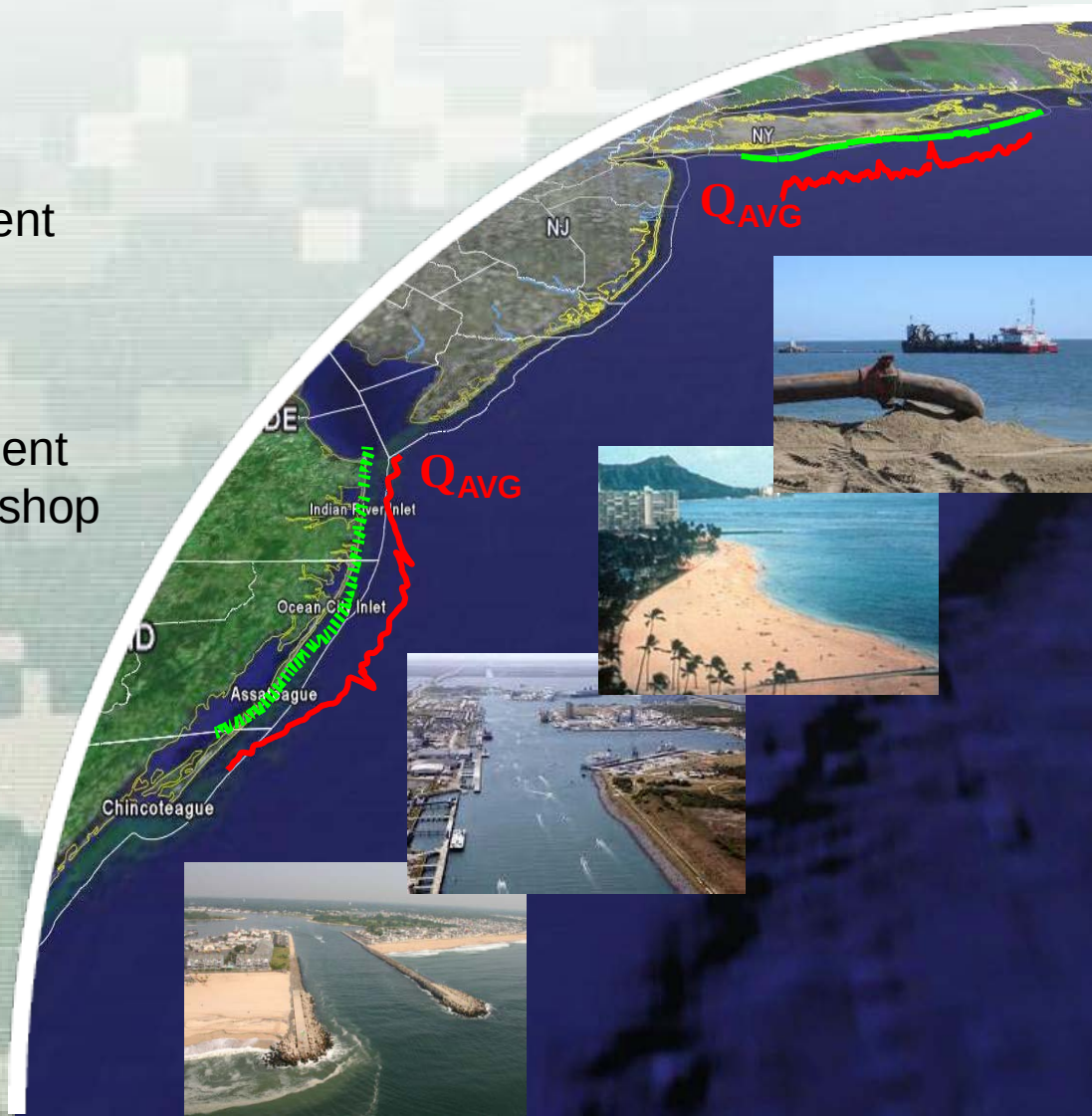
RSM Program: Progress and Future Directions

Linda S. Lillycrop
Program Manager
Regional Sediment Management

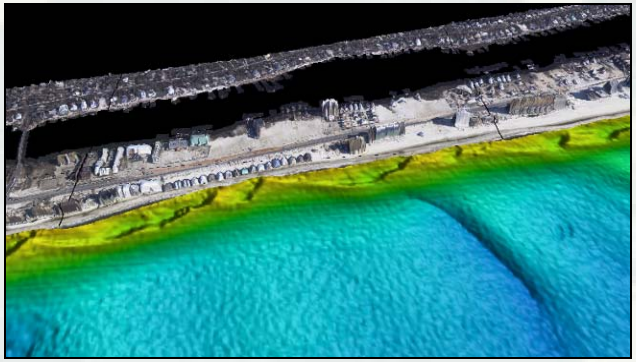
Regional Sediment Management
In-Progress-Review and Workshop
10-12 August 2011



