

Draft Restoration Plan and NEPA Evaluation for the Oahu Sugar Site: West Loch, Pearl Harbor

Prepared by:

U.S. Department of Commerce
National Oceanic and Atmospheric Administration

For:

**The Natural Resource Trustees
for the Oahu Sugar Site**

U.S. Department of Commerce
National Oceanic and Atmospheric Administration

And

U.S. Department of the Interior
U.S. Fish and Wildlife Service
National Park Service

JANUARY 13, 2024

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I. INTRODUCTION

This Draft Restoration Plan and NEPA Evaluation (RP/NEPA Evaluation) for the Oahu Sugar Comprehensive Environmental Remediation, Compensation, and Liability Act (CERCLA) Site (Oahu Sugar Site) has been prepared by National Oceanic and Atmospheric Administration (NOAA) for the federal natural resource trustees responsible for restoring natural resources and resource services injured by releases of hazardous substances at the [Oahu Sugar Site](#) at Pearl Harbor in O‘ahu, Hawai‘i. The natural resource trustees (the Trustees) for the Oahu Sugar Site are the U.S. Department of the Interior (DOI), represented by the U.S. Fish and Wildlife Service (USFWS), and the U.S. Department of Commerce, represented by NOAA.

On February 14, 2022 a [Consent Decree](#) was entered with the U.S. District Court for the District of Hawai‘i announcing a settlement that includes approximately \$2.5 million to restore natural resources injured by releases of hazardous substances at the Oahu Sugar Site at Pearl Harbor in O‘ahu, Hawai‘i. The Trustees have prepared this document to propose approximately \$1.25 million in funding of the West Loch Pearl Harbor Honouliuli Watershed Wetland Restoration Project to restore estuarine coastal wetland habitat. The Trustees are proposing additional restoration projects to restore terrestrial natural resources, including migratory bird and endangered species habitat, in an additional restoration plan available at <https://darrp.noaa.gov/hazardous-waste/oahu-sugar>.

A. Compliance with Other Authorities

In addition to the National Environmental Policy Act (NEPA) (42 U.S.C § 4321 et seq.) and its implementing regulations (40 C.F.R. Parts 1500-1508), other legal requirements may apply to CERCLA Natural Resource Damage Assessment (NRDA) restoration planning or implementation. The Trustees will ensure compliance with authorities applicable to the restoration project ultimately selected for implementation. Whether and to what extent an authority applies to a particular project depends on the specific characteristics of the project, among other parameters. The subset of authorities listed below is the most relevant for the proposed restoration:

Endangered Species Act (16 U.S.C. §§ 1531 et seq.)

The Endangered Species Act (ESA) establishes a process for identifying and listing species. It requires all Federal agencies to carry out programs for the conservation of federally listed endangered and threatened plants and animals, and prohibits actions by Federal agencies that may adversely affect listed species or adversely modify designated critical habitat without formal consultation with the USFWS or NOAA. Section 7 of this Act specifies the consultation program conducted with these Federal agencies.

National Historic Preservation Act (16 U.S.C. §§ 470 et seq.)

The National Historic Preservation Act requires agencies to take into account the effects of Federal undertakings on historic properties. The Section 106 process, as defined in 36 C.F.R. § 800, provides for the identification and evaluation of historic properties, for determining the

effects of undertakings on such properties, and for developing ways to resolve adverse effects through the process of consultation.

Coastal Zone Management Act (16 U.S.C. §§ 1451-1464)

The purpose of the Coastal Zone Management Act (CZMA) of 1972 is to encourage States to manage and conserve coastal areas as a unique, irreplaceable resource. Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner that is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.

Clean Water Act (33 U.S.C. §§ 1251 et seq.)

The Clean Water Act (CWA) is the principal law governing pollution control and water quality of the nation's waterways. Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States. Section 401 of the CWA requires any applicant for a federal license or permit that conducts any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification from the State in which the discharge originates or would originate. The Trustees will require all necessary permits to be in place prior to implementation of the proposed restoration activities.

Rivers and Harbors Act (33 U.S.C. §§ 403 et seq.)

The Rivers and Harbors Appropriation Act regulates development and use of the nation's navigable waterways and regulates obstruction or alteration of navigable waters. The Trustees will require all necessary permits be in place prior to implementation of restoration activities.

Migratory Bird Treaty Act (16 U.S.C. §§ 703-712)

The Migratory Bird Treaty Act of 1918 (MBTA) implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. The MBTA protects all migratory birds and their eggs, nests, and feathers and prohibits the taking, killing, or possession of migratory birds. It is intended to ensure the sustainability of populations of all protected migratory bird species.

Fish and Wildlife Coordination Act (16 U.S.C. §§ 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that federal agencies consult with the USFWS, NMFS, and state wildlife agencies for activities that affect, control or modify waters of any stream or bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. This consultation is generally incorporated into the process of complying with Section 404 of the Clean Water Act, NEPA or other federal permit license or review requirements.

Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. §§ 1801 et seq.)

The Magnuson-Stevens Fishery Conservation and Management Act, as amended in 1996, created a requirement for federal agencies to consult with the National Marine Fisheries Service (NMFS) when their actions or activities may adversely affect habitat identified by federal regional fishery management councils or NMFS as essential fish habitat (EFH). Rules published by NOAA (50 C.F.R. §§ 600.805 - 600.930) specify that any Federal agency that authorizes, funds or undertakes, or proposes to authorize, fund, or undertake an activity which could adversely affect EFH is subject to the consultation provisions of the above-mentioned act and identifies consultation requirements. The Trustees will initiate EFH consultation prior to the release of the Final RP. The Trustees believe that restoration activities may adversely affect EFH, but the effects can be minimized through best management practices and consultation with NMFS.

Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

This order, issued by President Clinton on February 11, 1994, requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The U.S. Environmental Protection Agency (EPA) and the Council on Environmental Quality (CEQ) have emphasized the importance of incorporating environmental justice review in the analyses conducted by federal agencies under NEPA and of developing mitigation measures that avoid disproportionate environmental effects on minority and low-income populations.

Executive Order 14096 - Revitalizing Our Nation's Commitment to Environmental Justice for All

Executive Order 14096 reiterates and strengthens Executive Order 12898 regarding federal actions and environmental justice. Executive Order 14096 also requires that each agency shall, as appropriate and consistent with applicable laws, carry out environmental reviews under NEPA “in a manner that analyzes direct, indirect, and cumulative effects of [f]ederal actions on communities with environmental concerns” (EO 14096, §3(ix)(A)).

Restoration activities supported by the Trustees help to ensure the enhancement of environmental quality for all populations in the project area. The Trustees have determined that the proposed restoration activities would provide beneficial impacts to minority and low-income populations described in detail in Section IV.D.2 *Environmental Justice* by improving the quality of the natural environment and ecosystem services to local communities. None of the alternatives are expected to have a disproportionately high and adverse impact on minority or low-income populations in the area, including economically, socially, or in terms of conditions affecting their health.

B. Purpose and Need

Purpose. The purpose of the proposed action identified in this Draft RP/NEPA Evaluation is to accomplish the goal of restoring, replacing, rehabilitating, and/or acquiring the equivalent resources at the locations identified to compensate the public for natural resources, including ecological services, injured, lost or destroyed due to releases of hazardous substances from the former Oahu Sugar Site located within the Pearl Harbor Naval Complex in O‘ahu, Hawai‘i.

Need. The Oahu Sugar Company, LLC (Oahu Sugar), a subsidiary of Kaanapali Land LLC, operated sugar cane fields and associated facilities on the island of O‘ahu, Hawai‘i, and leased land at the Pearl Harbor Naval Complex from the United States Department of Defense and Department of Navy from roughly 1947-1995. Oahu Sugar operated a pesticide mixing plant located along the coastline of Walker Bay that, through the years, resulted in the release of dioxin and pentachlorophenol, among other hazardous substances, in the environment resulting in injuries to natural resources. The Natural Resource Trustees have a statutory duty to use recovered natural resource damages to compensate the public for injury to, and loss of services from, natural resources.

C. Proposed Action

The proposed restoration will restore estuarine coastal wetland habitat along West Loch Pearl Harbor shoreline and adjacent to Pearl Harbor National Wildlife Refuge—an area impacted by hazardous waste discharges from the former Oahu Sugar Site.

Proposed restoration activities include physical removal of invasive red mangrove and other nonnative vegetation, disposal of cut/removed vegetation at approved off-site locations, and replanting of cleared areas with native sedges, groundcover, and trees, predator control, and community engagement efforts.

Restoration efforts in West Loch Pearl Harbor are focused on critical shoreline and wetland habitats that provide important habitat for native Hawaiian aquatic and terrestrial species. These areas planned to be restored represent priority areas that will serve as critical habitat zones that are intended to increase the probability of future survival for native species that have been impacted by adverse effects in the West Loch Pearl Harbor area.

Restoration will be implemented by the State of Hawai‘i as part of a larger restoration effort to restore ecological function and habitat for native aquatic and terrestrial wildlife within the West Loch Pearl Harbor that are already underway. The State currently partners with local community groups, to implement mangrove removal, native vegetation replanting, and education through community engagement and is an integral part of the larger long-term plan to restore and maintain natural areas through collaboration.

The proposed action exhibits a sufficient nexus to the natural resources injured by hazardous waste from the Oahu Sugar Site. The Trustees have determined that this type and scale of action will effectively provide long-term benefits to critical shoreline, estuarine, and wetland habitat for native terrestrial and aquatic wildlife along West Loch Pearl Harbor.

D. Public Participation

Public participation and review is an integral part of the NRDA and NEPA process. The Trustees have made this Draft RP/NEPA Evaluation available at <https://darrp.noaa.gov/> and also through the NOAA DARRP “Coastal Recovery News and Updates” email delivery service for review and comment for a period of 45 days. The Trustees will address public comments and will respond to those comments as part of the Final RP/NEPA Evaluation.

Public Meeting and Comment Period

The Trustees will be holding an in-person Open House Public Meeting on January 29, 2025 at the Filipino Community Center- 94-428 Mokuola Street, Waipahu, Hawai‘i 96797 to share the details of the proposed projects. There will be two opportunities to attend the in-person Open House – from 11am-2pm (HAST) and 5-8pm (HAST). The **public comment period will start on January 13, 2025 and end on February 26, 2025.**

Public comments may be submitted in writing or by email to:

Jennifer Boyce
nmfs.oahusugar@noaa.gov
501 West Ocean Blvd Suite 4470
Long Beach CA 90802

E. Administrative Record

The Trustees have maintained records documenting the information considered and actions taken by the Trustees during this restoration planning process, and supporting their decisions in this Draft RP/NEPA Evaluation. These records are available for review by interested members of the public. Interested persons can access or view these records at:

<https://www.diver.orr.noaa.gov/web/guest/diver-admin-record/13205>

II. BACKGROUND

A. The Site

The Oahu Sugar site is located within the Pearl Harbor Naval Complex on the Waipi‘o Peninsula, on O‘ahu, Hawai‘i. The peninsula is located between the West and Middle Lochs of Pearl Harbor, and was formerly leased from the US Navy to Oahu Sugar, which conducted sugar cane cultivation including operating a pesticide mixing facility along Walker Bay (Figure 1). The facility released dioxins, pentachlorophenol, and other hazardous substances to the terrestrial areas of the site as a result of spills and other operations. From limited sampling and analyses of benthic invertebrates, fish, and sediment conducted in the 1990s-2010’s by the Navy within Walker Bay, the Trustees concluded that hazardous substances from the site have migrated to Walker Bay and adversely affected benthic resources, fish and bird habitat.

