



Haleiwa Harbor Regional Sediment Management

Description

The federally authorized Haleiwa Small Boat Harbor is located on the north shore of Oahu, Hawaii (Figure 1). Previous Regional Sediment Management (RSM) efforts identified material shoaling between the federal stub breakwater and the State of Hawaii (state) owned outer breakwater, as indicated in Figure 1. Sand is transported by wind and high waves from Alii Beach over the root of the outer breakwater and is deposited harborside. A significant portion of this material is ultimately transported into the federal channel. This RSM effort will initiate investigations and coordination required for approval of a federally maintained deposition basin on the harborside of the outer breakwater. The deposition basin will be designed to intercept the material before it reaches the federal channel. Cost savings from maintaining the deposition basin utilizing land based equipment versus maintenance using a floating dredge plant concurrent with federal channel dredging will be quantified.



Figure 1. Location of Haleiwa RSM region.

The goal is that, in the future, beach quality material dredged from the federally authorized general navigation features at Haleiwa Small Boat Harbor (both the deposition basin and the channel) will be placed on Haleiwa Beach (Figure 1), ultimately reducing federal operation and maintenance (O&M) costs while also resulting in beneficial use of the material. Additionally, the Honolulu District will seek to establish long-term permitting for beach placement to avoid initiating the permit process for similar future actions.

Issue/Challenge To Address

When Haleiwa Harbor was last dredged in 2009, the dredged material was disposed of upland. Sediment testing results had indicated that the material near the harbor entrance was beach quality material, however, at the time beneficial use was not feasible due to cost and permitting timelines. Since then, RSM Program funded studies have defined circulation and sediment transport processes as well as explored various beneficial use



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options in the region. FY17 RSM investigations identified about 2,000 cubic yards (cy) of sand on the harborside of the outer breakwater (Figure 2). Removing this material prior to it entering the federal navigation channel will reduce maintenance dredging costs. Currently, the maintenance dredge volume and interval at Haleiwa Small Boat Harbor are estimated at 6,500 cy and 10 years, respectively.

One of the main hurdles to beach placement of suitable material in Hawaii is acquiring necessary permits to place sand below the mean high waterline. FY17 RSM investigations initiated the environmental coordination and permitting process for beneficial use in the Haleiwa region. Additional work is needed to secure the appropriate permits and satisfy environmental consultation requirements. This RSM effort will attempt to establish long-term permitting to allow beach placement of material from the harbor. It will also be an important next step in the implementation of similar projects throughout the State of Hawaii.

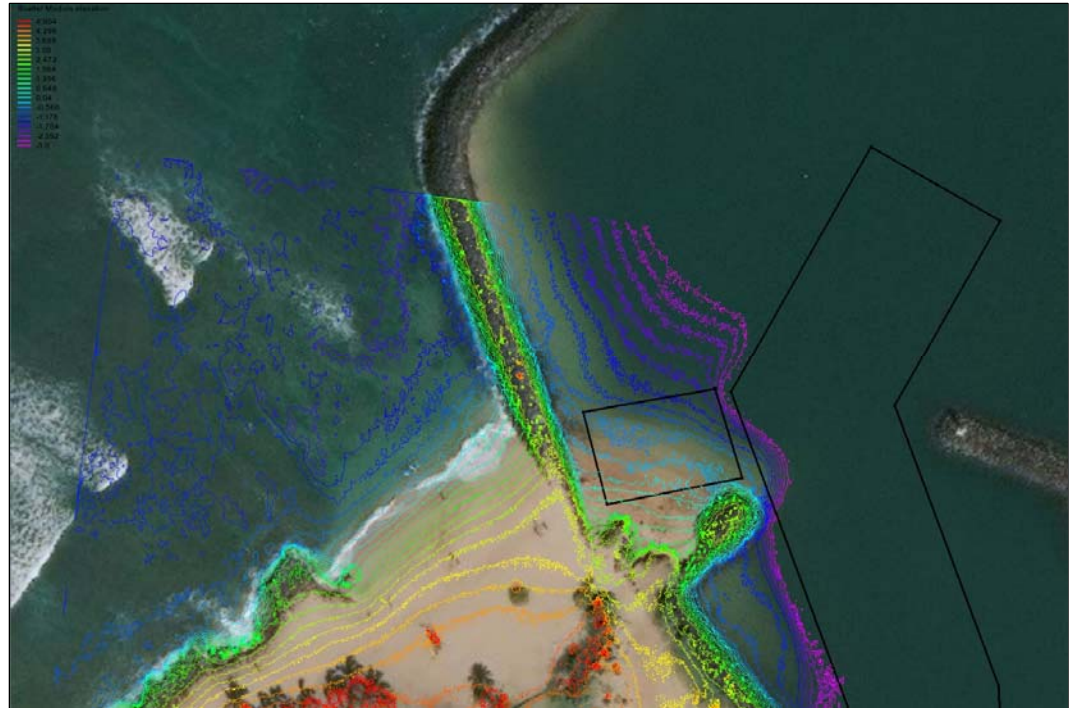


Figure 2. Location of material shoaled on the harborside of the outer breakwater.

**Successes
Lessons Learned**

Lessons learned will be compiled during the duration of this initiative.

**Projected Benefits
Cost Savings
Value Added**

Federal cost savings would be realized through the reduction of O&M maintenance dredging requirements. Additionally, beneficially using material for beach placement would provide environmental, recreational, and economic benefits.

Expected Products

- Detailed analysis of shoaled material, including volume, shoaling rate, and projected excavation frequency
- Cost estimate of excavation and beach placement, including life cycle cost evaluation
- Framework for environmental consultation and permitting
- Technical Note and presentation



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Stakeholders/Users

Stakeholders include the State of Hawaii Department of Land and Natural Resources (DLNR) Office of Conservation and Coastal Lands (OCCL), DLNR Division of Boating and Ocean Recreation (DOBOR), and the City and County of Honolulu Department of Parks and Recreation (C&C).

Leveraging Opportunities

This RSM effort will leverage historical data such as hydrographic surveys and LiDAR data, as well as the information previously obtained during the FY13 and FY17 RSM efforts, including modeling results, regional sediment budget, analysis of beneficial use options, and initial environmental coordination efforts. The state is currently formulating a programmatic general permit for small-scale beach restoration projects. This RSM effort will leverage this endeavor to facilitate the RSM permitting process in the Haleiwa region.

Points of Contact

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Participating Partners

Participating partners include the DLNR OCCL, DLNR DOBOR and C&C