



# Regional Sediment Management Program

## Charleston District: Charleston Harbor RSM



### Description

Assess sediment transport benefits and changes associated with nearshore placement of material in the areas south of the Charleston Harbor Jetty, potentially provide an option of beneficial use of dredge material and reduce impacts of jetties on down coast Folly Island.



Location Map: Charleston Harbor, SC

### Issue/Challenge To Address

- Investigate potential dredged material placement locations within the vicinity of Charleston nearshore area.
- Use the Coastal Modeling System (CMS) models (developed for the Jetty project) to estimate sediment transport and morphology change at the proposed dredged material placement sites.
- Assess changes in the nearshore area due to the dredged material placement.
- Assess sediment pathways during the release of the dredged material at the placement sites using the Particle Tracking Model (PTM).

### Successes Lessons Learned

New Initiative

### Expected Products

- RSM Technical Report and Technical Note
- Inclusion as part of Engineering appendix in Post 45 PED report and DMMP

### Stakeholders/Users

The South Carolina State Port Authority supports all potential beneficial uses of dredge material that will enhance recovering the placed material back into the littoral zone, reduce use of confined disposal areas and the ODMDS. Environmental agencies reserve judgment on their position and opinion of nearshore placement until modeling can provide some predictive impacts, but support the concept.

### Projected Benefits

Develop strategies for improving sediment management for the entire area.

**Leveraging Opportunities**

O&M funded bathymetric data adjacent to the federal channel. Section 204 CAP study funded bathymetric data offshore of Charleston Harbor.

O&M funded numerical CMS model of the area offshore of Charleston Harbor. The numerical modeling effort for Charleston Harbor includes simulating the coastal hydrodynamics, wave transformation and sediment transport in the area.

Harbor deepening project known as Post 45 collected ADCP wave and current data for the ODMDS and funded two additional ADCP to collect data up and downcoast of the jetties, which was used to calibrate and validate the CMS model.

RSM program funded vibracores of the deposition basin inside the north jetty that were done in conjunction with vibracore data collection of the entrance channel under the Post 45 feasibility study.

**Points of Contact**

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**Participating Partners**

South Carolina State Port Authority