



Regional Sediment Management Program Jacksonville District (SAJ): Palm Beach Harbor / Lake Worth Inlet RSM



Description

Using the Coastal Modeling System and CSHORE, the US Army Corps of Engineers (USACE), Jacksonville District (SAJ) will optimize alongshore and cross shore placement locations south of the Lake Worth Inlet for Operations and Maintenance (O&M) material dredged from the Palm Beach Harbor Navigation Project. Traditionally the least cost location for placement is the nearshore south of the inlet. However, local stakeholders strongly prefer subaerial beach placement, believing that nearshore placement is not an effective mitigation measure for downdrift erosion caused by the inlet.

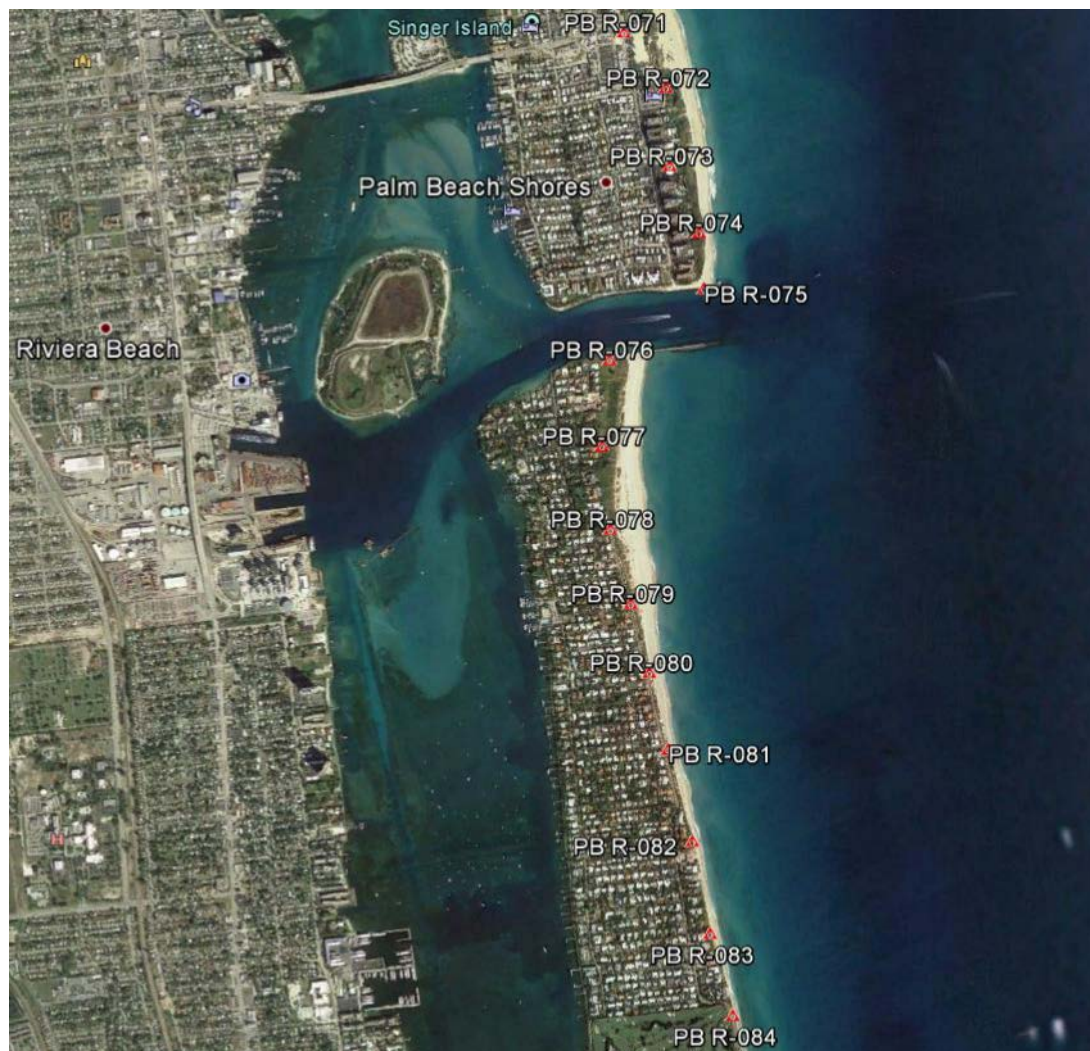


Figure 1. Palm Beach Harbor, Lake Worth Inlet and area beaches, Palm Beach County, FL.



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Issue/Challenge To Address

This initiative seeks to determine the effectiveness of the historic beach and nearshore O&M placements in terms of inlet bypassing and to optimize the location of placements so that sediments are best incorporated into the littoral system south of the inlet. Potential effects to environmental resources will be investigated and placement location recommendations will be adjusted accordingly. Differences between how sediments placed on the beach are incorporated into the littoral system versus nearshore placement will be explored. The reliability of predictions provided by the Sediment Mobility Tool will be tested for future instances when project funding or schedules do not allow for extensive investigations to determine the ideal nearshore placement location.

Successes Lessons Learned

The current practice of nearshore and beach placement of O&M sand from Palm Beach Harbor Federal Navigation Project has had significant positive impact on the downdrift shoreline. However, the degree of positive impacts is unknown.

Expected Products

- Technical Note on application of the Sediment Mobility Tool as compared to the results of detailed CMS and CSHORE modeling.
- Stakeholder meeting and notes.
- Presentation of results at RSM annual meeting and a professional conference.
- Newsletter article.

Stakeholders/Users

Stakeholders include the Florida Department of Environmental Protection, USFWS, Port of Palm Beach, and the Town of Palm Beach.

Projected Benefits

Results of the study will better define the behavior of nearshore vs. beach sand placements and allow for strategic placement of Navigation material which has the potential to generate future cost savings to this and other navigation projects.

Leveraging Opportunities

SAJ will perform maintenance dredging on Palm Beach Harbor in FY16, which will provide an important opportunity to leverage survey and data collection funded by the navigation project as well as to make specific dredge/placement decisions based on the needs of the RSM study. The Sediment Mobility Tool, CSHORE and CMS will likely leverage some ERDC R&D funding to support participation by ERDC leads on these new tools.

Points of Contact

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Participating Partners

ERDC (CEERD-HNC)