

**Pearl Harbor Dry Dock  
Comments PA: Section 106 PHNSY & IMF DRY DOCK AND WPF Mitigation  
Restoration of Loko i`a Pā`aiau  
Submitted by Ali`i Pauahi Hawaiian Civic Club  
February 22, 2022**



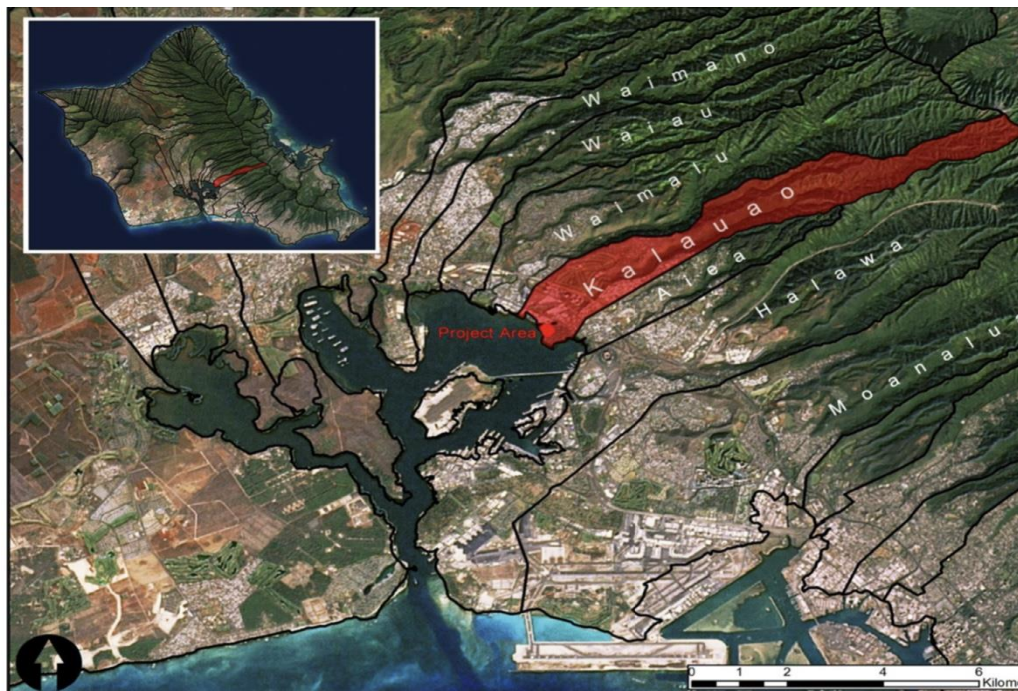
Loko i`a Pā`aiau, 2022

The proposed new Dry Dock at Pearl Harbor is to be constructed in an area that is home to ancestral guardians of Pu`uloa who are still held sacred to the Native Hawaiian community. In recognition that it is to be built in an area where three thriving ancient fishponds, including, Loko a Mano and Pohaku, once thrived, we respectfully request that mitigation for the new Dry Dock project include the final phase of restoration of the historically important Pā`aiau Fishpond, as articulated in its Preservation and Burial Treatment Plan (see attached), to ensure a fully operational fishpond. Per the plan: “Dredging will be needed to establish a healthy soil/ecosystem for fish. The fishpond walls will need to be stabilized. A functional makaha/gate is also needed to control water quantity and fish population.”

The pond is listed on the State Historic Register, the Pearl Harbor Trail Master Plan, and has received numerous commendations for reconnecting community to Pearl Harbor. It is a national model for creating valuable cultural relationships between the military and the civilian community, as well as for restoring traditional ecological knowledge. A Hawai'i State Department of Education documentary featuring the restoration vision recently aired on PBS Hawai'i (<https://vimeo.com/560224107>) and received valuable recognition from the Historic Hawai'i Foundation, as well as from the Honolulu City Council.

Removal of several acres of mangrove, restoration of the historic walls, and construction of the healing and educational center have already begun, through the efforts of the community and Navy partnership (see: [https://issuu.com/navyregionhawaii/docs/ho\\_okele\\_april21\\_finalfinal/s/12053305](https://issuu.com/navyregionhawaii/docs/ho_okele_april21_finalfinal/s/12053305)).

