

# The USACE Regional Sediment Management Program

## Jeff McKee

Navigation Business Line Manager  
HQ, Proponent

## Linda Lillycrop

Program Manager  
US Army Engineer Research and Development Center (ERDC)

## Katie Brutsche

Deputy Program Manager, ERDC

## Jackie Keiser

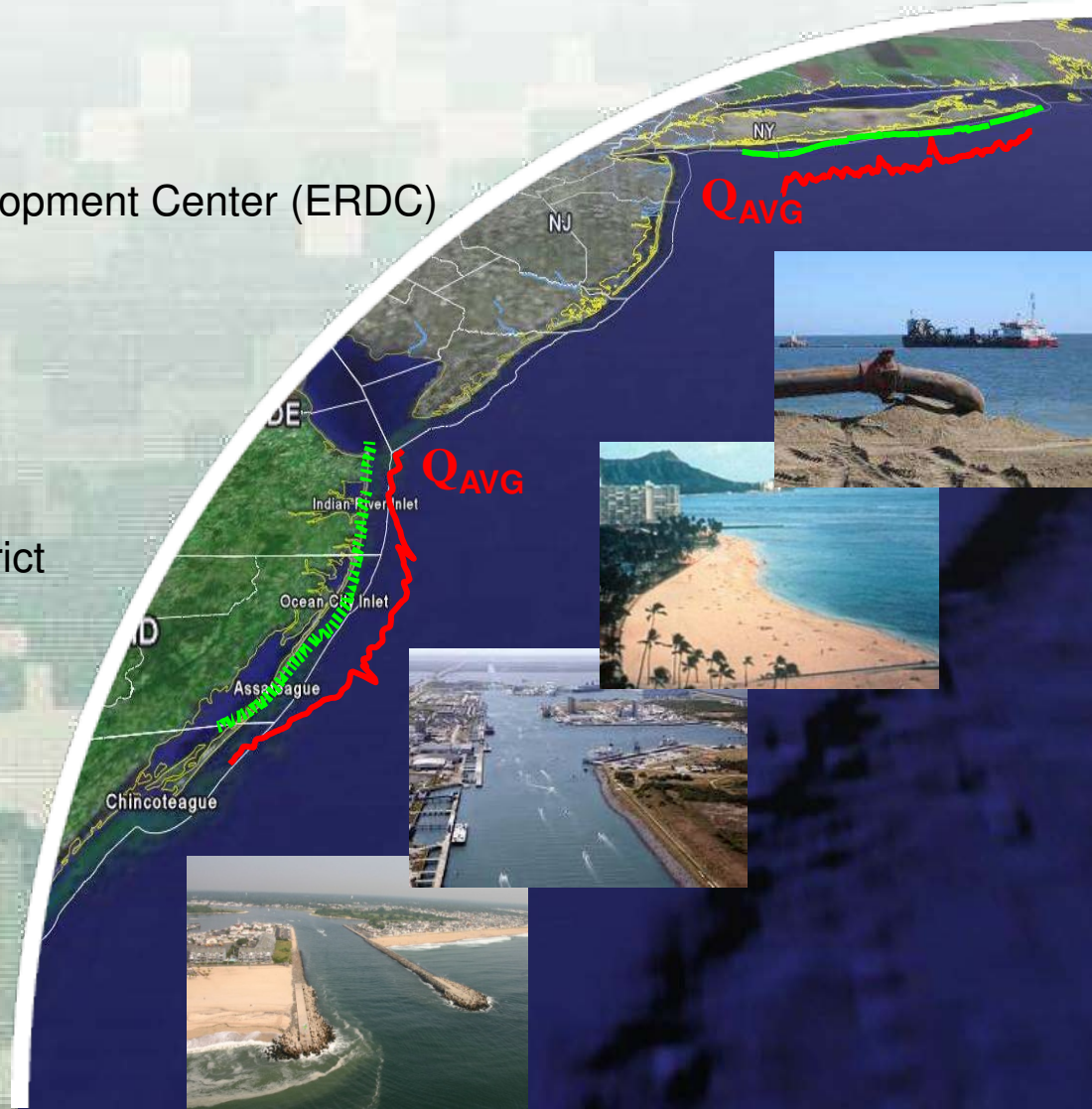
Director  
RSM National Center, Jacksonville District