B. Settlement

On February 11, 2022, the United States District Court for the District of Hawai‘i entered a Consent Decree between the United States and Kaanapali Land, LLC and Oahu Sugar Company, LLC, Civil Action No. 1:21– cv–00190. The complaint filed in this case alleges claims for natural resource damages under CERCLA against Kaanapali Land, LLC and its bankrupt subsidiary, Oahu Sugar. Under the Consent Decree, Settling Defendants paid a total of \$2.5 million to the United States via the Department of the Interior and the National Oceanic and Atmospheric Administration for ecological restoration projects.

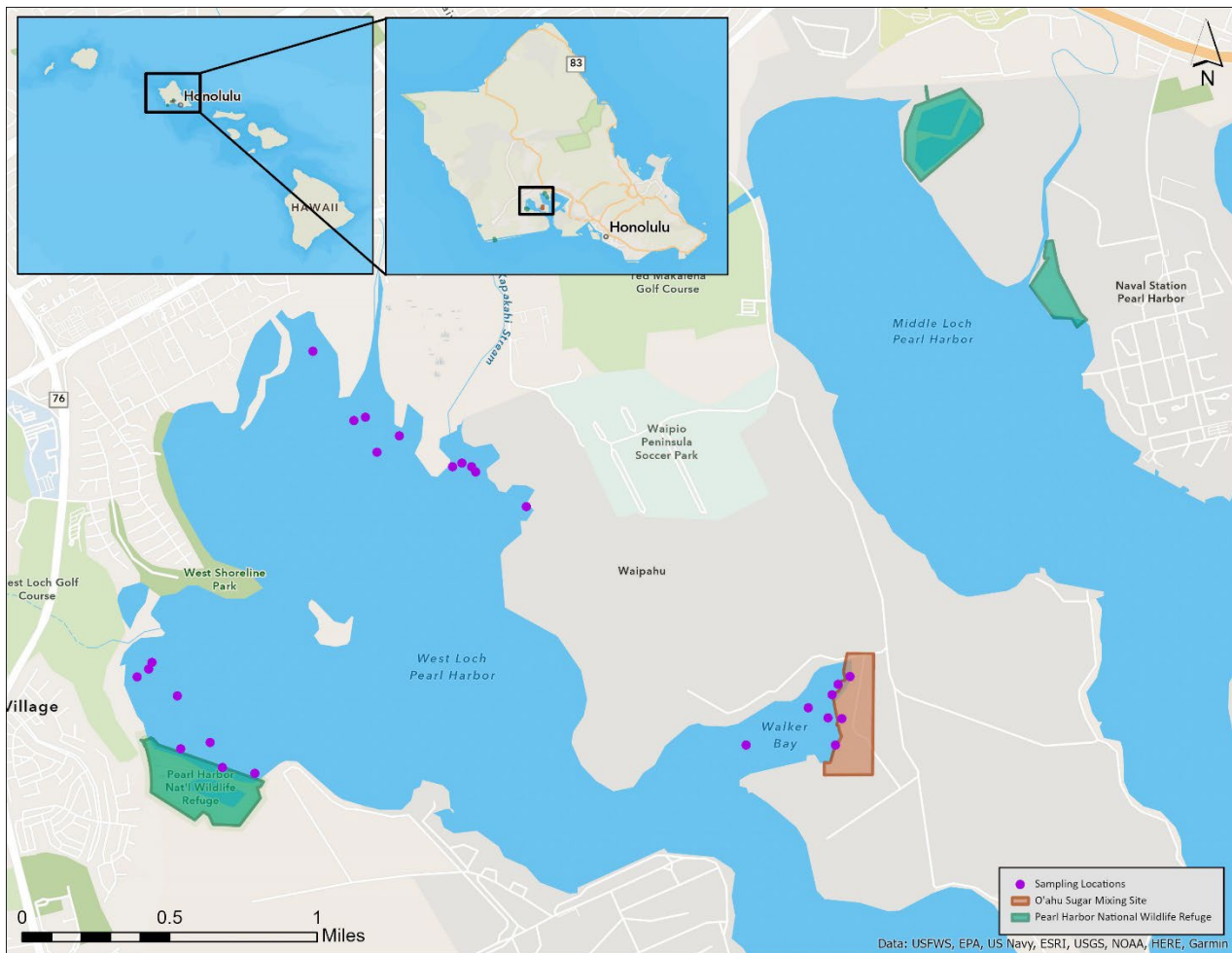


Figure 1. Map of Pearl Harbor and Walker Bay. Sampling locations for 1996, 2009, 2012 data are shown (in purple)

III. Restoration Planning

A. Restoration Goals

The overall goal of the CERCLA NRDA restoration planning process is to identify and select restoration alternatives that are appropriate to restore, rehabilitate, replace, or acquire the equivalent of, natural resources and their services injured or lost as a result of releases of hazardous substances. In this Draft RP/NEPA Evaluation, the Trustees consider and evaluate restoration alternatives that will compensate the public for natural resources and associated services injured, lost, or destroyed due to releases of hazardous substances from the Oahu Sugar Site, pursuant to the requirements of applicable federal laws and regulations.

B. Evaluation Criteria

The CERCLA natural resource damage assessment and restoration regulations at 43 C.F.R. Part 11 provide guidance on the selection of restoration alternatives. Specifically, 43 C.F.R. section 11.82 requires the Trustees to develop a reasonable number of possible restoration alternatives and to evaluate each of the possible alternatives based on all relevant considerations, including the following factors:

1. Technical feasibility
2. Relationship of the expected costs of the proposed actions to the expected benefits from the restoration
3. Cost-effectiveness/cost to carry out the alternative
4. Results of any actual or planned response actions
5. Potential for additional injury resulting from the proposed actions
6. Natural recovery period
7. Ability of the resources to recover with or without alternative actions
8. Potential effects of the action on human health and safety
9. Consistency with relevant Federal, State, and Tribal policies
10. Compliance with applicable Federal, State, and Tribal laws

C. Restoration Alternatives

1. Alternative 1: Honouliuli Watershed Wetland Restoration

Project Description

The Honouliuli Watershed Wetland Restoration project will use approximately \$1.25 million of the Oahu Sugar settlement to restore estuarine coastal wetland habitat along West Loch Pearl Harbor shoreline and adjacent to Pearl Harbor National Wildlife Refuge (Figure 2)—an area impacted by hazardous waste discharges from the Oahu Sugar Site. Restoration activities include physical removal of invasive red mangrove and other nonnative vegetation, disposal of cut/removed vegetation at approved off-site locations, and replanting of cleared areas with native Hawaiian sedges, groundcover, and trees, and predator control for native birds. Technical activities in support of the on-the-ground restoration include wildlife and water quality monitoring, public outreach, environmental education, and partnership development.

This project is expected to result in: 6 acres of restored coastal estuarine wetlands; 15 acres of restored wetland pond estuarine habitat for endangered birds and aquatic biota; improved water quality; increased community engagement and stewardship; and increased protection for the adjacent Pearl Harbor National Wildlife Refuge. Specific features of the project are described below.



Figure 2. Proposed project area within the Honouliuli Watershed in West Loch Pearl Harbor.

Background and Need

Historically, all of the Pearl Harbor (Pu‘uloa) shoreline was a healthy wetland area with extensive open mudflats and areas dominated by low-lying sedges and salt-tolerant plants that supported abundant aquatic and terrestrial wildlife. Several large streams empty into the West Loch section of Pearl Harbor, the largest estuary on the island of O‘ahu, which contains important estuarine and wetland habitat for endemic and indigenous birds, fish, and invertebrates. These streams’ channels and confluences in its lower reaches have been significantly impacted by multiple stressors such as increased sedimentation and pollutants and introduced invasive wildlife and vegetation which have led to poor water quality, a disruption of natural ecosystem function, and degraded native habitat for terrestrial and aquatic wildlife.

Native Hawaiian sedges typically form open structures that allow water to flow through and serve as nursery grounds and cover for native juvenile fish such as Hawaiian āholehole (*Kuhlia sandvicensis*). Hawaiian sedge marshes have been losing ground; their habitats altered for coastal development or invaded by introduced species, such as red mangrove (*Rhizophora mangle*) and California grass (*Urochloa mutica*). Invasive mangrove has outcompeted and overtaken critical wetland habitats and will continue to expand if left unchecked.

Approximately 70% of all mangrove found on O‘ahu occur in Pearl Harbor with the largest mangrove stand occurring in the West Loch (Chimner et. al. 2006). The rapid expansion of mangrove in West Loch has been related to past land use, leading to increases in sediment yields deposited at the mouths of streams, which allowed colonization of mangroves into the harbor. This further led to colonization of mangrove to many new areas around Pearl Harbor. To

mitigate the adverse effects from multiple stressors impacting West Loch Pearl Harbor, restoring key areas such as sedge marshes and wetland habitats so they can improve water quality and provide habitat and refuge for native aquatic species and endangered Hawaiian birds is needed.

Project Goals and Objectives

The overall goal of this project is to restore and maintain over 21 acres of critical impacted shoreline, estuarine, and wetland habitat for native terrestrial and aquatic wildlife along West Loch Pearl Harbor.

The proposed project area is part of a long-term restoration plan for the entire shoreline of West Loch, Pearl Harbor. The project area is anchored by the Honouliuli Unit of the Pearl Harbor, O‘ahu U.S. Fish and Wildlife Service’s National Wildlife Refuge Complex on one side and the Pouhala Marsh Wildlife Sanctuary, managed by the Hawai‘i Department of Land and Natural Resources, Division of Forestry and Wildlife on the other. Embedded in between these two managed wetland preserves is the Honolulu City and County Kapapahu Point Shoreline Park. The area addressed in this project proposal is part of a greater networked effort to restore and protect the entire undeveloped shoreline of West Loch, Pearl Harbor. It is proposed that this collaborative, networked approach between several existing managed wetlands will lead to long-term conservation of coastal wetland functions in the area by providing at least 20 years of conservation benefit.

Objectives and actions for this project are listed below:

1. Restore and maintain over 6 acres of estuarine coastal wetland habitat along West Loch Pearl Harbor shoreline and adjacent to Pearl Harbor National Wildlife Refuge.
2. Restore and maintain over 15 acres of freshwater emergent wetland pond habitat.
3. Collaborate with multiple partners to develop adaptive management plans, including predator control plans, that will guide the long-term management and maintenance for over 21 acres of restored wetland and shoreline habitat.
4. Develop and implement strategies to engage the community in each phase of restoration, monitoring, and long-term maintenance, and increasing responsible stewardship of restored areas.

