the project site within or adjacent to a Hawaiian fishpond or historic settlement area?        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Discussion:** Explain “Yes” responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

2. The former Red Hill Bulk Fuel Storage Facility (RHBFSF) is a National Historic Civil Engineering Landmark, and a Historic American Engineering Record (HAER) was prepared for the facility (HAER, 2015). The Red Hill underground fuel storage system is a linear complex of interconnected facilities. Ground level facilities within the Proposed Action area of potential effect (APE) include Adit 3 ( [REDACTED] ) and the top of an existing vent shaft (HAER, 2015). The Navy considers RHBFSF as eligible for listing in the National Register of Historic Places (NRHP), but its eligibility has not yet been consulted on or documented. The Proposed Action would not impact the former RHBFSF.

Additional archaeological sites that may be eligible for listing in the NRHP are discussed below in response to question #3.

3. International Archaeology, LLC completed an archaeological inventory survey (AIS) for the project site. The AIS included archaeological pedestrian survey and subsurface testing. The APE comprised 25.6 acres, bound by the H-201/H-3 freeway interchange to the south, the H-3

freeway to 7 the west, and the State of Hawaii Department of Agriculture Animal Quarantine Facility to the north.

A large portion of the project area has been heavily modified during 20th century ground-disturbing activities related to historical plantation activity, the construction of the Red Hill Fuel Facility, the construction of the H-201 and H-3 highways, the channelization of Halawa Stream, and the installation of power lines, roads, fences, and related infrastructure and appurtenances. Historic and modern refuse, in the form of ceramic and metal pipes, appliances, vehicle remains, bottles, and garbage, is ubiquitous across the project area.

Nine archaeological features comprising seven sites were identified during the pedestrian survey. The features consist of a length of exposed [REDACTED] fuel pipeline, a segment of historic road alignment, a retaining wall, one concrete pad, one concrete structure, a road culvert, a section of concrete wall, concrete pipe footers, and a large concrete structure.

Two of the sites identified during the pedestrian survey are recommended as being eligible for the National Register of Historic Places under Criteria A and D. Temporary Site 2, a complex of three features—a road alignment, a retaining wall, and a concrete structure—associated with historical plantation activity and military development at Red Hill, is recommended to be eligible under Criteria A and D because of its association with the plantation era as well as World War II (WWII) development and use of the Red Hill facility. Temporary Site 7, [REDACTED] is associated with military activity at Red Hill and is recommended to be eligible under Criteria A due to its association with WWII development and use of the Red Hill facility. This site was described in the HAER for the RHBFSF (HAER 2015:78–80).

No further work is recommended by the AIS for the nine features at seven sites documented during pedestrian survey.

Additionally, previously documented Site 50-80-13-7785 was revisited during the survey as a portion of it intersects the current project area. The site consisted of eight historical features related to ranching and military activities. However, the pedestrian survey documented disturbance to the site from the construction of a gravel access road. Comparison of the initial maps, photos, and descriptions revealed disturbance across the central portion of the site, which has completely destroyed Feature D, an enclosure, displaced a portion of Feature B, a mound, and displaced or partially buried sections of Feature G, a retaining wall. The remaining features (A, C, E, F, and H) were all determined to be intact (Filimoehala and Allen 2015). The disturbance was related to the construction of a gravel access road and groundwater monitoring sites. Subsurface testing was undertaken in the form of four shovel test pits (STPs) located within the boundaries of previously documented Site 50-80-13-7785. The purpose of subsurface testing was to determine the extent of subsurface disturbance to Site 7785 and to identify possible subsurface deposits. Subsurface disturbance to Site 7785 was documented at STP 01 in the form of construction gravel to approximately 15 centimeters below surface. No cultural material was identified in any of the STPs.

Lastly, four trenches were mechanically excavated in the HDOT right-of-way along the H-201/H-3 freeway interchange in an area of proposed utility infrastructure for the Proposed Action. No cultural material or deposits were present.

4. In 2012, the Commander Navy Region Hawaii entered into a Programmatic Agreement (PA)

with the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) regarding Navy undertakings in Hawaii. The PA was amended in 2024 and applies to all undertakings on Navy property, and it identifies stipulations the Navy must meet to satisfy its responsibilities under Section 106 of the National Historic Preservation Act (NHPA).

The Navy submitted a work plan to the SHPO for the AIS. The SHPO did not provide comments on the AIS work plan and the Navy proceeded with the archaeological surveys. Following completion of the archaeological surveys, the Navy submitted the Draft AIS report to the SHPO for review. The Navy is awaiting SHPO review comments on the Draft AIS report. Potential impacts to cultural resources will be reviewed in accordance with the PA which requires consultations with the SHPO and other stakeholders. Additionally, HDOT will complete HRS Chapter 6E consultation with the SHPO for portions of the Proposed Action within State-owned land. Through implementation of the PA, a Section 106 program alternative under the NHPA, and compliance with HRS Chapter 6E, the Preferred Alternative would result in less than significant impacts to cultural resources.

## 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 those 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 that follows:**

- |  | <u>Yes</u>               | <u>No</u>                           |
|--|--------------------------|-------------------------------------|
| 1. Will the proposed action alter any natural landforms or existing public views to and along the shoreline?                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Does the proposed action involve the construction of a multi-story structure?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Is the project site located on or adjacent to an undeveloped parcel, including a beach or oceanfront land?                      | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Does the proposed action involve the construction of a structure visible between the nearest coastal roadway and the shoreline? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Will the proposed action involve constructing or placing a structure in waters seaward of the shoreline?                        | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion: Explain "Yes" responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

Not applicable.

## COASTAL ECOSYSTEMS

**Objective:** Protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes, 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 of significant biological or economic importance, including reefs, beaches, and dunes.
- 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 that follows:**

- |  | <u>Yes</u>                          | <u>No</u>                           |
|--|-------------------------------------|-------------------------------------|
| 1. Does the proposed action involve dredge or fill activities?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 2. Is the project site within the Special Management Area (SMA) or the Shoreline Setback Area?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. Is the project site within the State Conservation District?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 4. Will the proposed action involve some form of discharge or placement of material into a body of water or wetland?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Will the proposed action require earthwork, grading, clearing, grubbing, or stockpiling?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 6. Will the proposed action include the construction of waste treatment facilities, such as injection wells, discharge pipes, or septic systems? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 7. Will the proposed action involve the construction or installation of a stormwater discharge or conveyance system?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 8. Is an intermittent or perennial stream located on or adjacent to the project parcel?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

COASTAL ECOSYSTEMS (continued)

- |   | <u>Yes</u>                          | <u>No</u>                           |
|---|-------------------------------------|-------------------------------------|
| 9. Does the project site provide habitat for endangered species of plants, birds, or mammals?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 10. Is any such habitat located near the project site?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 11. Is a wetland located on the project site or parcel?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 12. Is the project site situated in or abutting a Natural Area Reserve, Marine Life Conservation District, Marine Fisheries Management Area, or an estuary? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 13. Will the proposed action occur on or near a coral reef or coral colonies?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Discussion: Explain “Yes” responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

3. A small site (<one acre) within the Proposed Action project area is proposed for a new fire protection water tank. The site is located on federally owned property in the State Conservation Land Use District (LUD). Although federal actions on federal lands are not subject to the State Land Use Regulations, the following assessment demonstrates that the Proposed Action comports with State Land Use Law and is intended to facilitate review of this Coastal Consistency Determination.

Uses within the State Conservation LUD are regulated by the State Department of Land and Natural Resources (DLNR) Office of Conservation and Coastal Lands (OCCL) through Hawaii Administrative Rules (HAR) Chapter 13-5 and Hawaii Revised Statutes (HRS) Chapter 183C. The State Conservation LUD is divided into five subzones: 1) Protective, 2) Limited, 3) Resource, 4) General, and 5) Special. The proposed fire protection water tank is sited within the General Subzone of the State Conservation LUD. Permissible land uses in the General Subzone are limited to those enumerated in HAR § 13-5-25. HAR § 13-5-25(a) allows that those uses identified in the Protective, Limited, and Resource Subzones also apply to the General Subzone unless otherwise excluded. HAR § 13-5-22 regulates uses in the Protective Subzone. This section provides that not-for-profit land uses undertaken in support of a public service by an agency of either the county, state, or federal governments constitute a “Public Purpose Use,” and are permissible in the Protective Subzone and, therefore, also within the General Subzone. Public Purpose Uses are defined in the regulation to include “water systems and other utilities.” The Proposed Action meets the definition of a Public Purpose Use, therefore the fire protection water tank is a permissible use within the State Conservation LUD.

5. The project site is located on mostly undeveloped land on a portion of the RHBFSF installation. Site preparation will require significant earthwork, grading, clearing, grubbing, and temporary stockpiling during the construction phase of the Proposed Action.

The entire construction area will be graded and grubbed to create a level construction pad for the Proposed Action. Existing foliage at the site is described as a scrub forest and consists of non-native shrubs and grasses (such as koa haole and guinea grass) that do not provide high-quality habitat to native and endangered species or Hawaiian seabirds.

Stockpiling of construction materials will occur at a designated staging area located within the

HDOT ROW in a large grassy field to the northwest of the project site. Temporary stockpiling of sediment, rock, and other materials may occur at the project site during the construction phase as well. No long-term, post-construction stockpiling is anticipated to occur at the project site.

8. The project site is located just south of the South Halawa Stream, one of the two branches of the Halawa Stream. The South Halawa Stream flows through a concrete channel in the vicinity of the project area. The stream has perennial flow below the Proposed Action project area due to the discharge of up to five MGD from the emergency water treatment plant into the South Halawa Stream. Completion of the Proposed Action will result in the cessation of the existing discharge of five MGD of water from the emergency water treatment plant into the South Halawa Stream, reverting it back to its pre-existing and historical condition as an intermittent flow stream.

9. No state-listed or federally listed threatened, endangered, or candidate plant species or rare native Hawaiian plant species have been reported within the study area in recent decades. There is the potential for the occurrence of federal and state protected animal species in the project area, but no critical habitat has been designated for these species in the project area. The only confirmed observation of a protected species in the RHBFSF was the Hawaiian hoary bat (*Lasiurus cinereus semotus*), which was detected during a 2014 study using automated recording equipment. The study recorded sounds in the ultrasonic range for 190 nights over one year resulting in two detections. The Hawaiian hoary bat is Hawaii's only native terrestrial mammal and is listed as endangered under the Endangered Species Act. Very little is known about Hawaiian hoary bat ecology and life history. It has been recorded on all the main Hawaiian Islands and in a diversity of habitats including developed areas and agricultural lands. For roosting, the Hawaiian hoary bat prefers woody vegetation greater than 15 feet tall, which occurs within the study area.

The bird species with a potential to occur in the study area are only likely to fly over or stop temporarily since suitable habitat is poor or does not exist for most species. There are no water habitats in the study area for species such as the Hawaiian stilt (*Himantopus mexicanus knudseni*), which require wetland habitats, freshwater, shorelines, or waterbodies. Several protected Hawaiian seabirds are also known to potentially occur within the project area.

In accordance with Section 7 of the Endangered Species Act, the Navy consulted with the USFWS regarding the Preferred Alternative. In a letter to the USFWS dated January 7, 2025, the Navy determined that the Preferred Alternative may affect but is not likely to adversely affect the Hawaiian Stilt, Band-rumped Storm-Petrel, Hawaiian Petrel, Newell's Shearwater, and Hawaiian hoary bat, or jeopardize the continued existence of these species. USFWS concurred with the Navy's determination in a letter dated February 27, 2025.

10. Most of the habitat removed by the Proposed Action would consist of kiawe and koa haole forest, which would primarily impact forest-dwelling species. With the exception of the Hawaiian hoary bat, there are no native or endemic terrestrial amphibian, reptile, bird, or mammal species present in the project area. A number of bird species have been observed at the site. Most are non-native resident species, but a few Migratory Bird Treaty Act (MBTA)

protected species have also been observed.

During construction, the noise and human activity associated with construction of the Proposed Action would displace wildlife from an area greater than the project footprint. The area is already quite noisy due to the proximity of the H-201 and H-3 interchange. The affected species are expected to use suitable nearby habitats within the RHBFSF for temporary relocation and foraging. In the long term (i.e., during operations), wildlife would return to the habitat remaining in the project area but would be permanently displaced from the project footprint.

MBTA-protected birds would be impacted if active nests are disturbed or damaged during vegetation removal. Construction of the Proposed Action may temporarily displace some of the observed MBTA species. The potential temporary displacement of these individuals is not expected to affect individuals' survival or overall species' populations. To minimize impacts to MBTA-protected birds, nest surveys would be conducted a maximum of seven days before construction. Active nests would be left in place, undisturbed, and a 100-foot buffer established until chicks have fledged, which may take up to eight weeks. If nesting birds are found directly adjacent/abutting the site that could possibly be impacted by construction activities due to proximity, the sightings would be immediately reported to the JBPHH Natural Resources Manager for further guidance. A biologist would monitor active nests during construction activities to reduce the chances of nest abandonment by temporarily shutting down construction activities that disrupt the normal daily patterns of the birds. Activities would resume when birds have voluntarily left the area.

The Proposed Action would include the permanent loss of 8.9 acres of non-native scrub forest within the project footprint. The scrub forest to be removed does not provide high-quality habitat for protected species.

Outdoor lighting would follow the Dark Skies Instruction to avoid all night lighting whenever possible, and to install only full cutoff exterior down-lighting fixtures for all new construction.

## 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 and coastal related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts in the coastal zone management area.
- 3) Direct the location and expansion of coastal development to areas designated and used for that development and permit reasonable long-term growth at those areas, and permit coastal development outside of designated areas when:
  - a) Use of designated locations is not feasible;
  - b) Adverse environmental effects and risks from coastal hazards 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 that follows:**

- |   | <u>Yes</u>               | <u>No</u>                           |
|---|--------------------------|-------------------------------------|
| 1. Does the proposed action involve a harbor or port?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Is the proposed action a visitor industry facility or a visitor industry related activity? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Does the project site include agricultural lands or lands designated for such use?         | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Does the proposed action relate to commercial fishing or seafood production?               | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Is the proposed action related to energy production or transmission?                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

ECONOMIC USES (continued)

Discussion: Explain "Yes" responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

Not applicable

COASTAL HAZARDS

Objective: Reduce hazard to life and property from coastal hazards.

