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GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
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ref:OCCL:MC

File No: Loko I'a: HA-16-01

Chad Wiggins  
Hawai'i Island Marine Program  
The Nature Conservancy of Hawai'i  
923 Nu'uuanu Avenue  
Honolulu, HI 96817

Dear Mr. Wiggins,

**SUBJECT: LOKO I'A PERMIT HA-16-01: Ka Loko o Kiholo**  
Pu'uwa'awa'a, North Kona, Hawai'i  
(3) 7-1-002:004 and 007

The Office of Conservation and Coastal Lands (OCCL) has reviewed the information you sent regarding proposed work at Ka Loko o Kiholo on the above subject parcel. The pond is in the Resource Subzone of the State Land Use Conservation District.

The 3.2 acre fishpond is on private property owned by The Nature Conservancy and managed in partnership with Hui Aloha Kiholo, a local community group with lineal and cultural ties to the pond. The project area is entirely within the Resource Subzone of the State Land Use Conservation District.

Kiholo is a brackish pu'uone style pond. A functioning 'auwai connects it to the ocean and allows for tidal-driven water exchange. It is fed by pūnāwai (subterranean springs) that flow at an estimated three to five million gallons per day. King Kamehameha I commissioned the pond in 1811 after the nearby royal fishpond Paiea was covered by lava from Hualālai. The construction of Ka Loko o Kiholo was completed in 1812, and included the building of rock walls around an existing embayment, and connecting it to the natural estuarine environment with multiple 'auwai.

The estuarine fauna within the fishpond include native and non-native fish species such as striped mullet, milkfish, pacific threadfin, flagtail, jacks, surgeonfish, sergeant fish, and black tail snapper; and native invertebrates such as crabs, snails, shrimp and prawns. The land surrounding the fishpond is dominated by invasive non-native plants. Some Polynesian-introduced and native plants are also present, including niu, milo, hau, noni, naupaka, and makaloa

Lava partially covered the pond in 1859, and tsunamis in the 1940s, 1960s, and most recently in 2011 deposited large amounts of sand in the anchialine ponds in the region. The 2011 tsunami also damaged the rock walls and 'auwai.

The restoration work will involve dredging sand and sediment to restore the benthic habitat within the fishpond, and repairing the rock walls adjacent to the pond.

The dredging activities for the proposed project will utilize a small suction pump and a small excavator to remove sand and sediment from the bottom of the fishpond. The sand material will be deposited in its original location to prevent flooding of the land during high tide, and will return the fishpond to its former depth.

Wall dimensions varied by area, but were generally 3 ft. wide and 2-6 ft. tall (from the base in the water to the top along the shoreline). The project will prioritize the restoration of the walls that were damaged by the tsunami and the area that is now flooding during high tide. Subsequent work will focus on the smaller walls adjacent to the fishpond that have been damaged by invasive vegetation, goats, or neglect. The rock wall repair will engage lineal descendants of the area who, along with master stone masons from throughout Hawai'i, will train TNC staff and community volunteers in traditional dry stack techniques.

OCCL sought comments on the proposal and associated best management plan from DLNR's Land Division, Division of Aquatic Resources, Division of Forestry and Wildlife, and Historic Preservation; the Office of Hawaiian Affairs; Kua'āina Ulu 'Auamo, the Hawai'i County Planning Department; the U.S. Army Corps of Engineers; NOAA Fisheries Pacific Islands Regional Office; and the State Department of Health, Environmental Planning Office. None offered any objections to the project or the associated best management practices.

After reviewing the application, OCCL finds that:

1. The proposed work at Ka Loko o Kīholo is consistent with the statewide programmatic general permit for the restoration, repair, maintenance, and operation of loko i'a (Conservation District Use Permit ST-3703: Ho'āla Loko I'a), as approved by the Board of Land and Natural Resources on June 27, 2014;
2. The activities described were covered in the Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI) for the Ho'āla Loko I'a program, which was published on October 23, 2013;
3. The proposal requires the need for a Tier 2 Loko I'a permit signed by the Chair of the Board of Land and Natural Resources;
4. The State Department of Health water quality certifications are waived pursuant to Hawai'i Revised Statutes (HRS) Chapter 342D WATER POLLUTION, Section 6.5 Hawaiian loko i'a (b) *The department shall waive the requirement to obtain water quality certification under this chapter for any person that has received notice of authorization to proceed from the department of land and natural resources office of conservation and coastal lands under the statewide programmatic general permit for the restoration, repair, maintenance, and operation of loko i'a;*<sup>1</sup> and
5. The standard conditions found in Hawai'i Administrative Rules (HAR) §13-5-42 apply.

