The USACE Regional Sediment Management Program

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BUILDING STRONG®
Regional Sediment Management

A systems approach for efficient and effective use of sediments and management of projects in our Coastal, Estuarine, Riverine, and Watershed environments.
In 2015, 27 Districts (20 Coastal, 7 Inland) and ERDC, IWR
RSM = Sustainable Solutions for.....

RSM Operating Principles

- Recognize sediment as a regional resource
- Balanced, economically viable, environmentally sustainable solutions
  - Increase benefits while reducing costs
- Improve economic performance by linking multiple projects
- Optimize operational efficiencies & natural exchange of sediments
- Consider local & regional impacts (physical, environmental, social)
- Develop/enhance/apply technology & tools to optimize system
- Share information & data, reduce data duplication
- Improve partnerships and collaboration (USACE/Stakeholders/Partners)
RSM Practices

Reduce Offshore Disposal

Place Nearshore

Reduce CDF Placement
Utilize to improve system

Bypass/Optimize Placement

Reduce Sedimentation

Ecosystem Restoration
w/ partners

• Keep sediment in the littoral system
• Follow natural sediment processes
• Reduce sedimentation
Key to RSM Success.....

USACE District Team
Planning, Engineering, Operations

Stakeholder and Partners

Working Together To:
- Identify Opportunities and Solutions
- Make Decisions
- Overcome Obstacles
- Take Action
- Leverage Resources to Make It Happen
Regional Understanding

Communication Coordination Collaboration

USACE (Planning, Engineering, Operations…)

Partners Stakeholders

Environmental Agencies

Taking Action

ID Gaps in Knowledge

Develop Plan to Improve Knowledge

Conceptual Sediment Budget

Data Management GIS

Models

Field Data

Refine Regional Sediment Budget

ID Opportunities & Develop Strategies For Optimizing Use of Sediments

Action - Adaptive Management

Incorporate Standard Practice
RSM Program

- Regional Approaches
- Coordination
- Technology Data Gaps
- Integrate Across Projects and Authorities

- Operations & Maintenance
  - Continuing Authorities Program
  - Dredge Material Mgmt Plans
  - Feasibility Studies
  - Other

Construction

- Photographs of construction sites
FY17 RSM Proposals due 22 July 2016
Proposal Criteria

• Stakeholder/partner/resource agency communication and collaboration

• Takes action to move sediment in a manner that optimizes use

• Reduces lifecycle costs in the Navigation, Flood Risk Management, and/or Environmental Restoration missions.

• Supports RSM Principles and Practices

• Produces innovative solutions

• Utilizes/enhances existing Corps tools, databases, capabilities, and builds Corps technical expertise

• Transferable products, shared knowledge, new or enhanced tools, benefits commercial use projects, or results in cost savings.
Nearshore Berms

Guidance and Tools needed for:
- Design
- Operations & Placement
- Monitoring & Performance
- Benefits

*Federal standard: Least cost, environmentally acceptable

**FL: >10% fines cannot be placed on beach
St. Augustine Inlet, FL and Vicinity
Combining multiple projects (CG, O&M), sand bypassing, shoreline erosion

$5-7M cost savings
Reduced dredging/environmental impacts
Combined permit
Emergency sand sources
Navigation Channels with Nearshore Placement of Sand

Use of SAW Government Dredge Fleet

Dominant Currents During Flooding Tide
Description/Challenge

• Government Shallow Draft Dredges (SDD) serve multiple projects on Atlantic coast
• Little to no technical coordination to promote and achieve more efficient sediment management

Goals/Issues to Address

• Evaluate ways to improve sediment management on projects in NAD and SAD that use Government Shallow Draft Dredges (SDD)
• Identify RSM Opportunities across Business Lines using SDD fleet

BLUF: Explore how the government fleet of Shallow Draft Dredges can improve sediment management practices and strategies within NAD/SAD and across business lines
RSM FY12 IPR
An RSM Initiative for the Major Philadelphia District Navigation Projects
Larry Cocchieri & Rich Thorsen, NAD; Monica Chasten and Tim Rooney, NAP

Description/Challenge
Development of a systems approach for operating and management of the major navigation projects within the Philadelphia District

Goals/Issues to Address
- Improve data management & visualization for more efficient RSM
- Better understanding of national and regional science and practices to improve RSM and EWN efforts in NAP
- Most material is not “fluffy white beach sand”, grain-size challenged riverine sediments, but try to keep it in the system
- Improve RSM coordination within NAP and with project stakeholders

BLUF: Improved data and project management through tool and process developments. Improve knowledge, “trust” and develop RSM strategies within the organization and with RDT stakeholders
BLUF: USACE and NJDOT require a more detailed and long-term evaluation of all federal and state channels in the Barnegat system as well as evaluation of beneficial use of dredged material alternatives that would benefit the entire region.

Problem Statement/Issue

- Navigation Mission difficult to maintain for so many channels in such a dynamic sediment system
- Sediment System is active, but not well understood
- Traditional Placement Areas filling up
- Beneficial Use of Dredged Material can be difficult in NJ
- Need to maintain missions and build system resilience but need better technical understanding and decision support tools
A Sediment Progression: From Confinement to In-Water Creation

Somewhere in Jersey….

“Business as Usual”….Confined Disposal Facilities (CDF)
A Sediment Progression: From Confinement to In-Water Creation
Accelerating Progress with an RSM/EWN Approach: Mordecai Island
Mordecai Island CONSTRUCTED! November 2015
FY16 RSM Program/Center Goals

- Operationalize, construct identified RSM opportunities
- Guidance on Authorities for RSM/Federal Standard
- Stakeholder Workshops
- Quantify Benefits (economic, environmental)
- Capture and Outreach Successes, Value Added, Benefits
- Coastal and Inland
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