Policies:

- 1) Develop and communicate adequate information about the risks of coastal hazards.
- 2) Control development, including planning and zoning control, in areas subject to coastal hazards.
- 3) Ensure that developments comply with requirements of the National 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 that follows:**

	<u>Yes</u>	<u>No</u>
1. Is the project site on or adjacent to a sandy beach?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. If “Yes” to question no. 1, has the project parcel or adjoining shoreline areas experienced erosion?	<input type="checkbox"/>	<input type="checkbox"/>
3. Is the project site within a potential tsunami inundation area? Refer to tsunami evacuation maps at: <a href="https://dod.hawaii.gov/hiema/public-resources/tsunami-evacuation-zone/">https://dod.hawaii.gov/hiema/public-resources/tsunami-evacuation-zone/</a>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Is the project site within a flood hazard area according to a FEMA Flood Insurance Rate Map? Refer to FEMA maps at: <a href="https://msc.fema.gov/portal/home">https://msc.fema.gov/portal/home</a>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Is the project site susceptible to or has it experienced ocean related impacts? E.g., sea water inundation, high tides, wave runup, sea level rise, storm surge, ground water intrusion, or subsidence.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Is the project site susceptible to or has it experienced either stormwater or groundwater impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: Explain “Yes” responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

Not applicable.

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.

**ProjCheck either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section that follows:**

- |   | <u>Yes</u>                          | <u>No</u>                |
|---|-------------------------------------|--------------------------|
| 1. List the permits or approvals required for the proposed action and provide the status of each in the Discussion section below. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Does the proposed action conform with state and county land use designations for the site?                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Has an environmental impact statement or environmental assessment been prepared for the proposed action?                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Has the public, applicable neighborhood board, or community groups been notified of the proposed action?                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion: Explain “Yes” responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

1. Permits required for the Proposed Action include, but may not be limited to:

Permit	Issuing Authority	Status
Finding of No Significant Impact (National Environmental Policy Act)	United States Navy	Draft Environmental Assessment (EA) released for public review.
Aqua Engineers Sewer Connection Permit	United States Army	To be completed prior to construction.

Permit	Issuing Authority	Status
Approval of Design of Water Treatment Facility	State of Hawaii; Department of Health	In process.
Operation of Water Treatment Facility Permit	State of Hawaii; Department of Health	To be completed prior to operation.
National Pollutant Discharge Elimination System Construction General Permit	State of Hawaii; Department of Health	To be completed prior to construction.
Spill Prevention, Control, and Countermeasure Plan	State of Hawaii; Department of Health	To be completed prior to construction.
National Historic Preservation Act Section 106 Approvals	State of Hawaii; Department of Land and Natural Resources – State Historic Preservation Division	In process.
Hawaii Revised Statutes Chapter 6E Approvals	State of Hawaii; Department of Land and Natural Resources – State Historic Preservation Division	In process.
Endangered Species Act Section 7 Approvals	U.S. Fish and Wildlife Service	Complete
Sewer Connection Permit	City and County of Honolulu; Department of Planning and Permitting	To be completed prior to construction.

2. Part of the Proposed Action project area comprising the proposed construction staging area, construction access road, perimeter fence clear zones, and electrical utility connection, is on State-owned property within the State Urban Land Use District (LUD). HRS § 205-2(b) provides that within the State Urban LUD, activities and uses shall include those provided by ordinances or regulations of the county within which the State Urban LUD is situated. Therefore, the controlling land use regulations as to this portion of the project area are those enumerated within the City and County of Honolulu's Land Use Ordinance (LUO).

The remaining majority of the project area is located on federally owned property that primarily lies within the State Urban LUD, with a small site (proposed fire protection water tank) located in the State Conservation LUD. Although federal actions on federal lands are not

subject to the State Land Use or County Zoning regulations, the following assessment demonstrates that the Proposed Action comports with State and County land use regulations and is intended to facilitate review of this Coastal Consistency Determination.

As described above, the LUO provides land use regulations for the Urban LUD on Oahu. Pursuant to LUO § 21-3.40(c), the purpose of the F-1 Military and Federal Preservation District is to identify areas in military or federal government use and to permit the full range of related activities. The LUO does not provide any specific uses or development standards for parcels zoned as F-1 Military and Federal Preservation District, instead deferring these items to the judgement of the federal government and its agencies.

The small portion of the project area on federally owned land (e.g. fire protection water tank) within the State Conservation LUD and County P-1 Restricted Preservation District is also considered a permissible use (See the section on Coastal Ecosystems response to question #3).

Therefore, the Proposed Action is in compliance with all applicable State and County land use regulations.

3. A Draft EA has been prepared for the Proposed Action in compliance with the National Environmental Policy Act (NEPA) and Navy regulations for implementing NEPA. The Navy released the Draft EA for public review and comment from March 21 to April 20, 2025.
4. The Navy has implemented a range of efforts to notify the public. In May 2024, the Navy distributed an EA pre-assessment consultation letter to a range of potentially interested stakeholders including elected officials, neighborhood boards, Native Hawaiian Organizations, utilities, and community organizations. government agencies. A summary of the comments received during the pre-assessment consultation is provided in Appendix A of the Draft EA.

The Navy published a notice of availability of the Draft EA in the Honolulu Star-Advertiser (March 21, 23, and 24, 2025) and in The Environmental Notice (March 23, 2025). The Navy distributed the notice of availability of the Draft EA to the same distribution list as the pre-assessment consultation, including elected officials, neighborhood boards, Native Hawaiian Organizations, utilities, and community organizations. The Navy announced the availability of the EA at the Pearl City Neighborhood Board meeting on March 25, 2025. The Navy provided an email notification to the Aiea Neighborhood Board ahead of their April 8, 2025 meeting and to the Aliamanu-Salt Lake Neighborhood Board and Ewa Neighborhood Board ahead of their April 10, 2025 meetings. Additionally, the Star-Advertiser published a newspaper article discussing the availability of the Draft EA on April 14, 2025, and Hawaii News Now published a news report discussing the availability of the draft EA on April 16, 2025.

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 that follows:**

- |   | <u>Yes</u>                          | <u>No</u>                           |
|---|-------------------------------------|-------------------------------------|
| 1. Has information about the proposed action been disseminated to the public, applicable neighborhood board, or community groups? | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. Has the public been provided an opportunity to comment on the proposed action?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 3. Has or will a public hearing or public informational meeting be held?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Discussion: Explain “Yes” responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

1. The Navy has implemented a range of efforts to notify the public about the Proposed Action. See the Managing Development Section response to question #4.
2. The Navy released the Draft EA for public review and comment from March 21 to April 20, 2025. The Draft Environmental Assessment was available online at <https://pacific.navfac.navy.mil/About-Us/National-Environmental-Policy-Act-NEPA-Information/>. Hard copies of the Draft EA were made available for review at the Aiea Public Library and the Hawaii State Public Library. The Navy is considering all comments received before proceeding with a decision on the Proposed Action.

## BEACH AND COASTAL DUNE PROTECTION

### Objective:

- (A) Protect beaches and coastal dunes for:
  - (i) Public use and recreation;
  - (ii) The benefit of coastal ecosystems; and
  - (iii) Use as natural buffers against coastal hazards; and
- (B) Coordinate and fund beach management and protection.

### Policies:

- 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 shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities.
- 3) Minimize the construction of public shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities.
- 4) Minimize grading of and damage to coastal dunes.
- 5) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor.
- 6) 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 that follows:**

- |  | <u>Yes</u>               | <u>No</u>                           |
|--|--------------------------|-------------------------------------|
| 1. Will the proposed action occur on a shoreline parcel?                                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Will the proposed action occur in an area or parcel that is adjacent to a shoreline parcel? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Is the proposed action located within the shoreline setback area?                           | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Will the proposed action affect natural shoreline processes?                                | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Will the proposed action affect recreational activities?                                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Will the proposed action affect public access to or along the shoreline?                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

BEACH AND COASTAL DUNE PROTECTION (continued)

Discussion: Explain "Yes" responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

Not applicable.

## MARINE AND COASTAL 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.
- 3) 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.
- 4) Promote research, study, and understanding of ocean and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources.
- 5) 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 that follows:**

- |  | <u>Yes</u>               | <u>No</u>                           |
|--|--------------------------|-------------------------------------|
| 1. Will the proposed action involve the use or development of marine or coastal resources?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Will the proposed action affect the use or development of marine or coastal resources?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Does the proposed action involve research of ocean processes or resources?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Will the proposed action occur in or abutting a Natural Area Reserve, Marine Life Conservation District, Marine Fisheries Management Area, or an estuary? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Discussion:** Explain "Yes" responses to the questions above. If more space is needed, attach a separate sheet, or append additional information.

Not applicable.

**Coastal Zone Management Act  
Federal Consistency Review  
Detailed Project Description  
for  
Red Hill Water Treatment Facility  
at  
Joint Base Pearl Harbor-Hickam, Oahu**

**May 2025**



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## 1 Introduction

Joint Base Pearl Harbor-Hickam (JBPHH), a Command of the United States (U.S.) Navy (hereinafter, jointly referred to as the Navy) proposes to construct and operate a new water treatment facility to reconnect water from the Navy's Red Hill Shaft to the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water system and discontinue the discharge of water into Halawa Stream. The Proposed Action would include the construction of a new, permanent water treatment facility and the associated utilities, infrastructure, and site improvements. Additionally, an interim, modified granular activated carbon (GAC) water treatment facility is currently under construction at Red Hill to replace the existing emergency GAC water treatment facility. The Proposed Action also includes the connection of the interim GAC water treatment facility to the Navy drinking water system until the permanent water treatment facility is operational. Both the permanent water treatment facility and the interim GAC water treatment facility would treat water from the Red Hill Shaft to meet National Primary Drinking Water Regulations (NPDWR) and State of Hawaii Department of Health (HDOH) Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

The proposed project is consistent with the Navy's commitment to carry out long-term actions agreed upon by the U.S. Environmental Protection Agency (EPA), HDOH, and the Navy in the January 2022 Red Hill Shaft Recovery and Monitoring Plan (Section 1.4 page 11 and Section 2 pages 17-18). In compliance with Hawaii Administrative Rules (HAR) Section 11-20, Relating to Public Water Systems, HDOH approval would be required to construct and operate the Proposed Action and reconnect the Red Hill Shaft to the Navy drinking water system.

On June 2, 2023, the EPA finalized and signed the 2023 Administrative Consent Order (ACO) with the Navy to ensure the safe defueling and closure of the former Red Hill Bulk Fuel Storage Facility (RHBFSF). In accordance with the ACO, the Navy is working to safely and expeditiously execute the permanent decommissioning of the former RHBFSF. The proposed water treatment facility is consistent with the ACO and the Navy's mission to permanently close the former RHBFSF.

## 2 Background

The Red Hill Shaft is located on federal property within the former RHBFSF installation on the island of Oahu, Hawaii. It is owned, operated, and maintained by the Navy and was constructed in 1942. The Red Hill Shaft overlies the Waimalu system of the Pearl Harbor Aquifer, which is an underground source of drinking water. Prior to its closure in November 2021, the Red Hill Shaft was one of several Navy drinking water wells that served as a source for the Navy's drinking water distribution system that provided drinking water to Joint Base Pearl Harbor-Hickam (JBPHH) and several outlying residential and non-residential communities. [REDACTED]

In late November 2021, a fuel release from the RHBFSF contaminated the Red Hill Shaft drinking water well, and contaminated water was unknowingly pumped from the Red Hill Shaft into the Navy drinking water distribution system. Upon identifying the Red Hill Shaft as the source of contaminated water, pumping at the Red Hill Shaft pump station was stopped and the shaft was disconnected from the Navy drinking water system.

In consultation with the EPA and HDOH, the Navy installed an emergency water treatment facility and resumed pumping operations at the Red Hill Shaft in January 2022 to remove contamination from groundwater extracted from the Red Hill Shaft and the underlying aquifer, and to contain movement of the fuel plume within the aquifer. The containment of the fuel plume within the aquifer through the continued pumping of water from the Red Hill Shaft is referred to as maintaining the contaminant capture zone. The emergency water treatment facility utilizes GAC technology to remove fuel contaminants and treat the water in compliance with the National Pollutant Discharge Elimination System (NPDES) permit granted by HDOH. After the water is treated, it is then discharged into the adjacent South Halawa Stream. [REDACTED]

The Navy is currently constructing an interim GAC water treatment facility at Red Hill as an interim solution to a permanent replacement of the emergency GAC facility (Proposed Action). Once operational, the interim GAC water treatment facility will discharge treated water to Halawa Stream. As a part of the Proposed Action, the Navy is proposing to connect the interim GAC water treatment facility to the Navy drinking water system. This would only happen following the completion of this EA and approval from HDOH.

### **3 Location and Surrounding Environment**

The former RHBFSF installation consists of 226 acres on the lower slopes of Halawa Ridge which separates the Halawa and Moanalua Valleys of the island of Oahu, Hawaii. The former RHBFSF is a part of JBP HH. The Proposed Action would be located within the former RHBFSF installation, at the base of a ridge of a volcanic formation known as Red Hill. The site is bounded by Interstates H-201 and H-3 to the south and west, the Hawaii Department of Agriculture Animal Quarantine Facility, Hawaii Department of Public Safety Halawa Correctional Facility, and the Halawa Valley Industrial Park to the north, and the U.S. Army Red Hill Family Housing to the east. Notable landmarks in the vicinity of the Proposed Action include Aloha Stadium, Halawa Quarry, and Tripler Army Medical Center. Figure 1 shows the project site and nearby features and landmarks.

### **4 Purpose of and Need for the Proposed Action**

The purpose of the Proposed Action is to restore the Red Hill Shaft as a valuable drinking water source for the Navy drinking water system, in compliance with NPDWR and HDOH Safe Drinking Water Standards, and to discontinue discharge of the resource into Halawa Stream.

The Proposed Action is needed because potable water from the Red Hill Shaft has been unavailable to support users and activities on the Navy's drinking water system since November 2021 and because the installation needs an additional source to ensure adequacy of its drinking water system.

