



# Placement of Navigation Dredged Material on Babe's Beach Galveston, Texas

## ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS

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### Response Summary:

The Galveston District regularly dredges the Houston Ship Channel to maintain navigable access to ports connected through Galveston Bay. The project sediment in the channel is approximately 40% fine (smaller than 63  $\mu\text{m}$ ) and 60% sand sized. The fine material is placed in an offshore site and the sandy material is designated for beneficial use beach nourishment of Galveston Island with support from the local sponsor. Prior beach nourishment using this material resulted in undesirable ponding. The District requests guidance concerning rapid on-board determination of sediment quality for beach construction, beach profile design, construction methods appropriate to minimize ponding, and the economics related to dredging and placement volume loss and beach fill.

### Period of Performance:

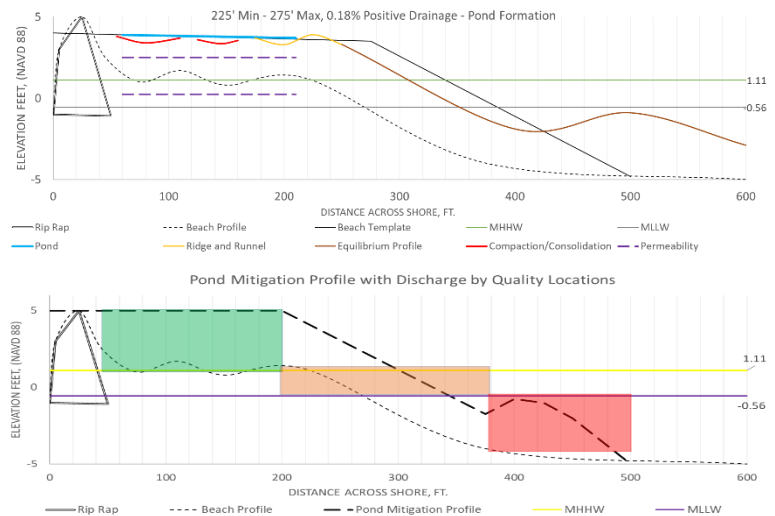
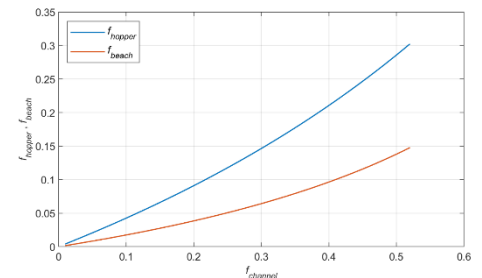
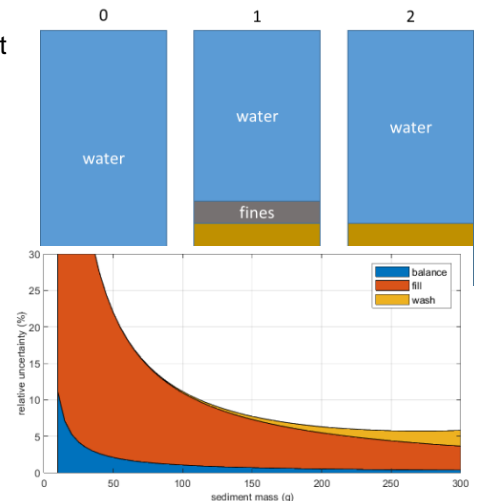
November 19, 2020 – December 8, 2020

### Benefits of the Response to the USACE Dredging/Navigation Program:

The USACE Dredging/Navigation Program is benefited by the development of technical methods to determine sediment quality in a field expedient manner to improve operational decision making. In addition, the program benefits from the successful BU nourishment of beaches utilizing cost-share partner funding. The Program's research component benefits from the continued collaboration and technology development between ERDC and SWG in the topic areas of fines loss during dredging and placement operations and beach nourishment design using BU dredged material.

### Deliverable:

The DOTS response resulted in an introduction meeting on the specifics of the request, a presentation meeting on the preliminary findings, a 17-page response document describing the conceptual development of a rapid testing method for fine-sediment content, recommendations for beach construction to reduce ponding, and relationships between fines-content and the fill-cut ratio of the beach construction.



Providing environmental and engineering technical support to the U.S. Army Corps of Engineers Operations and Maintenance navigation and dredging missions

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