Actions to meet objective 1:

- Remove over 6 acres of invasive mangrove and nonnative vegetation (by hand and use of heavy equipment).
- Treat removal areas to prevent regrowth through nonchemical methods.
- Plant 4 acres of wetland native Hawaiian sedges, groundcover, and trees.
- Collaborate with the USFWS O‘ahu National Wildlife Refuge Team to obtain native plant seeds and cuttings from the Honouliuli Unit complex for propagation (and out-planting) of native wetlands plants in the project area.

- Collaborate with the Hawai‘i Department of Land and Natural Resources, Division of Forestry and Wildlife Wetlands Coordinator to obtain seeds and cuttings from the Pouhala Marsh Wildlife Refuge also located in West Loch, Pearl Harbor.
- Remove regrowth of invasive mangrove and maintain native plantings.
- Monitor wildlife, including aquatic species, habitat, and waterbirds, to document ecological success of the project.
- Monitor water quality and hydrology to assess changes in water flow due to restoration efforts.

Actions to meet objective 2:

- Remove over 15 acres of invasive mangrove and nonnative vegetation.
- Plant over 8 acres of wetland native Hawaiian sedges, groundcover, and trees along stream and pond banks and margins.
- Remove regrowth of invasive mangrove and maintain native plantings.
- Monitor wildlife (aquatic species/habitat surveys and periodic waterbird surveys).
- Monitor water quality and hydrologic conditions.
- Engage with partnering NGOs and the island-chain wide Hawaiian cultural fishpond managing group to learn best methods and inspire new projects in line with the vision for restoration of West Loch and Pearl Harbor as a whole.

Actions to meet objective 3:

- Expand the West Loch Strategic Partnership for collaborative restoration, maintenance, and community outreach throughout the region.

Actions to meet objective 4:

- Maintain a citizen science monitoring program to add to the datasets describing wildlife in addition to data collected by the non-profit project partners. Monitoring includes periodic surveys of selected waterbirds, aquatic biota, and predator species.
- Expand and maintain the community-engaged adopt-a-plot program already in place in adjacent areas.
- Engage additional schools in the native plant propagation, acclimation, out-planting and out-planting survival monitoring programs (already existing for restoring adjacent wetlands).
- Increase participation by 50 individuals in ongoing place-based outreach and education programs that engage and educate the community in wetland conservation, incorporating the Honouliuli Unit of the US FWS National Wildlife Refuge via the externally-placed Betty Bliss Nagamine Overlook.

Expected Results

The proposed project will compensate the public for natural resource injuries, and services lost, resulting from hazardous waste releases at the former Oahu Sugar Site by providing:

- Over 6 acres of restored coastal estuarine wetlands.
- Over 15 acres of restored wetland pond estuarine habitat for endangered birds and aquatic biota.
- Improved water quality.
- Increased community engagement and stewardship.
- Increased protection for the adjacent Pearl Harbor National Wildlife Refuge (areas adjacent and surrounding the National Wildlife Refuge will act as a buffer to invasive plants and animals from entering the refuge as well as serve as additional habitat for endangered birds and aquatic species).

Expected Benefits to Aquatic Biota

The restoration of shoreline and estuarine pond wetland habitat will benefit native aquatic biota by increasing habitat and connectivity, reducing anoxic conditions, and increasing water circulation and mixing, an important process in estuary production. Native juvenile fishes and invertebrates will benefit from the restoration because of two key factors. First, increased productivity in estuaries yields food resources that are essential for rapidly growing juveniles. Second, the increased habitat and connectivity will increase interactions of seawater, freshwater and land which provides critical refuges for native fish from predation.

Expected Benefits to Terrestrial Wildlife

Removal of invasive mangrove and restoring project areas with native plants is expected to enhance the habitat for waterbirds and migratory shorebirds. Many of these birds are found only in Hawai‘i, and only on particular islands. The waterbirds known to occasionally utilize the West Loch estuarine habitat for feeding and loafing include four endangered waterbirds: Hawaiian gallinule (‘alae ‘ula, *Gallinula chloropus sandvicensis*), Hawaiian duck (koloa maoli, *Anas wyvilliana*), Hawaiian coot (‘alae ke‘oke‘o, *Fulica alai*), and the Hawaiian stilt (ae‘o, *Himantopus mexicanus knudseni*).

Restoration of wetlands is expected to increase invertebrate productivity such as aquatic insects which are important food resources for native waterbirds. As the proposed site is adjacent to the Pearl Harbor National Wildlife Refuge and is part of the same watershed, threatened and endangered species are expected to greatly benefit from the project’s habitat expansion.

2. No Action

Pursuant to the CERCLA regulations, the Trustees considered a No Action alternative premised on “natural recovery” (43 C.F.R § 11.82(c)(2)). Under the natural recovery alternative, the Trustees would take no direct action to restore injured natural resources or compensate for lost

services using case settlement funds at this time. The Trustees would allow natural recovery processes to occur.

3. Alternatives Considered but Eliminated from Further Evaluation

In addition to the restoration alternatives described above, some alternatives were identified by the Trustees that were ultimately eliminated from further consideration because they are now being implemented as part of a separate NRDA case (Chevron Pipeline Oil Spill) and restoration planning effort. Thus, these alternatives were not carried forward for CERCLA NRDA evaluation or NEPA analysis in this Draft RP.

ALTERNATIVE/PROJECT	DESCRIPTION	LOCATION
POUHALA POND CREATION	Create 5-acre restoration pond for endangered waterbird nesting habitat	Pearl Harbor West Loch
POUHALA MARSH ENHANCEMENT PROJECT	Enhance habitat for waterbird nesting, foraging, and loafing, while recovering wetland habitat, watershed function, and native plant communities	Pearl Harbor West Loch

The Trustees were unable to identify other potential restoration alternatives to compensate the public for natural resources and associated services injured, lost, or destroyed due to releases of hazardous substances from the Oahu Sugar Site. If, during the public review and comment period, other restoration alternatives are proposed or identified, they will be considered by the Trustees during the development of the Final RP/NEPA Evaluation.

D. CERCLA NRDA Evaluation of Alternatives

1. Alternative 1: Honouliuli Watershed Wetland Restoration (Preferred)

The Trustees have evaluated the Honouliuli Watershed Wetland Restoration alternatives using the CERCLA NRDA evaluation criteria listed in Section III.B, and have concluded that this alternative aligns favorably with these criteria. This type and scale of project will effectively provide appropriate compensation for injured habitat. Moreover, the project has a direct nexus to and will directly benefit the natural resources and resource services injured by releases of hazardous substances at the Oahu Sugar Site. Without direct intervention, mangrove and other invasive vegetation will continue to thrive within this active stream channel, thereby increasing the potential for flood damage and continuing to provide poor habitat for native terrestrial and aquatic wildlife. These negative impacts can be lessened by clearing the debris and invasive vegetation, replanting native vegetation, and educating and encouraging local community engagement. In addition, this project is anticipated to have only minimal adverse environmental consequences and multiple beneficial impacts, as discussed further in Section IV.F.

The CERCLA NRDA evaluation is summarized in Table 1 below. Based on this evaluation, and the supporting environmental analysis provided in Section IV.F, the Federal Trustees identify the Preferred Alternative (Section IV.J).

Table 1. Summary and comparison of the alternatives evaluation using the selection criteria in the CERCLA NRDA Regulations (43 C.F.R. § 11.82(d)).

Evaluation Criteria	No Action Alternative	Alternative 1: Honouliuli Watershed Wetland Restoration (Preferred)
Technical feasibility	The No Action alternative is technically feasible	Alternative 1 is technically feasible. The technological and management skills necessary to implement the Project are well known and each element of the plan has a reasonable chance of successful completion in an acceptable period of time.
Cost effectiveness	The No Action alternative has no cost or benefit at this time.	It is anticipated that Alternative 1 will prove effective in generating significant restoration gains with direct nexus to the Trustees' injury concerns.
The results of any actual or planned response actions	Absent restoration actions, there is a reduced potential for resources to fully recover to baseline conditions.	N/A
Potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the injured resources or other resources	No additional natural resource injuries would occur with no action, but injuries and losses associated with the Site would go unaddressed, at least for the time being. This alternative does nothing to compensate the public for interim losses of ecological services, which will continue to accrue into the future.	Activities associated with Alternative 1 would have at most, minor, localized, and mainly short-term impacts on the types of resources that were injured at the Site (benthos, fish, bird habitat). These impacts would mainly occur during construction activities during restoration implementation. It is expected that the vast majority of impacts would be beneficial and long-term as estuarine coastal wetland habitat along the West Loch Pearl Harbor shoreline—an area impacted by hazardous waste discharges from the Site—is restored.
The natural recovery period as determined in 43 C.F.R. § 11.73(a)(1) (i.e., the amount of time needed for recovery if no restoration, rehabilitation, replacement, and/or acquisition of equivalent resources efforts are undertaken beyond response actions performed or anticipated)	The natural recovery period and the abilities of the resources to recover with or without alternative actions, considered together, would likely be on the order of decades or longer.	Proposed restoration activities under Alternative 1 are expected to accelerate the time required for recovery of the affected ecosystem.
Ability of the resources to recover with or without alternative actions	The ability of the resources to recover without alternative actions would be lost for decades, if not in perpetuity, without similar restoration occurring in the area.	With Alternative 1, degraded coastal wetland habitat and related resources along the West Loch shoreline and adjacent to Pearl Harbor National Wildlife Refuge would be restored and managed, with expected benefits to aquatic biota and terrestrial wildlife. The proposed project will compensate the public for natural resource injuries, and services lost, resulting from

		hazardous waste releases at the former Oahu Sugar Site.
Potential effects of the action on human health and safety	The No Action alternative would not affect or change existing circumstances for human health and safety.	Alternative 1 would have no anticipated adverse effects on human health and safety; rather, the alternative would improve access to nature and increase quality of life and the human environment.
Consistency with relevant Federal, State, and Tribal policies	The No Action alternative is not inconsistent with any relevant Federal or State policies.	Alternative 1 is consistent and in accordance with both relevant Federal and State policies to restore natural resources injured by hazardous substances. In particular, the Project would be required to meet applicable federal legal standards, as well as any applicable State and local permitting requirements.
Compliance with applicable Federal, State, and Tribal laws and tribal policies	Because the No Action alternative would not provide for any restoration at this time, it would not facilitate achieving the Federal Trustees' goal of restoring injured natural resources and services.	Alternative 1 is consistent and is in accordance with CERCLA's requirement that damages recovered by the Federal Trustees for natural resource injuries be used for restoration or replacement of those resources. The proposed restoration will provide ecological uplift and benefits to the public.

2. No Action Alternative (Non-preferred)

With the No Action alternative, no restoration, rehabilitation, replacement or acquisition projects or actions would occur discrete from current conditions. This alternative would result in minimal to no costs since no action using settlement funds would be taken. If selected, there would be no implementation of restoration of lost resources and their services/uses, and there would be no intent to implement projects to compensate for past natural resource and resource use injuries resulting from hazardous waste discharges from the Oahu Sugar Site. This would allow for some affected resource conditions to continue with uncertain duration or outcomes, and would prolong the environmental injury from the Incident.