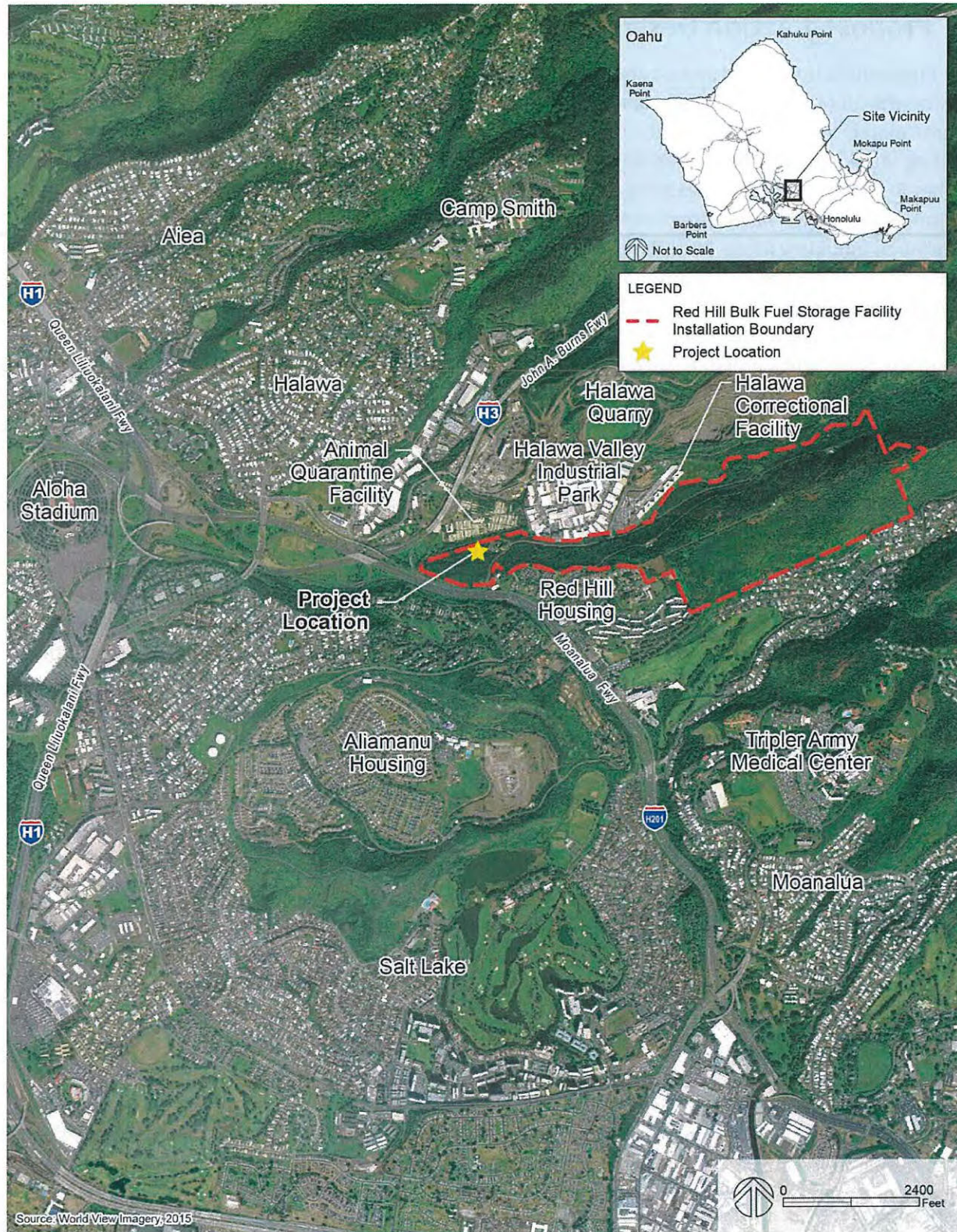


Figure 1 Project Location Map

## 5 Proposed Action Description

The Proposed Action would include the construction and operation of a permanent water treatment facility with [REDACTED] (limited to an annualized average daily volume of approximately 5 MGD), as well as the connection of the interim GAC water treatment facility to the Navy drinking water system. The interim GAC water treatment facility is currently under construction at the former RHBFSF to replace the existing emergency GAC water treatment facility. The interim GAC water treatment facility [REDACTED] and will be located along the southern installation boundary adjacent to the H-3 Freeway right of way (ROW) (Figure 2). The Proposed Action includes the connection of the interim GAC water treatment facility to the Navy drinking water system until the permanent water treatment facility is operational. Both the permanent water treatment facility and the interim GAC water treatment facility would treat water from the Red Hill Shaft to meet NPDWR and HDOH Safe Drinking Water Standards before it is distributed to the Navy drinking water system.

Connection of the interim GAC water treatment facility to the Navy drinking water system would include the installation of new piping for treated water. Construction of the interim GAC facility (not including connection to the Navy drinking water system) is anticipated to be completed in 2026. Connecting the interim GAC facility to the Navy drinking water system would require approval from the HDOH under HAR Section 11-20-30 (New and Modified Public Water Systems).

The proposed permanent water treatment facility would utilize GAC pressure vessels to treat water from the Red Hill Shaft before distributing it to the Navy drinking water system. GAC technology is identified by the EPA as the best available technology for removing organic contaminants in drinking water. The proposed facilities would be located within the former RHBFSF installation boundary at three separate sites (Table 1). The proposed permanent water treatment facility would be located at the lower site [REDACTED] to the west of the existing emergency GAC water treatment facility and the Lower Access Road. Additional support facilities are proposed at the upper site, [REDACTED]

[REDACTED] An aboveground fire protection water storage tank would be constructed at an uphill location approximately [REDACTED]. The storage tank is required to provide adequate fire protection infrastructure at the permanent water treatment facilities.

Due to the sites' sloping topography, grading and earthwork would be needed to create level areas for the facilities, equipment, access roads, and construction work areas. Construction access would be provided through the existing RHBFSF Gate. An optional construction staging would be provided on an adjacent State of Hawaii Department of Transportation (HDOT) Right of Way (ROW). Access to this staging area would utilize an existing State of Hawaii Department of Agriculture (HDOA)-owned driveway off Halawa Valley Street and a new connection to an existing roadway serving the HDOT ROW that continues across Halawa Stream to the proposed permanent water treatment facility site (Figure 2). Construction activities would be restricted to daylight hours and would generally not occur at night unless required to do so (e.g., connections to existing utilities may require work outside of regular construction hours if a shutdown is required).

5.1 Facilities

The Proposed Action would involve the construction of approximately 26,300 square feet of new facilities. A description of the proposed facilities is provided in Table 1.

**Table 1 Facilities proposed for the Proposed Action**

<i>Site</i>	<i>Facility</i>	<i>Description</i>
Lower Site	GAC Pressure Vessels and Canopy	[REDACTED] and ancillary equipment would be installed as part of the permanent water treatment facility. The GAC pressure vessels would be housed under a canopy [REDACTED]. The GAC canopy footprint is [REDACTED].
Lower Site	Wash Water Transfer Tank	The wash water transfer tank is proposed to receive and attenuate wash water from backwashing the GAC media prior to discharge into the sanitary sewer system. The tank would [REDACTED].
Lower Site	Chemical Feed Building	A [REDACTED] building is proposed for the housing of [REDACTED]. The building footprint is [REDACTED].
Lower Site	Generator Building 1	A [REDACTED] structure would house [REDACTED]. The generator building footprint is [REDACTED]. The [REDACTED].
Lower Site	Neutralization Building	A [REDACTED] structure would house [REDACTED]. The building footprint is [REDACTED].
Upper Site	Switchgear Building	A [REDACTED] structure would house [REDACTED]. The building footprint is [REDACTED].
Upper Site	Generator Building 2	A [REDACTED] structure would house [REDACTED]. The generator building footprint is [REDACTED].
Fire Protection Water Storage Tank Site	Fire Protection Water Storage Tank	A 250,000-gallon, aboveground concrete, non-potable fire protection water storage tank would be constructed at an uphill location within the former RHBFSF along the Upper Access Road, [REDACTED].

## 5.2 Site Improvements

The Proposed Action includes site improvements for the permanent water treatment facility encompassing a total area of approximately 25.6 acres. Descriptions of the proposed site improvements are included in the table below (Table 2).

**Table 2 Site Improvements for the Proposed Action**

<b>Improvement</b>	<b>Description</b>
Site Preparations	The water treatment facility footprint would be located in a generally undeveloped area of the former RHBFSF. The lower site would be grubbed and graded and revetted with mechanically stabilized retaining walls ranging up to 33 feet in height. The upper site would be grubbed, graded, and revetted with concrete retaining walls. Rock fall mitigation measures would also be installed at the sites (e.g., scaling of cut surfaces, anchored wire mesh, etc.). Extant utilities would be relocated, removed and/or demolished to accommodate the new facility.
Construction Staging and Access	The Proposed Action includes the use of an optional construction staging area within HDOT ROW adjacent to the H-201 to H-3 off-ramp. Construction access to the Proposed Action site would be provided via two approaches: (1) through the existing RHBFSF Gate via the Lower Access Road and (2) an existing HDOA-owned driveway off of Halawa Valley Street serving the Animal Quarantine Facility and a connection to an existing roadway serving the HDOT ROW that continues across Halawa Stream to the permanent water treatment facility site. Parking for construction personnel would be provided within the proposed HDOT staging area to the north of the project site. The access road from the HDOT ROW staging area includes an HDOT-owned culvert bridge over Halawa Stream that is rated for highway traffic. Improvements to the existing access roads are not needed prior to construction and once construction is complete, the roads would be restored to their pre-construction condition.
Security Fencing	The Proposed Action would comply with Unified Facilities Criteria (UFC) 4-022-03 Security Fences and Gates. Approximately 4,200 feet (0.8 miles) of security fencing would be installed along the perimeter of the proposed water treatment facility site and adjacent to the H-201 ROW boundary. The perimeter fence would be approximately eight feet tall, including a three-strand barbed wire top guard. In compliance with UFC requirements, the Navy would clear vegetation and maintain a 30-foot-wide clear zone on the exterior of the perimeter fence. Portions of this clear zone would be located within the HDOT ROW and the Navy would obtain easements from HDOT for access and maintenance.
Site and Security Lighting	The Proposed Action would include the installation of site lighting at the permanent water treatment facility (upper and lower sites) as well as security lighting along the perimeter security fence. All lighting would be shielded to reduce light pollution and potential impacts to wildlife.

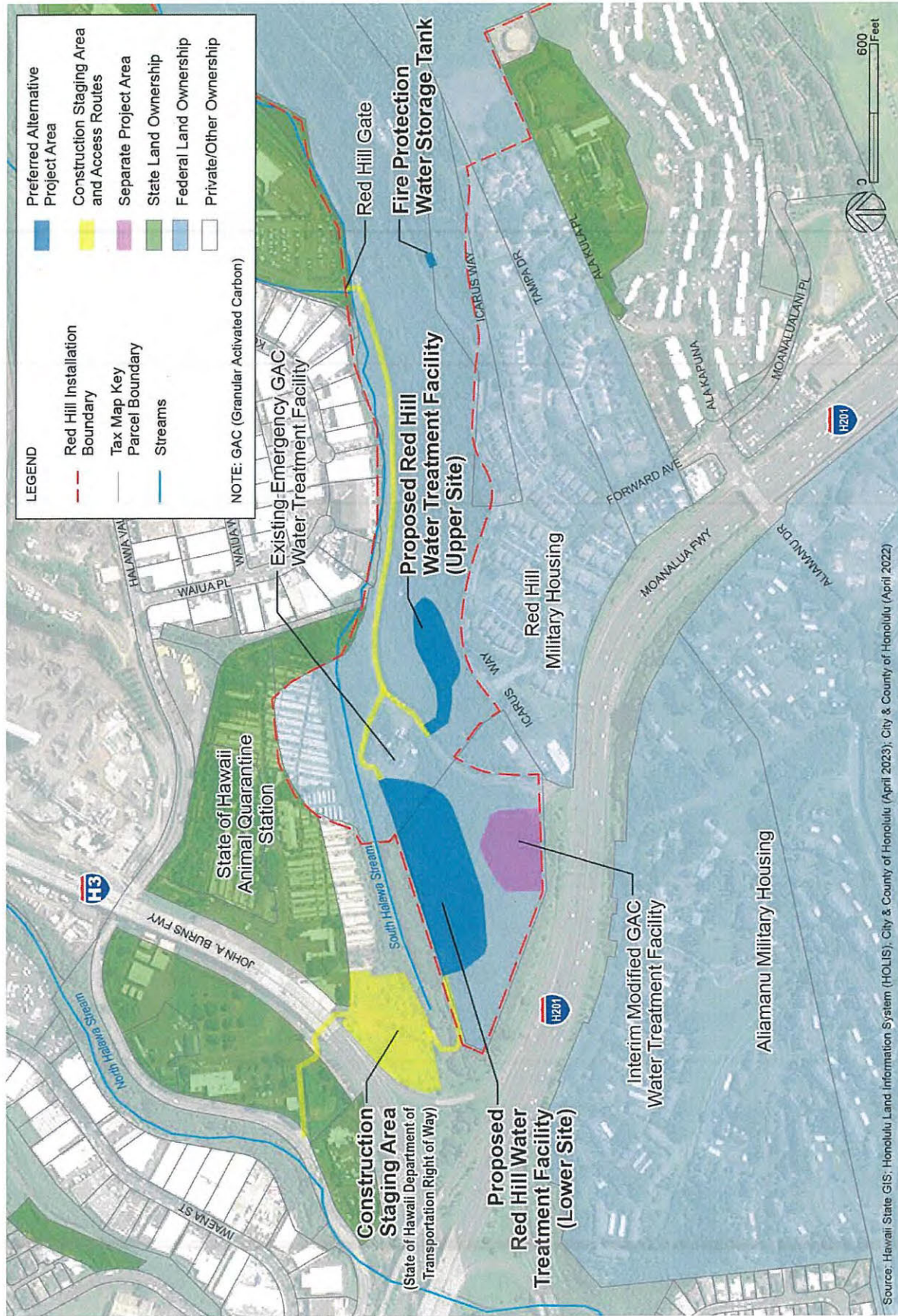


Figure 2 Proposed Action – Conceptual Site Plan

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### 5.3 Utilities and Infrastructure

The Preferred Alternative would include utilities improvements for electrical, telecommunications, water, fire protection, sanitary sewer, and stormwater infrastructure to support the permanent water treatment facility. These improvements are described in Table 3. Specific utility line locations and points of connection are not shown in Figure 2 due to Operational Security (OPSEC) guidelines.