The fishpond wall is over 50% restored, after only 6 months of construction by Native Hawaiian traditional practitioners, with funds raised by APHCC, its fiscal sponsor, Living Life Source Foundation, NAVFAC, the National Environmental Education Foundation and Department of Defense Legacy Resource Management Program, the City and County of Honolulu, Office of Community Service (2020 CARES ACT), Oahu Economic Development Board, Pacific American Foundation, and community donors and volunteers. With proper mitigation support, the remaining wall and pond restoration can be easily completed, and the Navy's long-term plan for Loko Pā'aiau can be achieved, long before the new dry dock is ready to begin service.



Location of Project Area

## Loko i`a Pā`aiāu Restoration



Loko i`a Pā`aiāu and Surrounding McGrew Point and `Aiea Kai Housing  
Prior to Start of Restoration Project in 2014

Loko i`a Pā`aiāu is located along the western shore of McGrew Point Navy Housing area, Kalauao Ahupua'a, 'Ewa District, O'ahu Island. Since 2014, the Navy, Ali'i Pauahi Hawaiian Civic Club (APHCC), Living Life Source Foundation, lineal descendants and the 'Aiea community have been dedicated to restoring the fishpond and to preserving and protecting this cultural and historical site.

Through respectful partnership, these entities aspire to create a stronger relationship between the military and Native Hawaiian Organizations (NHOs) and the community, as a whole. Loko Pā`aiāu (State Inventory of Historic Places [SIHP] No. 50-80-09-00108) lies adjacent to the west of McGrew Point, which is used for Navy housing. The area is commonly referenced as the east loch of Pearl Harbor.

Pā`aiāu is a pre-western contact traditional Hawaiian fishpond, and its construction is credited to royalty. It is one of the only remaining fishponds attributed to the ruler of O'ahu, Mō`ī Wahine Kalanimanuia, who governed peacefully for over 60 years, from the site, over 400 years ago. Her mother, Kūkaniloko, was the first Mō`ī Wahine, and the third Mō`ī Wahine to govern was Lili`uokalani. The ancient mo`o akua wahine



(ancestral female deity), Kanekua`ana, who was believed to have brought abundance to Pu`uloa, continues to be honored by Native Hawaiian stewards. It is also the last fishpond that has the capacity to be fully restored, out of an original 24-plus ponds that sustained generations of Native Hawaiians who settled around the harbor.

The mission of the Loko i`a Pā'aiau project is to preserve the cultural site and landscape, educate the community on Native Hawaiian cultural traditions and practices, advocate cultural awareness, and implement and maintain an authentic Hawaiian presence in the area.

On path to being a fully functioning fishpond, again, Loko Pā'aiau is being restored with the help of thousands of volunteers and, since its inception, over \$500,000 and thousands of hours, in support from over 120 donors, including, the Navy, the US Government (CARES Act), the City and County of Honolulu, Living Life Source Foundation, APHCC, Aiea Community Association, Washington Prime - Pearlridge Center, local and national businesses, lineal descendants, Service Members, and individual donors. (See Paaiau.org for more information.) It serves both the Native Hawaiian communities as well as the greater community of Hawai`i. It houses a healing center and provides many educational resources, nurtured by esteemed traditional practitioners with over 60 years of training, and organizes and conducts tours for Navy residents, school groups and foreign and kama`aina visitors.

The Hawaiian Healing Center is sited in a traditional hale, built by Master Hale Builder Kumu Francis Sinenci, a Vietnam Veteran. It honors our warriors and provides inspiration to the community, while engaging with military members and their families who may be adjusting to life in the service or those facing the challenges of post-traumatic stress disorder (PTSD). It also serves as a space for transmitting traditional knowledge to Native Hawaiian students, their families, and Medical School residents who may treat Native Hawaiian veterans, in their practices.

Loko Pā'aiau, measuring approximately 6.34 acres, is bounded on the west by the ahupua'a of Waimalu and on the east by the ahupua'a of 'Aiea and Hālawā. Kalauao Stream abuts the original wall boundary, to the northwest, and Aiea Bay lies approximately 0.17 miles to the east of the fishpond. Kalauao Spring is located near the Pearl Harbor coast, west of the fishpond. The east, north, and south sides of the fishpond are surrounded by land while the west end is open to the ocean. It is located within the Dry Dock APE.