For purposes of this Draft RP/NEPA Evaluation, the No Action alternative is not preferred since compensatory restoration is required. The No Action alternative is retained and evaluated in this Draft RP/NEPA Evaluation for comparative purposes relating to the natural resource restoration activities resulting from the project alternatives considered (Table 1).

IV. NEPA EVALUATION

The National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, *et seq.*, and the regulations guiding its implementation at 40 C.F.R. Parts 1500-1508, apply to restoration actions that federal natural resource trustees plan to implement under CERCLA and other federal laws. NEPA and its implementing regulations outline the responsibilities of federal agencies and provide specific procedures for preparing the environmental documentation necessary to demonstrate compliance. NOAA is acting as the lead agency for NEPA compliance for this Draft RP/NEPA Evaluation.

The Trustees integrated the CERCLA and NEPA processes in this Draft RP/NEPA Evaluation. Integration of the NEPA evaluation process into this document allows the Trustees to provide for public involvement under both statutes concurrently. This approach is recommended under 40 C.F.R. § 1500.2(c), which provides that federal agencies should “[i]ntegrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.” Thus, this document serves, in part, as the agencies’ compliance with NEPA.

A. Requirements for Analysis under NEPA

Under NEPA, federal agencies must evaluate potential impacts to the environment from their proposed actions and reasonable alternatives. If impacts are potentially significant, an environmental impact statement (EIS) is required, but if impacts are either unclear or considered not significant, an environmental assessment (EA) may be prepared. Additionally, some types of actions may qualify for a Categorical Exclusion (CE), or otherwise not be subject to NEPA.

NEPA allows for broad programmatic analyses that subsequently can be used to meet NEPA requirements for project-level actions through incorporation by reference and “tiering.” This process is discussed further below. The NEPA process ensures that public decision-makers are fully informed about the potential impacts of the proposed action and alternatives and allows for meaningful public involvement in the decision-making process. For this Draft RP/NEPA Evaluation, the federal Trustees propose to satisfy their NEPA obligations by applying the impacts analysis and conclusions drawn in another, previously published programmatic NEPA document—NOAA Restoration Center’s 2015 “Programmatic Environmental Impact Statement for habitat restoration activities implemented throughout the coastal United States” (RC PEIS). The public will be invited to provide feedback on the Trustees’ proposed action and alternatives and the analysis conducted in the Draft RP/NEPA Evaluation.

This Draft RP/NEPA Evaluation complies with NEPA by 1) describing the purpose and need for restoration; 2) addressing public participation for this process; 3) identifying alternative actions; 4) summarizing the current environmental setting; and 5) analyzing environmental consequences.

The Fiscal Responsibility Act (42 U.S.C. § 4336b, June 2023) amended NEPA to require that when a federal agency relies on a programmatic environmental document more than 5 years old, the federal agency must reevaluate the analysis and any underlying assumptions in the programmatic environmental document to ensure the analysis remains valid. Consistent with the FRA amendment to NEPA, and with 40 C.F.R. § 1501.11, the Trustees determined that the analysis in the RC PEIS (2015) and the underlying assumptions therein in the context of the project proposed in this RP/NEPA analysis remain valid and that it continues to be applicable.

B. NOAA Restoration Center Programmatic Environmental Impact Statement

After decades of experience evaluating and implementing environmental restoration projects, NOAA’s Restoration Center (RC) has determined that many of its efforts involve similar types of activities with similar environmental impacts. To increase efficiency in conducting future NEPA analyses for a large suite of habitat restoration actions, the RC developed the “Programmatic Environmental Impact Statement for habitat restoration activities implemented

throughout the coastal United States” (RC PEIS) in 2015. After a public comment period, a Record of Decision was signed July 20, 2015. USFWS documented their adoption of the RC PEIS with a Record of Decision, dated August 20, 2019 (84 Federal Register 45515). The RC PEIS is available at the following link:

<https://www.fisheries.noaa.gov/resource/document/restoration-center-programmatic-environmental-impact-statement>

The RC PEIS provides a program-level environmental analysis of NOAA’s habitat restoration activities throughout the coastal and marine environment of the United States. Specifically, it evaluates typical impacts related to a large suite of projects undertaken frequently by the RC, including, but not limited to: Coral Reef Restoration; Debris Removal; Beach and Dune Restoration; Signage and Access Management; Fish Passage; Fish, Wildlife, and Vegetation Management; Levee and Culvert Removal, Modification, and Set-Back; Shellfish Reef Restoration; Subtidal Planting; Wetland Restoration; Freshwater Stream Restoration; and Conservation Transactions. These analyses may be incorporated by reference in subsequent NEPA documents, including tiered NEPA documents, where applicable. For example, a site-specific NEPA document may evaluate a restoration project where all potential impacts were addressed in the RC PEIS. In that instance, the site-specific NEPA document would, in effect, incorporate by reference the full impacts analysis from the RC PEIS. In those cases where the RC PEIS determined none of the potential impacts would be significant, the site-specific NEPA document could incorporate that conclusion by reference as well. In short, no further NEPA analysis may be necessary so long as the proposed activity is within the range of alternatives and scope of potential environmental consequences analyzed in the RC PEIS and would not cause significant adverse impacts. Conversely, if the site-specific restoration activity is not within the scope of alternatives or environmental consequences considered in the RC PEIS, it will require additional NEPA analysis through preparation of a new NEPA document.

For this Draft RP/NEPA Evaluation, the Trustees have made the preliminary determination that the RC PEIS fully covers the scope of the proposed action and all environmental impacts, and a separate NEPA analysis and decision document is not needed. This determination has been documented in the sections below, and in a draft NEPA “Inclusion Analysis” (Appendix).

The environmental impacts from riverine and coastal habitat restoration projects (including invasive species removal/control and wetland planting) and supporting technical assistance activities (implementation monitoring; fish and wildlife monitoring; public outreach; environmental education, programs, and partnerships) in support of these types of projects have been analyzed in the RC PEIS. The Trustees have also determined that the RC PEIS’s analysis of the proposed project activities remains valid. Those general analyses are incorporated here by reference and are summarized in the draft Inclusion Analysis (Appendix), as discussed in Section IV.F below.

C. Proposed Action and Alternatives

Alternative 1: Honouliuli Watershed Wetland Restoration (Preferred Alternative)

As described in Sections III, the proposed action is the Honouliuli Watershed Wetland Restoration project. The proposed restoration will restore coastal wetland habitat along West Loch Pearl Harbor shoreline and adjacent to Pearl Harbor National Wildlife Refuge—an area

impacted by hazardous waste discharges from the former Oahu Sugar Site. Restoration activities include physical removal of invasive red mangrove and other nonnative vegetation, disposal of cut/removed vegetation at approved off-site locations, and replanting of cleared areas with Hawaiian sedges, groundcover, and trees. Technical activities in support of these on-the-ground-activities include wildlife, water quality, and hydrologic monitoring; and public outreach, environmental education, and partnership development, as described in Section IV.

The Honouliuli Watershed Wetland Restoration project is the Trustees' tentatively preferred alternative based on the CERCLA NRDA evaluation in Section III.D. This project is evaluated in this Draft RP/NEPA Evaluation to further inform its selection as the preferred alternative and to determine whether the scope of the alternative and all potential impacts are sufficiently addressed in the RC PEIS. This evaluation is described below in Section IV.E and IV.F and is documented in the draft Inclusion Analysis, which is appended to this Draft RP/NEPA Evaluation (Appendix).

No Action Alternative (Non-preferred Alternative)

NEPA requires that federal agencies consider a “no action” alternative and the CERCLA regulations require consideration of a “natural recovery” alternative. These alternative options are equivalent. Under the No Action alternative, the Trustees would undertake no restoration projects and any further restoration of natural resources and services injured by the release of hazardous substances would instead occur through natural recovery alone. No action is a non-preferred alternative because it fails to compensate the public for losses associated with the incident. However, NEPA mandates that federal agencies evaluate the environmental impacts of no action.

D. Affected Environment

This section provides both general and site-specific descriptions of the affected physical, biological, and social environments, and related resources, as they relate to the geographic area that may be affected by the restoration alternatives considered in this Draft RP/NEPA Evaluation. This Draft RP/NEPA Evaluation incorporates by reference and briefly summarizes the general affected environment description of coastal habitats, including wetlands and stream and river channels, in the RC PEIS (Section 3.1.3).

1. General – Coastal Habitats

Wetlands

Wetlands provide numerous beneficial ecological functions, including protection of shorelines from waves and storm surges, erosion control and buffering, carbon sequestration and storage, water storage, maintenance of water quality, removal of sediments, groundwater recharge, nutrient and pollution filtering, spawning and nursing areas for many fish species, and food and habitat for numerous species of aquatic and terrestrial plants and animals. Wetlands are among the most productive ecosystems in the world, supporting thousands of species of plants, animals, shellfish, finfish, birds, invertebrates, and microbes. Wetlands also provide important recreational and economic benefits for humans, such as opportunities for boating, fishing, hiking, waterfowl hunting, nature observation, and photography, among many others.

Wetland resources are found throughout the areas affected by Trustee-supported projects, including all regions and many areas along coastlines, rivers, streams, estuaries, and other water bodies or receiving areas. A wide variety of wetlands occur in the potentially affected area covered by this RC PEIS, including tidal and nontidal wetlands. These categories of wetlands are described further in Section 3.1.1 of the RC PEIS, and that information is incorporated here by reference.

Stream and River Channels

While stream and riverine systems are dynamic and highly variable environments, they do share certain qualities that are somewhat universal. Many rivers and streams along the coast are tidal, with the effects of ocean tides extending upstream. The channel of a stream or river is the portion of the cross section that is usually submerged and totally aquatic. Channel substrates may be composed of various materials, including cobbles, boulders, sand, clay, and silt. Portions of a river channel often contain biological elements such as oyster reefs or submerged aquatic vegetation beds that help shape or define the channel. Stream and river channels are critical to the viability of living coastal and marine resources. In addition to providing freshwater, rivers and streams transport nutrients and provide habitat for thousands of aquatic and terrestrial species, including birds, shellfish, finfish, amphibians, reptiles, mammals, plants, and invertebrates. Vegetation that grows along the banks of rivers and streams stabilizes the banks, shades the water, and provides cover and food for animals and nutrients for the ecosystem (e.g., from fallen leaves).

The integrity of stream and river channels is important to the viability of not only the streams and rivers themselves, but also to the estuaries, oceans, marshes, and wetlands connected to them. Processes such as accelerated channel erosion, pollution, diking, damming, channel alteration, scouring, and dumping can drastically affect the rivers and streams and their receiving waters by causing accelerated sedimentation, and alteration of temperature and water quality, among other factors.

The Trustees have made the determination that the RC PEIS contains an applicable description of the affected environment generally associated with the types of restoration activities described in this Draft RP/NEPA Evaluation. Site-specific attributes of the affected environment are described below.

