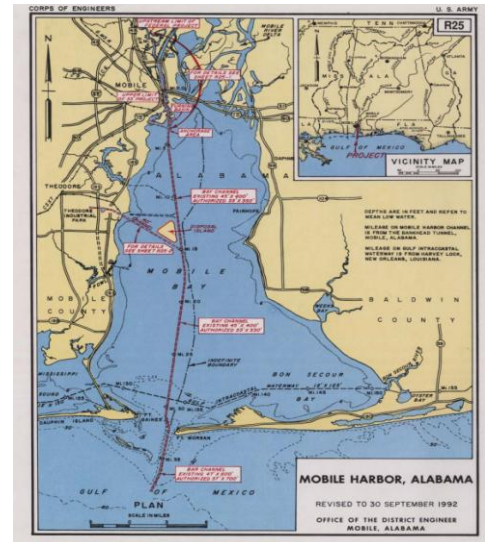




Mobile District - Evaluation of Mobile Bay Channel In-Bay Disposal Practices

Description

The Mobile District has the responsibility for maintenance of the Federally authorized navigation project for Mobile Harbor, Alabama. Mobile Harbor is highly utilized for commercial shipping with a national ranking of 9 by the Channel Portfolio Tool. The entire Mobile Bay channel is typically dredged using hopper dredging equipment with disposal of the material in the approved Mobile-North Ocean Dredged Material Disposal Site (ODMDS). Approximately 4 million cubic yards of material is removed from the channel annually and transported as much as 40 miles to the ODMDS at an annual cost of about \$12 million. Having the ability to utilize both hopper and cutterhead dredging equipment would provide options and flexibility on maintenance scheduling and cost.



In addition to the operational constraints, hauling material from the Bay channel to the ODMDS permanently removes sediment from the natural system. It is believed that removal of sediment from the bay may have a correlation with bathymetric variations and accelerated shoreline recession that has been observed in certain portions of the bay. Reestablishing the option for in-bay disposal may contribute to the much needed conservation efforts for the protection of marshes, sea grasses, oyster reefs, and other ecological resources. In-bay beneficial uses of dredged material can also be used for restoration of these resources. By reducing the amount of sediment disposal in the ODMDS, more of the bay sediment will subsequently be retained in the natural sediment transport system.

The purpose of this effort is to investigate opportunities and alternatives to resume in-bay disposal practice options for the Mobile Bay navigation channel. Having this option will allow the utilization of cutterhead dredge equipment with more cost effective disposal practices and provide the flexibilities to utilize a greater percentage of the available dredging fleet.

Issue/Challenges

Open water in-bay disposal practices are not widely accepted by the support agencies. Obtaining the interagency support necessary to identify and demonstrate these disposal practices will be among the biggest challenges. It is also important to be able to demonstrate how the material behaves once it is placed in the open water sites

Successes Lessons Learned

The selection of this RSM project is a result of the current dredging and disposal practices in Mobile Bay being an important issue for Mobile District's Operations Division. It is important that an RSM action have a direct benefit to the District's navigation program.

The formation of an active interagency working group has been a key component towards identifying the major issues associated with in-bay disposal practices. Regular participation of this group will be a key factor in the success of this program.



Expected Products

Interagency RSM Working Meeting
In-Bay Disposal Demonstration Plan
Mobile Bay Channel In-Bay Disposal Strategies Tech Note
Long term In-Bay Disposal Recommendations

Potential Users

Alabama State Port Authority is Non-Federal Sponsor for the Mobile Harbor Federal Navigation Project. Additionally, the Mobile Bay project offers the interrelations and connectivity between inland and coastal watersheds, and has been the subject of numerous studies and projects by various agencies including EPA, NASA, USACE SAM and ERDC, NOAA, Mississippi State University, Mobile Bay National Estuary Program, and the State of Alabama

Projected Benefits

The effort will establish the channels for interagency collaboration and coordination that will be required for planning and implementing in-bay disposal practices. By leveraging modeling efforts the District will have a better understanding of the behavior of dredged material when placed in open using thin layer methods. Reestablishing in-bay disposal practices will return sediment to the sediment transport system contributing to the conservation of the Bay's natural resources.

Leveraging Opportunities

This effort will take advantage of the knowledge, experiences, and recommendations gained from the Mobile Bay Watershed Demonstration Program. This effort will be incorporating activities funded by the Mobile Bay National Estuary Program (NEP) which focuses on historical shoreline and bathymetry data that is being compiled and analyzed to quantify net volume changes and document sediment transport pathways for the entire Mobile Bay. Opportunities are being explored to leverage sediment transport modeling capabilities being developed through various programs at ERDC. Additionally, field monitoring of the performance of thin-layer disposal activities are being coordinated through the Engineering with Nature program

Points of Contact

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Participating Partners

Alabama Department of Conservation and Natural Resources (ADCNR), State
Lands Division
ADCNR, Marine Resources Division
Alabama Department of Environmental Management
Alabama State Port Authority
U.S. Fish and Wildlife Service
NOAA, National Marine Fisheries Service
Alabama/Mississippi Sea Grant
Mobile Bay National Estuarine Program
The Nature Conservancy