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<sup>1</sup> HRS §342D-6.5 was amended by Act 230 (15), Relating to Hawaiian Fishponds, approved by the Governor of the State of Hawai'i on July 13, 2015. The intent of this Act was to *improve state government efficiency and response time in the administration of water pollution control*. It allowed most applicants for loko i'a restoration and repair permits to submit a single permit application instead of a series of single-agency applications.

After careful review of the proposed project, the Department finds that the proposed work will not negatively impact water quality, and authorizes a Tier 2 Loko I'a permit for the restoration work at Ka Loko o Kīholo, Pu'uwa'awa'a, North Kona, Hawai'i, TMKS (3) 7-1-002:004 and 007, subject to the following standard conditions:

1. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
2. The permittee, its successors and assigns, shall indemnify and hold the State of Hawai'i harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;
3. The permittee shall obtain appropriate authorization from the department for the occupancy of state lands, if applicable;
4. All representations relative to mitigation set forth in the application are incorporated as conditions of the permit;
5. The actions outlined in the best management plan submitted with the application are incorporated as conditions of the permit;
6. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;
7. In issuing the permit, the department and board have relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;
8. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the permittee shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;
9. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawai'i, and by Hawai'i statutory and case law;
10. Should historic remains such as artifacts, burials or concentration of charcoal be encountered, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact HPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
11. Other terms and conditions as prescribed by the chairperson; and
12. Failure to comply with any of these conditions shall render a permit void under the chapter, as determined by the chairperson or board.

Please acknowledge receipt of this approval, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other within thirty days. Should you have any questions feel free to contact Michael Cain at 587-0048.

Sincerely,

  
for Suzanne D. Case, Chairperson  
Board of Land and Natural Resources

Receipt acknowledged:

  
Permittee's Signature CHARLES H. WIGGINS, JR (CHAD)

7 APRIL 2016  
Date

copy: State Parks, U.S. Army Corps of Engineers



## HO‘ALA LOKO I‘A APPLICATION

**FISHPOND NAME: Ka Loko o Kiholo**

**APPLICANT NAME: The Nature Conservancy**

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Pond location: Kiholo

Nearest Tax Map Key(s): (3) 7-1-002-004 and (3) 7-1-002-007

Ahupua`a: Pu`uwa`awa`a

District: North Kona

Island: Hawai`i Island

Commencement Date: March 1, 2016

Completion Date: December 31, 2026

Wall length: 1300

Pond surface area: 3.2 acres

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### WORK SUMMARY

- Operations only
- Construction of accessory structures
- Minor repair and restoration of pond walls, ‘auwai, mākāhā, etc.
- Moderate repair and restoration (10% to 50% damage)
- Major repair and restoration (greater than 50% damage)

Linear feet of wall to be repaired (rocks on site): 1300 ft

Linear feet of wall to be restored (new rock): N/A

Source of new rock: existing on site

Amount of “fill” (expansion beyond original footprint): N/A

- Dredging using mechanized equipment
    - Estimated volume of dredging: 3000 cubic yards
  - Vegetation removal using mechanized equipment
    - Estimated acreage: N/A
  - Emergency repair
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## REQUIRED SIGNATURES

### Applicant

Name / Hui: The Nature Conservancy

Street Address: 923 Nuuanu Ave

Honolulu, HI 96817

Contact Person & Title: Chad Wiggins, Program Director, Hawaii Island Marine Program, The Nature Conservancy of Hawaii

Phone: 808-443-5402

Email: cwiggins@tnc.org

Interest in Property: Manager

Signature: 

Date: 28 JANUARY, 2016

*Signed by an authorized officer if for a Corporation, Partnership, Agency or Organization*

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### Landowner (if different than the applicant)

Name:

Title; Agency: DLNR

Mailing Address:

Phone:

Email:

Signature:

Date:

*For State-owned ponds, the government entity with management control over the parcel shall sign as landowner.*

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### Agent

Agency:

Contact Person & Title:

Mailing Address:

Phone:

Email:

Signature:

Date:

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### For DLNR Managed Lands

#### State of Hawai'i

Chairperson, Board of Land and Natural Resources

Department of Land and Natural Resources

P.O. Box 621

Honolulu, Hawaii 96809-0621

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**Signature:**

**Date:**

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## DESCRIPTION OF THE LOKO I‘A

**Please discuss the current physical and environmental conditions of the loko i‘a. Please also note if any endangered or threatened species are found in the pond.**

Ka Loko o Kiholo located at Kiholo Bay (Pu‘u Wa‘awa‘a, North Kona, Hawai‘i Island), is a 200-year old fishpond privately owned by The Nature Conservancy and managed in partnership with Hui Aloha Kiholo, a local community group with familial and cultural ties to the lands of Kiholo and surrounding ahupua‘a. Together with our community and government partners, we are working to restore the fishpond in order to improve habitat for native plants and animals and perpetuate cultural traditions so that Ka Loko o Kiholo will continue to thrive for centuries to come.

Ka Loko o Kiholo is a loko pu‘uone style fishpond, with a functional ‘auwai that connects the inland pond to the nearshore marine environment and allows for water exchange through the tidal cycle (See attached Kiholo Fishpond Rehabilitation Map.) The 3.2-acre fishpond supports a brackish estuarine ecosystem with salinities ranging from 2 ppt to 32 ppt, depending on tidal state, depth and location within the fishpond. The fishpond water is fed by submarine groundwater discharge estimated to flow at a rate of 3-5 million gallons per day into the fishpond from subterranean springs (pūnāwai). No surface streams are present in this arid region. Previous water quality monitoring conducted by The Nature Conservancy shows a nutrient gradient throughout the fishpond that correspond to the inland groundwater springs (high in Silica, Nitrate + Nitrite, and Phosphate) and biological activity (higher Ammonia near the ‘auwai).

The estuarine fauna within the fishpond include native and non-native fish species (including striped mullet, milkfish, pacific threadfin, flagtail, jacks, surgeonfish, sergeant fish, black tail snapper), native invertebrates (crabs, snails, shrimp and prawns). The land surrounding the fishpond is dominated by invasive non-native plants, including kiawe (*Prosopis pallida*), ironwood (*Casuarina equisetifolia*), sourbush (*Pluchea carolinensis*), and christmas berry (*Schinus terebinthifolius*). Some Polynesian-introduced and native plants are also present, including niu (*Cocos nucifera*), milo (*Thespesia populnea*), hau (*Hibiscus tiliaceus*), noni (*Morinda citrifolia*), naupaka (*Scaevola taccada*), and makaloa (*Cyperus laevigatus*).

A sediment layer in the fishpond has accumulated due to detritus deposits primarily from invasive plants, which has reduced habitat quality for native fish and invertebrates. Ecological restoration work has been ongoing since 2013, which has focused on trimming back invasive species to reduce the source of sediment to the fishpond.

Additional habitat degradation occurred during the 2011 tsunami, when the inundation wave deposited sand into the fishpond and damaged rock walls along the fishpond banks. As a result, the damaged land area now floods at high tide due to the lowered elevation of the fishpond banks. Additional rock walls adjacent to the fishpond that were used to stabilize the fishpond shore are in various states of disrepair due to invasive vegetation damage and neglect.

Threatened species include the honu (green sea turtle, *Chelonia mydas*), which frequent the reef and lagoon. While some honu enter the fishpond daily for foraging and resting, no nesting behavior has been observed at Ka Loko o Kiholo. Although no bats have been observed at Kiholo, The Nature Conservancy and Hui Aloha Kiholo have established precautionary practices to avoid potential disturbance or harm. (See the Best Management Practices section below for more details).

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## HISTORY OF THE LOKO I‘A

The legacy of Ka Loko o Kiholo spans two centuries, and while the fishpond has seen many changes in both ownership and landscape, it remains a place of rich historical, spiritual, cultural and ecological significance. The fishpond was commissioned to be built by King Kamehameha I in 1811, after the loss of a nearby royal fishpond, Paiea, which was covered by a lava flow from Hualālai. The construction of Ka Loko o Kiholo, completed in 1812, included building a large rock wall that enclosed a natural estuarine embayment with multiple ‘auwai (channels connecting the fishpond to the ocean).

