

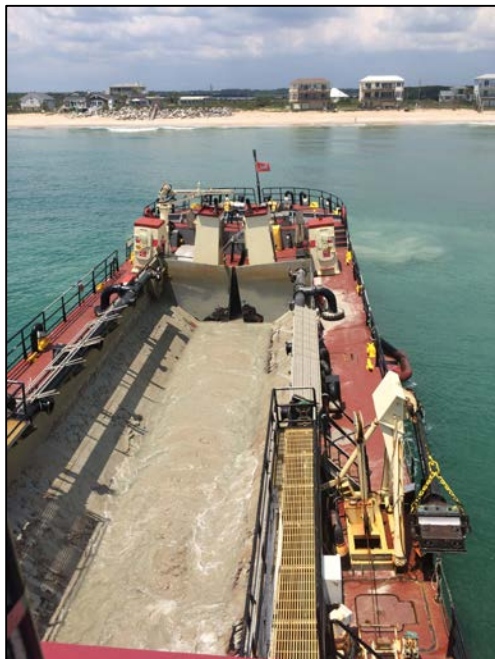


Regional Sediment Management Program U.S. Army Engineer Research and Development Center (ERDC): Advancing Nearshore Berm Research, Guidance, and Tool Development



Description

Continued research and development of methodologies and calculation tools for predicting the behavior of nearshore placed sediment is proposed to make technical data for siting nearshore berm sites more accessible, improve the communication of successful placement descriptors, and validate nearshore berm tools, thereby making nearshore berm projects more effective.



SAW Dredge *Murden* placing material in the nearshore of Vilano Beach, Florida.

Issue/Challenge To Address

Nearshore placement of dredged material for beneficial use is a common practice for Operations & Maintenance (O&M) within the U.S. Army Corps of Engineers. The nearshore berm design concept has been recognized to follow the goals of Regional Sediment Management (RSM) by allowing waves and tidal forces to winnow fine material and move sediment into alignment with the nearshore and beach environment. General design guidance for nearshore berm placement was produced in the 1980's and 1990's, but is not adequately sophisticated for District needs as shown by several Statements of Need (SoN) submitted to the Navigation Research, Development, and Technology (RD&T) Portfolio in recent years. Historically, the Coastal Inlets Research Program (CIRP) and the RSM Program collaborated on a multi-faceted RD&T effort to advance our understanding on design and assessment of project performance for nearshore berms that included field data collection and numerical modeling assessment, guidance development, and a web-application to serve as a tech-transfer tool.

Successes Lessons Learned

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



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Expected Products

- Web Application
- Communication Tools and Technical Note
- Stakeholder/Resource Agency Meetings
- Technical Note on Vilano Beach Nearshore Berm
- Advocacy Group Newsletter Article
- Final Presentation at RSM In Progress Review

Stakeholders/Users

Stakeholders include the coastal districts within USACE.

Projected Benefits

Benefits would include the creation of a web application to allow District engineers to run the Sediment Mobility Tool (SMT), which estimates frequency of mobility of sediment placed in the nearshore based on depth of placement, waves, currents, and grain size of the material. Results from the web application as well as communication tools that will be created within this research task will allow Districts to better communicate with resource agencies and stakeholders regarding nearshore placement of sediment. Finally, a nearshore placement site in Vilano Beach, Florida currently being monitored will be used as additional validation for the SMT.

Leveraging Opportunities

This project is intended to be worked in conjunction with the CIRP Program. Additional leveraging with the Mobile District Spatial Data Branch (OP-J) and the USACE Jacksonville District (SAJ) will also occur.

Points of Contact

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Participating Partners

CIRP, SAJ, and OP-J.