



US Army Corps
of Engineers

Engineer Research and
Development Center

Regional Sediment Management Program Mobile District (SAM):



Beneficial Use of Dredged Material to Fill Oyster Dredge Holes in Mobile Bay

Description

The Mobile District is responsible for maintaining the Mobile Harbor Federal navigation project and has been actively engaged in pursuing and implementing more efficient sediment management strategies. Working with the Mobile Bay Interagency Working Group (IWG) the Mobile District has been successful in implementing several beneficial use applications associated disposal of dredged material in Mobile Bay. Building on these successes, the IWG has recommended pursuing additional beneficial use opportunities including the filling and restoring of areas within the Bay that were historically used for oyster shell dredging and mining operations. This proposed effort will investigate opportunities and develop a strategy to beneficially use dredged material from the Mobile Bay navigation channel to restore the areas where holes have been left from oyster shell mining activities.

Issue/Challenge to Address

This past oyster mining activity created numerous holes in the Bay bottom that still exist today. These holes are located primarily in the central portion of the Bay. The IWG recognize that these areas present an opportunity to extend beneficial use activities to fill the holes and restore those areas to natural bay-bottom conditions. The purpose of the proposed study is to investigate opportunities and develop a strategy to beneficially use dredged material from the Mobile Bay navigation channel to restore the bay bottom in areas where holes still exist. Acting on this opportunity will not only restore the bay bottom to historical conditions but will promote the retention of sediment within the Bay's natural sediment system. From an operational perspective, conducting in-bay placement will allow more 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.

Successes Lessons Learned

The project offers substantial opportunities to document and build on Federal, state, local, non-profit, and academia collaborative efforts with different missions and purposes. Opportunities that could be applied in other areas of the southeast and the nation include: collaboration and support; fine grained sediment transport modeling; information exchange and dissemination; knowledge management; training; and integration of the regulatory, planning, engineering, and operational processes.

Expected Products

- Hydrographic Survey of Oyster Holes
- Mobile Bay IWG Meeting Discussing Plan of Action
- MFR from IWG meeting
- Implementation Strategies for Filling and Restoring Oyster Holes

Stakeholders/Users

All efforts involving the selection of potential sites and placement strategies will be coordinated through the Mobile Bay IWG. This group consists of representatives from the following agencies: Alabama Port Authority, Alabama Department of Conservation and Natural Resources, Alabama Department of Environmental Management, Environmental Protection Agency – Mobile Bay National Estuary Program, National Marine Fisheries Service, United States Fish and Wildlife Service and Dauphin Island Sea Lab.

Projected Benefits

Placing material from the navigation channel will prolong the use of the current open water sites and retain more sediment in the Bay's natural system. The strategy being developed will emphasize connection between major maintenance dredging requirements



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of the Bay channel, beneficial uses, and sediment management methods that reduce dredging costs. The strategy will also recognize the ongoing collaborative and interagency coordination and partnerships necessary for the implementation of long term maintenance requirements. Improved communication and relationships within the USACE organization and with Federal, state, local agencies, and academia; improve District planning, engineering, and management practices; increase participation from project sponsors; improve data collection, sharing, and archival, technical tools; and improve understanding of regional processes thereby providing improved management decisions.

Leveraging Opportunities

This task will leverage existing tools from the Mobile Bay ongoing research efforts at ERDC. Such models and tools will provide capabilities to evaluate probable consequences of natural change and specific navigation and management actions to make informed decisions associated with in-bay disposal and restoration practices. This understanding will help to improve/benefit Corps navigation mission for Mobile Harbor.

Points of Contact

Larry Parson, Nate Lovelace, Elisabeth Godsey (Mobile District)

Participating Partners

The Mobile Bay Interagency Working Group which consists of local, State and Federal agencies including academia and other non-government organizations.