In 1859, Ka Loko o Kiholo was partially covered by a lava flow from Mauna Loa, while the remaining uncovered water area (3.2 acres) continued to be used for traditional aquaculture. In the late 1800’s, the ahupua‘a of Pu‘u Wa‘awa‘a was utilized by the Hind family and Hu‘ehu‘e Ranch for cattle production. The ranchers would drive cattle from the mauka lands to the makai area of Kiholo Bay, where the cattle was shipped to Honolulu. During this ranching era, Ka Loko o Kiholo provided a sustainable source of food for the paniolos (cowboys) and their families, with a resident caretaker and a paniolo cottage supporting the fishpond maintenance and harvest.

Tsunamis in the 1940's and 1960's damaged many of the existing ranch structures and altered the shoreline of Kiholo dramatically by pushing the once white sandy beach inland and adjacent to the fishpond. The most recent tsunami in 2011 again impacted this area by damaging the shoreline and rock walls, including the ‘auwai. Hui Aloha Kiholo, which co-manages Kiholo State Park with the Division of State Parks, repaired the damaged ‘auwai in 2012 with an emergency permit from the State of Hawai‘i.

In the 1980’s, the property surrounding and including Ka Loko o Kiholo was sold by the Hind family to Paul Mitchell, and in 2002, Kiholo Bay was designated as a State Park Reserve by the State of Hawaii. Hui Aloha Kiholo formed in 2007 as an organized and collaborative effort to take care of a place that is significant to Hawaiian history and culture, as well as to the people who are connected to Kiholo through lineage, family history, residence, and recreation. Hui Aloha Kiholo gathered together all those who are linked to Kiholo for cultural, community, ecological, sustenance, and spiritual reasons in an effort to steward Kiholo in perpetuity.

In 2011, Paul Mitchell’s son Angus donated the property and fishpond to The Nature Conservancy. The following year, The Nature Conservancy facilitated a Conservation Action Plan (CAP) workshop with community partners, to outline strategies and actions to restore the cultural and natural resources of Kiholo Bay and fishpond. The CAP partners included Hui Aloha Kiholo, National Park Service’s Ala Kahakai National Historical Trail, State of Hawai‘i Division of State Parks, and Conservation International. The collaborative planning process set specific conservation targets to improve fishpond habitat for native species and traditional aquaculture practices, including removing invasive plant species on lands surrounding the fishpond, restoring the native plant community, repairing rock walls, and dredging sand and sediment deposits in the fishpond to return it to its former depth and rocky substrate. The plan also set a goal of providing a place for community members, students, and researchers to study nature, learn about estuarine systems, practice traditional fishpond management, and create solutions to critical threats at multiple scales.

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## PROPOSED WORK PLAN

**Please provide a summary of the work that is being proposed under this permit. Please note any use of mechanized equipment.**

To improve the fishpond function and return it to its former health and abundance, we are proposing two physical restoration components: 1) dredging of sand and sediment to restore benthic habitat within the fishpond; and 2) repairing the damaged rock walls adjacent to the fishpond. These two components are complimentary and will occur concurrently, as the removal of sand and sediment is necessary to locate rocks that were buried during the tsunami and to find the base stones of the walls so they can be restored using the original structural design.

Additional physical restoration activities on the lands surrounding the pond will be covered by Special Management Area (SMA) and Conservation District Use Application (CDUA) permits from the County of Hawai'i and the State of Hawai'i, respectively, including invasive vegetation removal, native plant restoration, ungulate exclosure fencing, and traditional accessory structures.

These efforts are a continuation of the traditional and historic work done for generations by the native people of this place. While present day efforts may use modern methods and equipment, the practice of fishpond maintenance, care and management are centuries-old customs. The local community is fully invested in the restoration of Ka Loko o Kiholo, with the awareness that the physical restoration is integral to the perpetuation of traditional fishpond practices. Cultural approaches that will be used for this project include protocols by community members before workdays, hands-on training for the next generation of stewards, and continuation of knowledge through on-going maintenance by trained volunteers.

The rock wall repair will engage lineal descendants of the area who, along with master stone masons from throughout Hawai'i, will train TNC staff and community volunteers in traditional dry stack techniques. The rock walls functioned to stabilize the banks of the fishpond, and consultation with lineal descendants of Kiholo was conducted in December 2015 to document the location, function, and dimensions of the walls. (See attached map). Wall dimensions varied by area, but were generally 3 ft. wide and 2-6 ft. tall (from the base in the water to the top along the shoreline). The project will prioritize the restoration of the walls that were damaged by the tsunami and the area that is now flooding during high tide, as noted on attached map as "highest priority". Subsequent work will focus on the smaller walls adjacent to the fishpond that have been damaged by invasive vegetation, goats, or neglect ("medium and low priority" on map).