## Monica Chasten

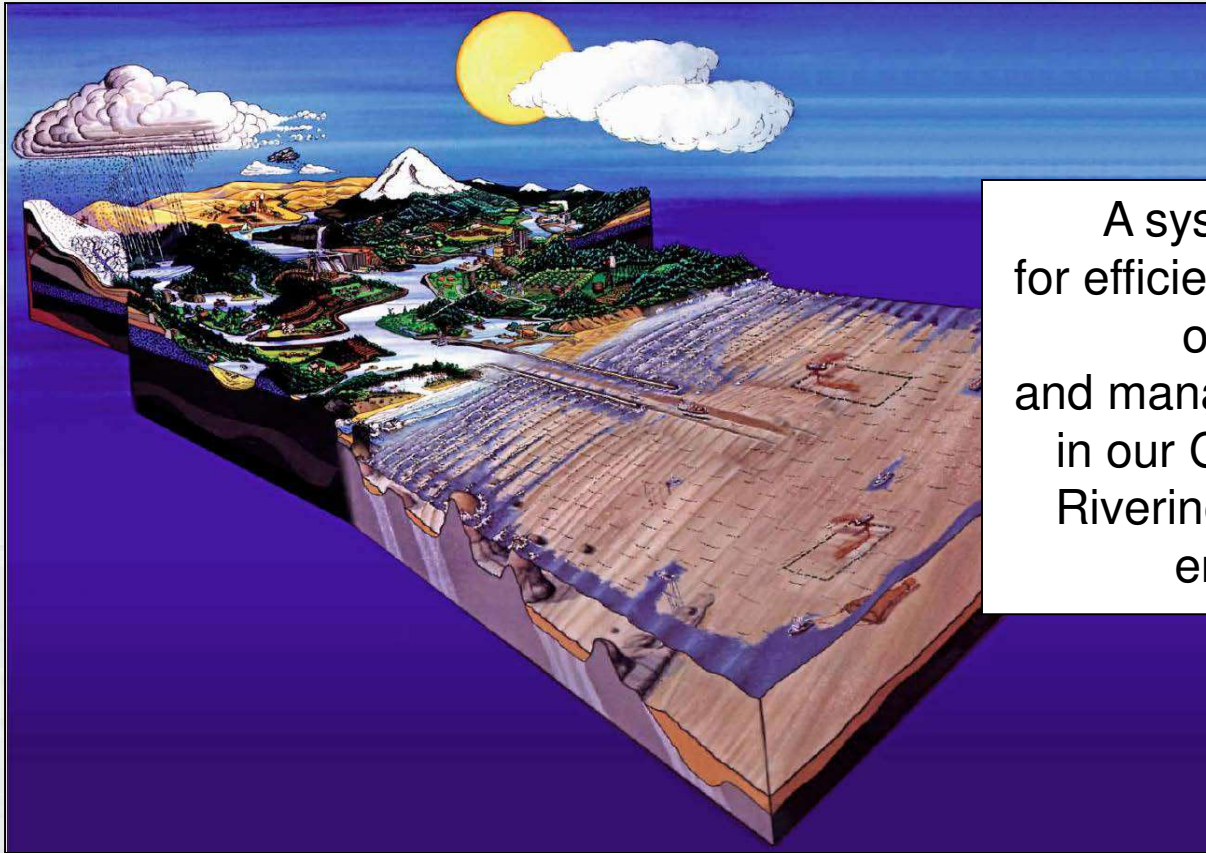
NAP District POC



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,  
Riverine, and Watershed  
environments