**Table 3 Utilities and Infrastructure for the Proposed Action**

<b>Improvement</b>	<b>Description</b>
Electrical	The Proposed Action would harden electrical infrastructure at the site to ensure a more resilient and reliable electrical service to the installation, including the proposed permanent water treatment facility. A new underground Hawaiian Electric Company (HECO) electrical service point of connection would be constructed along the H-201 ROW, and new underground duct lines would be constructed to provide electrical distribution to and within the project sites. To provide backup to HECO power, the Proposed Action would provide [REDACTED]
Telecommunications	The Proposed Action would connect the proposed permanent water treatment facility to the Navy's existing telecommunications system. Within the site, the Proposed Action would provide a new, underground telecommunications distribution system to serve the permanent water treatment facility and Red Hill Pump Station. [REDACTED]
Water	The Proposed Action would construct a [REDACTED] raw water transmission line to convey water from the Red Hill Shaft Pump Station to the permanent water treatment facility. A [REDACTED] finished water line would convey the treated water from the permanent water treatment facility to the Navy's existing drinking water distribution main. Additional ancillary water lines would be constructed as necessary to support operations at the permanent water treatment facility and to connect the interim GAC water treatment facility to the Navy drinking water system.
Fire Protection	A 250,000-gallon aboveground concrete, non-potable fire water storage tank would be constructed at an uphill location within the former RHBFSF [REDACTED]. Fire protection for the upper and lower sites would be provided by a [REDACTED]. Fire sprinklers for the proposed buildings would also be fed from the fire protection water system.
Sanitary Sewer	The Proposed Action would construct a new domestic wastewater pump station (located at the lower site) and a new sanitary sewage force main. Domestic wastewater from the facility would be pumped to a point of connection within the Red Hill Army Family Housing sewer system. The Proposed Action would also construct a new wash water waste pump station (located at the lower site) and a new wash water waste force main. The wash water waste generated during backwash activities would be pumped to one of two potential points of connection: 1) a connection to the Red Hill Army Family Housing sewer system, or 2) a connection to the City and County of Honolulu's sewer system within Forward Avenue near Ala Kupuna Street. These connections would require agreements with the Army and a sewer connection permit from the City and County of Honolulu Department of Planning and Permitting Wastewater Branch.

**Table 3 Utilities and Infrastructure for the Proposed Action**

<i>Improvement</i>	<i>Description</i>
Stormwater	The proposed facilities would increase impervious surfaces within the project site. Stormwater at the site would be managed according to guidelines in Unified Facilities Criteria 3-210-10 Low Impact Development (LID). LID features would be implemented to provide infiltration areas and underground detention basins within the site. There would be no increase in peak stormwater discharge rates to offsite areas. The existing drainage patterns would be maintained to the maximum extent possible.

**5.4 Operations**

It is anticipated that the facility would have a [REDACTED] but be limited to an annualized average daily volume of approximately 5 MGD (i.e., within the current Water Use Permit allocation). The water treatment facility would be designed to meet NPDWR and HDOH Safe Drinking Water Standards. In addition, the facility would contain additional on-line instrumentation to detect fuel contaminants in the water. If fuel contamination is detected in the raw water, an alarm would be triggered to alert the operators to investigate and take action. The operators would be able to remotely operate valves to prevent contaminated water from entering the Navy water distribution system.

The Proposed Action would utilize GAC pressure vessels to treat the water from the Red Hill Shaft. The GAC media within the GAC pressure vessels used by the permanent water treatment facility would need to be replaced every several years. Prior to placing new GAC media into service, the GAC media needs to be backwashed to remove fine, inert particles that can be dispersed throughout the GAC media. This would occur prior to initial operation of the proposed water treatment facility, as well as when GAC media is replaced. The wash water waste generated by backwashing the GAC media would be conveyed to the City and County of Honolulu’s sanitary sewer system. As the GAC media is expected to have a service life of several years, this backwash process would be infrequent.

The permanent water treatment facility would be operated by Navy personnel based at the Navy’s Waiawa Pump Station (approximately seven miles to the northwest). Water treatment operators would be licensed in the State of Hawaii. It is anticipated that operators and maintenance personnel [REDACTED]

[REDACTED] The operators would perform process control functions, collect, and record operating data, collect samples, complete regulatory reporting, and conduct preventive maintenance and basic corrective maintenance. More complicated maintenance would be performed by third-party contractors on an as-needed basis. All laboratory analyses for regulatory purposes would be performed by a certified third-party laboratory.

GAC technology is identified by the EPA as the best available technology for removing organic contaminants in drinking water. Moving forward, the Navy would continue to operate the facilities in compliance with safe drinking water standards and best practices including regular testing and reporting consistent with EPA and HDOH requirements. This could also include the installation of additional enhanced treatment technologies such as anion exchange or high-pressure membrane treatment (e.g., nanofiltration or reverse osmosis). The proposed permanent water treatment facility has been designed to accommodate potential future enhanced treatment technologies within the existing site footprint.

**5.5 Best Management Practices Included in Proposed Action**

This section presents an overview of the best management practices (BMPs) that are incorporated into the Proposed Action in this document. BMPs are existing policies, practices, and measures that the Navy would adopt to reduce the environmental impacts of designated activities, functions, or processes. Although BMPs mitigate potential impacts by avoiding, minimizing, or reducing/eliminating impacts, BMPs are distinguished from potential mitigation measures because BMPs are (1) existing requirements for the Proposed Action, (2) ongoing, regularly occurring practices, or (3) not unique to this Proposed Action. In other words, the BMPs identified in this document are inherently part of the Proposed Action and are not considered as potential mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action. Table 4 includes a list of BMPs.

BMPs include actions required by federal or state law or regulation. The recognition of the general management measures prevents unnecessarily evaluating impacts that are unlikely to occur.

**Table 4 Best Management Practices**

<i>BMP</i>	<i>Description</i>	<i>Impacts Reduced/Avoided</i>
Implement construction dust control plan	Example BMPs include watering of active work areas, using wind screens, keeping adjacent paved roads clean, covering of open-bodied trucks, limiting the area that is disturbed at any given time, and stabilizing inactive areas that have been worked. Other potential BMPs include the use of designated stabilized construction entrance locations.	Prevents or minimizes impacts to air pollution such as fugitive particulate emissions from being transported away from the project area
Erosion Control	Compliance with National Pollutant Discharge Elimination System (NPDES) provisions including Storm Water Pollution Prevention Plans; erosion and sediment control measures, such as protection of erodible soils; control of storm water runoff from the construction site; use of sediment basins; use of vegetation and mulch on soil exposed by grading; use of silt fencing or silt socks around excavated and cleared areas; and fugitive dust control measures.	Prevents or minimizes water quality impacts on receiving waters (i.e., Halawa Stream)
Low Impact Development (LID)	LID features would be implemented to increase stormwater infiltration onsite. There would be no increase in the existing peak stormwater discharge rate to offsite areas, and the existing drainage patterns would be maintained to the extent possible.	Prevents or minimizes stormwater runoff and water quality impacts.
Invasive species control and decontamination procedures	To minimize the potential for invasive species introduction, all construction equipment, vehicles, and materials that have been sourced off-island would be inspected and decontaminated of any excessive debris or plant material prior to use onsite.	Prevents invasive species introduction within the project area.
JBPHH Green Waste Policy	All green waste generated at the project area will be chipped with excess soil removed and processed according to current JBPHH Green Waste Policy.	Prevents the spread of the coconut rhinoceros beetle.

**Table 4 Best Management Practices**

<i>BMP</i>	<i>Description</i>	<i>Impacts Reduced/Avoided</i>
Pre-construction nest surveys of protected bird species	Conduct nest surveys for protected bird species before construction activities involving clearing of vegetation. If an active nest is found, it would be left in place, a 100-foot buffer would be established, and the nest would remain undisturbed until chicks have fledged. A qualified biologist would be present on the project site during all construction or earth moving activities until the chicks fledge to ensure that the birds and nests are not adversely impacted.	Prevents adverse impacts to protected avian species.
Shielded lighting	Outdoor lighting would follow the Dark Skies Instruction (COMNAVREG Hawaii Instruction 5090.9) to avoid night lighting whenever possible, and to install only full cutoff exterior down-lighting fixtures for all new construction.	Prevents disorientation, disturbance, and/or injury to protected avian species and reduce impact from light pollution to the public ROW along Interstate H-201 and H-3.
Hawaiian hoary bat protections	Any trees 15 feet in height or taller will not be trimmed or cleared during the Hawaiian hoary bat pupping season (June 1 through September 15). If any bat pups were to be discovered in the construction zone, outside of this season, vegetation clearing would immediately stop, Navy Facilities Engineering Systems Command (NAVFAC) Hawaii would contact the USFWS within 24 hours, and operations would be moved to a minimum of 300 feet away. Construction would not resume until the bat pups have departed the area on their own accord and/or the USFWS gives additional guidance.	Prevents adverse impacts to the Hawaiian hoary bat.
Hazardous Materials and Hazardous Waste Management	Handle, transport, dispose of and/or remediate hazardous materials or waste encountered during construction in accordance with applicable federal and state regulations.	Protects construction workers/community members from hazardous material encountered during construction.
Construction Noise Control	The contractor would implement noise mitigation practices during construction including ensuring correctly installed mufflers are functioning on all construction equipment and locating stationary noise-generating equipment as far as practical from existing noise-sensitive land uses.	Avoids or minimizes potential construction noise impacts to noise sensitive receptors.



**STATE OF HAWAI'I  
OFFICE OF PLANNING  
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DTS202505131330ME

Coastal Zone  
Management  
Program

June 19, 2025

Environmental Review  
Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented  
Development

Statewide Geographic  
Information System

Statewide  
Sustainability Branch

Captain Robert Kleinman  
Department of the Navy, Naval Facilities Engineering Systems Command  
(NAVFAC) Hawaii/EV21  
Building 55  
400 Marshall Road  
Joint Base Pearl Harbor-Hickam, Hawaii 96860-3139  
Robert.d.kleinman.mil@us.navy.mil

Dear Captain Kleinman:

**Subject: Hawaii Coastal Zone Management Program Federal Consistency Review for Red Hill Water Treatment Facility at Joint Base Pearl Harbor-Hickam Oahu, Hawaii; TMK (1) 9-9-010:050, 006, &001**

The Hawaii Coastal Zone Management (CZM) Program has completed the federal consistency review received on May 13, 2025, for the proposed construction and operation of a permanent water treatment facility with [REDACTED] of treatment capacity, as well as the connection of the interim GAC water treatment facility to the Navy drinking water system. This CZM federal consistency review covers the following project elements, as represented in the CZM federal consistency application and supporting information:

The Joint Base Pearl Harbor-Hickam (JBPHH), a Command of the US Navy (jointly referred to as the Navy) proposes the connection of an interim modified granular activated carbon (GAC) water treatment facility (currently under construction at Red Hill) to replace the existing emergency GAC water treatment facility. Additionally proposed is the construction and operation of a new, permanent water treatment facility and associated utilities, infrastructure, and site improvements. Both the permanent GAC water treatment facility and the interim GAC water treatment facility would treat water from the Red Hill Shaft to meet the National Primary Drinking Water Standards before it is distributed to the Navy drinking water system.

The proposed facilities would be located within the former Red Hill Bulk Fuel Storage Facility (RHBFSF) installation boundary at three separate sites. The proposed permanent water treatment facility would be located at the lower site [REDACTED] to the west of the existing emergency GAC water treatment facility and the Lower Access Road. Additional support facilities are proposed at the upper site, [REDACTED]

Station (approximately 500 feet east of the proposed treatment facility). An aboveground fire protection water storage tank would be constructed at an uphill location [REDACTED] [REDACTED]. Due to the site's sloping topography, grading, and earthwork would be needed to level areas for the facilities, equipment, access roads, and construction work areas.

The Hawaii CZM Program published a public notice in the State Environmental Review Program publication, "The Environmental Notice," on May 23, 2025, with the public review and comment period concluding on June 7, 2025. During the public notice period no public comments or inquiries were received.

We conditionally concur with the US Navy, JBPHH's determination that the proposed activity is consistent to the maximum extent practicable with the enforceable policies of the Hawaii CZM Program. The following conditions shall apply to this consistency concurrence:

1. The proposed activity shall be completed as represented in the CZM federal consistency application. Any changes to the proposal shall be submitted to the Hawaii CZM Program for review and approval. Changes to the proposal may require a full CZM federal consistency review, including publication of a public notice and provision for public review and comment. This condition is necessary to ensure that the proposed activity is implemented as reviewed for consistency with the enforceable policies of the Hawaii CZM Program. Hawaii Revised Statutes (HRS) Chapter 205A Coastal Zone Management, is the federally approved enforceable policy of the Hawaii CZM Program that applies to this condition.
2. The proposed activity shall be in compliance with the State of Hawaii water quality standards and requirements, including the Clean Water Act (CWA) Section 401 Water Quality Certification, as specified in Hawaii Administrative Rules (HAR) Chapter 11-53 Section 401 Water Quality Certification, Chapter 11-54 Water Quality Standards and HRS Chapter 342D Water Pollution. This condition is necessary to ensure consistency with Hawaii CZM Program federally approved enforceable policies HRS Chapter 342D Water Pollution, and HAR Chapter 11-54 Water Quality Standards.
3. The proposed activity shall be in compliance with State of Hawaii water pollution control requirements, including obtaining a National Pollutant Discharge Elimination System (NPDES) Permit, as specified in HAR Chapter 11-55 Water Pollution Control and HRS Chapter 342D Water Pollution. This condition is necessary to ensure consistency with Hawaii CZM Program federally approved enforceable policies HRS Chapter 342D and HAR Chapter 11-55.
4. To mitigate potential adverse effects from the proposed activity, potential construction impacts will be mitigated through implementation of a construction Storm Water Pollution Prevention Plan and associated erosion control measures and best management practices as outlined in the Coastal Zone Management Act Federal Consistency Review Detailed Project Description. This condition is necessary to ensure consistency with the

Captain Robert Kleinman  
June 19, 2025  
Page 3

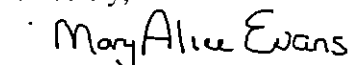
coastal ecosystems policies of HRS Chapter 205A Coastal Zone Management, which is the federally approved enforceable policy that applies to this condition.

5. The proposed activity shall be in compliance with the conservation district requirements as specified in HRS Chapter 183C Conservation District and HAR Chapter 13-5 Conservation District. This condition is necessary to ensure consistency with the Hawaii CZM Program federally approved enforceable policies HRS Chapter 183C and HAR Chapter 13-5.

If the requirements for conditional concurrences specified in 15 CFR § 930.4(a), (1) through (3), are not met, then all parties shall treat this conditional concurrence letter as an objection pursuant to 15 CFR Part 930, subpart C. The US Navy, JBPHH shall immediately notify the Hawaii CZM Program if the conditions are not acceptable in accordance with 15 CFR § 930.4(a)(2). Otherwise, acceptance of the conditions shall be presumed at the end of the 90-day federal consistency notification period on August 11, 2025.