A mutually designed Long Term Plan envisions a Fully Operational Fishpond, such as those that once lined the shores of Pearl Harbor and the area known formally today as the “Dry Docks.” In 2019, leaders of Ali`i Pauahi Hawaiian Civic Club bestowed the Hawaiian name, *Keaooonāmanō*, ***The Realm of the Sharks***, on Dry Dock 1, in honor of the ancestral guardians who lived in the space and protected the people from the man-eating sharks. (See the traditional song and story of Kaahupahau: [https://www.huapala.org/Pul/Pupu\\_A\\_O\\_Ewa.html](https://www.huapala.org/Pul/Pupu_A_O_Ewa.html))

Approximately 50% of the plan has been completed, through a close partnership between the Navy, APHCC, LLSF, and the community, well in advance of projected dates. To achieve total operational status, the following projects are needed:

### **Fully Operational Fishpond Requirements**

- (1) Dredging is needed to establish a healthy soil/ecosystem for fish.
- (2) The fishpond walls need to be stabilized.
- (3) A functional makaha/gate is also needed to control water quantity and fish population.
- (4) A self-sufficient educational, cultural and healing space needs to be created.

The completion of the following projects will ensure that the fishpond will be fully operational by 2032:

### **Project 1: Removal of Trees**

Numerous invasive trees planted in the uplands for animal food stock and landscaping have taken hold in the pond, since the bombing of Pearl Harbor. Several are in higher than 20' tall. A study of invasive trees in He'eia Fishpond shows that removing invasive trees and replacing them with native plants dramatically improves the health of the ecosystem and water quality of the pond. (See: <https://www.hawaii.edu/news/2019/08/06/manoa-sea-grant-mangroves-heeia/>):

- A) Removal of 9 Invasive Canary Island Palms, due to danger of falling spikes and rapid propagation.

Location: 5 inside pond fence, 4 outside pond fence;

- B) Removal of 10 Kiawe trees, aligning and setback from the pond, pose a fire hazard, danger of falling thorns and branches, destabilization of wall, due to root expansion, and rapid regrowth.



Invasive Canary Island Palm and Kiawe Trees Line the Footpath

Location: 8 trees inside pond fence, 7 outside pond fence, 2 connected to traditional hale (branches only); and,

- (C) Removal of 12 Opiuma due to a danger of falling, extremely hazardous and sharp thorns and extremely invasive presence in the pond.

Location: 2 large trees inside front gate entrance, 8 smaller trees, inside pond fence, and minimum of 2, outside pond fence.





Falling Opiuma Tree at Entrance of the Pond



Dangerous Spiked Branches of Canary Island Pal



(D) Removal of Mangrove regrowth and roots in the silt

Location: Inside pond; Harbor side; outside fence

(E) Removal of Milo stumps along the pathway between the entrance fence and the traditional hale, due to tripping danger and limited space.

Location: Removal of stumps from entrance of pond path to the traditional hale.



Mangrove, Invasive Cattails, Opiuma Tree on Inland Side of the Pond



## **Project 2: Fence Demolition**

To increase access to the pond from the Hawaiian Healing Space, ensure pedestrian safety, reduce overgrowth of invasive species, and expand views from the land to the water, demolish and dispose of the broken chain link fence.

Location: Harbor side of the pond, next to Hawaiian Healing Space.



Old Fence Separating Pond from Hawaiian Healing Space, 2022





Fence Separating Pond From Hawaiian Healing Space, Blessing, 2014



Fence Separating Pond from Hawaiian Healing Space, 2022



### **Project 3: Dredging (Includes Removing Invasive Species)**

For visitor safety, as well as full ecosystem restoration, remove several tons of silt that have eroded into the pond, due to past upland development practices. Also, remove the invasive mangrove, pickleweed and other non-native plants that have overtaken native plants.

APHCC has met with Loko Ea Fishpond managers to address efficiency and potential repurposing of the dredged material. Native plants to be cultivated include: Makaloa, akulikuli, naio, niu, wauke, etc. Also, other native plants conducive to nesting area for the alae ke`okeo may also be planted.