2. Site-Specific

Soils and Geology

Pearl Harbor is a coastal plain estuary located in central O‘ahu, Hawai‘i. It is divided into three main bays or lochs (East, Middle and West Lochs) and one smaller loch (Southeast Loch), which are remnants of drowned river valleys joined together by a main channel connecting the harbor with the open ocean (Coles et al. 1997). Since the submergence of the ancient river valleys, the Pearl Harbor region has developed into a nearly level coastal plain that slopes to wetlands along the shore. The maximum elevation in the area is 20 feet above mean sea level on the eastern portion of the harbor (Department of Navy 2001).

The most extensive shoreline type is sheltered rocky/constructed seawall shoreline. The second most prevalent shoreline type is wetlands, which are occasionally found in the upper reaches of

the lochs. Isolated areas of fine-grained sand beaches are found sporadically along the three main lochs and on Ford Island.

Vegetation

Vegetation along much of the West, Middle and East Loch shorelines is dominated by introduced red mangroves (*Rhizophora mangle*), which form dense growths of bushes and trees up to 10 m high. Elsewhere, the shoreline vegetation is cultivated grass, trees, plants, and kiawe trees (*Prosopis pallida*) (Coles et al. 1997). Where mangroves do not occur, the nearshore subtidal zone is largely either vertical concrete walls or a shallow consolidated reef platform to about 2 m depth, which is often covered with fine sediments and introduced macroalgae. Further offshore the substratum slopes to bottom covered with a thick layer of fine silt or mud. The sea floor in Pearl Harbor is largely comprised of a soft substrate, such as terrigenous mud and calcareous sand (Department of Navy 2001).

Prior to the introduction of mangrove and other nonnative plant species, Pearl Harbor shoreline commonly consisted of Aka‘akai, a native great bulrush (*Schoenoplectus lacustris subsp. validus*), and ‘akulikuli, a shoreline seapurslane (*Sesuvium portulacastrum*) (Englund 2000). Riparian vegetation surrounding lower stream reaches, wetlands, and spring areas are currently dominated by introduced species; red mangrove (*Rhizophora mangle*), pickleweed (*Batis maritima*), and *Pluchea indica* and *Pluchea carolinensis* dominate the shoreline areas. The invasive mangrove now form a dense monoculture along all of Pearl Harbor lochs and has changed the physical environment of Pearl Harbor estuarine areas from a low shrub and bulrush community to one dominated by nearly impenetrable stands of mangroves.

Hydrology and Water Quality

The Pearl Harbor estuary was formed when sea level rise flooded the alluvial valley floor at the end of the last glacial period (approximately 15,000 years ago). Sedimentation from upland areas formed small deltas that divide Pearl Harbor into the three lochs. The Pearl Harbor watershed is bounded by Wahiawā town to the north, the Ko‘olau Mountains to the east, and the Wai‘anae Mountains to the west. The watershed drains 134 square miles or 22 percent of the island. Historically, seven perennial streams entered Pearl Harbor: Halawa, ‘Aiea, Kalauao, and Waimalu Stream fed into the East Loch; Waiawa Stream entered into the Middle Loch; and Waikale and Honouliuli Streams into the West Loch. Today, several of these streams are considered intermittent or nonfunctional; however, all carry storm drainage into Pearl Harbor. The total stream input into Pearl Harbor is estimated between 8-56 mgd (Oceanit et al. 2007).

The harbor is about 8 square miles (21 square kilometers) of surface water area with a mean depth of 29.2 m. The harbor is relatively isolated from oceanic circulation, and water exchange between the harbor and the open ocean is relatively low. Residence time within the harbor has been estimated as about six days maximum for bottom water and one to three days for surface water (Grovhoug, 1992). Water temperature in the harbor varies from 23 to 29 degrees C, and salinities range from 10 to 37‰ (mean 33‰). Salinity is highly influenced by terrestrial and ground water runoff, especially at the heads of the three main lochs. Warming of surface water and freshwater discharge contributes to the development of a pronounced vertical stratification of harbor waters, which in turn promotes differing current conditions and relative isolation between surface and bottom water masses. Surface water circulation is primarily offshore and driven by

tradewinds, while tidal flood and ebb flows control the movement of bottom water in and out of the harbor (Grovhoug, 1992).

The water of Pearl Harbor has always been relatively turbid from stream runoff and other sources of sediment, however, land use changes including deforestation, ranching and grazing, and development of sugar cane cultivation increased runoff-related sedimentation. The development of the Pearl Harbor Naval Base and the opening of the harbor entrance channel drastically altered the habitat, as shallow areas were dredged and shorelines were converted to docks and naval operations facilities. Fish ponds were filled and urbanization progressed as Pearl City was developed.

Water quality deteriorated due to military activities, urbanization, sewage discharge, and industrial and agricultural uses. The Pearl Harbor Naval Complex was placed on the National Priorities List of the Nation's most contaminated hazardous waste sites in 1992 (Pearl Harbor Natural Resource Trustees 1999). This designation was due to metals, organic compounds, and petroleum hydrocarbons found in the soil, groundwater, and sediment. Subsequent to clean-up processes and follow-up investigations, no immediate threats currently exist at Joint Base Pearl Harbor –Hickman (EPA 2008).

The 2016 State of Hawai‘i Water Quality Monitoring and Assessment Report lists the Pearl Harbor estuary for levels of total nitrogen, total phosphorus, and other pollutants that have exceeded water quality standards, and is categorized as a “high” priority for initiating Total Maximum Daily Loads (TMDL) development for the next cycle of monitoring and assessment (Hawai‘i Department of Health, Clean Water Branch, 2016). Pearl Harbor has been identified and posted as an area where fish and shellfish should not be consumed. Both the Kapakahi and Waikele streams are listed as impaired water bodies under the Clean Water Act’s 303(d) listing. Both streams have been identified as a high priority for initiating TMDL development in order to improve water quality, with the TMDLs in progress for Kapakahi Stream. Waikele Stream is listed for total nitrogen, nitrates, and turbidity during the wet season. Kapakahi Stream is listed for total nitrogen, nitrates, and total phosphorus during the wet season, in addition to trash during the wet and dry season, and a visual listing from 2001-2004 for turbidity during the dry season.

*Biological Resources*¹

The Pearl Harbor watershed supports numerous biological resources including waterbirds, shorebirds, invertebrates, and plants. Native species, including endangered and threatened species occur here, as well as numerous invasive species (USFWS 2010).

The waterbirds include four endangered waterbirds: Hawaiian gallinule (‘alae ‘ula, *Gallinula chloropus sandvicensis*), Hawaiian duck (koloa maoli, *Anas wyvilliana*), Hawaiian coot (‘alae ke‘oke‘o, *Fulica alai*), and the Hawaiian stilt (ae‘o, *Himantopus mexicanus knudseni*). Population levels of these endangered waterbirds have been severely reduced primarily because of the loss habitat and introduced species. Migratory waterfowl, ducks, and shorebirds are seasonal migrants (USFWS 2010).

¹ Biological resources described in this section are analogous to “living coastal and marine resources and EFH” and “threatened and endangered species” described in the RC PEIS (Section 3.0 Affected Environment).

The State of Hawai‘i has 354 plant species that are federally listed as threatened and endangered including 121 listed plants are found on the island of O‘ahu. Two endangered plant species occur within the Pearl Harbor NWR –the Akoko (*Euphorbia skottsbergii*) and the ‘Ewa Hinahina (USFWS 2010).

The federally and state-listed threatened Pacific green sea turtle (*Chelonia mydas aqassizl*) occurs in Pearl Harbor. Mammals are limited to invasive mongoose, rats, cats, and wild boars which are found throughout urbanized O‘ahu.

There is evidence from oyster shells discovered in wetland areas and nearshore visual surveys throughout West Loch of the presence of two species of oyster species native to Pearl Harbor—Hawaiian oyster (*Dendostrea sandvicensis*) and black-lip pearl oyster (*Pinctada margaritifera*). Both species are threatened and population levels in Pearl Harbor have plummeted from historic abundance.

Though there are no federally-listed fish species that utilize West Loch Pearl Harbor, there are freshwater diadromous species listed under Hawai‘i’s Department of Natural Resources Species of Greatest Conservation Need (SGCN) which are species identified in need of conservation action from key threats potentially affecting their future survival. These freshwater goby species utilize both brackish water and freshwater habitats and are used as indicators of watershed ecosystem health. Other native fish species found within Pearl Harbor are included in Table 2 below.

Table 2. Native fish species found within Pearl Harbor.

Scientific Name	Common Name	Hawaiian Name	Biogeography	*Status
<i>Eleotris sandvicensis</i>	Hawaiian sleeper	‘O‘opu ‘akupa	Endemic	SGCN
<i>Awaous guamensis</i>	Stream goby	‘O‘opu nākea	Indigenous	SGCN
<i>Stenogobius hawaiiensis</i>	Freshwater goby, naniha goby	‘O‘opu naniha	Endemic	SGCN
<i>Kuhlia xenura</i>	Hawaiian flagtail	Āholehole	Endemic	
<i>Kuhlia sandvicensis</i>	Reticulated flagtail	Āholehole	Endemic	
<i>Mugil cephalus</i>	Flathead mullet	‘Ama‘ama	Indigenous	
<i>Chanos chanos</i>	Milkfish	Awa	Indigenous	
<i>Sphyræna helleri</i>	Barracuda	Kawale‘ā	Indigenous	
<i>Caranx ignobilis</i>	Giant trevally	Ulua aukea	Indigenous	
<i>Carax malampygus</i>	Bluefin trevally	‘Omilu	Indigenous	
<i>Acanthurus triostegus sandvicensis</i>	Convict Surgeonfish	Manini	Indigenous	

Scientific Name	Common Name	Hawaiian Name	Biogeography	*Status
<i>Polydactylus sexfilis</i>	Sixfinger threadfin	Moi	Indigenous	
<i>Albula</i> spp.	Bonefish	‘Ō‘io	Indigenous	
<i>Stolephorus purpureus</i>	Hawaiian Anchovy	Nehu	Indigenous	

*Hawai‘i’s Species of Greatest Conservation Need (SGCN) – vulnerable species, indicator species, fragmented or isolated populations, low or declining populations.

1. Whitfield, A. K., Jacques Panfili, and J-D. Durand. "A global review of the cosmopolitan flathead mullet *Mugil cephalus* Linnaeus 1758 (Teleostei: Mugilidae), with emphasis on the biology, genetics, ecology and fisheries aspects of this apparent species complex." *Reviews in Fish Biology and Fisheries* 22.3 (2012): 641-681.
2. Davis, Bertell D., Bishop Museum "In Memory of Pearl Harbor: the Loses Gone Unsung", Environment, Vol. 2.6, Dec. 1991.
3. Atlas of Hawaiian Watersheds and their Aquatic Resource, Waikele, O‘ahu Watershed Code 34101, Hawai‘i Division of Aquatic Resources, 2008.

The marine water column from the surface to a depth of 1,000 meters (m) from shoreline to the outer boundary of the EEZ (200 miles), and the seafloor from the shoreline out to a depth of 700 m around each of the Hawaiian Islands, have been designated as EFH. As such, all waters and submerged lands are designated as EFH and support various life stages for the management unit species (MUS) identified under the Western Pacific Regional Fishery Management Council’s Pelagic and Hawai‘i Archipelago Fishery Ecosystem Plans. The MUS and life stages found in these waters include: eggs, larvae, juveniles, and adults of Bottomfish MUS; eggs, larvae, juveniles, and adults of Crustacean MUS; and juveniles and adults of Pelagic MUS.