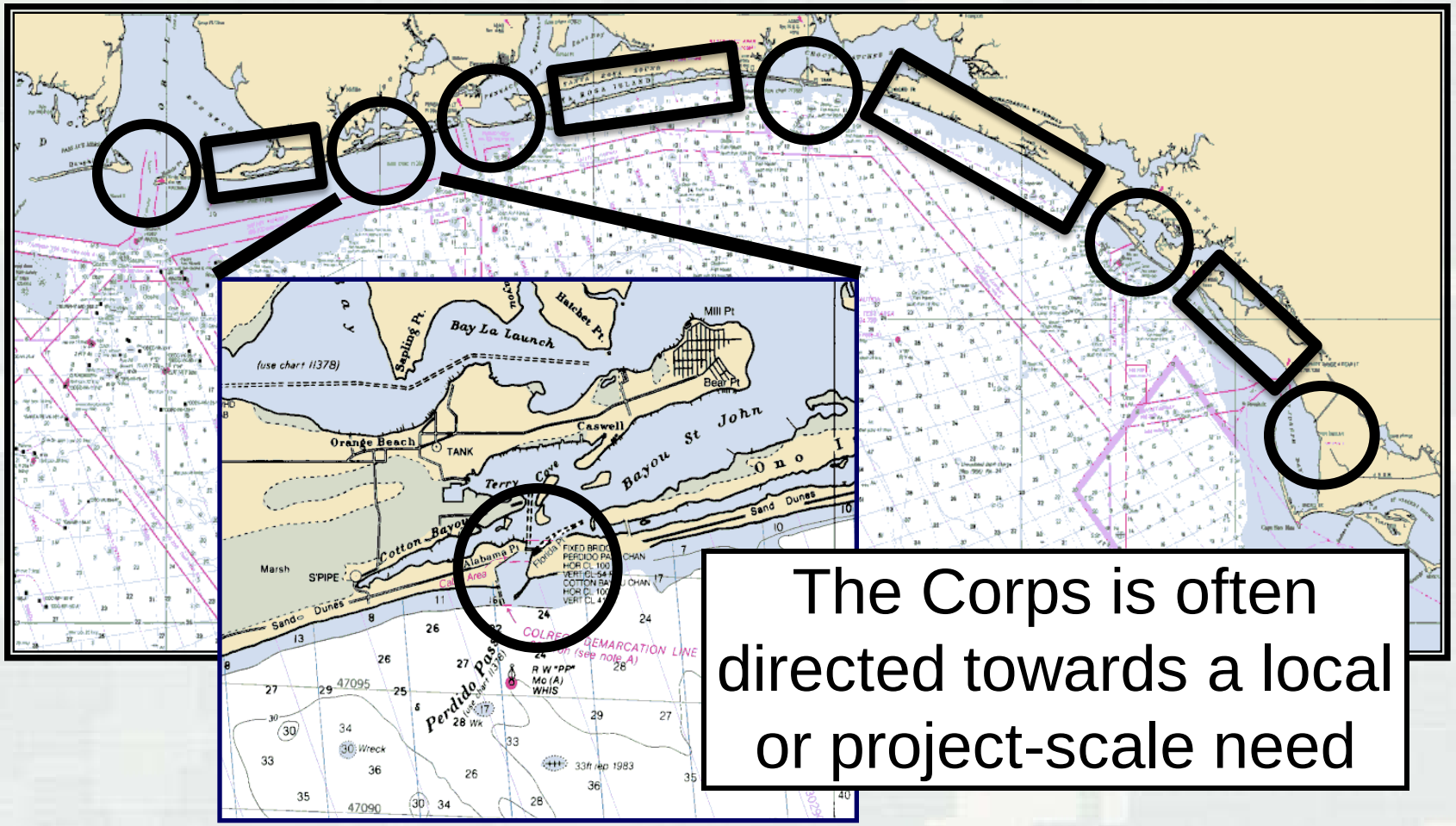
US Army Corps of Engineers
BUILDING STRONG®

Outline

- RSM Overview
- Status and Progress
- Future Directions



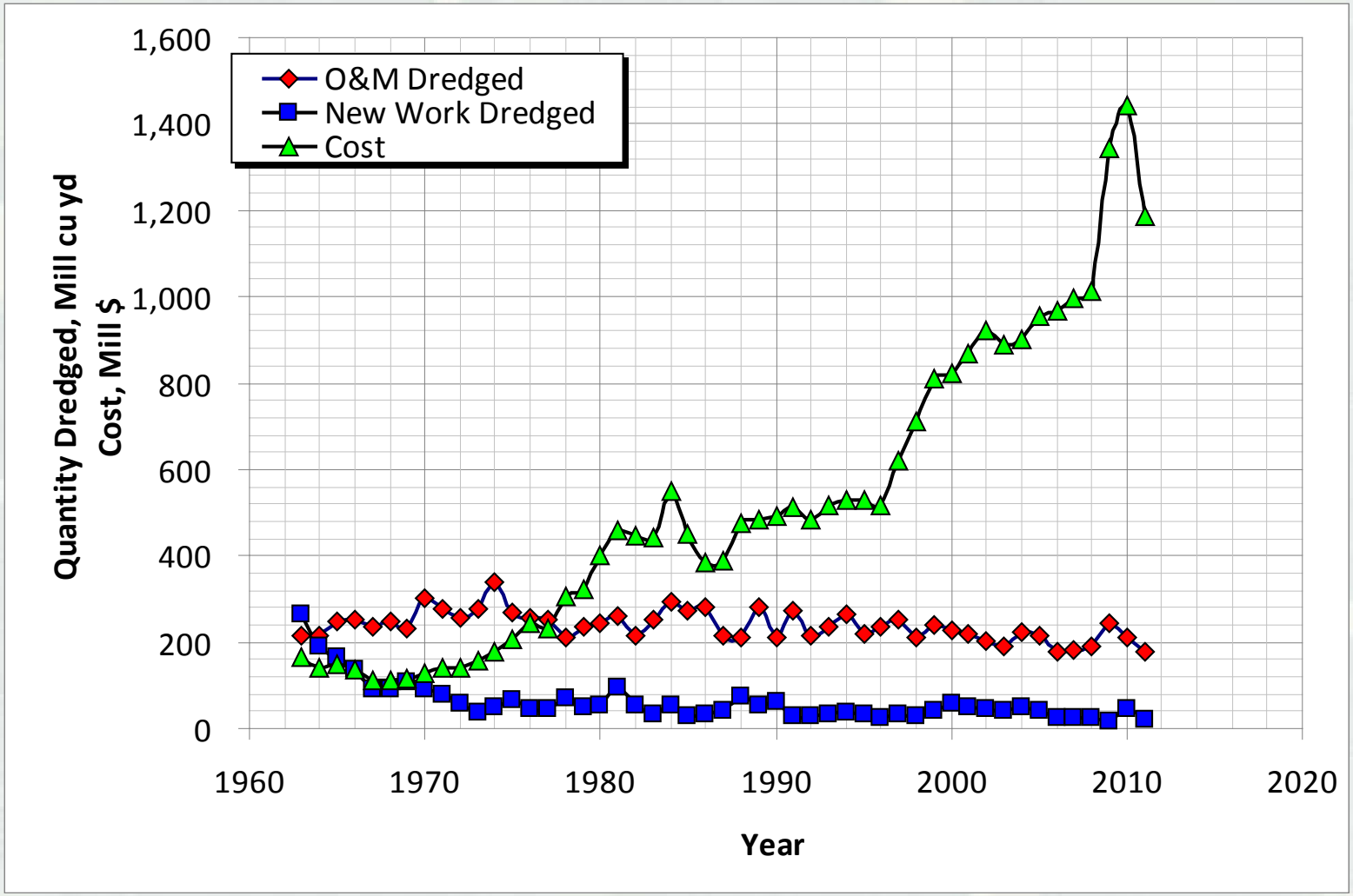
Why RSM?