The dredging activities for the proposed project will utilize a small suction pump (3" diameter hose, gas powered) and a small excavator to remove sand and sediment from the bottom of the fishpond. The sand material will be deposited in its original location to prevent flooding of the land during high tide, and will return the fishpond to its former depth (see attached map of proposed sand fill area). By removing the sand, we will also be able to access the rock wall material that was deposited in the fishpond, and locate the bases of the rock walls. Dredging organic sediment from the pond will return the fishpond to its former depth and rocky bottom. The removed organic sediment will be used for native plant propagation and plantings in the lava landscape surrounding the fishpond.

Best management practices (BMP's) will include the use of protective gear such as silt fences, sediment berms, dewatering bags will be used to ensure that sediment and sand does not get transported to marine waters during dredging activities. The Nature Conservancy and Hui Aloha Kiholo will closely monitor conditions before, during and after restoration work occurs, and we will work in small areas at a time to minimize effects on native animals. (See the Best Management Practices section below for more details.)

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## **PROPOSED OPERATIONS PLAN**

**Please discuss what species you intend to raise in the pond, and your proposed methods of stocking, raising, and harvesting these species.**

The goals of this phase of the Ka Loko o Kiholo restoration are to restore the native habitat for the benefit of all native organisms, rebuild the rock walls that were damaged by the tsunami. Longer-term fishpond management will include harvest of non-native and native fish and invertebrates for the community's consumption, using the species naturally found in this fishpond. The Nature Conservancy does not plan to stock or feed the native species at this time.

To assess the effects of the restoration project and develop a sustainable harvest plan, The Nature Conservancy and community members conduct regular monitoring of the fauna within the fishpond. We have continuously conducted monthly fish surveys since 2013 to assess the fish species presence, abundance, and biomass to evaluate the natural variability within the fishpond, recruitment of juvenile species and assess effects of harvest on the fish populations. In addition, we conducted an invertebrate survey for diurnal species in 2015 to map species distribution, abundance and habitat preferences, which will be repeated after restoration work is completed to assess the effects of removing sediment on invertebrates. Invertebrates in the fishpond showed a high correlation to the rocky substrate, and it is assumed that removal of sediment will improve habitat availability for these species.

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## CONSISTENCY WITH HO‘ALA LOKO I‘A PROGRAM

**Please discuss how this proposal is consistent with Conservation District Use Permit (CDUP) ST-3703 (available online at [dlnr.hawaii.gov/special-projects](http://dlnr.hawaii.gov/special-projects)) and which tier-level the project falls under.**

The Nature Conservancy is seeking a Tier 2 permit for the removal of sand and sediment from the fishpond using a small pump and small excavator, and the repair of rock walls adjacent to the fishpond. Mechanized removal methods will be employed only when necessary to remove the sand that was deposited into the fishpond by the 2011 tsunami or accumulated sediment from organic detritus. There will be no expansion of the fishpond footprint. According to CDUP ST-3703, second tier activities include dredging using mechanized equipment, major wall restoration, and moderate change in the dimensions of the original structure. A second tier permit is necessary because of the proposed use of an excavator and pump for sand and sediment removal from the fishpond; however, most of the actions proposed in the restoration project fall under first tier or maintenance activities. These activities include invasive species removal and most manual restoration efforts. Maintenance activities to be undertaken with this project consist of replanting with native species, continued maintenance of rock walls due to storm damage or future tsunamis. The proposed project at Ka Loko o Kiholo falls under the approved OCCL programmatic environmental assessment (HRS Chapter 343).

The overall benefit to the ecological and cultural resources at Ka Loko o Kiholo will include habitat restoration for native plants, fish and invertebrates by returning the benthos to the previously rocky and sandy substrate, engagement and increased capacity of local community members in traditional practices of rebuilding and maintaining rock wall structures, and reduced erosion of land due to flooding at high tide from tsunami damage.