EFH consultations are necessary when a federal nexus exists and the activities proposed may adversely affect EFH resulting in a reduction in the quality and/or quantity of EFH, as described in the MSA. A federal nexus exists when a proposed action is either permitted, conducted, or funded by the federal government.

Historical/Cultural Resources

Prior to European contact, the Pearl Harbor watershed was utilized by Native Hawaiians for fishing, food gathering, and fish cultivation in fishponds. Historically, the peninsula was also used for rice and watercress cultivation (Elliot and Hall 1977). Early reports describe an abundance of fish and shellfish in Pearl Harbor and the importance of the area as a major Hawaiian population center supported by numerous and extensive fish ponds, which declined in the nineteenth century.

Pearl Harbor is recognized as one of the most historic sites in the United States due to the attack on the military base in World War II and the resulting American casualties. In 1964, the U.S. Naval Base Pearl Harbor was declared a National Historic Landmark (NHL) by the Secretary of the Interior and was placed on the National Register of Historic Places in 1966. Within the NHL boundary there are also several activities and related facilities of particular historic and cultural importance including the USS Arizona Memorial, USS Utah, and the USS Nevada. The most

famous of these is the USS Arizona Memorial, which spans the submerged USS Arizona, off Ford Island and the associated Visitor Center on the shoreline of East Loch. The Visitor Center was completed in 1980 and attracted over 1.7 million visitors in 2020 (NPS Stats).

Pearl Harbor National Wildlife Refuge is comprised of three units on the southern portion of O‘ahu: the Waiawa Unit, the Honouliuli Unit, and the Kalaeloa Unit. The Waiawa Unit is 24.5 acres and is located on the west side of the Pearl City Peninsula, which divides the Middle Loch from the East Loch within Pearl Harbor. The Honouliuli Unit, covering 36.5 acres, is located on the west shore of the West Loch of Pearl Harbor. The newest unit, Kalaeloa, is located on the flat coastal Ewa Plain approximately 7 miles southwest of Pearl Harbor. This unit, which was formerly part of the Barbers Point Naval Air Station, is 37.4 acres (USFWS 2010).

Recreation

Several parks and recreational resources are located in West Loch Pearl Harbor adjacent to the proposed project area. These include the West Loch Shoreline Park and beach, Kapapuhi Point Park, West Loch Bike Path, and the 18-hole West Loch Golf Course. In addition, the Honouliuli Unit of the Pearl Harbor National Wildlife Refuge can be accessed year-round for interpretation, wildlife viewing, and photography at the Betty Bliss Memorial Overlook (<https://www.fws.gov/refuge/pearl-harbor/about-us><https://www.fws.gov/refuge/pearl-harbor/about-us>).

Socioeconomic Resources

In 2013, the population in Honolulu County included an estimated 964,678 persons, with a total of 309,803 households, a median family income of \$85,440, and an unemployment rate of 3.7 percent. In the West Loch Census Tract (Tract 87.03), there are an estimated 7,056 persons, a total of 1,665 households, a median family income of \$54,398, and an unemployment rate of 9.8 percent (DBEDT 2013).

Hawai‘i is economically dynamic with diversified agriculture and manufacturing; strategically important to the global defense system of the U.S.; a Pacific Basin transportation center; and a major tourism destination. The health of the State’s economy depends significantly on conditions in the overall U.S. economy and key international economies, especially Japan. State taxes are collected under a centralized tax system. The chief sources of the State’s revenue are a general excise tax, individual income taxes, and federal grants-in-aid. The second largest source of income in Hawai‘i is the Federal government, primarily through defense expenditures.

Tourism is Hawai‘i’s largest industry with the majority of visitors coming from the U.S. mainland, Canada, Australia, and countries of the Far East, particularly Japan. Most visitors to Hawai‘i travel by air. The Honolulu International Airport, on O‘ahu; General Lyman Field at Hilo on Hawai‘i; and the Kahului Airport on Maui, are the major civilian airports capable of serving large-jet traffic. There are several smaller airports among the islands and a number of small private airfields and military airports throughout the State. Oceanic passenger ships also carry visitors through Honolulu, and there is one interisland cruise line (Hawai‘i Travel Guide).

Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental impacts of federal projects on minority and low-income populations, and Tribal Nations. The EPA defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” Environmental justice efforts focus on improving the environment in communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities. Impacts on minority and low-income populations are considered disproportionately high and adverse under EO 12898 if they would “significantly ... and adversely” affect a low-income or minority population and would “appreciably exceed or [be] likely to appreciably exceed” impacts on the general population or another appropriate comparison group (CEQ 1997).

Executive Order 14096, “Executive Order on Revitalizing Our Nation’s Commitment to Environmental Justice for All,” requires each federal agency, as appropriate and consistent with applicable law, “to identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of [f]ederal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns” (EO 14096, §3(i)). Executive Order 14096 reiterates and strengthens Executive Order 12898 regarding federal actions and environmental justice. Executive Order 14096 also requires that each agency shall, as appropriate and consistent with applicable laws, carry out environmental reviews under NEPA “in a manner that analyzes direct, indirect, and cumulative effects of [f]ederal actions on communities with environmental concerns” (EO 14096, §3(ix)(A)).

Consistent with EO 12898 and EO 14096, this section identifies low-income and minority populations within the proposed project area based on the most recent socioeconomic and demographic statistics currently available from the U.S. Census Bureau’s American Community Survey (ACS) 5-year estimates from 2015 to 2019 (<https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/>).

The USEPA’s EJSCREEN: Environmental Justice Screening and Mapping Tool (<https://ejscreen.epa.gov/mapper/>) was used to identify low-income and minority (people of color) populations at the Census Block scale—in this case Block Groups 150030087031 (population: 2,602) and 150030086173 (population: 3,350), which encompass the proposed project area². According to EJSCREEN, people of color comprise approximately 93% (including 58% non-Hispanic Asian alone and 15% Pacific Islander alone) and 81% (including 56% Non-Hispanic Asian alone and 5% Pacific Islander alone) of these block groups, respectively, which is greater than the state as a whole (approximately 78%) and the United States (approximately 40%). Only 7% of the Block Group 150030087031 population consists of low-income

²A block group is an area defined by the Census Bureau that usually has in the range of 600-3,000 people living in it. People of color=the percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals.

Low-income=the percent of a block group’s population in households where the household income is less than or equal to twice the federal "poverty level."

households and 11% of the Block Group 150030086173 population consists of low-income households, which is less than that of Hawai‘i (22%) and the United States as a whole (31%).

Air Quality

The Department of Health, Clean Air Branch, monitors the ambient air in the State of Hawai‘i for various gaseous and particulate air pollutants. The U. S. Environmental Protection Agency has set national ambient air quality standards (NAAQS) for six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter (PM10 and PM2.5). Hawai‘i has established state ambient air standards for all of these pollutants (except for PM2.5) in addition to hydrogen sulfide, a product of volcanic emissions. The primary purpose of the statewide monitoring network is to measure ambient air concentrations of these pollutants and to ensure that these air quality standards are met. In 2015, there were four air-monitoring stations on the island of O‘ahu. One of the monitoring stations is located in Pearl City, in the general vicinity of the project site. According to the State of Hawai‘i Department of Health Annual Summary 2015 Air Quality Data, criteria and pollutant levels in the State remained below all federal and state ambient air quality standards (excluding exceedances due to volcanic activity).

E. Evaluation of Alternative 1 Relative to the RC PEIS

As discussed above in Sections III and IV, Alternative 1 is comprised of coastal wetland habitat restoration along the West Loch Pearl Harbor shoreline and adjacent to Pearl Harbor National Wildlife Refuge. On-the-ground restoration activities include physical removal of invasive red mangrove and other nonnative vegetation, disposal of cut/removed vegetation at approved off-site locations, and replanting of cleared areas with Hawaiian sedges, groundcover, and trees. Supporting technical activities include wildlife, hydrologic, and water quality monitoring; and public outreach, environmental education, and partnership development.

Section 2.2.2 of the RC PEIS addresses “Riverine and Coastal Habitat Restoration” alternatives, including the types of on-the-ground restoration activities proposed in this Draft RP/NEPA Evaluation. Specifically, the RC PEIS describes the actions associated with “Invasive Species Control” and “Wetland Restoration-Wetland Planting” in Sections 2.2.2.4.1 and 2.2.2.11.5, respectively. Applicable “Technical Assistance” activities are described in Sections 2.2.1.2 (“Implementation and Effectiveness Monitoring”), 2.2.1.3 (“Fish and Wildlife Monitoring”), and 2.2.1.4 (“Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs”).

The Trustees have determined that the project activities that comprise Alternative 1 described in this Draft RP/NEPA Evaluation fall within the scope of the “Riverine and Coastal Habitat Restoration” and “Technical Assistance” alternatives considered and described in the RC PEIS. Further, the restoration activities associated with the Alternative 1, as described in this Draft RP/NEPA Evaluation, are provided in the appended draft Inclusion Analysis under “Project Description/Scope of Activities”.

F. Impacts Analyzed for Alternative 1

The RC PEIS impacts analysis includes a description of the impacts associated with the types of restoration activities proposed in this Draft RP/NEPA Evaluation. That information can be found in Section 4.0 of the RC PEIS (“Environmental Consequences”; also see Table 11). The environmental consequences from activities related to wetland and shoreline habitat restoration most applicable to the proposed action (Alternative 1) are described in Sections 4.5.2 (“Riverine and Coastal Habitat Restoration”) of the RC PEIS, and more specifically, in Sections 4.5.2.4.1 (“Invasive Species Control”) and 4.5.2.11.3 (“Wetland Plantings”). Also, see Tables 20 and 35 of the RC PEIS for a summary of these impacts. In addition, Technical Assistance activities most applicable to the proposed action are analyzed in Sections 4.5.1.2 (“Implementation and Effectiveness Monitoring”), 4.5.1.3 (“Fish and Wildlife Monitoring”), and 4.5.1.4 (“Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs”), and also summarized in Tables 13-15 of the RC.

Direct, indirect, and cumulative impacts to relevant resources (e.g., geology and soils, water resources, living coastal and marine resources and EFH, threatened and endangered species, cultural and historic resources, land use and recreation, and socioeconomics) with the Alternative 1 are also fully summarized in the draft Inclusion Analysis in “Project Impact Analysis – IV.4 and IV.5,” core questions 4 and 5 (Appendix).

The Trustees have also determined that Alternative 1 would not have adverse impacts beyond the scope of those analyzed in the RC PEIS, or meet any other criteria for exclusion from analysis under the RC PEIS (refer to Table 10 of the RC PEIS).

Ultimately, the RC PEIS concludes that the anticipated impacts would not be significant, and the Trustees propose to adopt that conclusion and the supporting analyses in this Draft RP/NEPA Evaluation. A more detailed description of the Trustees’ justification for doing so can be found in the draft Inclusion Analysis (Appendix).