The Corps is often directed towards a local or project-scale need

US Navigation Channels

O&M (Maintenance) and New Work Volumes and Cost



Regional Sediment Management

- Coastal Engineering Research Board Initiative (1996 -1998)
- RSM Demonstration (2000)
- Mobile District (2000-2003)
- Additional Districts (2002 – present)

Charge from CERB:
"*RSM Demo Projects WILL…*"

- **Contain Specific Problem to Solve**
- **Generate Initial Outcomes Quickly**
- **Involve Multiple Agencies**
- **Develop Stakeholder Support**

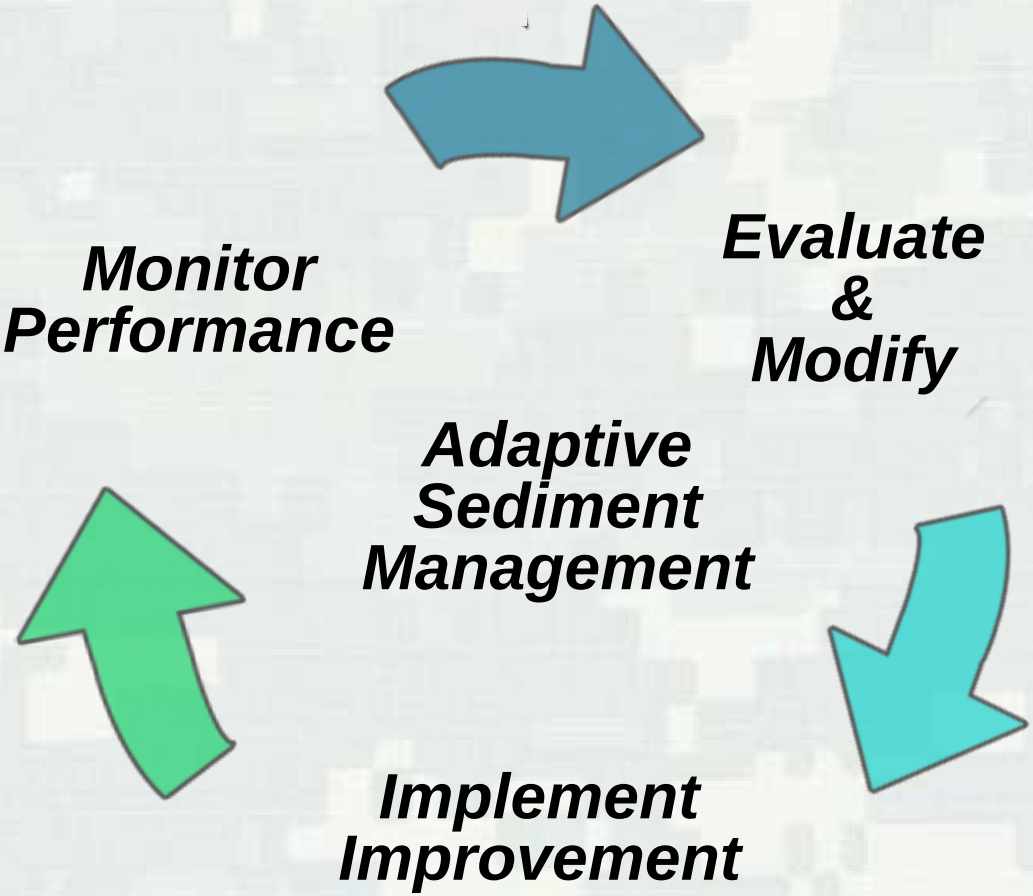
Regional Sediment Management

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

- Manage local sediments and projects within the regional context
- Consider sediments as a regional resource
- Support sustainable solutions for USACE missions:
  - Navigation
  - Flood Risk Management
  - Environmental Restoration
- Communicate and collaborate – USACE, Stakeholders, Partners

Optimize Natural Exchange of Sediments Within a Region

Regional Sediment Management Approach



RSM Practices

- **Keep sediment in the littoral system**
- **Follow natural sediment processes**
- **Reduce sedimentation**

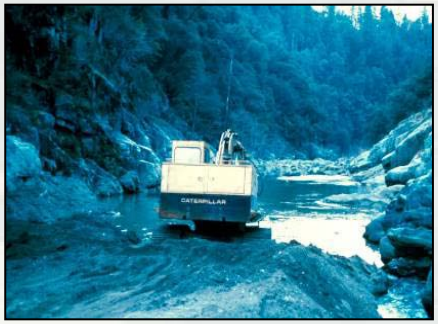
Reduce Offshore Disposal

Place Nearshore

Bypass/Optimize Placement

Ecosystem Restoration w/partners

Reduce CDF Placement Utilize to improve system



Reduce Sedimentation

RSM Team

(Opportunities, Actions, Messaging)

PM: Cycles OP, PD, EN

Operations Division:

- Chief, Technical Support Branch, Navigation Section
- Chief, Coastal Branch
- Chief, Spatial Data Branch
- Beneficial Uses Project Manager
- Dredging Project Manager
- Area Office Representative, Coastal
- Area Office Representative, Inland

Engineering Division:

- Chief, Hydrology & Hydraulics Branch
- Coastal Engineer

Planning Division:

- Physical Scientist, Coastal
- Physical Scientist, Coastal
- Inland Environment Team Leader
- Biologist, Inland

Office of Counsel

Others…..