Location: Inside the pond and partially on the mauka shoreline.



Loko ʻŌʻa Pāʻaiau Filled with Silt from Upland Erosion, 2019

### **Project 4: Island for Bird Sanctuary**

Since the restoration of the pond began in 2014, several migratory and endangered Hawaiian waterbirds, such as, ae`o, `auku`u, kolea, ulili, and alae ke`oke`o visit, to forage and rest. Due to introduced land-based mammals in the surrounding communities (e.g. feral rats, dogs, cats, mongoose), the threatened birds are not able to nest or roost for long lengths of time. To improve the environmental habitat, special islands will be created, using the dredged soil and native plants, such as those planted in the past 7 years. They will be built to withstand ocean rise and tidal currents and will incorporate predator-proof fencing on the inland side of the pond.

Research at the Pearl Harbor National Wildlife Refuge indicates that such fencing will be an important conservation tool on the Hawaiian Islands, for all of Hawai'i's endemic waterbirds.

Location: Mauka side of pond



Ae'o, Native Hawaiian Stilt



`Alae Ke'oke'o, Hawaiian Coot (One Sighted in 2021)



`Auku'u, Black-Crowned Night Heron



Pearl Harbor National Wildlife Refuge





Kahu Bruce Keaulani preps native coconuts for planting



Captain Delao clears invasive species around native makaloa





Navy Archeologist Jeff Pantaleo helps Hui Ku Maoli Ola unload native plants for National Lands Day 2021



Aaron Terry (Veteran) and Kellee Hearther (Active Duty Navy Family) plant native makaloa



## Project 5: Complete Restoration of Traditional Fishpond Wall (Kuapā)



Remnants of original Makai wall, 2014  
<100 Stones Left at Beginning of Restoration



Restored Makai Wall, 2022

The Pā`aiau Preservation Plan calls for the 400-year-old wall of the pond to be completely restored. Most of the stones of the original wall were removed, since December 7, 1941, necessitating the importation of stones from West O`ahu. To date, 150' feet of the original rock wall, on the Harbor side, has been rebuilt, with over 21,000 tons of basalt stone and crushed coral sourced.

An additional 150 feet, including three mākāhā (traditional sluice gates), remains partially submerged, in the pond. This project will source materials, including a minimum of 20,000 pounds of basalt and coral, as well as sufficient labor and equipment to restore the submerged wall and connect it to the inland shoreline. When completed, the wall will measure approximately 4' wide x 4' high and will be designed to withstand the rising ocean. At the completion of the project, the entire historic wall will have been fully restored.

Construction of the wall brings together a master crew of Native Hawaiian builders, led by Kumu Francis Sinenci, and hundreds of working hands from the military and community. Native Hawaiian protocol is observed. At the end of the first phase, volunteers honored their ancestral warriors, by placing a stone in their remembrance, at the end of the wall.

Location: Makai wall to mauka shoreline (near `Aiea Kai).



Pa`ai'au Lineal Descendant Cornelius Unciano, Adm. Dean Vanderley, CDR Darrel Frame, V Lt. Joshua Owens, Lineal Descendant Verna Takashima Tour the Wall, 2021



Master Wall Builder Kumu Francis Sinenci (Vietnam War Veteran), `Aiea High School Kumu Keola Kalani (Iraq War Veteran) and Native Hawaiian `Olelo Hawai`i Students Begin the Restoration of the Wall, 2020



## **Project 6: Landside Pedestrian Walk**

A large part of the pond's shoreline is currently overgrown with invasive vegetation rooted into four feet of silt. Beneath the silt lies 6' up to feet of water. This project will remove the vegetation and create a new raised walkway that connects the pond to the shore. Area residents and visitors will be able to safely walk on the landside of the pond. It will be built above the surface of the pond, to ensure that it does not obstruct the flow of fresh water that is necessary to support the pond's aquatic fish and plant inhabitants, as well as intertidal foraging areas. The Pearl Harbor National Wildlife Refuge Hono`uli`uli Unit (Betty Nagamine Bliss Overlook), which was established in 1972 as mitigation for construction of the Honolulu International Airport Reef Runway informs this work. It is managed under a cooperative agreement with the U.S. Navy. (See: <http://westlochfairways.org/wp-content/uploads/2015/10/Betty-Bliss-Overlook.pdf>)

Location: Mauka side of the pond.