G. Evaluation of the No Action Alternative

The No Action alternative (natural recovery) is the non-preferred alternative to the proposed action. With the No Action alternative, no on-the-ground restoration would be implemented and current environmental conditions at West Loch, Pearl Harbor, would remain as-is or continue to degrade. The No Action alternative would not result in direct impacts to the physical, biological, and cultural/human use environment since no restoration action would be undertaken. However, the benefits from the proposed restoration would not be realized and the public would not be compensated for natural resource injuries resulting from the release of hazardous substances at the Oahu Sugar Site.

H. Climate Change

The habitat restoration activities analyzed in the RC PEIS are particularly relevant to the discussion of carbon emissions and climate change science and its practical application in environmental restoration and conservation. The release of carbon and other greenhouse gasses into the atmosphere is due to a number of causes, most notably the combustion of fossil fuels and the destruction of ecological “carbon sinks”—ecosystems that absorb or contain more carbon than they emit. In the context of habitat restoration, a carbon sink could be coastal and freshwater wetlands, salt marshes, mangroves and submerged aquatic vegetation (SAV) beds, the associated

biomass for these habitats, or even the ocean itself—all environments that NRDA trustees work to restore, enhance, rehabilitate, reestablish, or protect. Sequestered carbon is an important concept in assessing the impacts of habitat restoration because many of the habitats described in the RC PEIS as part of the affected environment do serve as carbon sinks and therefore their restoration or protection from damage, degradation, or outright conversion/ development either prevents greenhouse gas emissions, or conversely increases the capacity of the habitat to further sequester carbon. One goal of these activities is to improve the functionality of ecosystems to where their carbon sequestration potential is enhanced or protected (e.g., estuarine wetlands). In addition to carbon sequestration, the restoration activities described in the RC PEIS also enhance the physical resiliency of coastal ecosystems to better withstand the effects of climate change and sea level rise.

Minor, localized, short-term, and adverse direct effects on greenhouse gas (GHG) emissions are expected as a result of the proposed restoration action (Alternative 1). Actions resulting in GHG emissions may include the use of heavy equipment for construction, transport of materials needed for construction, and other activities associated with pre-and post-implementation such as monitoring. These activities have the potential to generate GHG emissions through the use of oil-based fuels and consumption of both renewable and nonrenewable resources. However, the amount of GHG emissions generated through the proposed activities is not anticipated to be significant due to the limited number of restoration projects, duration construction time, and the use of best management practices for air quality.

Long-term, minor, beneficial impacts to factors affecting climate change may result from restoration activities that include placement of natural materials and vegetation and revegetation of disturbed sites with native species, as these actions would thus increase carbon storage capacity of soils and plant communities, contributing to carbon sequestration. The proposed restoration activities are expected to improve local resiliency to increased frequency of extreme weather events, flooding, and changes in annual patterns of precipitation by restoring estuarine coastal wetlands and emergent wetland pond habitat, increasing flood storage capacity and filtration of runoff controlling erosion, and attenuating wave energy along the adjacent shoreline.

I. Cumulative Impacts

Under NEPA, federal agencies are required to consider the cumulative effects of their proposed actions within the affected environment, taking into consideration other activities that have occurred, are occurring and are likely to occur in the future. Because the proposed restoration is restoring natural habitat structure and function, the Trustees expect that there will be long-term, minor to moderate positive cumulative effects on the biological and physical health of the project area under the Alternative 1, especially when considered in tandem with other habitat restoration efforts that have occurred or are currently taking place in the West Loch and Middle Loch areas (West Loch Pearl Harbor Honouliuli Stream Wetland Restoration project; Pouhala Marsh Enhancement project) which, when completed, will restore natural resources injured by NRDA incidents in Pearl Harbor associated with the [Oahu Sugar Site](#) and [Chevron Refinery Pipeline Oil Spill](#).

Cumulative project impacts would not be significant or occur at a regional scale, and are consistent with those described in the RC PEIS (Section 4.9, “Cumulative Impacts”). Cumulative impacts to relevant resources (geology and soils, water resources, living coastal and

marine resources and EFH, threatened and endangered species, cultural and historic resources, land use and recreation, and socioeconomics) with the proposed action are also summarized in the draft Inclusion Analysis under “Project Impact Analysis – IV.5” (Appendix).

There may be a long-term adverse effect to the physical and biological resources of the project area were the No Action alternative selected because the restoration would not occur. However, relative to the magnitude of adverse ecological impacts that currently exist in the affected area, the adverse cumulative effect of the No Action alternative is also not expected to be significant.

J. NEPA Conclusion

Through the analysis in this Draft RP/NEPA Evaluation, including the draft Inclusion Analysis, the Trustees have made a preliminary determination that the corresponding restoration-type descriptions and impacts for Alternative 1 fall entirely within the scope of the restoration project descriptions and analysis contained in the RC PEIS sections referenced herein. Moreover, there are no site-specific considerations, sensitivities, unique habitat, or resources that warrant additional NEPA analyses beyond what is provided in the RC PEIS. The public will be invited to provide feedback on the Trustees’ proposed action and alternatives and the analysis conducted in the Draft RP/NEPA Evaluation, which includes the draft Inclusion Analysis (Appendix). If, after the public comment period and review of any additional information it is determined that no substantive changes are needed to the Draft RP/NEPA Evaluation and draft Inclusion Analysis, the Trustees will not be preparing any further NEPA analysis or seeking a FONSI or Record of Decision (ROD) for the proposed restoration, and the Final RP/NEPA Evaluation will be prepared. Alternatively, if after the public review it is determined that the proposed activities do not fall within the scope of alternatives or environmental consequences considered in the RC PEIS, additional environmental review may be required through the preparation of a subsequent NEPA document.

K. Selection of Preferred Alternative

Based on the CERCLA NRDA evaluation of alternatives described in Section III and the NEPA Evaluation above, and consistency with the restoration goals and objectives, the Trustees have selected the Alternative 1: Honouliuli Watershed Wetland Restoration project as the Preferred Alternative. The Trustees have determined that this type and scale of action will effectively provide long-term benefits for an estimated 20 years to critical shoreline, estuarine, and wetland habitat for native terrestrial and aquatic wildlife along West Loch Pearl Harbor; and will compensate the public for natural resources and associated services injured, lost, or destroyed due to releases of hazardous substances from the Oahu Sugar Site.

V. REFERENCES

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USFWS. 2010. Pearl Harbor National Wildlife Refuge. Draft Comprehensive Conservation Plan and Environmental Assessment.

APPENDIX

NEPA Inclusion Analysis

NOAA Restoration Center NEPA Inclusion Analysis

Award Number

I. IDENTIFYING PROJECT INFORMATION

Project Name Oahu Sugar NRDA RP - West Loch Pearl Harbor Honouliuli Stream Wetland Restoration	Project State HI
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Project Proponent / Applicant NOAA; DOI-FWS; Hawaii DOH and DLNR (Trustees)	Project Contact Jennifer Boyce
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II. OTHER FEDERAL PARTNERS AND LEVEL OF NEPA ANALYSIS

Has another Federal agency completed NEPA? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is NOAA the lead federal agency for this NEPA analysis? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

III. PROJECT DESCRIPTION / SCOPE OF ACTIVITIES FOR ANALYSIS

Please check one of the following conditions:

- I am analyzing impacts of project planning and design activities, in order to gather all required project information
- I have all information needed to complete the final analysis of impacts for the entire project

Has a NEPA review been conducted for prior project activities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date of NEPA completion for prior phase N/A
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Describe the full scope of the project, including historic/ geographic/ ecological context, the type of restoration, and how it will be conducted.
Funds from a CERCLA bankruptcy settlement involving the Oahu Sugar Company, LLC (Oahu Sugar) were awarded jointly to NOAA and DOI in the amount of \$2.5 million, to be dispersed evenly between the two Trustee agencies.

Honouliuli Stream is a perennial waterway that empties into the West Loch portion of Pearl Harbor, Hawaii. The creek's channel and mouth in its lower reaches are affected by invasive plants, especially mangrove. Red mangrove, California grass, and other non-native vegetation have created poor habitat for fish and wildlife and reduced streamflow capacity and ecological function. Mangrove currently covers approximately 28 acres along the shoreline and previous wetlands and fish ponds of the Honouliuli stream confluence with West Loch Pearl Harbor. Without direct intervention, mangrove and other invasive vegetation will continue to thrive within this active stream channel, thereby increasing the potential for flood damage and continuing to provide poor habitat for native terrestrial and aquatic wildlife. These negative impacts can be lessened by clearing the debris and invasive vegetation, replanting native vegetation, and educating and encouraging local community engagement.

Describe the proposed action (i.e. the portion of the project that NOAA is funding/approving).
NOAA is funding the proposed project using the entirety of its share (\$1.25 million) of the Oahu Sugar bankruptcy proceedings. The proposed restoration will restore coastal wetland habitat along West Loch Pearl Harbor shoreline and adjacent to Pearl Harbor National Wildlife Refuge--an area impacted by hazardous waste discharges from the former Oahu Sugar site. Restoration activities include physical removal of invasive red mangrove and other nonnative vegetation, disposal of cut/removed vegetation at approved off-site locations, and replanting of cleared areas with Hawaiian sedges, groundcover, and trees. Supporting technical activities include wildlife, hydrologic, and water quality monitoring; public outreach; environmental education; and partnership development. Restoration will be implemented by the State of Hawaii as part of larger invasive plant removal efforts to restore ecological function and habitat for native aquatic and terrestrial wildlife within all of West Loch, Pearl Harbor and Honouliuli watershed.

The proposed action exhibits a sufficient nexus to the natural resources injured by hazardous waste from the Oahu Sugar site and that could potentially compensate for injuries to natural resources and services.

Check the types of activities being conducted in this project:

<input checked="" type="checkbox"/> Implementation and Effectiveness Monitoring	<input checked="" type="checkbox"/> Environmental Education Classes, Programs, Centers, Partnerships and Materials; Training Programs	<input checked="" type="checkbox"/> Fish and Wildlife Monitoring
<input type="checkbox"/> Planning, Feasibility Studies, Design Engineering, and Permitting		

Riverine and Coastal Habitat Restoration

NEPA Inclusion Analysis

<input type="checkbox"/> Beach and Dune Restoration	<input type="checkbox"/> Bank Restoration and Erosion Reduction	<input type="checkbox"/> Water Conservation and Stream Diversion
<input type="checkbox"/> Debris Removal	<input type="checkbox"/> Coral Reef Restoration	<input type="checkbox"/> Levee & Culvert Removal, Modification, Set-back
<input type="checkbox"/> Dam and Culvert Removal & Replacement	<input type="checkbox"/> Shellfish Reef Restoration	<input type="checkbox"/> Fringing Marsh and Shoreline Stabilization
<input type="checkbox"/> Technical and Nature-like Fishways	<input type="checkbox"/> Artificial Reef Restoration	<input type="checkbox"/> Sediment Removal
<input checked="" type="checkbox"/> Invasive Species Control	<input type="checkbox"/> Road Upgrading/Decommissioning; Trail Restoration	<input type="checkbox"/> Sediment/Materials Placement
<input type="checkbox"/> Prescribed Burns/Forest Management	<input type="checkbox"/> Signage and Access Management	<input checked="" type="checkbox"/> Wetland Planting
<input type="checkbox"/> Species Enhancement	<input type="checkbox"/> SAV Restoration	
<input type="checkbox"/> Channel Restoration	<input type="checkbox"/> Marine Algae Restoration	

Conservation Transactions		
<input type="checkbox"/> Land Acquisition	<input type="checkbox"/> Water Transactions	<input type="checkbox"/> Restoration/Conservation Banking

IV. PROJECT IMPACT ANALYSIS

Core Questions		
1. Are the activities to be carried out under this project fully described in Section 2.2 of the NOAA RC PEIS?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
2. Are the specific impacts that are likely to result from this project fully described in Section 4.5.2 of the NOAA RC PEIS?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
3. Does the level of adverse impact for the project exceed that described in Table 11 of the NOAA RC PEIS for any resource, including significant adverse impact?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

4. Describe the project impacts to resources (including beneficial impacts) and any mitigating measures being implemented.