Stakeholder/Partner Collaboration

Working Together To:

- Identify Opportunities and Solutions
- Make Decisions
- Overcome Obstacles
- Take Action
- Leverage Resources to Make It Happen

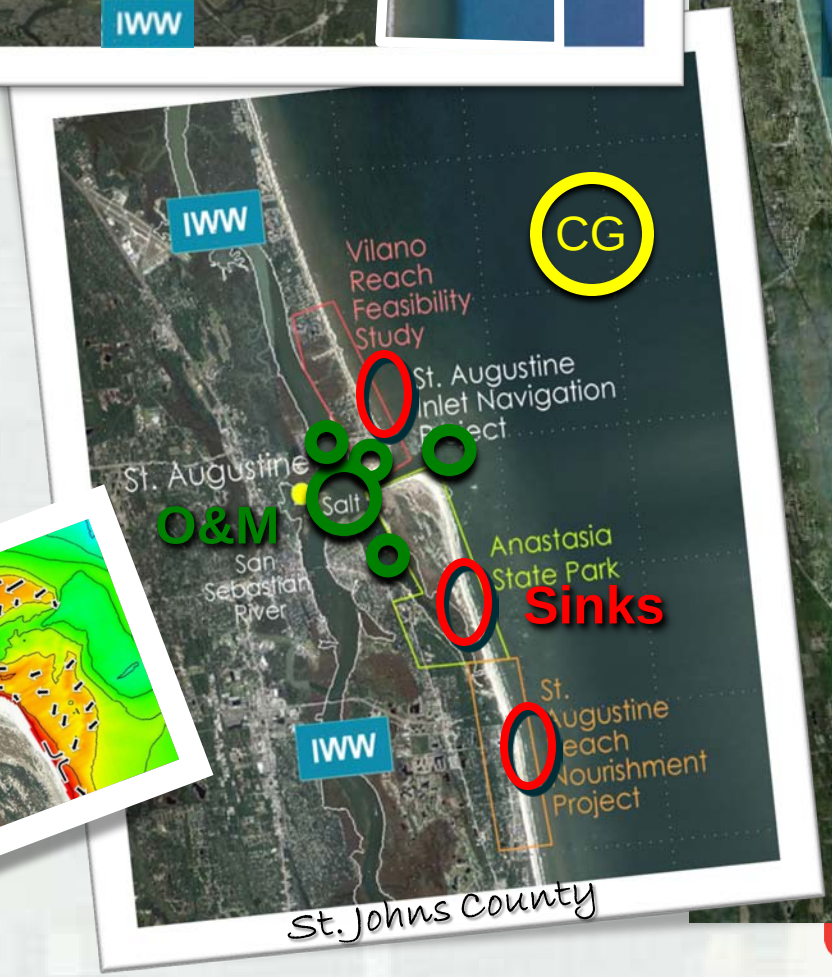
-Link Projects

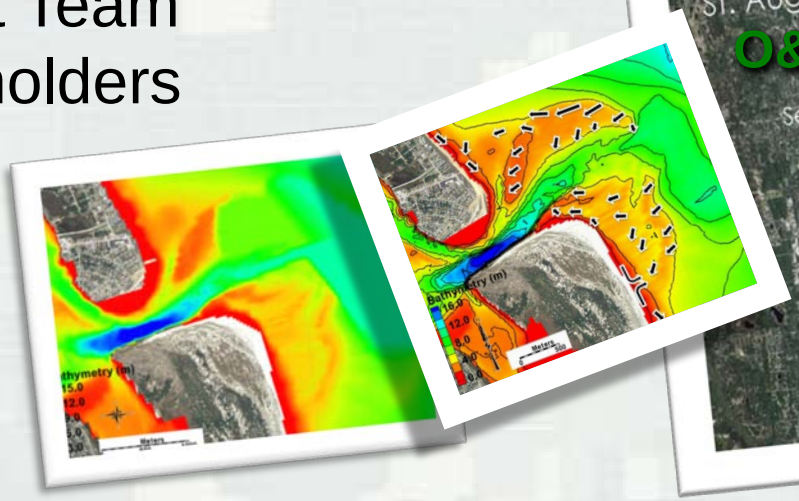
-Improve Sediment Management

-Leverage:
Models, Tools,
Data Collection, resources

-Taking action

-District Team
Stakeholders





RSM Progress/Status

RSM FY00-FY11 Participation

MCNP
CFDC
NCDB

RSM FY11 Participation

CIRP — Mission Support, Technology Transfer, Research & Development

DOER

CHARTS

MCNP
CFDC
NCDB

IOOS — Integrated Ocean Observing System

- ◇ RSM FY11 Base Program (13 Districts/ERDC), $2.0M
- ◆ RSM FY11 Congressional Adds (7), $2.2M FY10 carry-over

FY11 RSM "Base" Program

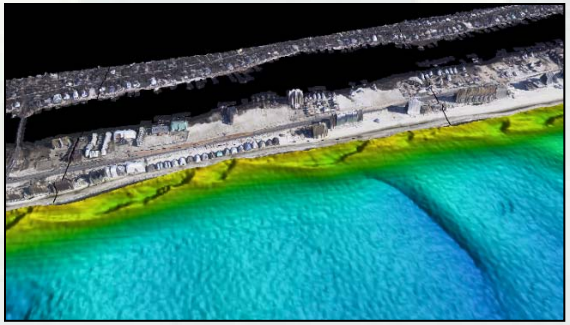
LRC: Lower Lake Michigan Sediment Budget
NAN: East Rockaway Inlet Sediment Budget
MVN: Coastal LA Sediment Budget
SPN: Ocean Beach/SF Bay 3D sediment transport modeling
LRE: Evaluation of Sediment Traps to Reduce Sedimentation
NAN: Long Island Sediment Needs Assessment Tool
NAP: Link Major Navigation Projects > Sediment Management Tool
Evaluate Environmental Sediment Limits
SAJ: St Johns & Duval Counties – CMS/GenCade/Benefits
Longboat Pass Nearshore Placement
SAM: Mobile Bay Watershed
SPL: Santa Ana River analysis, CA Sediment Mgmt Workgroup
SAC/ SWG/NAB: RSM Integration

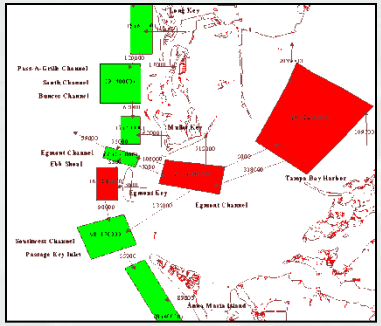
Wrap-Up
NAB: Chesapeake Bay RSM
NAP: Darby Cobbs Watershed
NWO: Niobrara River Basin Sediment Yield

