

## Beneficial Use of Dredged Material

### Section 1122 of the Water Resources Development Act of 2016 Pilot Project Proposal Form

#### 1. Name and location of the proposed project.

Name: Haleiwa Small Boat Harbor Maintenance Dredging and Beach Restoration

Location: Haleiwa Small Boat Harbor: 66-105 Haleiwa Road, Haleiwa, Hawaii 96712  
Haleiwa Beach Park, 62-449 Kamehameha Highway, Haleiwa, Hawaii 96712

#### 2. Purpose

The purpose of the proposed Beneficial Reuse of Dredged Material project is to place beach quality material from USACE maintenance dredging of Haleiwa Small Boat Harbor (HSBH) at the Haleiwa Beach Shore Protection Project (HSBPP), directly adjacent to the HSBH. This placement of sand on the adjacent beach will provide coastal storm damage reduction to upland infrastructure (a city park with facilities along the shoreline), as well as provide recreational benefits to an area that is used extensively by commercial businesses, tourists and residents throughout the year. A map of the area, including federal navigation and shore protection project features as well as adjacent beaches and landmarks, is shown in Figure 1.

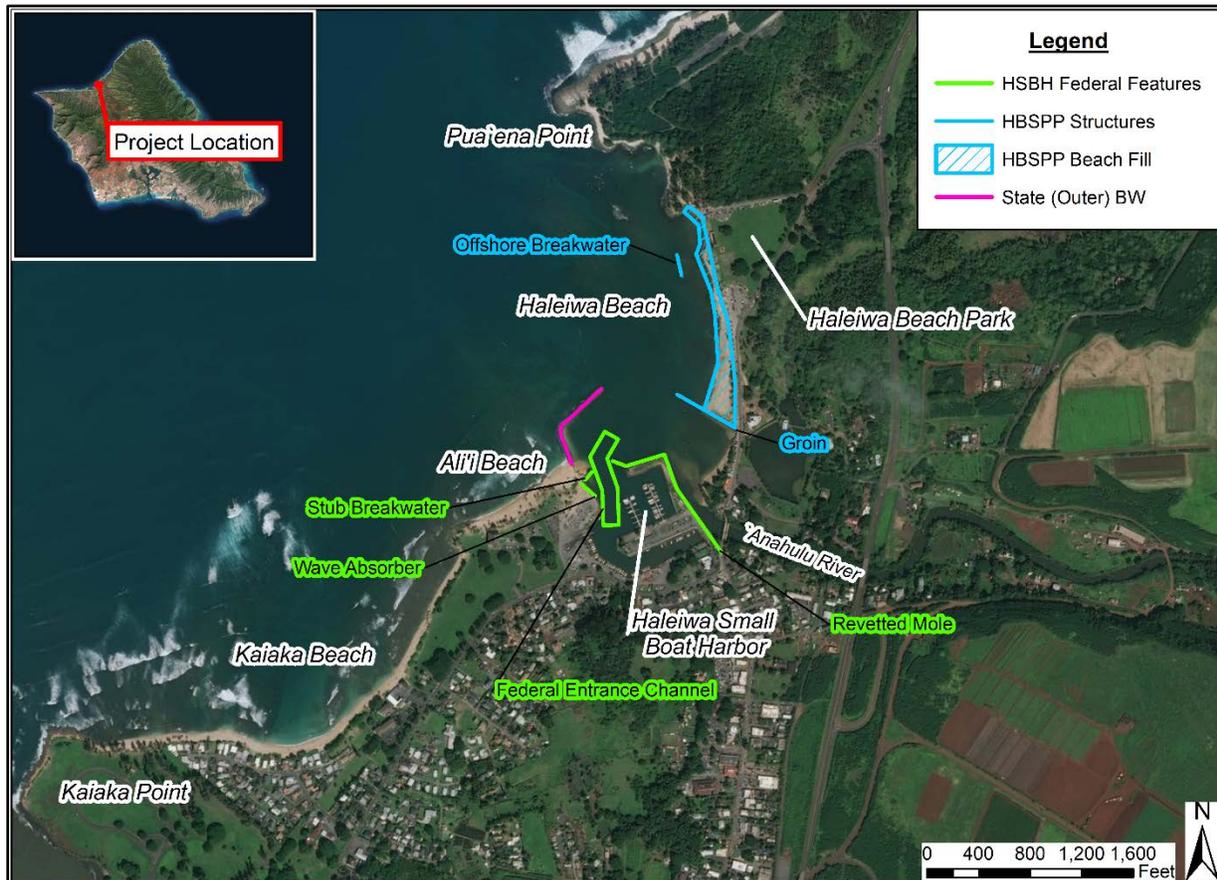


Figure 1 Map of Haleiwa Small Boat Harbor and surrounding area

Haleiwa Beach Park has experienced increased rates of erosion since the construction of the Haleiwa Small Boat Harbor (completed 1966, modified 1975) and Haleiwa Beach Shore Protection projects (completed 1965). Aerial photos of Haleiwa Beach showing the erosion of the beach shoreline over time are shown in Figures 2 and 3.