Betty Bliss Overlook, Pearl Harbor National Wildlife Refuge



Betty Bliss Overlook, Pearl Harbor National Wildlife Refuge

## Project 7: Interpretive Signage

Currently, there is no signage directing visitors to the pond. Weather-proof interpretive signage, like that installed on the Ford Island Historic Trail or the Pearl Harbor National Wildlife Refuge, will provide a high-quality interpretive experience for community and neighborhood visitors, without the requirements of staff or facilities to maintain. Indigenous artists who were commissioned to assist with the renovation of nearby Pearlridge Shopping Center will design the signage, inspired by the history documented in the Preservation Plan, and will invite area children and families to participate in its creation. This feature will help elevate the community's awareness of the importance of the site, as the last remaining royal fishpond in Pearl Harbor and an important stop on the Historic Pearl Harbor Trail.

Location: Entrance to pond; Mākāhā; Important areas of the pond.

## Project 8: Restroom Building (Hale ho'opau pilikia)

The restoration of the pond depends on hundreds of volunteers, mainly youth, every year. In addition to guests, they are not allowed to access the McGrew Recreational Center restroom which is the closest public bathroom facility to the pond. The next closest public restroom is nearly one mile walk away.

Currently, the APHCC rents a portable toilet, monthly. When a portable is not available, we have received aloha from neighborhood residents who allow visitors to use their home facilities. To ensure proper hygiene for the youth and kupuna, this project



will construct a small restroom building that is ADA compliant and, preferably, greywater.

Location: Near existing Wastewater Pumping Station.



Existing Wastewater Pumping Station may supply water and Electricity to our Restroom Bathroom Nearby

### **Project 9: Utilities Installation (Uila a me Wai)**

The site does not currently support electricity or water utilities. Consequently, use of the space is limited and there is no power for restoration support, cooking, communication and other safety systems. Fresh water must be carried in, daily, by volunteers, and there is no running water for suppressing fire on the traditional hale or in the grove of highly flammable invasive trees or supporting the school building. Fresh water pipes and electrical conduits are located within yards of the traditional hale and the future site of the school building and need only be integrated into the pond educational and healing spaces. PV will be installed to maximize abundant solar energy at the site.

## **Project 10: Environmental Arts Hale (Ka Hale No`eau)**

Prior to the building of a traditional hale in the pond area, stewards welcomed visitors in the McGrew Point Housing pavilion. The hale now serves that purpose, however, it is designed for and dedicated to healing practices for veterans, active-duty service members and community groups. With an increase in visits, in the past year, it has outgrown its capacity. A larger traditional style hale will be built for environmental education, such as site tours by school and community groups, and for the practice and teaching of indigenous cultural arts. It will also serve as a canoe hale.

The hale will be built of logs (preferably sourced locally), loulu thatching, cord and stacked rock. It will measure 20' x 40'. Also, ADA compliant, to ensure safe passage for wounded warriors, kupuna and others. The hale will be managed by APHCC, Living Life Source Foundation, lineal descendants of the pond, and other community stewards approved by the Navy, through MOU. Landscaping surrounding the hale will include a native plant garden that showcases traditional materials, such as, niu, wauke, milo, kou, makaloa, and others.

Location: Mauka side of pond.



Potential Hale Design





Rear Admiral Kott joins in the National Lands Day workday, with Aaron Terry (Veteran and Volunteer Steward), Robert Bowers (Volunteer Steward and Grandson, Son and Brother of Veteran and Active Duty Service Members), and Lori Chun (Community volunteer).



Volunteer stewards and McGrew residents remove invasive pickleweed in honor of National Lands Day

### **Project 11: School Building (Kula Kaiapuni)**

In addition to offering Native Hawaiian cultural and healing practices, the fishpond is a multi-faceted educational space, especially, for youth and families from the surrounding community. With nearly 41% of the student body at `Aiea High School not planning to enter college, defense contractors and industry partners have voiced a strong need for internships in character and culture-based programs and activities that foster positive character development and core values, virtues and principles, such as, Aloha, Kuleana (Responsibility) and Maluhia (Peace). Native Hawaiian language instruction will be offered here by native and descendant teachers. Kula Kaiapuni may be a donated historic home or a design created by a Native Hawaiian architect that will anticipate rising. It will host cultural and technical classes for students of all ages. To be fully functional, water, sewer and electrical utilities will be tied in. A resident caretaker may oversee the pond from this space.