# USACE RSM Participation FY00-FY15



In 2015, 27 Districts (20 Coastal, 7 Inland) and ERDC, IWR





# RSM = Sustainable Solutions for.....

## Navigation/ Dredging



## Flood Risk Management



## Environmental Restoration



### 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



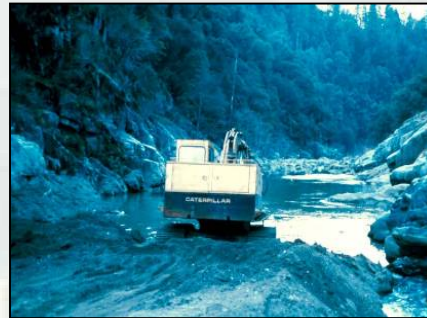
Place Nearshore



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

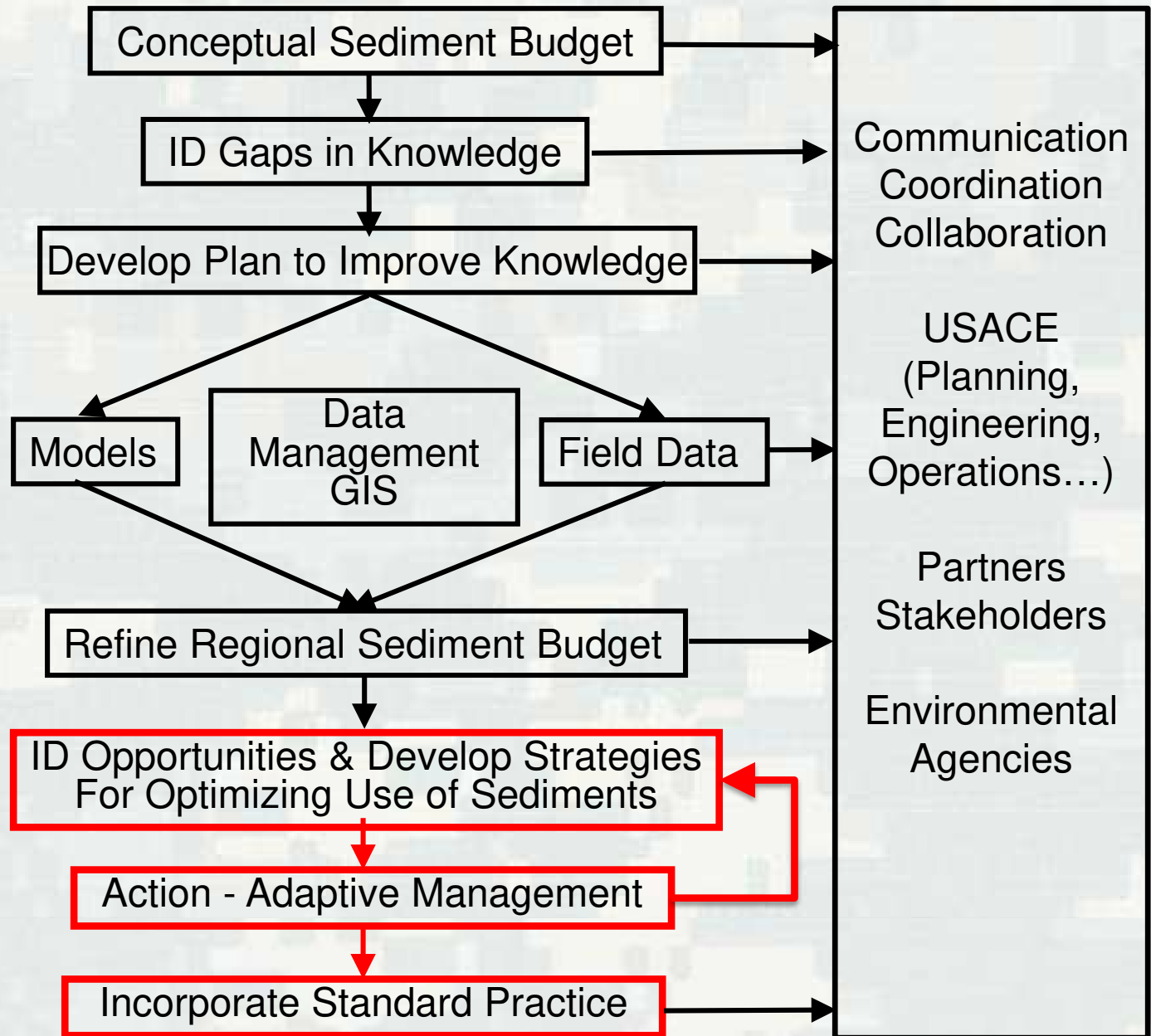
## **Working Together To:**

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



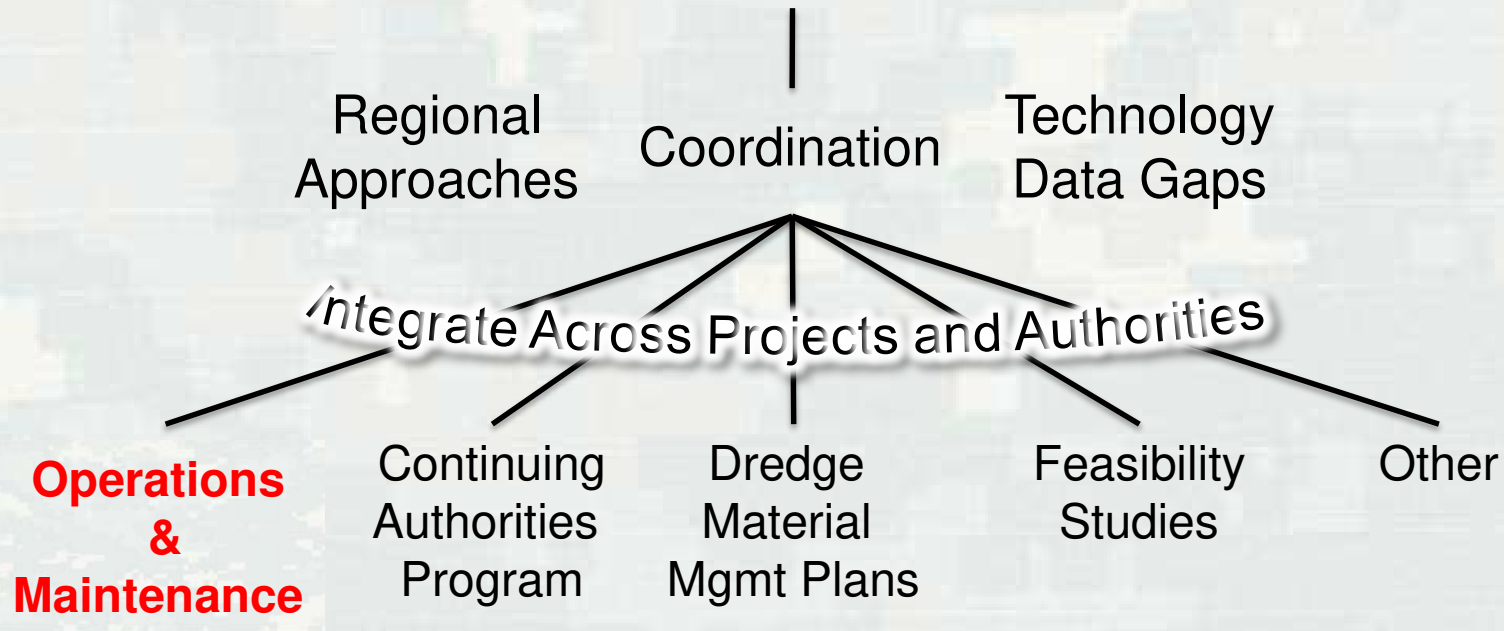
# RSM Process

Regional  
Understanding

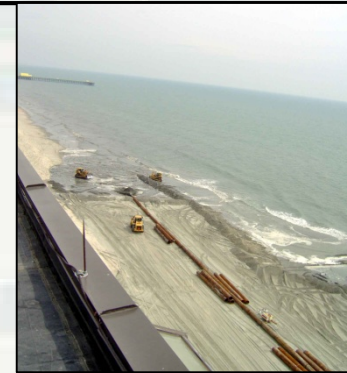