## BEST MANAGEMENT PRACTICES

**Please discuss the BMPs that will be followed to protect both the environment and the integrity of the pond (users' guide forthcoming).**

Water Quality Monitoring and Assessment Plan:

Due to the use of mechanized equipment to dredge the fishpond, the following water quality BMP's and monitoring plan will be adhered to during dredging activities.

1. Due to the primary ecological concern with mechanized sand and sediment removal is the risk of increased turbidity effecting nearshore marine waters, the monitoring protocol will use a water quality sonde (Yellow Springs Instrument, sonde 6500 V2) with a calibrated turbidity sensor (measuring turbidity in NTU units).
  2. Water quality monitoring will occur within the fishpond adjacent to the `auwai to monitor conditions at the only location that water can exit the fishpond and enter the ocean. (See attached map.) Water quality testing location will be mapped with a GPS and submitted with water quality monitoring reports to OCCL.
  3. Existing conditions prior to restoration work will be photo-documented.
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4. Due to previous baseline water quality monitoring being conducted by The Nature Conservancy since 2014, a summary of turbidity variability within the fishpond will be given to OCCL to review in consultation with State Department of Health, Clean Water Branch, prior to issuing the final notice to proceed.
5. Restoration work will be completed on an on-going basis, averaging approximately 2-3 days per week for the first six months, then 1-2 days per week thereafter, with frequency varying depending on community availability, weather conditions, and restoration needs.
6. Daily water quality testing will be done three times per day (1 hour before, during, and up to 2 hours after work) at the test site (see Item 2, above) daily for the first five days of restoration activities. Testing results will be emailed or faxed to OCCL at the end of each workday. If no adverse or lasting effects were seen during the initial restoration phase (first 5 days), then OCCL can waive or modify further water quality monitoring.

#### Water Quality Best Management Practices:

1. Turbidity and sediment from dredging-related work, including work relating to system structures, will be minimized and contained to the immediate vicinity of the authorized activity through the appropriate use of effective sediment containment devices (such as silt curtains, sediment berms, and dewatering bags).
  2. The site will be stabilized to prevent erosion and runoff, and work must stop during flooding or intense rainfall. Storm surge and high surf conditions will not affect restoration at this location, as this is an inland pond system that is protected from the marine environment by a large stone and sand beach and land area.
  3. No project-related materials (fill, revetment rock, pipe, etc.) shall be stockpiled in the aquatic environment (intertidal zones, reef flats, stream channels, wetlands, etc.) or in close proximity such that materials could be carried into waters by wind, rain, or high surf.
  4. All sand and rock removed from the fishpond shall be used to rebuild rock walls and to return the adjacent shoreline elevation to previous heights to prevent flooding at high tide and to stabilize the banks of the fishpond. All organic sediment will be drained of water using dewatering bags and sediment berms and used on site for native plant propagation.
  5. No contamination (by trash, debris sediment, non-native species introductions, attractions of non-native pests, etc.) of adjacent waters of the United States, including special aquatic sites, shall result from project-related activities. Special attention must be paid to the fouling level on barges, vessels, and equipment whereas to minimize the transport and potential introduction and spread of aquatic non-native species. In addition, if dredged or excavated material or structural members are removed from the water or placed in the water, measures must be taken to prevent the spread or introduction of any aquatic non-native species.
  6. Silt fences, silt curtains, sediment berms, or other appropriate containment structures shall be installed to contain sediment and turbidity at the work site during dredging activities (a) parallel to, and within 10 feet of, the toe of any fill or exposed soil which may introduce sediment to an adjacent aquatic site; and (b) adjacent to any fill placed or soil exposed within an aquatic site.
  7. All silt fences, curtains, and other structures shall be installed properly and permanently stabilized, be self-sustaining, and remain in place until any turbidity levels elevated due to construction have returned to ambient levels.
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8. Erosion controls must be properly installed before any dredging activities in the area may take place.
9. All disturbed areas must be immediately stabilized following cessation of activities for any break in work longer than 4 days.