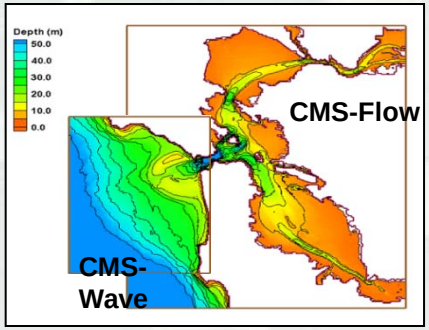
FY11 RSM “Base” Program

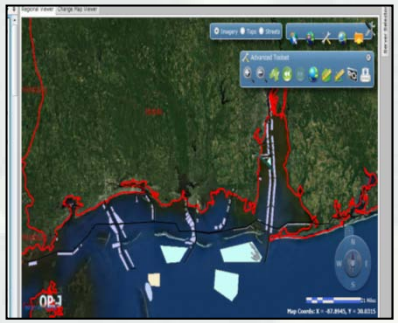
RSM Capability Enhancement & Tech Transfer

- Nearshore Placement/Berm Guidance - CIRP, MCNP, DOER, SAJ, SAM
- GenCade Model Enhancements – CIRP, SAJ, SAW, NAE
- CMS Model Enhancements & Application – CIRP, SAJ, MVN, SPN, NAE
- Channel Portfolio Tool - CIRP, DOER, NAP, SWG, NWP
- Beneficial Uses – DOER
- 3D Lidar Data & Tools – NCMP, CIRP, CFDC, SAM, SAW
- Sediment Management Tool - DOER, NCDB, NAP, NAN
- eCoastal, CE-Dredge - DOER
- Enhance Sediment Budget Analysis System (SBAS) – CIRP
- Data Framework, Navigation and Coastal Databank

