

# FY14 RSM-EWN IPR

## Charleston District, Charleston Harbor RSM Study, POC Sara Brown

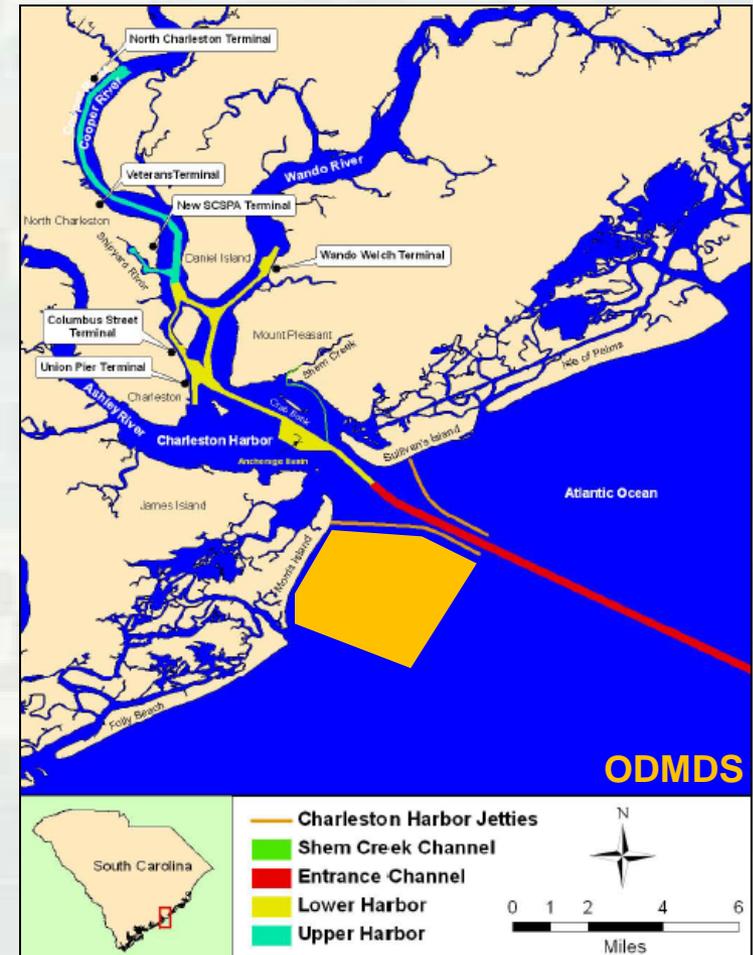
**BLUF:** Beneficial nearshore placement of dredged material in the area south of the Charleston Harbor Jetty.

### Description/Challenges

- Charleston Entrance Channel dredged material is composed of approximately 75 percent sand and is transported to the offshore ODMDS.
- Nearshore placement of the sand is a beneficial use of the dredged material.

### Objectives

- Estimate sediment transport and morphology change in the area.
- Select optimal dredged material nearshore placement location in the area south of the Charleston Harbor south Jetty.



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## Approach

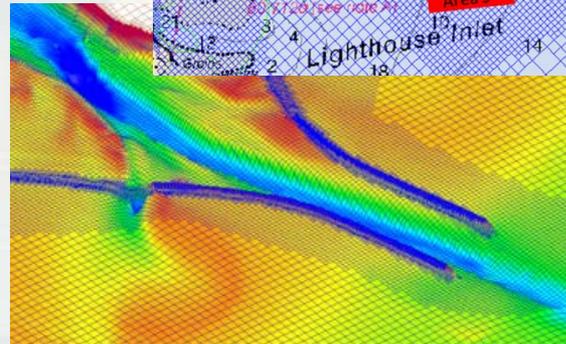
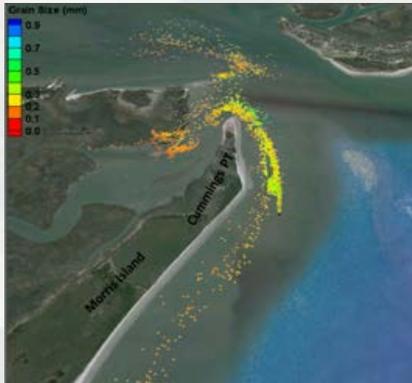
Measured Data

Potential Placement Sites

CMS Modeling

Morphology Change

PTM



## Deliverables

Report

2014 RSM IPR Presentation

Technical Note

Inclusion as part of Engineering Appendix  
and DMMP (if found applicable)

Quarterly update

September 15, 2014

July 24, 2014

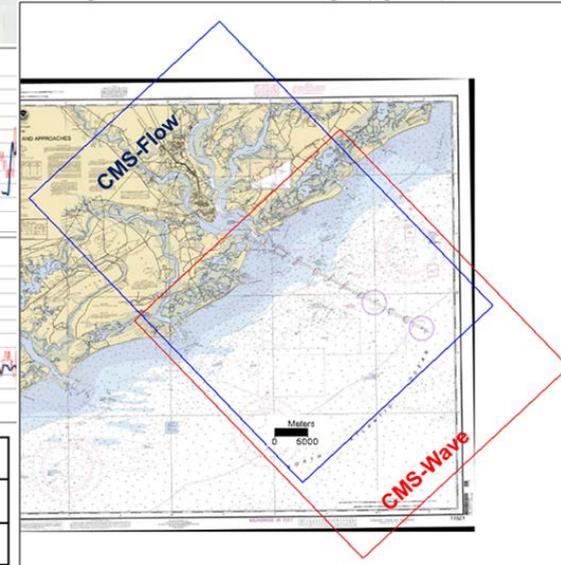
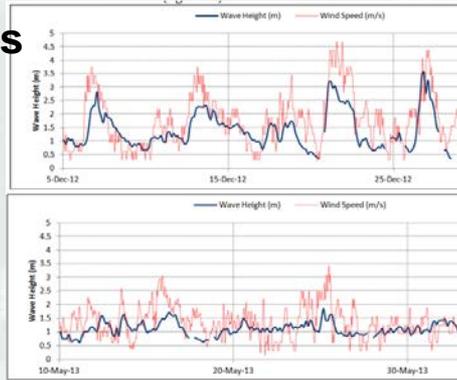
September 15, 2014