Protected Species Best Management Practices:

1. All on-site personnel shall be apprised that they are working in an environmentally sensitive area and that endangered or threatened Hawaiian waterbirds, turtles, and monk seals may be in the vicinity of the project.
  2. The Nature Conservancy will document and report to DLNR OCCL (and thereby the Corps, NMFS and FWS) all interactions with listed species, including the disposition of any listed species that are injured or killed. Should an ESA-listed species be adversely affected, all work must stop pending re-initiation and completion of consultation between DLNR OCCL, the Corps, NMFS PRD and/or FWS for that action.
  3. Constant vigilance shall be kept for the presence of ESA-list species during all aspects of the permitted and/or authorized action(s), including:
    - 3a. A responsible party, i.e., site manager / project supervisor, shall designate a competent observer to survey work sites and the areas adjacent to the authorized work area for ESA-listed marine species.
    - 3b. Surveys shall be made prior to the start of the work each day, including prior to resumption of work following any break of more than one-half hour. Periodic additional surveys throughout the work day will occur to ensure an ESA-listed marine species has not entered the work area during restoration activities.
    - 3c. If any federally protected waterbird species appears within 100 feet (30.5 meters) of ongoing, in-water work, work activity shall be temporarily suspended until bird leaves the area of its own accord.
    - 3d. If a waterbird nest, turtle nest, or monk seal pup or pregnant monk seal is discovered, all work shall cease and DLNR OCCL should be contacted immediately, who shall then notify FWS and/or NOAA immediately.
    - 3e. All in-water work will be postponed or halted when a threatened marine species are within 10 feet (50 feet for endangered species) of the proposed work, and will only begin/resume after the animal(s) have voluntarily departed the area, with the following exemption: if a threatened marine species are noticed within 10 feet after (50 feet for endangered species) work after already begun, that work may continue only if, in the best judgment of the responsible party, the activity is unlikely disturb or harm the animal(s); and
    - 3f. No one shall attempt to feed, touch, ride, or otherwise intentionally interact with any protected species.
  4. Project footprints must be limited to the minimum area necessary to complete the project.
  5. The project area must be flagged to identify sensitive resource areas, such as seagrass beds, coral resources, listed terrestrial plants, and turtle nests.
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6. Work located makai of the Mean Higher High Tide Line of a navigable water or makai of the upward limits of adjacent wetlands must be timed to minimize effects on ESA-listed species and their habitats.

7. Project operations must cease under unusual conditions, such as large tidal events and high surf conditions, except for efforts to avoid or minimize resource damage.

#### Pollution and Erosion Control Best Management Practices:

1. Proper installation and maintenance of silt fences, saudades, equipment diapers, and/or drip pans will be used to ensure no increased turbidity or petroleum products enter the marine environment.

2. Appropriate materials to contain and clean potential spills will be stored at the work site (e.g. petroleum sorbent pads and booms), and be readily available.

3. All project-related materials and equipment placed in the water will be free of pollutants.

4. Daily pre-work inspections of heavy equipment for cleanliness and leaks, with all heavy equipment operations postponed or halted until leaks are repaired and equipment is cleaned.

5. Fueling of project-related vehicles and equipment will take place at least 50 feet away from the water, over an impervious surface.

6. No trash or debris will enter the aquatic environment.

#### Historic Resources Protection Best Management Practices:

1. Restoration of walls should, when possible, make use of stones from the existing walls and rubble, and that all imported materials should resemble these original stones.

2. No stones should be collected from adjacent fishponds or other historic sites.

3. Portable artifacts may be removed with adequate documentation prior to removal, in consultation with Division of State Parks archeologists.

4. All nineteenth and twentieth century artifacts may be left in place, awaiting “coordinated conservation” efforts, in consultation with Division of State Parks archeologists.

5. The pond will be available for periodic monitoring by State Historic Preservation Division staff to document newly discovered finds, provide additional interpretation, and assure that the previous conditions are being met.

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## CERTIFICATION

I hereby certify that I have read this completed application and that, to the best of my knowledge, the information in this application and all attachments and exhibits is complete and correct. I understand that the failure to provide any requested information or misstatements submitted in support of the application shall be grounds for either refusing to accept this application, for denying the permit, or for suspending or revoking a permit issued on the basis of such misrepresentations, or for seeking of such further relief as may seem proper to the Land Board.

I hereby authorize representatives of the Department of Land and Natural Resources to conduct site inspections on my property. Unless arranged otherwise, these site inspections shall take place between the hours of 8:00 a.m. and 4:30 p.m.

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*Signature of authorized agent(s) or if no agent, signature of applicant*

## AUTHORIZATION OF AGENT

I hereby authorize \_\_\_\_\_ to act as my representative and to bind me in all matters concerning this application.

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*Signature of applicant(s)*