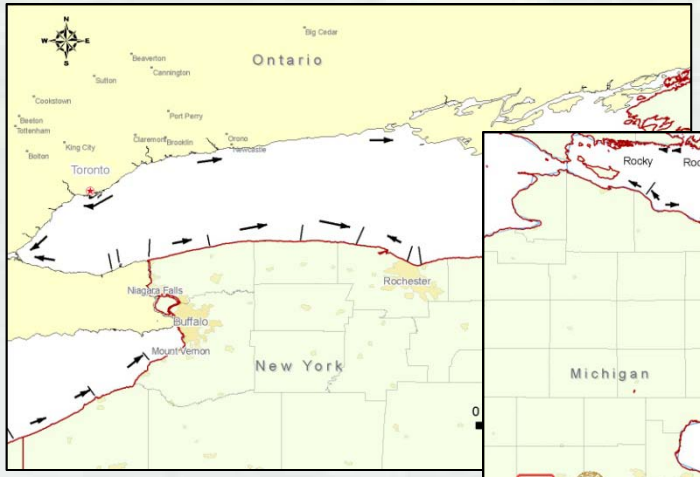


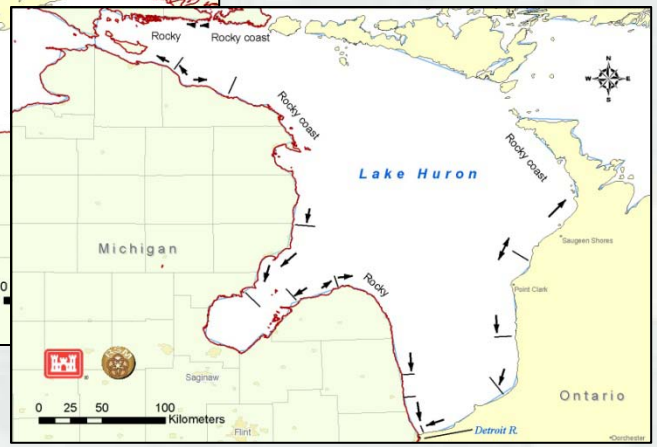


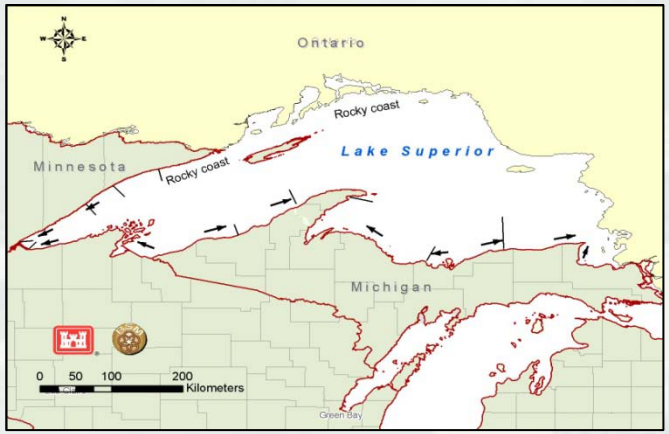




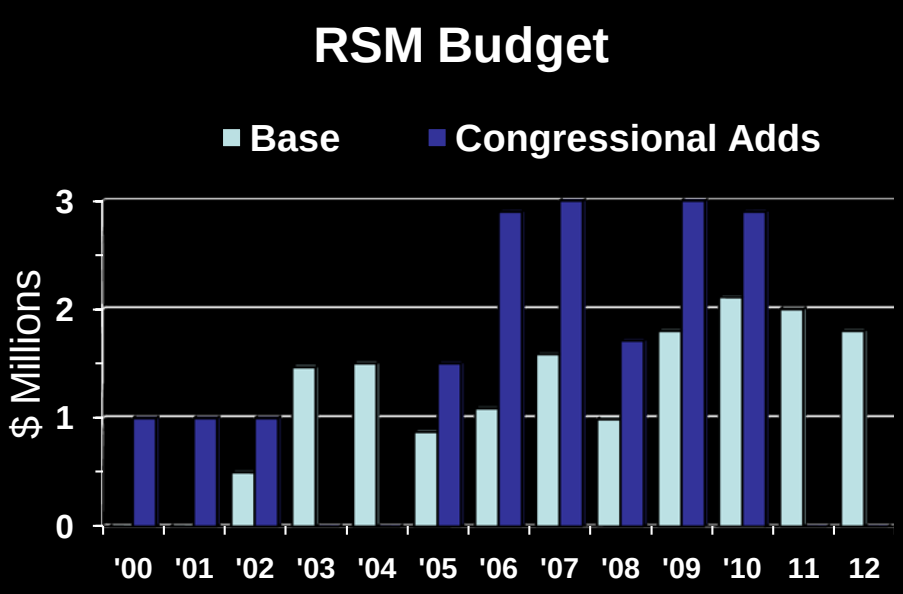
Sediment Budgets and Transport

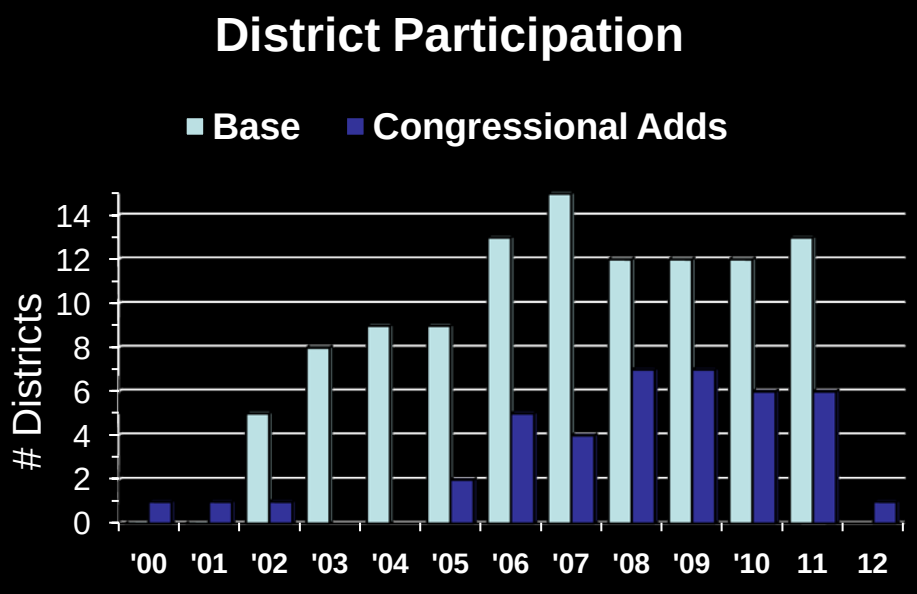






Historical Budget and District Participation





US Army Corps of Engineers

R,D&T Remaining Item Reporting S

Navigation Reports

Data as of 25 July 2011

Program	Obligations		Expenditures	
	Actual % CFY	Estimated	Actual % CFY	Estimated
Coastal Inlet Research Program	79.9	----	68.9	----
Dredging Operations and Environmental Research	58.0	----	54.5	----
Dredging Operations Technical Support Program	65.6	----	62.6	----
Inland Electronic Navigation Charts	100.0	----	100.0	----
Monitoring of Completed Navigation Projects	67.2	----	65.8	----
Navigation Systems Research	66.3	----	52.6	----
Regional Sediment Management Program	59.2	----	33.0	----

RSM Future Direction

Short and Long-term

RSM Program Funding Process

Presidents Budget O&M (Base) Request for Proposals (**12 Aug 2011**)	Congressional Adds O&M RSM PM Assigns ERDC PI Develop PMP (District, PI)
Proposal and PMP Submittal:	District Chief, Operations MSC RSM POC MSC Chief, Operations HQ, Navigation PM & RSM PM
Review Team:	4-Districts; CWG Lead; IWR RSM Technical lead; R&D PMs
RSM PM:	Program & Budget Formulation Recommendations to: ERDC TD Navigation/FRM HQ Navigation BLM
Proposal & PMP POC:	Qtr Progress Report, Fact Sheets Technical Transfer In-Progress-Review

RSM FY12 Proposal Criteria

- Takes action to move sediment in a manner that optimizes use.

- Reduces lifecycle costs in the Navigation, Flood Risk Management, and Environmental Restoration missions.

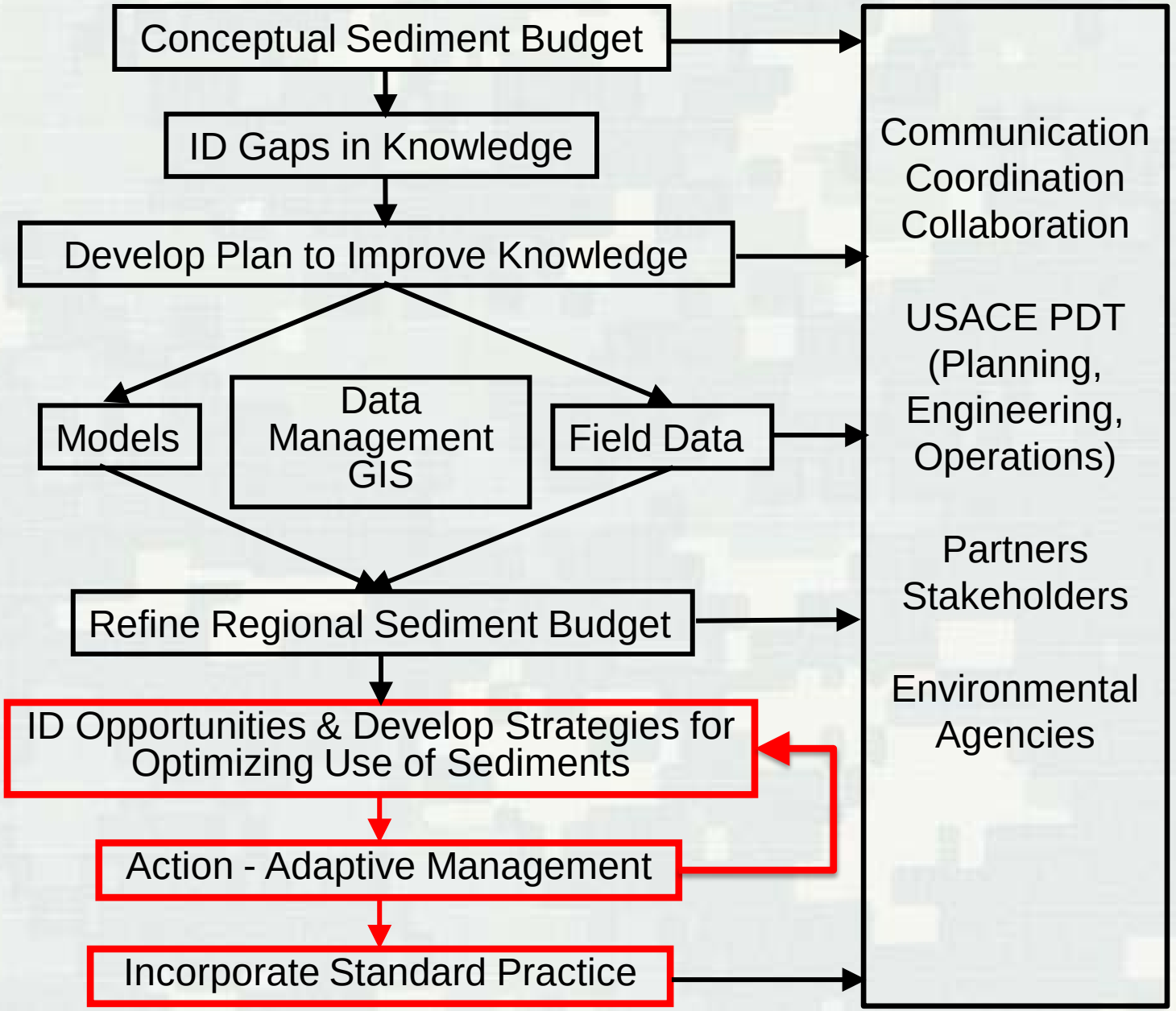
- Produces innovative solutions such as: links multiple projects and leverages across business lines, leverages other federal and non-federal projects and programs, or develops new adaptive management capabilities or techniques.