This CZM consistency conditional concurrence does not represent an endorsement of the proposed activity, 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 contact Rachel Beasley of our CZM Program at (808) 587-2888 or [rachel.e.beasley@hawaii.gov](mailto:rachel.e.beasley@hawaii.gov). If you respond to this comment letter, please include DTS202505131330ME in the subject line.

Sincerely,



Mary Alice Evans  
Director

cc: U.S. Army Corps of Engineers, Honolulu District Regulatory Office  
Department of Health, Clean Water Branch  
DLNR, OCCL  
DLNR, Commission on Water Resource Management  
DLNR, State Historic Preservation Division  
DLNR, DOFAW  
City and County of Honolulu, Department of Planning and Permitting  
NAVFAC PAC (Wendy Dauberman)  
HHF Planners (John Hagihara)

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## Appendix E

# Air Quality Methodology and Calculations

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# AIR CONFORMITY APPLICABILITY MODEL REPORT

Below is the Air Force's Air Conformity Application Model (ACAM) summary report for the estimated construction/demolition/improvement activities on site, as well as the two emergency generators apart of the Red Hill permanent water treatment facility preferred alternative.

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** NO BASE  
**State:** Hawaii  
**County(s):** Honolulu  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**b. Action Title:** Red Hill Water Treatment Facility

**c. Project Number/s (if applicable):** Alternative 1

**d. Projected Action Start Date:** 1 / 2024

**e. Action Description:**

Alternative 1 (Peferred Alternative): Permanent Water Treatment Facility near Red Hill Shaft. Air emitting equipment includes [REDACTED]

**f. Point of Contact:**

**Name:** Sierra Barr  
**Title:** Scientist  
**Organization:** EA  
**Email:** sbarr@eaest.com  
**Phone Number:** 7702749231

**2. Air Impact Analysis:** Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

applicable  
 not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS)

# AIR CONFORMITY APPLICABILITY MODEL REPORT

and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are “Near Nonattainment” (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action’s net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

**Analysis Summary:**

### 2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.302	250	No
NOx	11.685	250	No
CO	8.570	250	No
SOx	0.023	250	No
PM 10	187.629	250	No
PM 2.5	0.427	250	No
Pb	0.000	25	No
NH3	0.007	250	No
CO2e	2320.3		

### 2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.383	250	No
NOx	6.105	250	No
CO	3.314	250	No
SOx	0.007	250	No
PM 10	0.199	250	No
PM 2.5	0.199	250	No
Pb	0.000	25	No
NH3	0.002	250	No
CO2e	675.0		

### 2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.128	250	No
NOx	4.630	250	No
CO	1.230	250	No
SOx	0.002	250	No
PM 10	0.145	250	No
PM 2.5	0.145	250	No
Pb	0.000	25	No
NH3	0.000	250	No

# AIR CONFORMITY APPLICABILITY MODEL REPORT

<b>CO<sub>2e</sub></b>	237.7		
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## 2027 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
<b>VOC</b>	0.128	250	No
<b>NO<sub>x</sub></b>	4.630	250	No
<b>CO</b>	1.230	250	No
<b>SO<sub>x</sub></b>	0.002	250	No
<b>PM 10</b>	0.145	250	No
<b>PM 2.5</b>	0.145	250	No
<b>Pb</b>	0.000	25	No
<b>NH<sub>3</sub></b>	0.000	250	No
<b>CO<sub>2e</sub></b>	237.7		

The estimated annual net emissions associated with this action temporarily exceed the insignificance indicators. However, the steady state estimated annual net emissions are below the insignificance indicators showing no significant long-term impact to air quality. Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs. No further air assessment is needed.

*Sierra Barr*

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Sierra Barr, Scientist

19 October 2023

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DATE

# AIR CONFORMITY APPLICABILITY MODEL REPORT

Below is the Air Force's Air Conformity Application Model (ACAM) detail report for the estimated construction/demolition/improvement activities on site, as well as [REDACTED] Red Hill permanent water treatment facility preferred alternative.

## 1. General Information

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### - Action Location

**Base:** NO BASE  
**State:** Hawaii  
**County(s):** Honolulu  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

- **Action Title:** Red Hill Water Treatment Facility

- **Project Number/s (if applicable):** Alternative 1

- **Projected Action Start Date:** 1 / 2024

### - Action Purpose and Need:

The Proposed Action is to construct and operate a permanent, [REDACTED] water treatment facility to reconnect water from the Red Hill Shaft to the Navy drinking water system and discontinue discharge to Halawa Stream. The proposed water treatment facility would utilize GAC pressure vessel technology, [REDACTED] [REDACTED] to remove contaminants from the water drawn from the Red Hill Shaft and treat it to meet NPDWR and HDOH Safe Drinking Water Standards. The Proposed Action would include the construction of new facilities, utilities, infrastructure, and associated site improvements to support the permanent water treatment facility and the Red Hill Shaft Pump Station.

### - Action Description:

Alternative 1 (Preferred Alternative): Permanent Water Treatment Facility near Red Hill Shaft. Air emitting equipment includes [REDACTED]  
[REDACTED]  
[REDACTED].

### - Point of Contact

**Name:** Sierra Barr  
**Title:** Scientist  
**Organization:** EA  
**Email:** sbarr@eaest.com  
**Phone Number:** 7702749231

### - Activity List:

	Activity Type	Activity Title
■	[REDACTED]	[REDACTED]
■	[REDACTED]	[REDACTED]
4.	Construction / Demolition	Red Hill Waste Water Treatment Facility

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 2. Emergency Generator

---

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## 2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline?    Add

- Activity Location

County: Honolulu

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: [REDACTED]

- Activity Description:

[REDACTED]

- Activity Start Date

Start Month: 1

Start Year: 2024

- Activity End Date

Indefinite: Yes

End Month: N/A

End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.052805
SO <sub>x</sub>	0.000922
NO <sub>x</sub>	1.910125
CO	0.507400
PM 10	0.059664

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.059664
Pb	0.000000
NH <sub>3</sub>	0.000000
CO <sub>2</sub> e	98.1

## 2.2 [REDACTED]

- [REDACTED]  
 Type of Fuel used in [REDACTED]: [REDACTED]  
 Number of [REDACTED]: [REDACTED]

- Default Settings Used: No

- [REDACTED]  
 [REDACTED]: [REDACTED]  
 [REDACTED]: [REDACTED]

## 2.3 [REDACTED]

VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2</sub> e
0.000716	0.0000125	0.0259	0.00688	0.000809	0.000809			1.33

## 2.4 [REDACTED]

- [REDACTED]  
 $AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

[REDACTED]  
 [REDACTED]



# AIR CONFORMITY APPLICABILITY MODEL REPORT

## 3.4 [REDACTED]

- [REDACTED]  
$$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$$

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

## 4. Construction / Demolition

---

### 4.1 General Information & Timeline Assumptions

#### - Activity Location

County: Honolulu

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Red Hill Waste Water Treatment Facility

#### - Activity Description:

Construction of the Proposed Action consists of new facilities, utilities, infrastructure, and associated site improvements to support the permanent water treatment facility and the Red Hill Shaft Pump Station.

#### - Activity Start Date

Start Month: 1

Start Month: 2024

#### - Activity End Date

Indefinite: False

End Month: 0

End Month: 2026

#### - Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.428893
SO <sub>x</sub>	0.025255
NO <sub>x</sub>	8.530509
CO	9.423487
PM 10	187.538159

Pollutant	Total Emissions (TONs)
PM 2.5	0.335968
Pb	0.000000
NH <sub>3</sub>	0.008653
CO <sub>2</sub> e	2519.8

### 4.1 Site Grading Phase

#### 4.1.1 Site Grading Phase Timeline Assumptions

##### - Phase Start Date

Start Month: 1

Start Quarter: 1

Start Year: 2024

##### - Phase Duration

# AIR CONFORMITY APPLICABILITY MODEL REPORT

Number of Month: 6  
 Number of Days: 0

## 4.1.2 Site Grading Phase Assumptions

### - General Site Grading Information

Area of Site to be Graded (ft<sup>2</sup>): 3136320  
 Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 62726  
 Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 62726

### - Site Grading Default Settings

Default Settings Used: Yes  
 Average Day(s) worked per week: 5 (default)

### - Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	2	8
Other Construction Equipment Composite	2	8
Rollers Composite	1	8
Rubber Tired Dozers Composite	2	8
Scrapers Composite	5	8
Tractors/Loaders/Backhoes Composite	2	8

### - Vehicle Exhaust

Average Hauling Truck Capacity (yd<sup>3</sup>): 20 (default)  
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

### - Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

### - Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

### - Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

## 4.1.3 Site Grading Phase Emission Factor(s)

### - Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rollers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0434	0.0007	0.2707	0.3772	0.0139	0.0139	0.0039	67.130
Rubber Tired Dozers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47

# AIR CONFORMITY APPLICABILITY MODEL REPORT

Scrapers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83
Tractors/Loaders/Backhoes Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

## - Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.280	000.002	000.208	003.467	000.005	000.005		000.023	00332.267
LDGT	000.373	000.003	000.374	004.989	000.007	000.006		000.024	00427.713
HDGV	000.801	000.005	000.972	016.626	000.015	000.013		000.046	00789.621
LDDV	000.079	000.003	000.127	002.707	000.004	000.004		000.008	00325.337
LDDT	000.218	000.004	000.362	004.629	000.007	000.006		000.008	00461.106
HDDV	000.300	000.013	003.537	001.358	000.165	000.152		000.026	01490.613
MC	002.824	000.003	000.676	013.057	000.025	000.023		000.053	00392.231

### 4.1.4 Site Grading Phase Formula(s)

#### - Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

#### - Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

#### - Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)

HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)

HC: Average Hauling Truck Capacity (yd<sup>3</sup>)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

# AIR CONFORMITY APPLICABILITY MODEL REPORT

2000: Conversion Factor pounds to tons

**- Worker Trips Emissions per Phase**

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

## 4.2 Building Construction Phase

### 4.2.1 Building Construction Phase Timeline Assumptions

**- Phase Start Date**

Start Month: 1

Start Quarter: 1

Start Year: 2024

**- Phase Duration**

Number of Month: 24

Number of Days: 0

### 4.2.2 Building Construction Phase Assumptions

**- General Building Construction Information**

Building Category: Office or Industrial

Area of Building (ft<sup>2</sup>): 36850

Height of Building (ft): 35

Number of Units: N/A

**- Building Construction Default Settings**

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

**- Construction Exhaust (default)**

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

**- Vehicle Exhaust**

# AIR CONFORMITY APPLICABILITY MODEL REPORT

**Average Hauling Truck Round Trip Commute (mile):** 20 (default)

**- Vehicle Exhaust Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**- Worker Trips**

**Average Worker Round Trip Commute (mile):** 20 (default)

**- Worker Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

**- Vendor Trips**

**Average Vendor Round Trip Commute (mile):** 40 (default)

**- Vendor Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

### 4.2.3 Building Construction Phase Emission Factor(s)

**- Construction Exhaust Emission Factors (lb/hour) (default)**

Cranes Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0715	0.0013	0.4600	0.3758	0.0161	0.0161	0.0064	128.78
Forklifts Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0246	0.0006	0.0973	0.2146	0.0029	0.0029	0.0022	54.451
Generator Sets Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0303	0.0006	0.2464	0.2674	0.0091	0.0091	0.0027	61.061
Tractors/Loaders/Backhoes Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875
Welders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0227	0.0003	0.1427	0.1752	0.0059	0.0059	0.0020	25.653

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.280	000.002	000.208	003.467	000.005	000.005		000.023	00332.267
LDGT	000.373	000.003	000.374	004.989	000.007	000.006		000.024	00427.713
HDGV	000.801	000.005	000.972	016.626	000.015	000.013		000.046	00789.621
LDDV	000.079	000.003	000.127	002.707	000.004	000.004		000.008	00325.337
LDDT	000.218	000.004	000.362	004.629	000.007	000.006		000.008	00461.106
HDDV	000.300	000.013	003.537	001.358	000.165	000.152		000.026	01490.613
MC	002.824	000.003	000.676	013.057	000.025	000.023		000.053	00392.231

### 4.2.4 Building Construction Phase Formula(s)

**- Construction Exhaust Emissions per Phase**

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

# AIR CONFORMITY APPLICABILITY MODEL REPORT

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)  
NE: Number of Equipment  
WD: Number of Total Work Days (days)  
H: Hours Worked per Day (hours)  
EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)  
2000: Conversion Factor pounds to tons

## - Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
BA: Area of Building (ft<sup>2</sup>)  
BH: Height of Building (ft)  
(0.42 / 1000): Conversion Factor ft<sup>3</sup> to trips (0.42 trip / 1000 ft<sup>3</sup>)  
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

## - Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
WD: Number of Total Work Days (days)  
WT: Average Worker Round Trip Commute (mile)  
1.25: Conversion Factor Number of Construction Equipment to Number of Works  
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

## - Vender Trips Emissions per Phase

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT<sub>VT</sub>: Vender Trips Vehicle Miles Travel (miles)  
BA: Area of Building (ft<sup>2</sup>)  
BH: Height of Building (ft)  
(0.38 / 1000): Conversion Factor ft<sup>3</sup> to trips (0.38 trip / 1000 ft<sup>3</sup>)  
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)

# AIR CONFORMITY APPLICABILITY MODEL REPORT

VMT<sub>VT</sub>: Vender Trips Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds  
 EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
 VM: Worker Trips On Road Vehicle Mixture (%)  
 2000: Conversion Factor pounds to tons

## 4.3 Paving Phase

### 4.3.1 Paving Phase Timeline Assumptions

**- Phase Start Date**

Start Month: 1  
 Start Quarter: 1  
 Start Year: 2024

**- Phase Duration**

Number of Month: 6  
 Number of Days: 0

### 4.3.2 Paving Phase Assumptions

**- General Paving Information**

Paving Area (ft<sup>2</sup>): 10000

**- Paving Default Settings**

Default Settings Used: Yes  
 Average Day(s) worked per week: 5 (default)

**- Construction Exhaust (default)**

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

**- Vehicle Exhaust**

Average Hauling Truck Round Trip Commute (mile): 20 (default)

**- Vehicle Exhaust Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**- Worker Trips**

Average Worker Round Trip Commute (mile): 20 (default)

**- Worker Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

### 4.3.3 Paving Phase Emission Factor(s)

**- Construction Exhaust Emission Factors (lb/hour) (default)**

Graders Composite
-------------------

# AIR CONFORMITY APPLICABILITY MODEL REPORT

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
<b>Other Construction Equipment Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
<b>Rollers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0434	0.0007	0.2707	0.3772	0.0139	0.0139	0.0039	67.130
<b>Rubber Tired Dozers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
<b>Scrapers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1564	0.0026	0.9241	0.7301	0.0368	0.0368	0.0141	262.83
<b>Tractors/Loaders/Backhoes Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

### - Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.280	000.002	000.208	003.467	000.005	000.005		000.023	00332.267
LDGT	000.373	000.003	000.374	004.989	000.007	000.006		000.024	00427.713
HDGV	000.801	000.005	000.972	016.626	000.015	000.013		000.046	00789.621
LDDV	000.079	000.003	000.127	002.707	000.004	000.004		000.008	00325.337
LDDT	000.218	000.004	000.362	004.629	000.007	000.006		000.008	00461.106
HDDV	000.300	000.013	003.537	001.358	000.165	000.152		000.026	01490.613
MC	002.824	000.003	000.676	013.057	000.025	000.023		000.053	00392.231

### 4.3.4 Paving Phase Formula(s)

#### - Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

#### - Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$$

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

PA: Paving Area (ft<sup>2</sup>)

0.25: Thickness of Paving Area (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd<sup>3</sup> / 27 ft<sup>3</sup>)

HC: Average Hauling Truck Capacity (yd<sup>3</sup>)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)

# AIR CONFORMITY APPLICABILITY MODEL REPORT

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Vehicle Exhaust On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

## - Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
WD: Number of Total Work Days (days)  
WT: Average Worker Round Trip Commute (mile)  
1.25: Conversion Factor Number of Construction Equipment to Number of Works  
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VE</sub>: Worker Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

## - Off-Gassing Emissions per Phase

$$VOC_P = (2.62 * PA) / 43560$$

VOC<sub>P</sub>: Paving VOC Emissions (TONs)  
2.62: Emission Factor (lb/acre)  
PA: Paving Area (ft<sup>2</sup>)  
43560: Conversion Factor square feet to acre (43560 ft<sup>2</sup> / acre)<sup>2</sup> / acre)

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## **Appendix F**

### **Consistency with State and Local Laws, Plans, Policies, and Regulations and Hawaii Administrative Rules Significance Criteria and Determination**

**F.1 Consistency with State Laws, Plans, Policies, and Regulations**

This section discusses the Proposed Action’s consistency with relevant State laws, plans, policies, and regulations (Table F-1). While federal actions on federal lands are not required to be compliant with these provisions, the demonstration of compliance is to facilitate state review of this EA.

**Table F-1 Principal State Laws Applicable to the Proposed Action**

<i>State Land Use Plans, Policies, and Controls</i>	<i>Status of Compliance</i>
Hawaii Revised Statutes Chapter 343, Environmental Impact Statements	Hawaii Revised Statutes Chapter 343 exemption completed.
Hawaii Revised Statutes Chapter 344, Hawaii State Environmental Policy Act	The Proposed Action is consistent with the environmental guidelines of the Hawaii State Environmental Policy Act.
Hawaii Revised Statutes Chapter 195D, Conservation of Aquatic Life, Wildlife, and Land Plants	The Proposed Action is consistent with the HRS Chapter 195D. State threatened and endangered species, potential impacts, and best management practices are described in Section 3.5.
Hawaii Revised Statutes Chapter 205, State Land Use Commission and Land Use Districts	The portions of the action location within the State Conservation Land Use District are consistent with the relevant land use controls. The consistency of the portions of the action location within the State Urban Land Use District is assessed in Table 5-3.
Hawaii Revised Statutes Chapter 226, Hawaii State Planning Act	Subject to its consistency with the relevant State Functional Plans, the Proposed Action is consistent with the Hawaii State Planning Act.
Conservation Lands State Functional Plan (1991)	The Proposed Action is consistent with the relevant policies of the Conservation Lands State Functional Plan.
Health State Functional Plan (1989)	The Proposed Action is consistent with the relevant policies of the Health State Functional Plan.
Historic Preservation State Functional Plan (1991)	The Proposed Action is consistent with the Historic Preservation State Functional Plan.
Hawaii Revised Statutes Chapter 205A, Hawaii Coastal Zone Management Program	The Proposed Action is consistent with the objectives and policies of the Hawaii Coastal Zone Management Program.
Hawaii Administrative Rules Section 11-20, Relating to Public Water Systems	The Proposed Action would obtain approval from the HDOH Director.

### **Hawaii Revised Statutes Chapter 343, Environmental Impact Statements**

Part of the Proposed Action project area comprising the proposed construction staging area, construction access road, perimeter fence clear zones, and electrical utility connection would occur on State-owned property and is therefore subject to review under HRS Chapter 343. However, these project components can be exempted from the preparation of an EA under HAR Section 11-200.1-15. The Proposed Action includes the use of an existing HDOA-owned driveway, but the majority of the actions on State-owned property would be located within HDOT-owned ROW. Therefore, HDOT is the lead agency for the HRS Chapter 343 compliance. The Navy, in coordination with HDOT and HDOA, prepared an HRS Chapter 343 exemption based on the HDOT comprehensive exemption list.

### **Hawaii Revised Statutes Chapter 344, Hawaii State Environmental Policy Act**

HRS Chapter 344, the State Environmental Policy Act, establishes state policies and guidelines to encourage productive and enjoyable harmony between the state's populace and the environment, promote efforts to prevent or eliminate damage to the environment, and to enrich the understanding of ecological systems and natural resources that are important to the people of Hawai'i. HRS Chapter 344 provides environmental guidelines relating to 10 policy areas in HRS Chapter 344-4, being: 1) population; 2) land, water, mineral, visual, air, and other natural resources; 3) flora and fauna; 4) parks, recreation, and open space; 5) economic development; 6) transportation; 7) energy; 8) community life and housing; 9) education and culture; and, 10) citizen participation. Items 2, 3, and 10 are the most applicable to the Proposed Action. The Proposed Action closely aligns with these three identified policy areas.

The Proposed Action would restore the Red Hill Shaft as a source of potable water for customers on the Navy drinking water system and it would also continue to remediate the aquifer beneath RHBFSF by maintaining the groundwater capture zone within the aquifer. The Proposed Action would discontinue the discharge of up to 5 MGD of treated water into Halawa Stream and return it to a productive use. The Proposed Action aligns with the policy goal of Item 2.

The Navy conducted ESA Section 7 consultation with the USFWS on the Proposed Action. A biological assessment was completed for the Proposed Action as part of the Navy's ESA Section 7 consultation with the USFWS (see Appendix C). Hawaiian hoary bats are known to infrequently occur on the project site. Impacts to threatened and endangered species due to the implementation of the Proposed Action are anticipated to be minimal. However, standard conservation measures would be employed to mitigate potential impacts. These measures may include pre-construction surveys for protected species, no nighttime construction, not clearing woody plants over 15 feet in height during the Hawaiian hoary bat pupping season, and the use of shielded, MBTA-compliant outdoor lighting. These measures would avoid or minimize impacts to faunal resources. No native flora are known to occur on the project site. The Proposed Action aligns with the policy goal of Item 3.

The preparation and distribution of this EA incorporates multiple means by which the public had the ability to engage with and influence the development of the action. First, the Pre-Assessment Early Consultation period enabled government agencies, nonprofits, and local community groups the opportunity to provide initial comments on an action. Early consultation was conducted for the Proposed Action, which ran from May 24, 2024 to June 23, 2024. Additionally, the Navy published a notice of availability for the Draft EA in the Honolulu Star Advertiser and the State OPSD's *The Environmental Notice*, and there was a 30-day public review period (March 21 to April 20, 2025), during which time feedback was solicited to be incorporated into the Final EA.

The Proposed Action is consistent with the guidelines established in State Environmental Policy Act.

### **Hawaii Revised Statutes Chapter 205, State Land Use Commission and Land Use Districts**

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 Hawaii's limited and valuable land. The State Land Use Commission, 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.

Part of the Proposed Action project area comprising the proposed construction staging area, construction access road, perimeter fence clear zones, and electrical utility connection, is on State-owned property within the State Urban Land Use District (LUD). HRS Section 205-2(b) provides that within the State Urban LUD, activities and uses shall include those provided by ordinances or regulations of the county within which the State Urban LUD is situated. Therefore, the controlling land use regulations as to this portion of the project area are those enumerated within the City's Land Use Ordinance (LUO). Compliance with the provisions of the LUO, and other county-level land use policies, is discussed in Section 5.3.3. Because of its consistency with the LUO, the Proposed Action also complies with the provisions of HRS Chapter 205 and HAR Chapter 15-15.

The remaining majority of the project area is located on federally owned property that primarily lies within the State Urban LUD, with a small area around the proposed fire protection water tank located in the State Conservation LUD. Although federal actions on federal lands are not subject to the State Land Use Code, this demonstration that the Proposed Action comports with State Land Use Law is intended to facilitate review of this EA.

As described above, the City LUO provides land use regulations for the Urban LUD on Oahu. Per the discussion in Section 5.3.3, the Proposed Action is consistent with the City LUO designation (F-1 Military and Federal Preservation District) for the portions of federal property within the State Urban LUD.

Uses within the State Conservation LUD are regulated by the State DLNR Office of Conservation and Coastal Lands through HAR Chapter 13-5 and HRS Chapter 183C. The State Conservation LUD is divided into five subzones: 1) Protective, 2) Limited, 3) Resource, 4) General, and 5) Special. The proposed fire protection water tank is sited within the General Subzone of the State Conservation LUD. Permissible land uses in the General Subzone are limited to those enumerated in HAR § 13-5-25. HAR § 13-5-25(a) allows that those uses identified in the Protective, Limited, and Resource Subzones also apply to the General Subzone unless otherwise excluded. HAR § 13-5-22 regulates uses in the Protective Subzone. This section provides that not-for-profit land uses undertaken in support of a public service by an agency of either the county, state, or federal governments constitute a "Public Purpose Use," and are permissible in the Protective Subzone and, therefore, also within the General Subzone. Public Purpose Uses are defined in the regulation to include "water systems and other utilities." The Proposed Action meets the definition of a Public Purpose Use, therefore the fire protection water tank is a permissible use within the State Conservation LUD.

### **Hawaii Revised Statutes Chapter 226, Hawaii State Planning Act**

The Hawai'i State Planning Act, HRS Chapter 226, was enacted in 1978 to *"improve the planning process in this state, to increase the effectiveness of government and provide actions, to improve coordination among different agencies and levels of government, to provide for wise use of Hawai'i's resources and to guide the future development of the state."* The Act sets forth the Hawai'i State Plan, which is a long-range comprehensive plan that includes an overall theme, goals, objective, policies, priority guidelines, and implementation mechanisms.

The Hawai'i State Plan is divided into three parts:

1. *Part I, Overall Theme, Goals, Objectives, and Policies.* Part I lists the state plan's overall theme and goals. Objectives and policies focus on general topic areas including population, economy, physical environment, facility systems, and socio-cultural advancement.
2. *Part II, Planning Coordination and Implementation.* Part II establishes a statewide planning system to enable for the coordination of, and to serve as a guide to, all major state and county activities and to implement the overall theme, goals, objectives, policies, and priority guidelines. The planning system implements the State Plan through the development of functional plans and county general plans.

State Functional Plans (SFP) are developed by the state agency responsible for a given functional area, which includes agriculture, conservation lands, education, energy, higher education, health, historic preservation, housing, recreation, tourism, and transportation.

3. *Part III, Priority Guidelines.* Part III established the overall priority guidelines to be used to address areas of statewide concern. This part lays out the overall direction for the state, as follows: *"The state shall strive to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable course of action in five major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, and quality education."*

Three SFP cover topics which are applicable to the Proposed Action. These are identified as the Conservation Lands SFP (1991), Health SFP (1989), and Historic Preservation SFP (1991). Consistency with these SFP and their applicable policy areas is discussed below.

#### ***Conservation Lands State Functional Plan (1991)***

The Conservation Lands SFP sets forth the policies, programs, and projects of the State for implementing the State Plans' conservation-related objectives, policies, and priority guidelines. The Conservation Lands SFP describes three issue areas to be addressed by the plan: 1) inventories of resources and background information and basic research, 2) management, and 3) education and public information and agency coordination. Analysis of the Conservation Lands SFP is limited to Issue Area 2.

Management of conservation lands revolves around the development of natural resources and land management plans, protection of fragile or rare natural resources, enhancement of natural resources, appropriate development of natural resources, promotion and marketing of appropriate natural resources that are designated for commercial uses, and increased enforcement of land and natural resources use laws and regulations. The Proposed Action supports the state's goal of the responsible development of natural resources by restoring the Red Hill Shaft as a source of potable water and ending the discharge of this valuable resource into Halawa Stream. The Proposed Action is consistent with the relevant objectives of the Conservation Lands SFP.

#### ***Health State Functional Plan (1989)***

The Health SFP sets forth the policies, programs, and projects of the State for implementing the State Plans' health-related objectives, policies, and priority guidelines. The Health SFP six issue areas to be addressed by the plan: 1) health promotion and disease prevention, 2) communicable diseases prevention and control, 3) special populations with impaired access to health care, 4) healthcare services for rural communities, 5) environmental health and protections, and 6) HDOH leadership. Analysis of the Conservation Lands SFP is limited to Issue Area 5.

Issue Area 5 identifies the quality of Hawaii's environment as a critical priority for the state. Specifically, the quality of air, recreation, and drinking water are noted as being excellent. The 2021 Fuel Release at the

RHBFSF resulted in a significant discharge of fuel into the underlying aquifer, and negatively impacted the quality of the drinking water resource in the area. The implementation of the Proposed Action would result in the remediation of the drinking water resource and return the Red Hill Shaft into service as a source of safe drinking water. Hazardous materials within the water would be removed via the GAC vessels. If the spent GAC media is deemed hazardous, a landfill would be identified, and the waste transported to the appropriate facility. The Proposed Action is consistent with the relevant objectives of the Health SFP.

#### ***Historic Preservation State Functional Plan (1991)***

The Historic Preservation State Functional Plan (HP SFP) sets forth the policies, programs, and projects for implementing the State Plans' historic preservation related objectives, policies, and priority guidelines. The HP SFP identifies three issue areas to be addressed by the plan: 1) the preservation of historic properties; 2) the collection and preservation of historic records, artifacts, and oral histories; and, 3) the provision of public information and education on the ethnic and cultural heritages and histories of Hawai'i. Analysis of the HP SFP focus on Issue Area 1.