# RSM Program



## ***Construction***





# 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.

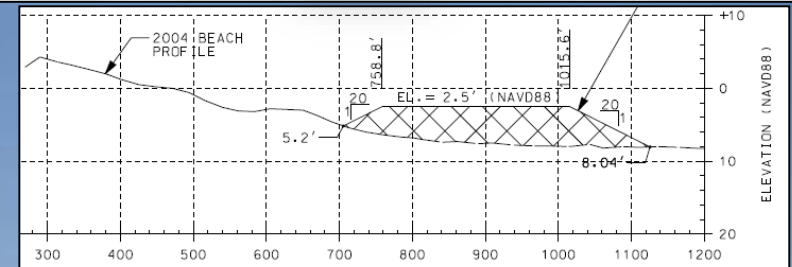


# Nearshore Berms



## Guidance and Tools needed for:

- Design
- Operations & Placement
- Monitoring & Performance
- Benefits



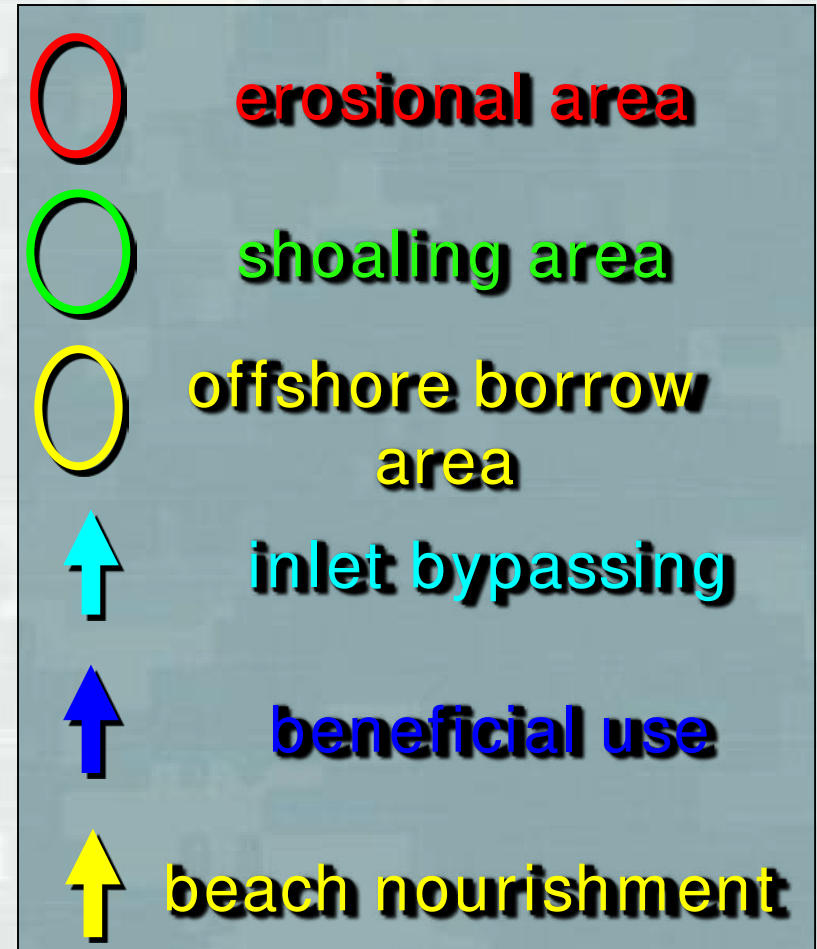
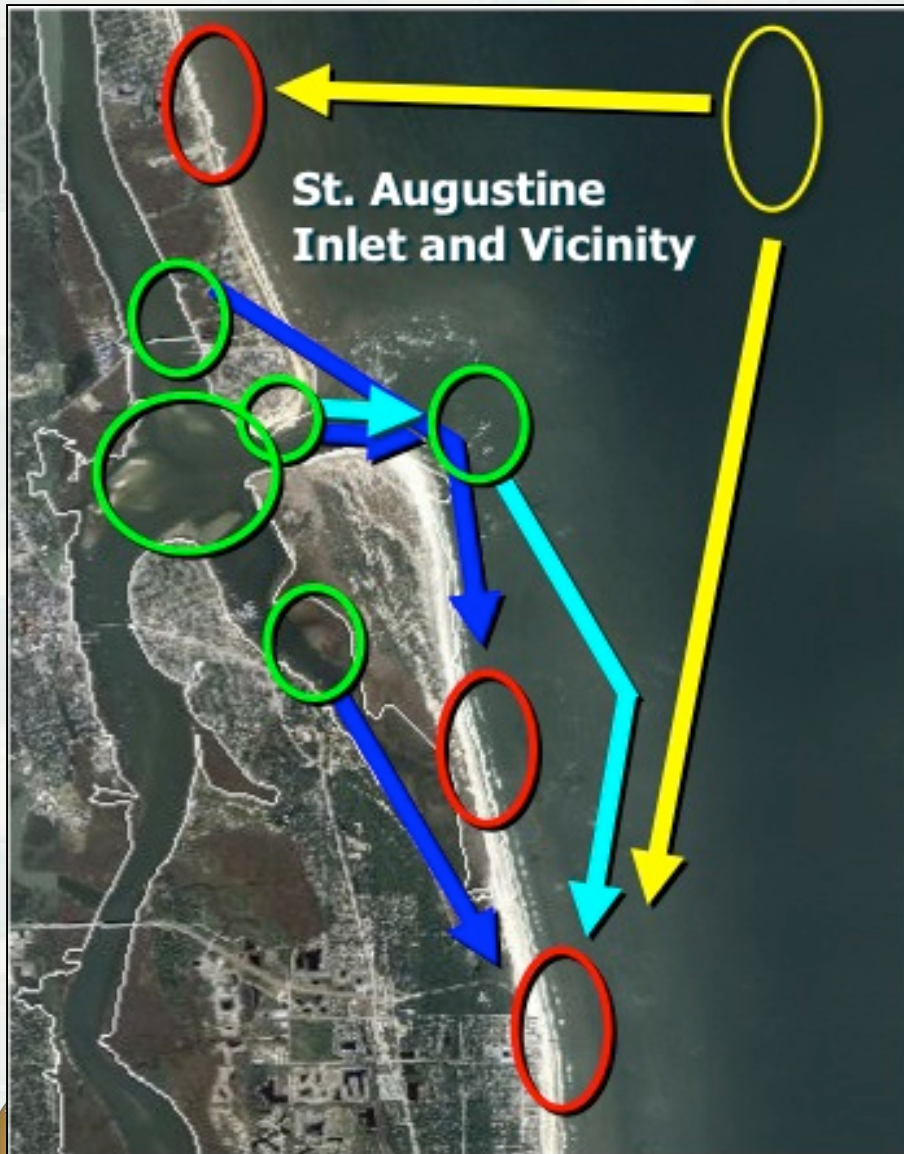
Nearshore  
Berm