- Utilizes existing or enhances Corps tools, databases, capabilities, and uses or builds Corps technical expertise.

- Adds value to the nation such as:
  Transferable products, shared knowledge, develop or enhance tools, benefit commercial use projects, cost savings.

- Technical Transfer:
  Communicate lessons learned and best management practices, publish results, demonstrate the benefit of actions, and participation in the RSM In-Progress-Review and workshop.

Future Direction: Short-Term



RSM Across the USACE

Collaboration Fed/State/Local
All Districts

RSM PgMP, PMP, District Guidance
NAE, NAN, NAP, NAO, NAB, SAW, SAJ, SAM, MVN, SWG, SPL, NAP, NWP, NWS, NWO, POH

RSM Strategies/Alternatives
NAE, NAN, NAP, NAO, NAB, SAW, SAC, SAJ, SAM, MVN, SWG, SPL, SPN, NWP, LRB, POH, NWO

Sediment Budgets/Regional Modeling
NAE, NAN, NAP, NAO, NAB, SAW, SAC, SAJ, SAM, MVN, SWG, SPL, SPN, NWP, LRB, POH, NWO

Model/Tool Develop/tech transfer
NAE, NAN, SAW, SAJ, SAM, MVN, SPN, POH, NWP

Data Management/eGIS
All Coastal, expanding inland

Monitoring/Data collection
NAE, NAN, NAO, SAW, SAJ, SAM, SWG, NWP

CDF Mining/Capacity
SAM, POH

River Sand for Coast
SAJ, SAM

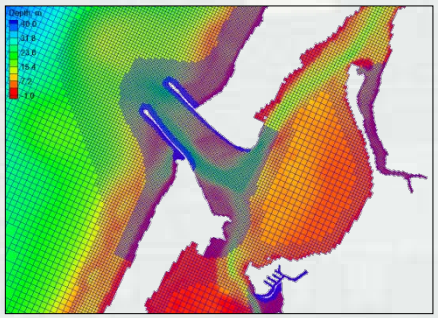
Sand Bypassing-Reduce Offshore
NAN, NAP, SAJ, SAM, NWP

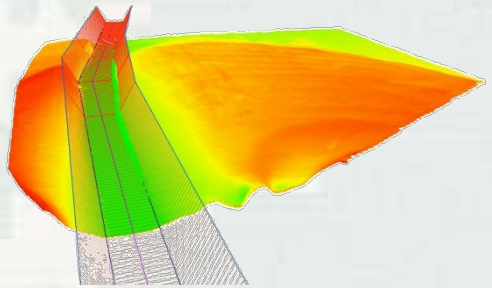
Habitat Restoration
NAN, NAP, SAJ, SAM

Watershed
SAM, SPL, NAP, MWS,NWO

FY12 (FY11) Program Goals

- Re-engage/Benefit O&M in addition to FRM, ER
- Focus on adaptive management
- Take Action – move sediments
- Leveraging and supplementing
- Build Corps capability & sustainable RSM programs
- Execute what is planned within funding timeline
- Lessons Learned local and national perspectives (Document and share knowledge gained)





RSM Future Direction
Long-Term

Engineering with Nature

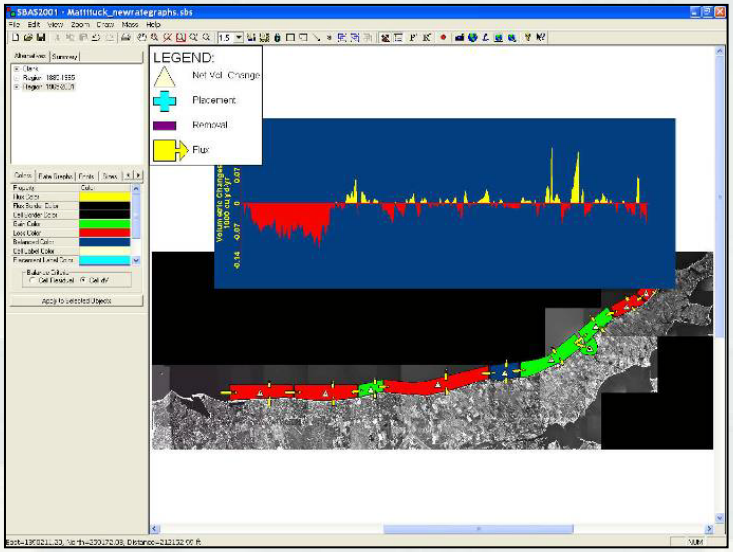
- Working with Nature (PIANC)
- Regional Sediment Management
- Beneficial Uses of Dredged Material