Figure 2. Haleiwa Beach Park shoreline as of 1970

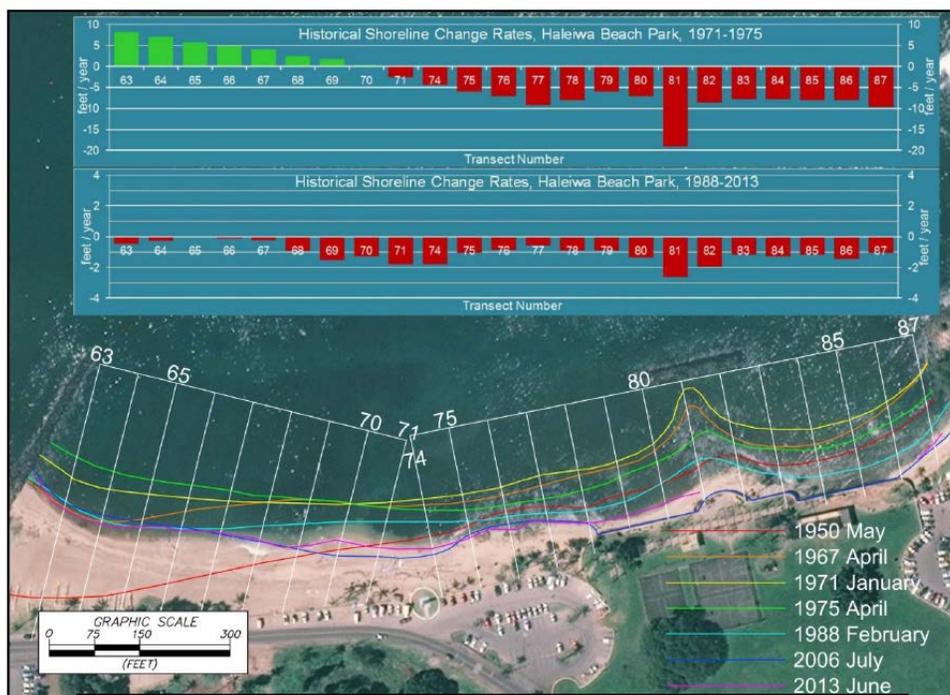


Figure 3. Haleiwa Beach Park shoreline 1950 - 2013

### **3. Description of the proposed project, including more detail on how material will be used beneficially to meet project purposes identified on slides 4 -8**

Historical dredging records at Haleiwa Harbor indicate that about 6,500 cubic yards of material may be dredged from the Federal channel during the next dredging event. Naturally occurring wave, tidal and circulation activity results in erosion of Haleiwa Beach sand southward toward the entrance channel of Haleiwa Small Boat Harbor. USACE Honolulu District would place clean, beach quality material from harbor maintenance dredging on Haleiwa Beach in the area of greatest erosion, which is immediately in front of the seawall by the comfort station. It is estimated to be an area of about 8,000 sf. This would help to temporarily protect the seawall and the structures behind it. Though the non-Federal sponsors are interested in re-nourishing the whole project, the beneficial reuse of this dredged material would help protect the most critical shore side facilities before a full re-nourishment can take place. Honolulu District would work with non-Federal sponsors and stakeholders during the design phase of maintenance dredging to obtain the necessary environmental requirements to place sand on the beach for this option. Preliminary coordination with regulatory and resource agencies has been initiated as part of Honolulu District's FY17 Regional Sediment Management activities.

In 2013 the City and County of Honolulu contracted Sea Engineering, Inc. to study erosion problems at Haleiwa Beach Park and to come up with solutions. In 2014 the consultant prepared a draft report presenting 5 alternate designs. Each alternative was designed to include sand tightening the terminal groin. Each option ranged in estimated construction cost from \$2,300,000 to \$5,300,000. The options required sand replenishment from 7,000 to 21,000 cy. The 6,500 cubic yards of material from the harbor dredging would be used to support one of these options.