The Preferred Alternative would involve ground disturbing activities that could effect two sites identified in the archaeological inventory survey. In accordance with Section 106 of the NHPA, the Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would adversely affect two sites within the APE and prepared an MOA to resolve adverse effects. Upon completion of consultations, the MOA was agreed to and signed by the Navy and SHPO in February 2026. Additionally, HDOT will complete HRS Chapter 6E consultation with the SHPO prior to construction for portions of the Proposed Action within State-owned land. Through the Navy's consultation and implementation of mitigation pursuant to NHPA Section 106 and by providing information to HDOT consistent with HRS Chapter 6E, the Proposed Action is consistent with the HP SFP.

#### **Hawaii Revised Statutes Chapter 205A, Hawaii Coastal Zone Management Program**

The Hawai'i CZMP sets out the objectives and policies to preserve, protect, and where possible, restore the natural resources of the coastal zone of Hawai'i. All lands in the State and the area extending seaward from the shoreline are classified as valuable coastal resources within the State's coastal zone area. Since all lands within the State fall under the purview of the CZMP, this EA must assess the Proposed Action's consistency with the ten objectives of HRS Chapter 205A and their supporting policies.

#### ***CZMP Objectives***

The ten CZMP Objectives are established in HRS Chapter 205A § 205A-2(b). The Proposed Action's consistency with the CZMP Objectives is discussed below.

##### **(1) Recreational Resources**

- (A) Provide coastal recreational opportunities accessible to the public

**Discussion:** The project area is not sited on the coast and will not impact coastal resources or coastal recreational opportunities which are accessible to the public. The Proposed Action is consistent with this CZMP objective.

##### **(2) Historic Resources**

- (A) 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.

**Discussion:** The Preferred Alternative would involve ground disturbing activities that could affect two sites that were identified in the archaeological inventory survey. In accordance with Section 106 of the NHPA, the Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would adversely effect two sites within the APE and prepared an MOA to resolve adverse effects. Upon completion of consultation, the MOA was agreed to and signed by the Navy and SHPO in February 2026. Additionally, HDOT will complete HRS Chapter 6E consultation with the SHPO prior to construction for portions of the Proposed Action within State-owned land. Through the Navy's consultation and implementation of mitigation pursuant to NHPA Section 106 and providing information to HDOT consistent with HRS Chapter 6E, the Proposed Action is consistent with this CZMP objective.

(3) Scenic and Open Space Resources

(A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

**Discussion:** The project area is not sited on the coast and will not impact any coastal scenic or open space resources. The Proposed Action is consistent with this CZMP objective.

(4) Coastal Ecosystems

(A) Protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes, from disruption and minimize adverse impacts on all coastal ecosystems.

**Discussion:** The project area is not sited near the coast; however it is sited adjacent to Halawa Stream which flows into the waters of Pearl Harbor. Due to the continuous discharge of 5 MGD of water from the onsite GAC water treatment system, Halawa Stream has a perennial flow. The Proposed Action will result in the cessation of this existing discharge of treated water from the Red Hill Shaft into Halawa Stream. Ending this discharge will revert the stream back to its pre-existing and historical condition as an intermittent flow stream.

Beyond the cessation of discharge, the Proposed Action includes significant earthwork, grading, clearing, and grubbing of the landscape to prepare the site for construction. Proximity to Halawa Stream necessitates appropriate erosion and stormwater management at the project area to mitigate adverse impacts to the stream, Pearl Harbor, nearshore waters, and coastal ecosystems. Implementation of erosion and stormwater management best practices will mitigate any adverse effect. Subject to the implementation of these best management practices, the Proposed Action is consistent with this CZMP objective.

(5) Economic Uses

(A) Provide public or private facilities and improvements important to the State's economy in suitable locations.

**Discussion:** The Proposed Action would restore the Red Hill Shaft as a source of safe, potable water which would supply drinking water to the Navy's water distribution system. The Proposed Action would increase supply and add additional redundancy to this system. The Proposed Action is consistent with this CZMP objective.

(6) Coastal Hazards

(A) Reduce hazard to life and property from coastal hazards.

**Discussion:** The Project Area is not sited on the coast, in the tsunami evacuation zone, or a special flood hazard zone and is not anticipated to be susceptible to coastal hazards. The Proposed Action is consistent with this CZMP objective.

(7) Managing Development

(A) Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

**Discussion:** The project site is not located on the coast and would not impact the management of coastal resources and hazards, the development review process, communication, or public participation with respect to coastal resources or hazards. The Proposed Action is consistent with this CZMP objective.

(8) Public participation

(A) Stimulate public awareness, education, and participation in coastal management.

**Discussion:** The project site is not located on the coast and does not involve coastal resources. Therefore, public awareness, education, or participation in coastal management processes is not incorporated as part of the Proposed Action. The Proposed Action is consistent with this CZMP objective.

(9) Beach and Coastal Dune Protection

(A) Protect beaches and coastal dunes for:

- (i) Public Use and Recreation;
- (ii) The benefit of coastal ecosystems;
- (iii) Use as natural buffers against coastal hazards; and,

(B) Coordinate and fund beach management and protection.

**Discussion:** The Proposed Action does not involve any beach or dune areas and would not impact the protection of coastal resources or ecosystems. The Proposed Action is consistent with this CZMP objective.

(10) Marine and Coastal Resources

(A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

**Discussion:** The Proposed Action is not sited on the coast and does not promote the protection, use, or development of marine or coastal resources. The Proposed Action is consistent with this CZMP objective.

**CZMP Policies**

The ten CZMP Policies are established in HRS Chapter 205A § 205A-2(b). The Proposed Action's consistency with the applicable CZMP Policies is discussed below.

(1) Recreational Resources

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Proposed Action will not impact coastal recreational resources. The Proposed Action is consistent with this CZMP Policy.

(2) Historic Resources

- (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 Preferred Alternative would involve ground disturbing activities that would affect two sites identified in the archaeological inventory survey. In accordance with Section 106 of the NHPA, and Stipulation 6 of the 2012 Programmatic Agreement, the Navy consulted with the SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would result in an adverse effect to two sites within the APE and prepared an MOA to resolve adverse effects. The MOA was agreed to and signed by the Navy and SHPO in February 2026. Additionally, HDOT will complete HRS Chapter 6E consultation with the SHPO prior to construction for portions of the Proposed Action within State-owned land. Through consultation and implementation of mitigation pursuant to NHPA Section 106 and HRS Chapter 6E, the Navy will resolve effects to historic properties. Therefore, the Proposed Action is consistent with this CZMP Policy.

(3) Scenic and Open Space

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast and will not impact coastal scenic and open space resources. The Proposed Action is consistent with this CZMP Policy.

(4) Coastal Ecosystems

(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

**Discussion:** The Proposed Action would involve substantial earthwork, grading, clearing, and grubbing of the project site to create a level building pad for the proposed water treatment facility. Earthwork activities would occur proximate to the channel of Halawa Stream and could result in impacts to the stream and downstream waters and ecosystems if erosion and stormwater are not properly managed. The implementation of best management practices relating to erosion and stormwater management, and protective measures along the channel of Halawa Stream would mitigate disruption or degradation of the stream and downstream waters. None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast and will not impact coastal ecosystems. The Proposed Action is consistent with this CZMP Policy.

(5) Economic Uses

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast and will not impact coastal economic activity. The Proposed Action is consistent with this CZMP Policy.

(6) Coastal Hazards

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast, is not within the tsunami evacuation zones, and is not located within a special flood hazard area. The Proposed Action is not at risk due to coastal hazards. The Proposed Action is consistent with this CZMP Policy.

(7) Managing Development

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast and no new coastal development is proposed as part of the project. The Proposed Action is consistent with this CZMP Policy.

(8) Public Participation

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast and the public participation policies relate specifically to public involvement, education, and consultation relating to coastal issues. The Proposed Action will not impact coastal resources and, therefore, public participation relating to these topics is not necessary for the Proposed Action. The Proposed Action is consistent with this CZMP Policy.

(9) Beach Protection

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast or proximate to any natural beaches. The nearest beach to the project area is Keehi Lagoon, which is an artificial beach. The Proposed Action would not result in the development of any shoreline hardening structures, would not involve the grading of coastal dunes, and is sited sufficiently inland from the shore such that coastal hazards are not anticipated to impact it. The Proposed Action is consistent with this CZMP Policy.

(10) Marine and Coastal Resources

**Discussion:** None of the policies for this objective are applicable to the Proposed Action. The Project Area is not sited on the coast and will not impact any marine or coastal resources. The Proposed Action is consistent with this CZMP Policy.

**F.2 Consistency with Local Laws, Plans, Policies, and Regulations**

This section discusses the Proposed Action’s consistency with relevant local laws, plans, policies, and regulations (Table F-2). While federal actions on federal lands are not required to be compliant with these provisions, the demonstration of compliance is to facilitate local review of this EA.

**Table F-2 Principal Local Laws Applicable to the Proposed Action**

<i>Local and Regional Land Use Plans, Policies, and Controls</i>	<i>Status of Compliance</i>
Hawaii Revised Statutes Chapter 205, State Land Use Commission and Land Use Districts	Subject to its consistency with the provisions of Chapter 21, the Land Use Ordinance, Revised Ordinances of Honolulu, the Proposed Action is consistent with the provisions of HRS Chapter 205 for the portions within the State Urban Land Use District.
Revised Charter of Honolulu, Section 6-1508, the Oahu General Plan	The Proposed Action is consistent with the relevant objectives and policies of the Oahu General Plan.
Revised Ordinances of Honolulu, Chapter 24, Development Plans	Consistent with Primary Urban Center Development Plan land use map and supports policies.
Revised Ordinances of Honolulu, Chapter 21, the Land Use Ordinance	The Proposed Action complies with the relevant LUO Standards.
Revised Ordinances of Honolulu, Chapter 21A, Special Flood Hazard Areas	Flood Zones X and D, No additional standards.

The planning regime for the City can broadly be split into three tiers. In the first tier, the Oahu General Plan (OGP) establishes the policy guidance for Oahu as a whole. The OGP informs all subsequent plans and implementing regulations, which are required to be consistent with the OGP.

In the next tier are the eight regional plans, divided among two Development Plans (DPs) and six Sustainable Communities Plans (SCPs). These plans relate to specific areas of Oahu, such as the Primary Urban Center DP (Urban Honolulu) or Koolauapoko SCP (the southern half of windward Oahu). These plans aim to fulfill three key goals, 1) conceptually describe the pattern of land use desired for the region; 2) provide guidance for functional infrastructure planning; and, 3) identify areas within the DP or SCP boundary that might benefit from more detailed planning.

The third tier relates to the specific mechanisms and regulations which implement the two higher tiers. These include the implementing ordinances and regulations (such as the LUO, the Subdivision Rules and Regulations, and the City's Capital Improvement Program), public facilities and infrastructure functional plans, and special area plans that give specific guidance for specific portions of the DP or SCP area.

### **Oahu General Plan**

The OGP was adopted by the City Council of Honolulu on December 1, 2021, as Resolution No. 21-023, CD1, and signed by the Mayor of Honolulu on January 14, 2022. The OGP is intended to guide the land use and development decisions and to influence actions within 11 Key Areas across the whole of Oahu. These 11 Key Areas frame the City's expression of public policy concerning the needs of the populace and the functions of government. The 11 Key Areas are: 1) Population, 2) Balanced Economy, 3) The Natural Environment and Resource Stewardship, 4) Housing and Communities, 5) Transportation and Utilities, 6) Energy Systems, 7) Physical Development and Urban Design, 8) Public Safety and Community Resilience, 9) Health and Education, 10) Culture and Recreation, and 11) Government Operations and Fiscal Management.

Objectives and policies relating to the 11 Key Areas are provided in the OGP. The Proposed Action's consistency with the relevant objectives and policies of the OGP is discussed below.

#### ***Oahu General Plan Key Areas***

##### **(I) Population**

**Discussion:** None of the objectives or policies for this Key Area are applicable to the Proposed Action. The Project Area will not impact anticipated population growth or housing demand. The Proposed Action is consistent with this OGP Key Area.

##### **(II) Balanced Economy**

**Discussion:** None of the objectives or policies for this Key Area are applicable to the Proposed Action. The Proposed Action is consistent with this OGP Key Area.

##### **(III) Natural Environment and Resource Stewardship**

###### **(A) To protect and preserve the natural environment.**

Policy 1: Protect Oahu's natural environment, especially the shoreline, valleys, ridges, watershed areas, and wetlands from incompatible development.

Policy 2: Seek the restoration of environmentally damaged areas and natural resources.

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

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

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

**Discussion:** The implementation of erosion and stormwater management best management practices will sufficiently protect the watershed of Halawa Stream and the waters of Pearl Harbor from adverse impacts. The Proposed Action is consistent with Policy 1.

The proposed water treatment facility will also remediate the aquifer beneath RHBFSF by continuing to maintain the groundwater capture zone within the aquifer. Implementation of the Proposed Action would enable for the restoration of the Red Hill Shaft as a source of potable water for customers on the Navy's water distribution system. The Proposed Action is consistent with Policy 2 and 7.

The existing onsite GAC water treatment system at the project site has discharged up to 5 MGD of water into the adjacent Halawa Stream. Since the implementation of this onsite GAC water treatment system, Halawa Stream has functioned as a perennial stream. This differs from its historic and pre-existing condition as an intermittent stream. The Proposed Action would result in the cessation of the discharge into Halawa Stream, restoring it to its original condition. The Proposed Action is consistent with Policy 3.

The Proposed Action is consistent with this OGP Key Area.

#### (IV) Housing and Communities

**Discussion:** None of the objectives or policies for this Key Area are applicable to the Proposed Action. The Project Area will not impact housing opportunities or choices and land or housing speculation. The Proposed Action is consistent with this OGP Key Area.

#### (V) Transportation and Utilities

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

Policy 3: Use technologies that provide water, waste disposal, and recycling services at a reasonable cost and in a manner that addresses environmental and community impacts

**Discussion:** The Proposed Action involves the development a new water treatment facility capable of treating water to NPDWR and HDOH safe drinking water standards. The new water treatment facility would be limited to an annualized average daily volume of approximately 5 MGD. The implementation of the Proposed Action would enable the Navy to restore and maintain the Red Hill Shaft as a source of safe drinking water for its customers. The proposed water treatment facility would utilize GAC pressure vessels to remove contaminants from the water supplied by the Red Hill Shaft. Regular testing of treated water would ensure that the water meets the relevant safe drinking water standards before distribution to customers. The Proposed Action is consistent with Policies 1 and 3 and this OGP Key Area.

