Evaluation of RSM Actions Using Government Shallow Draft Dredges

Presentation to
Regional Sediment Management Bi-Monthly Call

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26 April 2012

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Background

- Government Shallow Draft Dredges (SDD) serve multiple projects on Atlantic coast
- Little to no technical coordination to promote and achieve more efficient sediment management
- Joint NAD/SAD FY12 RSM Program proposal:
  - Share shallow draft project specifics and lessons learned across Division lines
  - Evaluate new ways to use and manage sediment
  - Improve value and operational efficiency
  - Determine how to best leverage capabilities of the SDD fleet
- Proposal approved for FY12 by RSM Program Manager
- Workshop conducted 18-19 Jan 12:
  - ERDC
  - SDD user Districts
  - NAD/SAD
- Presentations/discussion held to evaluate regional solutions

Workshop Discussion

- SDD user District projects:
  - SDD projects that are currently funded
  - SDD projects that were typically funded prior to the FY12 budget cuts to low use navigation
  - Projects that are potentially capable of being done by SDDs if:
    - Additional funding were provided or
    - Additional dredge capability (i.e., direct pumpout) were provided
- Specific project information includes:
  - Location
  - Depth
  - Frequency/dredging cycle
  - Environmental windows/restrictions
  - Volume
  - Sediment type
  - Material placement location
  - Coordination/construction challenges

Workshop Discussion

- Capabilities and operational aspects of SDD fleet:
  - Salient characteristics
  - Performance/production rates
  - Costs
  - Scheduling

Workshop Discussion

- SDD fleet is efficient and cost-effective means to maintain many shallow draft projects in NAD and SAD regions
  - Projects receive limited funds
  - Greater affordability (no acquisition, S&A or mob costs)
  - Highly valued by public and local stakeholders
  - Reassuring presence in the region
- SDD fleet useful to navigation and beach nourishment projects
- Seek adaptive sediment management that:
  - Identifies opportunities to reduce offshore placement and increase near-shore placement
  - Executes these opportunities
  - Monitors the effectiveness of these practices, and adjusts as required

Workshop Discussion

- Leveraging work across business lines:
  - Accomplish beach nourishment projects using navigation channels as borrow areas
  - Accomplish navigation dredging with near shore placement
- DMMPs may impose constraints that limit optimal sediment management:
  - Placed sediments find their way back into the channel
- Life cycle approach :
  - Reduce average annual cost of projects
  - Consider higher cost of further/longer sediment transport to reduce dredging frequency
  - Sediment migration well understood for some projects; further analysis required for others

Workshop Discussion

- Public/Stakeholder perception issues:
  - Near-shore placement may not be perceived as cost effective; no immediate visual result
  - Need for educating public on cost-effectiveness of practices
- SDD direct pumpout capability:
  - Identified as a capability that potentially increases the number of projects done with SDD fleet
  - Direct placement onshore
  - CURRITUCK and MURDEN have no onboard capability
  - SNELL carries submersible pump and pipeline; can pump out hoppers
  - May only be cost-effective for relatively small dredge quantities
- Placement restrictions:
  - Varies widely along Atlantic coast
  - Thin layer disposal and sidecasting permitted in limited areas
  - Near-shore disposal not permitted in all areas
  - Further research needed to evaluate regional environmental regulations

Findings and Recommendations

- Direct pumpout:
  - Potential to expand and enable improved sediment management
  - Explore efficiency and cost-effectiveness
  - Pursue pilot project for data collection and analysis
- Systems approach:
  - Determine optimum industry/SDD utilization
  - Optimal scheduling of regional work to optimize transit times between projects
  - Regional steering committee to facilitate prioritization, work planning and asset utilization across business lines
  - Use consistent criteria, methods and processes
  - Determine sediment transport patterns and pathways
  - Develop sediment budgets across the region to help with RSM actions
  - Use low-cost methods to help implement sediment management in short timeframe
  - Environmental considerations/permitting actions made using science-based decision making
  - Explore use of fine-grained material in the coastal zone

Findings and Recommendations

- Explore value of near-shore placement versus offshore placement
- Leverage work across business lines
  - Potential cost savings
  - Eliminate conflicts between projects
  - Promote collaboration across business lines where it makes sense
- Pursue related initiatives in the context of a programmatic strategy:
  - Streamlining of MOA process to accept contributed funds from local stakeholders
  - Evaluation of low use shallow draft projects using SDD
  - Low use prioritization
- Enhance regional collaboration and coordination of projects:
  - Leverage attendance of navigation managers at WEDA and National Dredging Meeting
  - Continue to seek innovative ideas and regional approaches

Questions/Discussion