Location: Makai Side of the Pond.





Potential Site of Kula Kaiapuni

### **Project 12: Kitchen Building/Sustainability Center (Hale Kuke)**

The Kitchen Building/Sustainability Center support the needs of the students and visitors who visit the pond for learning, working, and healing. It will include a makery for innovative practices of sustaining the pond (honey production, limu production, coffee, etc.), a certified kitchen, immediately adjacent to the school building. The kitchen will be used to prepare meals for visitors, volunteers and students. In addition, it will house a learning space where `ai pono, healthy and proper nutrition can be shared, along with other traditional arts that align with the fishpond. Moreover, it will allow the development of an innovative revenue generating stream to support the continued maintenance of the pond.

The building will be designed through an architecture collective involving area students and will likely be mobile.

Location: Near the School Building.

### Project 13: Reroute fresh water (Wai)



Pearl Harbor prior to Dec. 7, 1941  
Fresh Water Once Flowed Into the Pond from Stream and Springs

The role of the fishpond in sustaining food production for the Queen and her community is well established. What is less apparent is the pond's reliance on fresh water sources in Kalauao, where streams that flowed through lo'i kalo and the harbor have been cut off from the pond, with the infill and construction of homes and silt, inside the pond.

Fresh water springs were vital for nearshore ecosystems, as were flowing streams. "The millions of gallons of freshwater flowing from the springs into the ocean were vital for nearshore ecosystems. The mixing of fresh and saltwater created a fertile estuary for limu (seaweed) to grow. This, in turn, was a nursery and thriving place for schools of fish and shrimp to feed," according to the University of Hawai'i Sea Grant Program.

According to the Board of Water Supply, currently, over 800,000 gallons of fresh water are diverted from Kalauao Stream daily for the irrigation of Hawaiian Cement (Hālawā) Aloha Stadium (Hālawā), H-1 Freeway, and the Honolulu Airport. The steady flow of water is essential to the circulation and mixing of fresh and salt water in the pond that makes for a healthy and nourishing mixture. Absence of fresh water in parts of the pond is evidenced in the appearance of invasive plants that thrive in high salinity. Rerouting fresh water into the pond is essential for the fishery to grow and survive. This will involve collaboration with the Board of Water Supply, as well as the creation of a tunnel, pipe, or restoration of stream flow from the Kalauao Stream to Pa'aiau. In its current



Primary Urban Center Watershed Management Plan, the BWS acknowledges the need for fresh water at the fishpond and in the estuary of Pearl Harbor.

Location: Mauka Side of the Pond

#### **Project 14: Obtain Parcels with Houses On the Opposite Side of Pond (As They Become Available)**

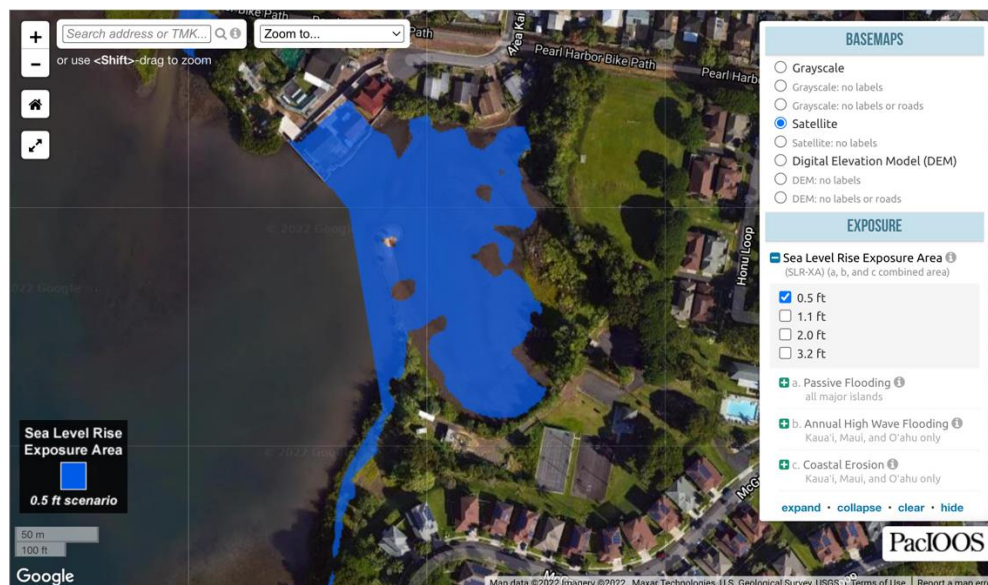
One of the greatest travails of restoring the pond is to ensure the harmonious balance of the salt water (kai) and the fresh water (wai). The two are intimately connected, in the Hawaiian water cycle. Unfortunately, the pond is adversely impacted by the building of homes in its northernmost section, which, in turn, suffers tremendous challenges relating to flooding.