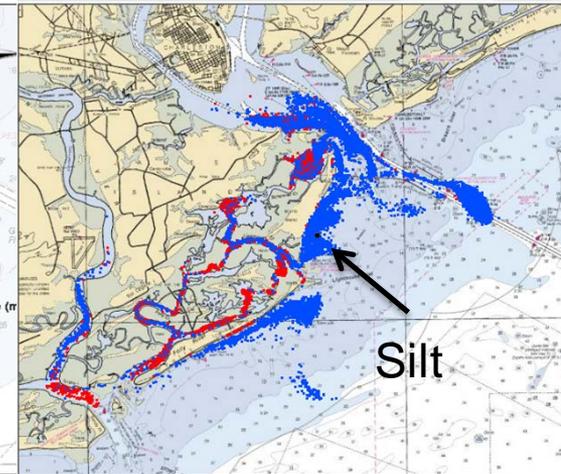
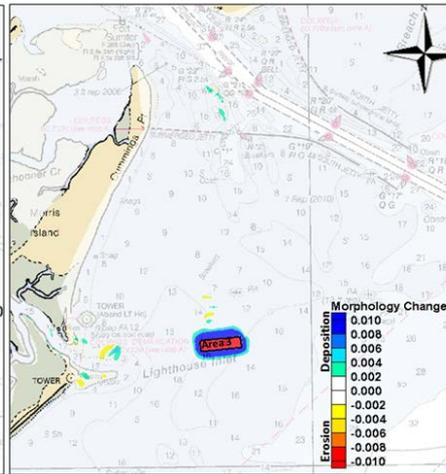
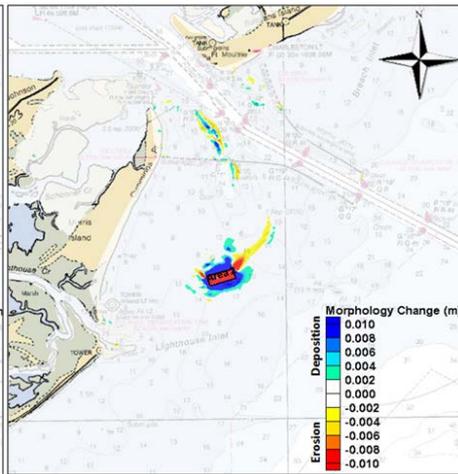
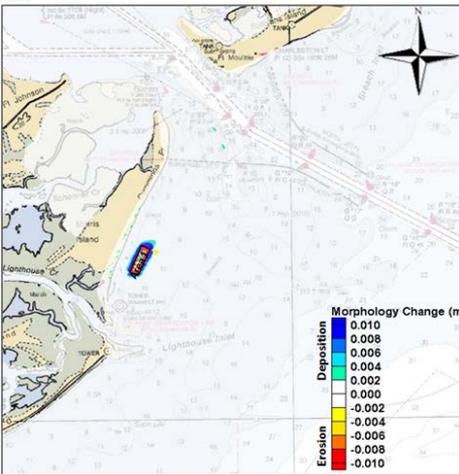
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Accomplishments/Benefits/Lessons Learned/Actions-construction  
 CMS-Wave and Flow Modeling  
 Active and Calm Simulation Periods  
 Erosion and Deposition  
 Sediment Pathways during Disposal



Placement Area	Net Volume Change (m <sup>3</sup> )	
	Active Simulation Period	Calm Simulation Period
Area 1	-5515.2	-2481
Area 2	-24071.9	-15453.9
Area 3	-14712.9	-7933.9



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### District PDT Members

Sara Brown RSM Manager (CESAC-EN-H)  
Layla Kashlan Coastal Engineer (CESAW)  
Caleb Brewer GIS Analyst (CESAC-OP-N)  
Gregory Dreaper GIS Administrator (CESAC-EN-H)  
Mark Messersmith Biologist (CESAC-PM-PL)  
Brandan Scully Navigation Chief (CESAC-OP-N)  
Bret Walters Planning Chief (CESAC-PM-PL)  
David Warren Navigation PM (CESAC-PM-P)  
Brian Wells Operations Chief (CESAC-OP)  
Brian Williams PM Post 45 (CESAC-PM-P)  
Carole Works Engineering Chief (CESAC-EN)  
Philip Wolf GIS Coordinator (CESAC-OP-N)

### Leveraging/Collaborative Opportunities

- O&M: collect bathymetric data adjacent to the federal channel.
- Section 204 CAP: collect data offshore of Charleston Harbor.
- O&M: development of numerical CMS model of the area offshore.
- Post 45 was collecting ADCP wave and current data for the ODMDS and funded two additional ADCP to collect data up and downcoast of the jetties.
- RSM program: 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.
- Future application:
  - Post 45 to investigate potential impact to the Charleston Harbor system due to deepening and/or widening of the existing Charleston Harbor project and/or alterations to the dredged material management strategy for the navigation project. The effects of hurricane storm surge and future sea level rise will be considered in the analysis.
  - Folly Beach Section 103 – sand bypass or shoal borrow area

### Stakeholders and Partners

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 judgement on their position and opinion of nearshore placement until modeling can provide some predictive impacts, but support the concept.

