USACE Regional Sediment Management Program

Linda S. Lillycrop Program Manager USACE Engineer Research and Development Center Coastal and Hydraulics Laboratory

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US Army Corps of Engineers BUILDING STRONG_®



Regional Sediment Management

A systems approach for efficient and effective use of sediments and management of projects in our Coastal, Estuarine, and Riverine environments





RSM = Sustainable Solutions for....



RSM Operating Principles:

- Recognize <u>sediments</u> as a <u>regional resource</u>; <u>prioritize use</u>
- Link and leverage across <u>multiple projects</u>, <u>business lines</u>, <u>authorities</u>
- Improve operational efficiencies & natural exchange of sediments
- Economically viable, environmentally sustainable solutions
- Local sediment <u>actions</u> which <u>benefit the region</u>, <u>consider regional impacts</u>
- Enhance technical <u>knowledge/tools for regional approaches</u>
- Share information and data
- Communicate and collaborate USACE, Stakeholders, Partners





USACE RSM Participation (2000-2014)



Jacksonville District - St Johns, Duval, Nassau Counties



RSM Tools







JALBTCX – National Coastal Mapping Program





Landscape Metrics

Understand How Long-term Ecosystem Functions are affected by our Projects & Actions

- a) Landscape Patterns Overtime
- b) Ecological Process
- c) Develop Model to Predict Changes to Ecological Process and Landscape Patterns

CE-Dredge Data Management & GIS

- Data management, visualization, & analysis
- Regional sediment budgets
- Facilitate sharing data & tools
- Protect our investments
- Retain Institutional knowledge

CE-Dredge Map Gallery

CE-Dredge Viewer

Dredging and Sediment Information Click here for editable version.

About About

Map Notes

Map Notes - Issues

USACE_PlacementAreas

Shoreline - Continually Updated (NOAA/JALBTCX/NGS)

Waterway Projecta -Rivers & Ports (NDC)

2012 Post Sandy
 differences (JALBTCK)

2012 PostSandy Volumes (JALBTCK)

Engineering w/Nature
Sites (USACE)

Placement Areas (USACE)

ESI Shoreline - Most Sensitive (NOAA)

 Estuarine Bathymetry (NOAA)

Medium Resolution Shoreline (NOAA)

CSPI Projecta (USACE)

Channel Boundaries (USACE)

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CE-Dredge Dredging Histories

Sediment Database Sediment Analysis Geo-App (SAGA)

Model Enhancements for Regional Approaches

Waves, Circulation, Water levels, Sediment Transport, Shoreline Change

SedMan Decision Support Tool

SEDiment MANagement Technologies

Define the problem by selecting and Reset deseleting criteria.		Below is a list o score indicating on a technology
Identify the Problem Physical Location	Î	Sweep Beam Vertical Mixer
Project Type		Agitation Dree
New or Existing Facility		Revetments
Project Objective		Seawalls
EWN Goals		Sediment Bar
Typical Appual Dredging		Sediment Coll
	Į	Levees
Physical Processes and Environment		Dredge Mater
Environmental Constraints	Ţ	Vessel Speed
2013 - US Army Corps of Engineers		

Below is a list of candidate solution technologies, along with a score indicating how well each fits the problem criteria. Click on a technology to see an overview.

Sweep Beam Dredging	100%
Vertical Mixers/Air Bubble Curtain	100%
Agitation Dredging	100%
Revetments	100%
Seawalls	100%
Sediment Barrier	100%
Sediment Collector	100%
Levees	100%
Dredge Material Management Plan	100%
Vessel Speed and Sailing Regulations	100%

Strategic Placement of Dredged Sediments

Example: Advancing Nearshore Berm Research, Guidance, & Tool Development

Objectives:

- Understand challenges/opportunities in placing NS Berms
- Tools to predict dispersion and movement of berms
- Tools to calculate benefits (economic, environmental, social)
- Guidance for plan, design, and construction in varying environments

<u>Tools and Data</u> Sediment Budget Analysis System (SBAS) SEDiment MANagement Technologies CE-Dredge Dredging Manager & Viewer Models and Databases Etc...

Thank you

Linda.S.Lillycrop@usace.army.mil

rsm.usace.army.mil

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