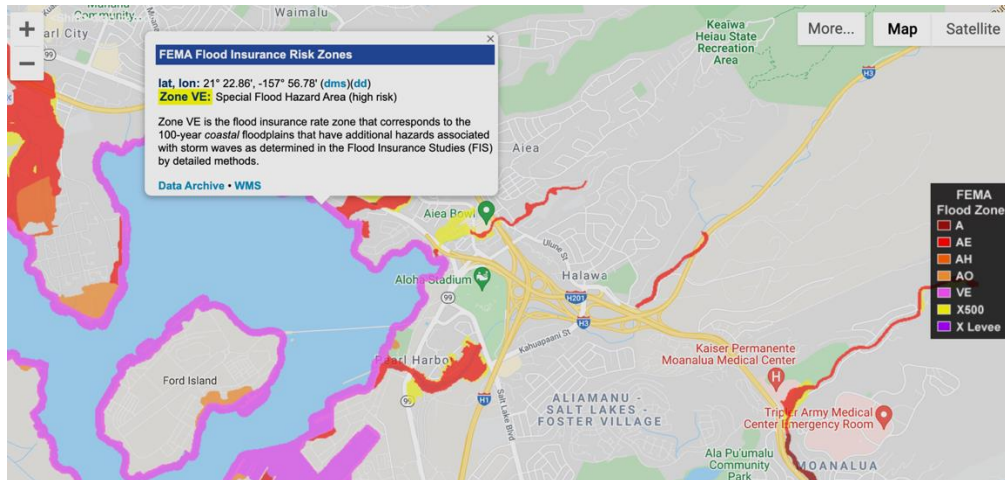
Climate Change projections anticipate that the land area leading up to Kamehameha Highway will be inundated with water in the coming years, as the ocean rises from .5' to 3.2'. Already, it has been brought to our attention that many homes are experiencing increased flooding and difficulties with their wastewater systems. Fish are appearing in some backyards, as the tides rise.

As owners choose to move inland, this project recommends the acquisition of the properties that abut Kalauao Stream and capped springs. This will allow the regeneration of the original pond and, if so desired by the neighboring landowner, encourage the added restoration of Loko 'Opu, Kalanimanuia's second pond.

Location: Northern end of the pond.

Image: .5' sea rise





Hawai'i Flood Hazard Zones



In the late 1950s, homes were built on filled land in the northern end of Loko i`a Pā`ai. Freshwater from the Kalauao Stream, and nearby springs, once flowed into the pond, through this area. Honorable Navy Veteran Phil Moore and his family reside in one of the homes and is a valuable teacher for our community.



## **Mahalo Nui Loa**

Mahalo nui loa for the opportunity to share our community's recommendation for mitigation for any potential Adverse Impact of the project, as noted in Section C(1)(f).

We do so, in gratitude for the aloha that we share, in stewarding our sacred wahi pana, Loko i`a Pā`aiau, and nurturing the abundance and peace of Kalanimanuia, for generations to come.

Aloha nui loa,

Ali`i Pauahi Hawaiian Civic Club  
Kehaulani Lum, Pelekikena  
[Kehaulanilum@ameritech.net](mailto:Kehaulanilum@ameritech.net)



Blessing of Ka Hale Ali`i o Na Koa, 2021