National Regional Sediment Management Program Norfolk District (NAO):
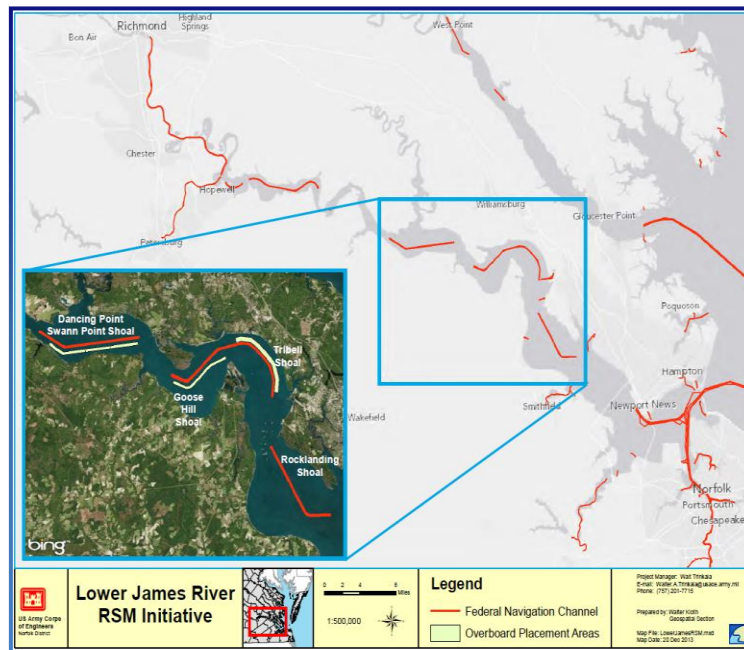
James River RSM

Description

The James River Federal navigation channel is located in southeastern Virginia. With at least six other federal navigation projects located within the project area plus dredging needs on tributary channels, there is a need to address sediment fate and dredged material placement strategies, while ensuring that adequate channel depths are provided and maintained in the Federal navigation channel. The US Army Corps of Engineers (USACE), Norfolk District, has undertaken a multi-year Regional Sediment Management (RSM) effort on the James River project coordinating the RSM activities with the Commonwealth of Virginia and interests within the James River Navigation Partnership.

Issue/Challenge To Address

The James River project is a Federal navigation channel that receives annual funding for maintenance dredging. Recent topics in the James River Navigation Partnership meetings include questions about the relationship between a rapid shoaling rate in middle James River shoals and sediment fate within the main stem and tributary stream basins. The James River RSM effort will begin providing the District with a better understanding of the sediment dynamics in the James River

The District anticipates the recent shoaling pattern changes may require a modification of James River dredged material management strategies in future years. The purpose of this work is to: 1) Study the transport of placed material within the James River, Goosehill Channel region and 2) Study the overall regional sediment transport patterns within the James River ranging from Dancing Point to Tribell Shoals.

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Expected Products

- Quarterly Progress Reports
- Technical Report with project results
- Scope of work for ERDC simulation modeling for dredged material reports
- Recommendations for next steps in development of a Lower James River RSM Strategy
- Grid Modification and hydrodynamic modeling (CH3D)
- Near field placement modeling (CDFATE and related models)
- Far field suspended loss transport modeling (PTM)
- Regional sediment transport, morphology, and mound transport (LTFATE)

Stakeholders/Users

The James River Partnership is already formally organized and brought for the need to examine RSM needs on the lower James River. The partnership will continue to be engaged in the process. Potential stakeholders involved include: Virginia Port Authority as agent for the City of Richmond, state environmental agencies, interested stakeholders, and the O&M General navigation business line.

Projected Benefits Value Added

Assist and enhance the District's development of James River future year performance-based budget submissions, assist in prioritizing future engineering and design work efforts and plans for future dredging contracts, provide tools for future environmental agency coordination, identifying potential RSM and Engineering With Nature solutions.

Leveraging Opportunities

James River is annually funded for navigation dredging and condition surveys. RSM efforts will pare well with the current year O&M General funding allocated on the James River Project. Other potential leveraging opportunities have potential: Virginia Port Authority, DOTS, DOER, using Corps Computer Simulation and Modeling Tools.

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Participating Partners

Port of Richmond VA, James River Navigation Partnership
U.S. Army Engineer Research and Development Center (ERDC)