RSM Long-Term
Engineering With Nature

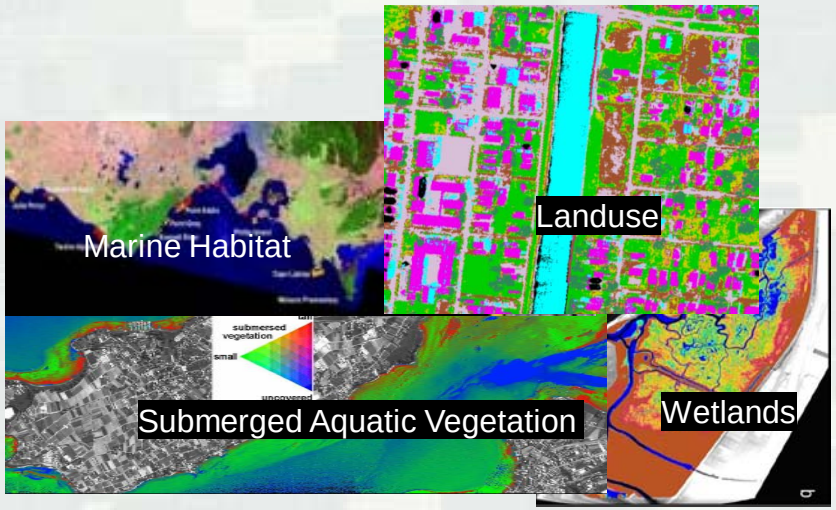
"Intentional alignment of natural and engineering processes to efficiently and sustainably deliver economic, environmental, and social benefits"

- Bridge engineering w/ecosystem and environmental processes
- Working with natural forces and processes to accomplish long-term goals
- Enhance existing capability to capture natural processes in a beneficial way
- Action oriented, results producing approach

Bridge Sediment Processes with Environmental Processes



Sediment



Environmental

RSM Long-Term

Districts

Engineering with Nature

Engineering Processes

Environmental Processes

Berms Research: RSM, CIRP, DOER

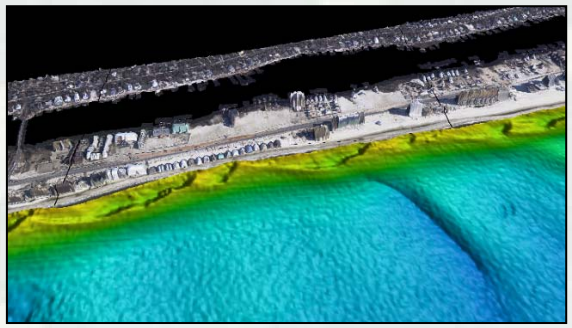
Guidance needed for:

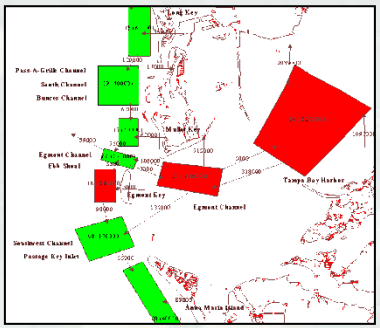
- **Design**
- **Operations & Placement**
- **Evolution**
- **Benefits**

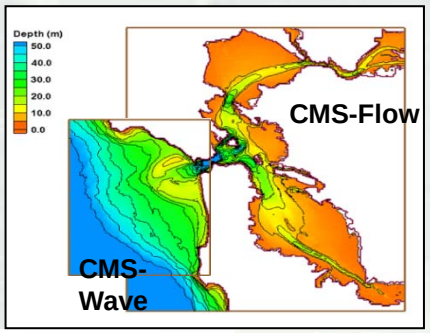
*Federal standard: *Least cost, environmentally acceptable*

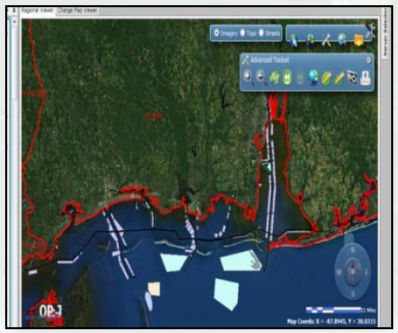
***FL: >10% fines cannot be placed on beach*

- RSM is a Journey, Not a Destination
- RSM is the Smart Way of Doing Business
- RSM is not the Project, RSM Makes Our Projects Better









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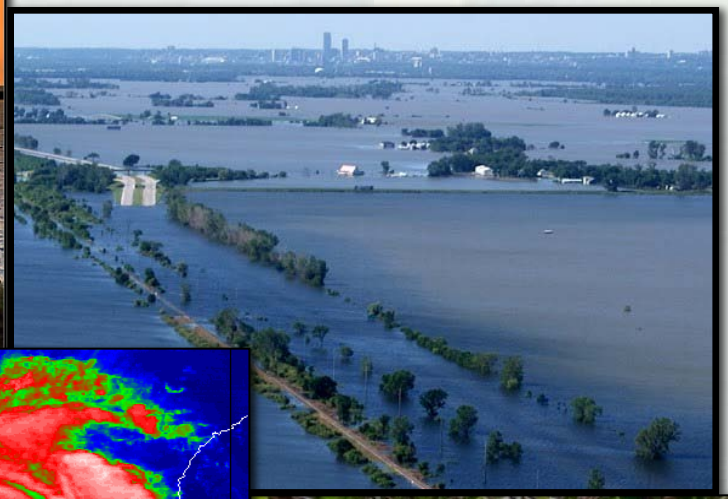

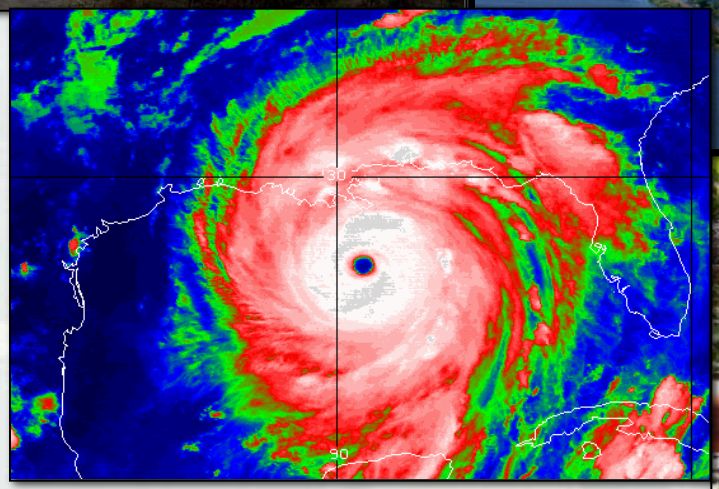

Regional Sediment Management