



Evaluation of Turbidity Compliance Issues in the State of Florida Associated with Federal Navigation Projects

Description

This proposal seeks to continue the Districts' coordination efforts with Florida Department of Environmental Protection (FDEP) and other agencies, as necessary, on establishing realistic turbidity permitting requirements for dredged material placement events based on further examination of real project's turbidity data for pre-, during, and post-placement. There is a clear relationship between the percent fines at the dredge source to the turbidity at the placement location, which is the subject of this proposal. This proposal also seeks to investigate the data derived from the Fate of Fines effort and turbidity's relationship. The expectation for the development of data-supported turbidity permit requirements, is an increase in RSM opportunities of the dredged material in the region, cost savings by decreasing upland and offshore disposal, and reducing the frequency of dredge shutdown times associated with turbidity threshold exceedances.

Issue/Challenge to Address

Turbidity monitoring measurements are required for both dredging and placement operations. Meeting turbidity compliance requirements for dredging usually does not present significant issues. Meeting compliance requirements at the placement/discharge areas, however, can be problematic and may result in temporary shut downs of dredging activities. State turbidity requirements appear to have been developed arbitrarily without any real science or engineering justifications. Under normal conditions, to meet compliance conditions, turbidity levels must be no greater than 29 NTU's above background levels. In Florida, if activities occur within an Aquatic Preserve, compliance levels must be 0 NTU's above background. The purpose of turbidity monitoring is to ensure that FDEP is upholding the water quality standards and also minimize impacts to resources due to turbidity generated by a project. However, with all the data that has been gathered historically, there are no adaptive project/site specific turbidity conditions being developed. Conditions in the permit must be adhered to without supporting documentation otherwise a project is deemed out-of-compliance causing potential shutdown of operations. Realistic turbidity thresholds should allow for increased potential to beneficially use dredged material and reduce costs by decreasing upland and offshore disposal and decreasing dredge shut-down times associated with exceeding set thresholds.

The purpose for this proposal is to continue efforts intended to identify and evaluate the effects of turbidity compliance issues on beach and nearshore placement associated with maintaining coastal navigation projects within the State of Florida, as well as identifying similar issues in other states in the South Atlantic Division (SAD). The ultimate goal will be to further collaborate with FDEP and others to share findings from other projects in order to develop turbidity requirements and monitoring methodologies towards establishing realistic turbidity thresholds for beach and nearshore placement activities.

Successes Lessons Learned

Lessons learned will be compiled during the duration of this study.

Expected Products

- List of applicable models and tools
- Technical Note

Stakeholders/Users

Stakeholders include the FDEP, other state environmental permitting agencies for turbidity compliance monitoring within SAD, and the three other districts within SAD.



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Projected Benefits Value Added

- Identification and development of data-driven, realistic turbidity requirements and sampling methodologies to be adapted into state regulatory turbidity permitting requirements for the placement of material – may result in fewer dredge event shutdowns capturing both long and short-term realized cost savings for the government and non-Federal sponsors
- Added efficiencies to the permitting requirements may result in the identification of a least cost disposal option for Federal navigation projects by providing beach nourishment on a nearby coastal storm damage reduction project(s) contributing to both short and long-term cost savings on the disposal of dredged material and a mobilization event for the nourishment by linking the two.
- Conservation of costs for transport to, permitting of, and capacity at ODMS – short and long-term cost savings.
- Habitat creation through beneficial use may be able to be used as mitigation for future impacts resulting from Federally authorized navigation projects – short and long-term cost savings.

Leveraging Opportunities

The foundation of RSM innately crosses business lines within our organization and in coordination with FDEP, as well as other state agencies, the expectation is to leverage these relationships and identify efficiencies in the permitting processes with regard to turbidity requirements for beneficially using dredged material from Federal navigation projects. The issue of turbidity requirements at the placement site is the focus of this proposal, however another effort regarding the fate of fine sediments, concerning turbidity during a dredge event, is also underway and there is a discernable connection between the two and therefore, an opportunity to leverage data between the efforts.

Points of Contact

Ashleigh Fountain (Jacksonville District); Larry Parson and Elizabeth Godsey (Mobile District)

Participating Partners

Florida Department of Environmental Protection; Georgia, Alabama, South Carolina and North Carolina environmental permitting agencies, and SAW, SAS, SAC Districts