1. Proposed Action - West Loch Pearl Harbor Honouliuli Stream Wetland Restoration

Actions undertaken by federal trustees to restore natural resources or services under CERCLA and other federal laws are subject to the National Environmental Policy Act, (NEPA), 42 U.S.C. § 4321 et seq., and the regulations guiding its implementation (40 C.F.R. 1500 et seq.). Under NEPA, federal agencies must evaluate potential impacts to the environment from their proposed actions and reasonable alternatives. NEPA allows for broad programmatic analyses that subsequently can be used to meet NEPA requirements for project-level actions through incorporation by reference in subsequent NEPA documents. The NEPA process ensures that public decision-makers are fully informed about the potential impacts of the proposed actions and alternatives and allows for meaningful public involvement in the decision-making process. For the proposed West Loch Pearl Harbor Honouliuli Stream Wetland Restoration project, NOAA and the Trustees propose to satisfy their NEPA obligations by applying the impacts analysis and conclusions drawn in another, previously published programmatic NEPA document—the NOAA Restoration Center's Programmatic Environmental Impact Statement (RC PEIS, available at: <https://www.fisheries.noaa.gov/resource/document/restoration-center-programmatic-environmental-impact-statement>). The RC PEIS provides a program-level environmental analysis of NOAA's habitat restoration activities throughout the coastal and marine environment of the United States. The Trustees' proposed action and alternatives are fully described in a Draft Restoration Plan/NEPA Evaluation for the Oahu Sugar Site. The public will be invited to provide feedback on the Draft Restoration Plan and NEPA Evaluation (RP/NEPA Evaluation) for the Oahu Sugar Site and the analysis conducted in this Draft Inclusion Analysis.

The Trustees' proposed restoration activities are similar to those described in sections 2.2.2.4.1 (Invasive Species Control), 2.2.2.11.5 (Wetland Planting), 2.2.1.2 (Implementation and Effectiveness Monitoring), 2.2.1.3 (Fish and Wildlife Monitoring), and 2.2.1.4 (Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs) of the RC PEIS. The proposed activities do not have impacts beyond those analyzed in the RC PEIS, including adverse effects that are significant, or meet any other criteria for exclusion from analysis (Table 10 of the RC PEIS).

Impacts from the proposed restoration activities are provided in sections 4.5.1.2 (Implementation and Effectiveness Monitoring), 4.5.1.3 (Fish and Wildlife Monitoring), 4.5.1.4 (Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs), 4.5.2.4.1 (Invasive Species Control) and 4.5.2.11.3 (Wetland Plantings), and in Tables 13-15, 20 and 35 of the RC PEIS. That information is incorporated by reference and summarized below.

1) Technical Assistance Activities - Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs:

Implementation and Effectiveness Monitoring:
Restoration monitoring could have indirect, long-term, major beneficial impacts on geology and soils, water, and living coastal and marine resources and EFH and threatened and endangered species beyond the project site. These activities could have direct and indirect, long-term, minor beneficial impacts on land use and recreation and socioeconomics beyond the project site. These

Core Questions (continued)

activities could have direct, short-term, minor adverse impacts on geology and soils, water, air, living coastal and marine resources and EFH, and cultural and historic resources that would be localized. These activities could have direct and indirect, short-term, minor adverse impacts on threatened and endangered species that would be localized.

Fish and Wildlife Monitoring:

Fish and wildlife monitoring could have indirect, long-term, major beneficial impacts on geology and soils, water, and living coastal and marine resources and EFH and threatened and endangered species beyond the project site. These activities could have direct and indirect, long-term, minor beneficial impacts on land use and recreation and socioeconomics beyond the project site. These activities could have direct, short-term, minor adverse impacts on geology and soils, water, air, and living coastal and marine resources and EFH that would be localized. These activities could have direct and indirect, short-term, minor adverse impacts on threatened and endangered species that would be localized. These activities could have indirect, short-term, minor adverse impacts on cultural and historic resources that would be localized. These activities could have direct, short-term, minor adverse impacts on land use and recreation that would be localized.

Environmental Education Classes, Programs, Centers, Partnerships, and Materials;

Training Programs:

Environmental education, outreach, training, and partnership activities could have direct, long-term, minor beneficial impacts on geology and soils and socioeconomics beyond the project site. These activities could have direct and indirect, long-term, minor beneficial impacts on water, living coastal and marine resources and EFH, threatened and endangered species beyond the project site. These activities could have indirect, long-term, minor beneficial impacts on cultural and historic resources and land use and recreation beyond the project site. These activities could have direct, long-term, minor adverse impacts on air but these impacts would be localized.

2) On-the-Ground Restoration Activities:

Invasive Species Control:

The impacts of invasive species removal ultimately benefit the immediate ecosystem by allowing native species the chance to re-establish. Generally, invasive species removal activities may cause direct, short-term, localized, minor adverse impacts to the affected area from mechanical or human activities. For terrestrial and aquatic invasive plant removal, direct adverse impacts to geology and soils may include compaction, whereas impacts to in-water substrate and water resources may include temporary sedimentation, turbidity, or other water quality impacts. However, long-term moderate to major beneficial impacts to geology and soils, water resources, coastal and marine resources, and EFH and threatened and endangered species would result as non-native species are replaced by diverse native plant and animal communities.

Wetland Planting:

Wetland planting may occur as a separate restoration activity or in combination with other restoration types described in the RC PEIS. Planting may cause short-term, direct adverse impacts to living coastal and marine resources when existing vegetation is trampled during the planting process. Planting is generally short-term in duration, lasting days to weeks. Minor adverse impacts to cultural and historic resources may occur during wetland restoration, when historic structures are present within a project site. Long-term, moderate beneficial impacts to water resources, living coastal and marine resources and threatened and endangered species would occur due to the erosion reduction and increased shelter provided by wetland plants. Woody and herbaceous plant communities play an important role in stabilizing the shoreline. Wetland planting activities would result in beneficial impacts by restoring or creating wetland and/or shallow-water habitats that provide areas for feeding and shelter for fish, as well as nutrient cycling and carbon sequestration and storage capacity. Changes in land use would be permanent if uplands were converted to wetlands. In general, increases in wetlands are beneficial land use and recreation impacts, due to the historic loss of wetland habitat. Minor beneficial impacts related to socioeconomic resources may result from increased tourism opportunities that could develop around an improved resource.

2. No Action

NEPA requires that federal agencies consider a "no action" alternative and the CERCLA regulations require consideration of a "natural recovery" alternative. These alternative options are equivalent. The no action alternative is the non-preferred alternative to the proposed action described above. With the no action alternative, no on-the-ground-restoration would be implemented and current environmental conditions at West Loch, Pearl Harbor, would remain as-is or continue to degrade. The no action alternative would not result in direct impacts to the physical, biological, and cultural/human use environment since no restoration action would be undertaken. However, the benefits from the proposed restoration would not be realized and the public would not be compensated for natural resource injuries resulting from the release of hazardous substances at the Oahu Sugar site.

NEPA Inclusion Analysis

5. Describe any potential cumulative impacts that may result from past, present or reasonably foreseeable future actions (beneficial or adverse).

Cumulative project impacts would not be significant or occur at a regional scale, and are consistent with those described in the RC PEIS (section 4.9, "Cumulative Impacts"). Because the proposed restoration is restoring natural habitat structure and function, and stabilizing existing habitat, the Trustees expect that there will be long-term, minor to moderate positive cumulative effects on the biological and physical health of the project area under the preferred alternative.

There may be a long-term adverse effect to the physical and biological resources of the project area were the no action alternative selected because the restoration would not occur. However, relative to the magnitude of adverse ecological impacts that currently exist in the affected area, the adverse cumulative effect of the no action alternative is also not expected to be significant.

6. Describe the public outreach and/or opportunities for public comment that have taken place to this point. Are any future opportunities for public input anticipated?

The Draft RP/NEPA Evaluation, including this Draft Inclusion Analysis, will be made available to the public for review and comment. All comments on the Draft RP/NEPA Evaluation and Inclusion Analysis will be addressed prior to finalization and approval of the Final RP. If, after the public comment period, and review of any additional information, it is determined that no substantive changes are needed to the Draft RP/NEPA Evaluation, NOAA and the Trustees will not be preparing any further NEPA analysis or seeking a FONSI or ROD for the proposed restoration project, and the Final RP/NEPA Evaluation will be prepared.

7. Have any public comments raised issues of scientific/environmental controversy? Please describe.

There have been no public comments to date identifying issues of scientific and environmental controversy related to the project. There is strong public support for restoring the West Loch Pearl Harbor shoreline. All comments on the Draft RP/NEPA Evaluation and Inclusion Analysis will be addressed prior to finalization and approval of the Final RP/NEPA Evaluation.

8. Describe the most common positive and negative public comments on issues other than scientific controversy described above in Question 7.

The proposed restoration activities are similar to those that have been occurring throughout the Pacific region for many years, and the public has generally been supportive of spending restoration funding (including CERCLA case settlement funds) on on-the-ground restoration projects, especially those associated with restoring and protecting natural resources and habitats. Any common positive and negative public comments received on this draft Inclusion Analysis will be addressed in the Final RP/NEPA Evaluation and Inclusion Analysis.

V. NEPA DETERMINATION

The action is completely covered by the impact analysis within the NOAA RC Programmatic EIS (PEIS). The project and its potential impacts may be limited through terms or conditions placed on the recipient of NOAA funds. It requires no further environmental review. An EIS Inclusion Document will be prepared.

The action analyzed here has unknown impacts. At this time, funding will be limited to those portions of the action and impacts analyzed in the PEIS. These limitations will be described in terms or conditions placed on the recipient of NOAA funds. If all remaining activities and impacts are later determined to be described in the PEIS, this analysis will be documented in the program record and the applicant may then proceed with the project. If all remaining activities and impacts are later determined to not be described in the PEIS, further NEPA review will be required; see below.

The action or its impacts are not covered by the analysis within the PEIS. It will require preparation of an individual EA, a supplemental EIS, adoption of another agency's EA or EIS, or will be covered by a Categorical Exclusion.

Signature _____

Date Signed _____