#### (VI) Energy Systems

**Discussion:** None of the objectives or policies for this Key Area are applicable to the Proposed Action. The Project Area will not impact energy production, supply, or management. The Proposed Action is consistent with this OGP Key Area.

#### (VII) Physical Development and Urban Design

(A) To coordinate changes in the physical environment of Oahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

Policy 2: Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and other public facilities and services.

Policy 13: Promote opportunities for the community to participate meaningfully in planning and development processes, including new forms of communication and social media.

**Discussion:** The immediate area surrounding the project site is anticipated to be a focal point for multiple major, upcoming state projects. Projects include the construction of the new OCCC, the new HDOA Animal Quarantine Station, the NASED, and multiple HDOA and HDOT maintenance projects. Coordination between the Navy and state agencies will be critical to ensure that projects do not interfere with one another. The Proposed Action is consistent with Policy 2.

The Proposed Action, by virtue of this EA and the early consultation period and public comment periods that are required, promotes the meaningful participation of the community in the planning process. The Proposed Action is consistent with Policy 13.

The Proposed Action is consistent with this OGP Key Area.

#### (VIII) Public Safety and Community Resilience

(A) To prevent and control crime and maintain public order.

Policy 1: Provide a safe environment for residents and visitors on Oahu.

**Discussion:** The Proposed Action contributes to providing a safe environment for residents and visitors to the portions of Oahu serviced by the Navy's water distribution system to which the proposed water treatment facility would be connected. Safe drinking water is a critical component of a safe environment, and the Proposed Action would enable the Red Hill Shaft to be returned to service in a safe manner. The Proposed Action is consistent with this OGP Key Area.

#### (IX) Health and Education

(A) To protect the health and well-being of residents and visitors.

Policy 4: Integrate public health concerns such as air and water pollution as a consideration in land use planning decisions.

**Discussion:** Public health concerns relating to water pollution were a critical area of focus in the development and planning processes of the Proposed Action. Due to the nature of the contaminant and the Proposed Action's end-goal of providing safe potable water to the customers serviced by the Navy's water distribution system, the proposed water treatment utilizes the best available technology to ensure that the water pumped from the Red Hill Shaft is safe for human consumption. The Proposed Action is consistent with this OGP Key Area.

#### (X) Culture and Recreation

**Discussion:** None of the objectives or policies for this Key Area are applicable to the Proposed Action. The Proposed Action is consistent with this OGP Key Area.

#### (XI) Government Operations and Fiscal Management

**Discussion:** None of the objectives or policies for this Key Area are applicable to the Proposed Action. The Proposed Action is consistent with this OGP Key Area.

### Primary Urban Center Development Plan

The Proposed Action lies within the Primary Urban Center Development Plan (PUC DP) area that stretches from Kahala in the east to Pearl City in the west. The current PUC DP was adopted in 2004 via Ordinance No. 04-14 and is, as of the date of this EA, currently undergoing revisions. Consistency with the PUC DP is assessed based on the adopted 2004 version. Consistency with the 2024 revision is discussed as a reference in the event that it is adopted by the City Council.

The 2004 PUC DP envisions the City of Honolulu in the year 2025, or the City of Honolulu as it is today. It details a city where cultural, natural, and scenic resources are protected and enhanced, where livable neighborhoods are interspersed with business districts, parks, and walkable streets, where there are numerous housing options for all incomes and ages, and with a balanced transportation system.

**Discussion:** The 2004 PUC DP Land Use map shows the project area as being designated for Industrial uses. The updated Land Use Map within the 2024 PUC DP is unclear on the land use designation for the project area, as the color shown on the map is not listed in the map's legend. Adjacent land use designations include Industrial and Valley/Ridge Neighborhood. The Proposed Act is consistent with the Industrial land use designation.

The Proposed Action supports the following policies of the PUC DP:

#### Section 3.2.3 Relation to Land Use Maps and Zoning (Policies)

- Industrial.

#### Section 3.4.2 Military, Airport, Harbor, and Industrial Areas (Policies)

- Support continuation of military uses.

#### Section 4.1.2 Water Allocation and System Development (Policies)

- Integrate resources management of all potable and non-potable water sources, including groundwater, stream water, storm water, and wastewater effluent.
- Implement upgrades and capacity improvements to serve project population increases.
- Protect and maintain watersheds to ensure an adequate supply of high quality water with sufficient infiltration recharge into groundwater aquifers.

#### Section 4.6.2 Stormwater Systems (Policies)

- Require methods of retaining or detaining stormwater for gradual release into the ground as the preferred strategy for the management of stormwater. Where feasible, utilize open spaces including parking lots, landscaped areas, parks, and golf courses to detain and infiltrate stormwater flows to reduce their volume and runoff rates.
- Manage stormwater flows through best management practices to minimize stormwater runoff and peak discharge rates.
- Preserve stream and estuarine habitats.

#### Section 4.8.2 Civic and Public Safety Facilities (Policies)

- Provide adequate staffing and facilities to ensure effective and efficient delivery of basic governmental service and protection of public safety.

## Land Use Ordinance

The LUO, Revised Ordinances of Honolulu (ROH), Chapter 21, serves as the controlling ordinance for land uses within the State Urban LUD on Oahu. The LUO regulates land uses in a manner that encourages an orderly development of Honolulu in accordance with the adopted land use policies, including the OGP and the DPs and SCPs. Various zoning districts are established by the LUO and the permitted uses and development standards for properties within a given district are also established.

The project site is largely located within the F-1 Military and Federal Preservation District. Pursuant to LUO Section 21-3.40(c), the purpose of the F-1 Military and Federal Preservation District is to identify areas in military or federal government use and to permit the full range of related activities. The LUO does not provide any specific uses or development standards for parcels zoned as F-1 Military and Federal Preservation District, instead deferring these items to the judgement of the federal government and its agencies. The portion of the project site which is located within the State Conservation LUD is also located within the P-1 Restricted Preservation District. Pursuant to LUO Section 21-3.40-1(a), all uses, structures, and development standards within the P-1 Restricted Preservation District shall be governed by the appropriate State agency. As established in Section 5.2.3 of this report, the Proposed Action complies with the relevant use standards for the State Conservation LUD.

The Proposed Action is also understood to be in compliance with the local standards for the F-1 Military and Federal Preservation District and the P-1 Restricted Preservation District. The Proposed Action is consistent with the provisions of the LUO and HRS Section 205.

## Special Flood Areas

According to Federal Emergency Management Agency Flood Insurance Rate Map Nos. 15003C0332H and 15003C0351G, the project site is located within Flood Zones X and D. Areas within Flood Zone X include the construction staging area within the HDOT ROW for Interstate H-3; all other areas are within Flood Zone D.

Flood Zone X is not a Special Flood Hazard Area and is not subject to any additional development standards relating to flood hazards. Flood Zone D includes areas where flooding hazards are unstudied, but where flooding may occur.

No additional development standards are imposed on the Proposed Action under the provisions of ROH Chapter 21A. The Proposed Action is consistent with the provisions of ROH Chapter 21A.

## F.3 Hawaii Administrative Rules Significance Criteria and Determination

Based on the findings presented in this document, the Proposed Action is not expected to result in a significant impact on the environment. A Finding of No Significant Impact is anticipated.

In coordination with HDOT, the Navy prepared an HRS Chapter 343 exemption determination, using the HDOT Exemption List, for the components of the project on State-owned property. The following significance criteria specified in Section 11-200.1-13, HAR provide a useful framework for evaluating the potential significance of environmental impacts associated with the Proposed Action.

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

The Proposed Action would not irrevocably commit a natural, cultural, or historic resource. It would restore the beneficial use of the Red Hill Shaft as a safe, potable drinking water source and discontinue the discharge of up to 5 MGD of treated water to Halawa Stream, resulting in a beneficial impact to groundwater resources. Construction of the proposed facilities would involve approximately 8.9 acres of permanent

vegetation removal, primarily non-native scrub forest. The project location does not include critical habitat, but BMPs would be implemented to avoid or minimize potential impacts to protected species.

The archaeological inventory survey for the Proposed Action identified two archaeological sites within the federal portion of the APE (Site 50-80-13-7785 and TS-2) that are recommended eligible for listing in the NRHP. These two sites (Site 50-80-13-7785 and TS-2) would be disturbed or destroyed during the construction of the Preferred Alternative.

Pursuant to Section 106 of the NHPA and in accordance with Stipulation VI of the 2012 PA among the Commander Navy Region Hawaii, the ACHP and the Hawaii SHPO Regarding Navy Undertakings in Hawaii, as amended in 2024, the Navy consulted with the Hawaii SHPO and consulting parties, including the Office of Hawaiian Affairs and other Native Hawaiian Organizations, regarding the Preferred Alternative. The Navy determined the Preferred Alternative would result in an adverse effect to Site 50-80-13-7785 and TS-2, and prepared a MOA to resolve adverse effects. The MOA was agreed to and signed by the Navy and SHPO in February 2026. Through implementation of the mitigation requirements stipulated in the MOA the Preferred Alternative would result in less than significant impacts to cultural resources. Additionally, HDOT will complete HRS Chapter 6E consultation with the SHPO prior to construction for portions of the Proposed Action within State-owned land. Through consultation and implementation of mitigation pursuant to NHPA Section 106 and HRS Chapter 6E, the Navy will resolve adverse effects to historic properties.

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

Implementation of the Proposed Action would not curtail the range of beneficial uses of the environment. No significant adverse impacts to the natural environment would result from the Proposed Action. Construction and operation of the proposed facilities would be performed in accordance with applicable Federal, State, and County regulations, thereby minimizing potential environmental impacts. In accordance with the CZMA, the Navy submitted a Federal Consistency Review to OPSD indicating that the project is consistent with the enforceable policies of the Hawaii CZMP. OPSD provided their conditional concurrence with the Navy's Federal Consistency Review in a letter dated June 19, 2025 (Appendix D).

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

The Proposed Action is consistent with the State's long-term environmental policies and guidelines specified in Chapter 344, HRS (see section 5.2.2).

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

The Proposed Action would not have a substantial adverse effect on economic welfare, social welfare, or cultural practices. It would not include major new facilities or uses to increase resident or visitor populations, employment patterns, housing demand or change community character. The Proposed Action would have a beneficial short-term effect on the economy, due to the temporary increase in construction-related jobs

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

The Proposed Action would not substantially affect public health. Standard security measures would be implemented to secure equipment and prevent public access into the construction and operation areas, and compliance with occupational safety and health regulations, standards, and instructions would minimize the potential for workplace accidents. Operation of the proposed water treatment facility would maintain the groundwater capture zone within the aquifer underlying RHBFSF, and would restore the Red Hill Shaft as a source of safe, potable water to the users of the Navy drinking water system.

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

The proposed action would not involve adverse secondary impacts, such as population changes or effects on public facilities. No foreseeable changes in land use or intensity of existing use, population or employment levels, or demand for public facilities is anticipated. The Proposed Action is to restore the Red Hill Shaft as a drinking water source. It would not involve a change to the Navy's permitted groundwater withdrawal rate or otherwise effect secondary impacts like population changes or effects on other public facilities.

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

The Proposed Action would not involve a substantial degradation of environmental quality. The use of construction BMPs would minimize anticipated construction-related short-term impacts. In the long-term, the Proposed Action would restore the Red Hill Shaft as a drinking water source which would have a beneficial impact on groundwater resources.

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

The Proposed Action, when combined with other past, present, or reasonably foreseeable future actions, would not result in significant cumulative impacts. A list of the past, present, and reasonably foreseeable future actions and cumulative impact analyses is provided in Chapter 4. The Proposed Action would restore the beneficial use of the Red Hill Shaft as a safe, potable water source for the Navy drinking water system. It would not involve a commitment for larger actions.

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

The Proposed Action would not have a substantial adverse effect on rare, threatened or endangered species or their habitat. In accordance with Section 7 of the ESA, the Navy consulted with the USFWS regarding the Preferred Alternative. In a letter to the USFWS dated January 7, 2025, the Navy determined that the Preferred Alternative may affect, but is not likely to adversely affect the Hawaiian Stilt, Band-rumped Storm-Petrel, Hawaiian Petrel, Newell's Shearwater, and Hawaiian hoary bat, or jeopardize the continued existence of these species. USFWS concurred with the Navy's determination in a letter dated February 27, 2025 (Appendix C). As part of the ESA consultation, a range of conservation measures has been identified to avoid or minimize potential adverse effects on protected species.

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

The Proposed Action would not have a substantial adverse effect on air quality, water quality, or ambient noise levels. The project would not introduce any new significant air emission units. Construction of the proposed facilities would generate short-term, temporary indirect air emissions (e.g., fugitive dust, exhaust emissions from construction equipment and vehicles, etc.). Emissions from construction and operational activities would be minor and no exceedance of reference thresholds is anticipated.

The project would be subject to an NPDES permit and would implement a SWPPP and erosion control BMPs to avoid or minimize potential impacts associated with increased runoff and erosion. The project would implement LID features to increase stormwater infiltration onsite. There would be no increase in existing stormwater discharge rates to offsite areas, and the existing drainage patterns will be maintained to the extent possible.

Construction would result in short-term increases in daytime noise, but noise control BMPs would be implemented to minimize potential adverse effects. Operation of the proposed water treatment facility would generate negligible impacts on the noise environment.

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

The Proposed Action would not have a substantial adverse effect on nor is it located within an environmentally sensitive area. The project area is not located in a flood plain or in a vulnerable coastal area. The proposed water treatment facility is located near the Halawa Stream, but the stream is fully contained within a concrete lined channel along this stretch. Additionally, the Proposed Action would implement LID features to increase stormwater infiltration onsite and minimize potential runoff to Halawa Stream.

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

The Proposed Action would not have a substantial adverse effect on scenic vistas and view planes. The proposed facilities would be visible from public viewpoints including Interstates H-201 and H-3. However, the proposed water treatment facility and other support structures would be consistent with existing industrial uses both at RHBFSF and adjacent areas in the Halawa Valley industrial area. Additionally, existing vegetation around the perimeter of the proposed water treatment facility would be maintained to screen views into the site.

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

The Proposed Action would not require substantial energy consumption or emit substantial greenhouse gases. It would increase the overall electrical demand from RHBFSF, but the increased demand would be within the existing capacity of the HECO grid. Additionally, the Navy is coordinating directly with HECO regarding the increase in demand and the new electrical point of connection. The construction of the proposed improvements would generate short-term, temporary indirect air emissions during the construction period (e.g., fugitive dust, exhaust emissions from construction equipment and vehicles, etc.). During the operational phase, direct greenhouse gas emissions would be limited and would include emissions generated from trips to the site and running the emergency generators.