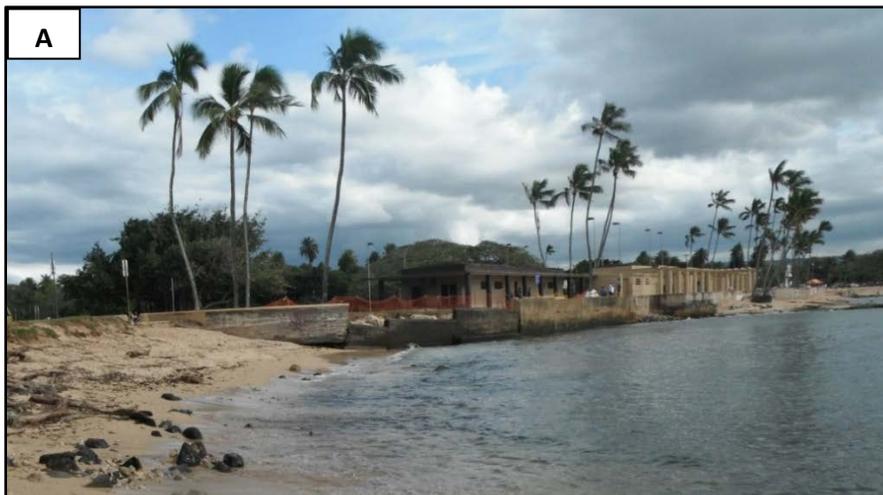




Figure 2. Pictures from March 2017 showing the severe erosion of the beach at the northern section of the Haleiwa Beach project (A) and the washed out area behind the seawall (B).

**4. The name of all non-federal interests planning to act as the sponsor.**

City and County of Honolulu: owns and maintains Haleiwa Beach Park

State of Hawaii, Department of Land and Natural Resources, Department of Boating and Ocean Recreation (DOBOR): non-Federal sponsor of the Haleiwa Small Boat Harbor

State of Hawaii Department of Land and Natural Resources, Office of Conservation of Coastal Lands (OCCL): non-Federal sponsor of Hawaii Regional Sediment Management Program

**5. List the authorized USACE water resources development project(s) that the proposed beneficial use project is associated with.**

**Haleiwa Small Boat Harbor.** HSBH was authorized on 26 March 1964 and 25 October 1974 under Section 107 of the River and Harbor Act of 1960, as amended. The project was the first joint Federal-State harbor constructed on Oahu. The original Federal project, which was completed in November 1966, consisted of the entrance channel and revetted mole. The stub breakwater and wave absorber were added in 1975. The current federal general navigation features of Haleiwa Harbor consist of an entrance channel 740 feet long, 100 to 120 feet wide, and 12 feet deep; a revetted mole that is 1,310 feet long; a stub breakwater that is 80 feet long; and a wave absorber that is 140 feet long (Figure 1). Non-federal project features include 64 berths, 26 moorings, 2 loading docks, and 3 ramps. The non-federal sponsor for the harbor is the State of Hawai`i, Department of Land and Natural Resources, Division of Boating and Ocean Recreation (DOBOR).

Haleiwa Harbor has been dredged twice since initial construction: 7,214 cubic yards (cy) in 1999 and approximately 6,500 cy in 2009. Both times, the material was disposed of upland. Some of the clean, sandy material from the 2009 dredging was used at Haleiwa Beach Park for repair work, and some was made into concrete. At the time, placing suitable dredged material on Haleiwa Beach was identified as a potential beneficial reuse option. However, the necessary

environmental permits were not in place, and the maintenance dredging schedule and budget did not allow for them to be acquired at that time.

**Haleiwa Beach Shore Protection Project.** Haleiwa Beach is just to the north of Haleiwa Harbor and the `Anahulu River mouth. In December 1949, Haleiwa Beach Park was fronted by a beach ranging from 90 to 130 feet wide. However, it steadily eroded over the next several years. In March 1957, a tsunami washed away a large volume of sand. At one point, a section of the existing seawall fronting the beach park comfort station collapsed due to the lack of beach in front of it (USACE 1973). The HBSPP was authorized by the River and Harbor Act of 1965, and was constructed in 1965. It consists of an offshore breakwater 160 ft long, a 520 ft long terminal groin at the southern end of the project, and a beach fill 1,600 ft long and 140-265 ft wide. In the 1970s, it was repaired several times due to storm damages. Due to a severe storm in December 1969, USACE conducted emergency repairs on the groin and offshore breakwater, and placed approximately 12,000 cy of sand on the beach. Storms in January 1974 and November 1976 again led to emergency repairs for the project, in 1975 and 1978 respectively. The project authorization states that the non-federal sponsor is responsible for ongoing maintenance of the project and that USACE may conduct emergency repairs to the project in accordance with Public Law (PL) 84-99. The non-federal sponsor for the HBSPP is the State of Hawai`i Department of Transportation.

