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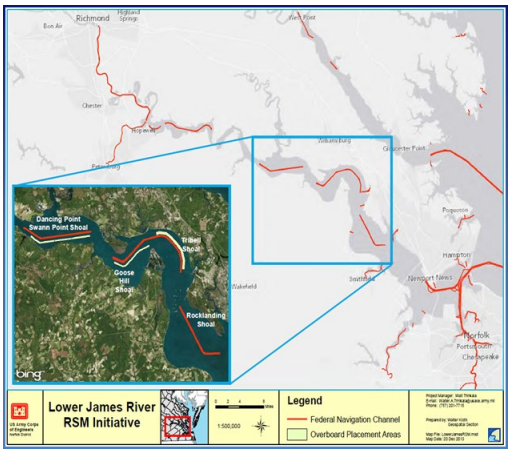
National Regional Sediment Management Program Norfolk District (NAO):

James River Federal Navigation Channel, Lower Reaches

Description

The previous work accomplished helped the James River O&M team to identify the regional problem (apparent changes in shoaling rates in the lower reaches of the James River) and provide base knowledge to improve dredging management along the lower James River. A robust hydrodynamic and sediment transport framework was developed to help understand this system. A comprehensive data set for sediment characterization was collected which can be used for model input.



Issue /Challenge To Address

This work will address several outstanding questions that if answered will support regional sediment management of the area. NAO would like to examine currently utilized placement sites and predict their life cycle as well as optimize the location of placement at Jordan Point site in the Middle James River Initiative area. This will be accomplished using USACE ERDC developed models that can predict hydrodynamics and sediment transport for the area. Understanding the fate of dredged material placed at these sites will provide vital information to the James River O&M team. The end result should help the James River O&M team optimize budget and prepare for future years of dredging as well as perform a risk assessment which may help reduce dredging costs significantly

Successes Lessons Learned

(1) Phase 1 placement site modeling completed
(2) Addressing sediment transport from each placement site as a regional concern in addition to our local focus.
(3) Additional lessons learned will be compiled during this study.

Projected Benefits Cost Savings Value Added

Economic benefits, cost savings
Dredging Operation efficiency and savings
Ultimate efficiency of time and money.

Expected Products

- Lower James River modeling results
- Documentation:
  - "Lower James River Sediment Transport Modeling – Tribell Shoals"
  - "Lifecycle Placement Site modeling at Lower James River"
  - "Cohesive Sediment Field Study: James River, Virginia"
  - "Middle James River Sediment Transport Modeling – Jordan Point"
- Presentation at James River Partnership Meeting

Stakeholders/Users

The James River Partnership is already formally organized and supports the need to examine regional sediment management initiatives on the lower and middle reaches of the James River. The partnership executive committee was briefed on the direction on the James River RSM effort. Stakeholder participation opportunities will be communicated through the partnership.

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Leveraging Opportunities

Partnering Program/Initiative	Leveraging Potential
Virginia Port Authority	Local sponsor is a cost sharing sponsor in dredged material placement; savings in placement costs mean more funds to accomplish much needed dredging
DOER	DOER program is supporting the aggregate study which serves as input for the life cycle study. In addition, previous tools created for erosion analysis through DOER are being used for Tribell Shoals study.
O&M General	Operations focused effort provides navigation benefits to the project, seeking to reduce O&M costs on individual components so that funds can be applied elsewhere to better achieve the navigation mission.

Points of Contact

Victor Roberts, NAO
Tahirih Lackey, Coastal and Hydraulics Laboratory

Participating Partners

The Port of Virginia
AdvanSix
Virginia Pilots Association
Virginia Maritime Association
Virginia International Terminals, LLC
T. Parker Host
James River Gypsum
Blaha Towing Company
McAllister Towing of Virginia