Maintenance of the beach project has been limited, thus portions of the beach are severely eroded. During a site visit in March 2017, it was observed that the most northern section, directly in front of the seawall protecting the comfort station at the beach park, is completely gone (Figure 2A). At this time, the seawall was undermined and the fill behind the wall was being washed out. The seawall itself was at risk of collapsing (Figure 2B), as it had most recently in the 2000's before being reset, but not repaired substantially. The beach fronting the remaining length of seawall ranges in width from 10 to 30 feet.

## **6. Estimate of total project costs and federal/non-federal share.**

The rough order of magnitude estimated construction cost for maintenance dredging of HSBH including beach placement of 6,500 cubic yards of dredge material at Haleiwa Beach Park is \$1,122, 571. This is an incremental cost of approximately \$282,000 above the construction cost of dredging and placement of all dredged material in the South Oahu Ocean Dredged Material Disposal Site (the least cost option). These estimates are documented in the FY17 RSM Technical Note, "Hawaii RSM: Advance Planning for the Beneficial Reuse of Dredged Material at Haleiwa Harbor, Island of Oahu, Hawaii" (DRAFT). This cost does not include environmental coordination/permitting requirements. Since the dredged material would come from a Federal navigation project, the incremental costs above the Federal standard for transporting and depositing the material would be 100% Federal/0% non-Federal under the Section 1122 Beneficial Use of Dredged Material Program.

**7. Estimate of the anticipated monetary and non-monetary benefits of the proposed beneficial use project with regard to the environmental, economic, and social benefits of the project.**

National Economic Benefits:

- Costs associated with storm damage to the existing coastal structures at Haleiwa Beach Park would be reduced with the restoration of the eroded beaches seaward of the structures.
- Costs associated with renourishing the beach to abate seasonal erosion of the beach park structures would be reduced.

Regional Economic Benefits:

- Local businesses, such as surf schools, kayak and stand-up paddle board rental businesses, restaurants, and retail stores would benefit from the public and tourists' use of the beach.
- Restoration of the beach would protect damage to the Haleiwa Beach Park buildings that are listed as historic properties.
- Restoration of the beach would protect damage to nearby public roads and parking facilities that are subject erosion.

Social Benefits:

- A valuable recreational beach would be restored for use by residents, tourists, and commercial businesses.
- Local canoe paddling teams would continue to use the beach for access to the ocean. Currently Haleiwa Beach is their main location for launching and staging canoes.
- Residents, tourists, and local businesses would be forced to travel elsewhere to enjoy recreational beach activities if the beach continues to erode.

Environmental Benefits:

- Restoration of the beach will prevent erosion of the terrestrial soils behind, which would affect water quality and harm coral and other marine life.
- Erosion of the beach could expose the existing wastewater treatment system on site causing discharge of pathogens into the ocean.

**8. Describe if local support exists for the proposal.**

Local support exists from the City & County of Honolulu and State of Hawaii Department of Land and Natural Resources (DOBOR & OCCL).

Community support from residents, tourists, and local business also support the beach restoration project, due to the fact that this is the only public beach park in the immediate vicinity, and is well used by surf schools, paddlers, surfers, and both visiting and local

beachgoers. Additional sandy beach area and protection of the park facilities are visible benefits to the community.

Preliminary discussions with resource agencies have indicated that the agencies do not have any major concerns with placement of sand at Haleiwa Beach Park. The presence of corals is likely to be limited due to freshwater inputs in the area. They do see a need to evaluate and identify the resources to better understand the potential impacts.

**9. Statement of the non-federal interest's financial ability to provide a share of the project costs.**

The non-federal sponsors will provide lands, easements and rights of way as appropriate for project construction. The City and County of Honolulu is committed to maintaining its valuable park facilities and budgets 20 to 30 million dollars each year for capital improvements to park facilities. The beach parks are valuable facilities for the benefit of the residents and visitors to Oahu. If necessary, the non-federal State of Hawaii sponsors are able to provide cost sharing through Special Funds allocated to their divisions.