\*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

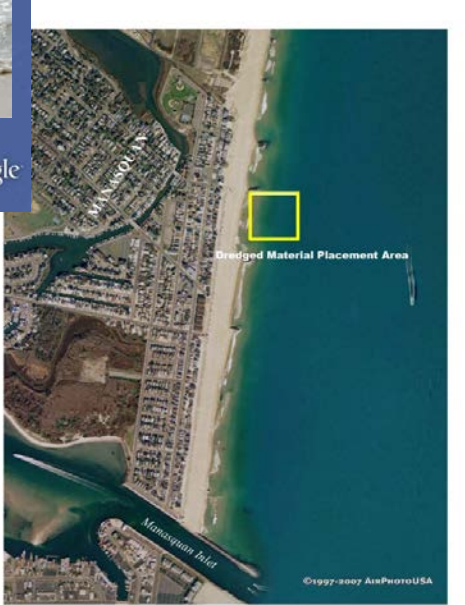
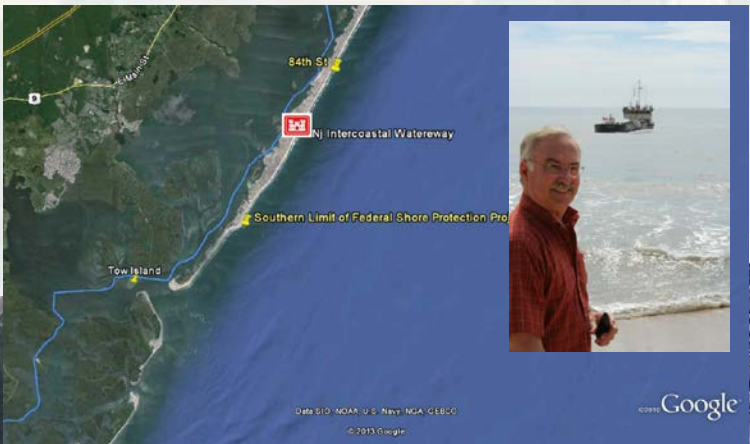
Reduced dredging/environmental impacts

Combined permit

Emergency sand sources



# Navigation Channels with Nearshore Placement of Sand



## Evaluation of RSM Actions Using Government Shallow Draft Dredges North Atlantic and South Atlantic Divisions, Rich Thorsen & Dylan Davis

### 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

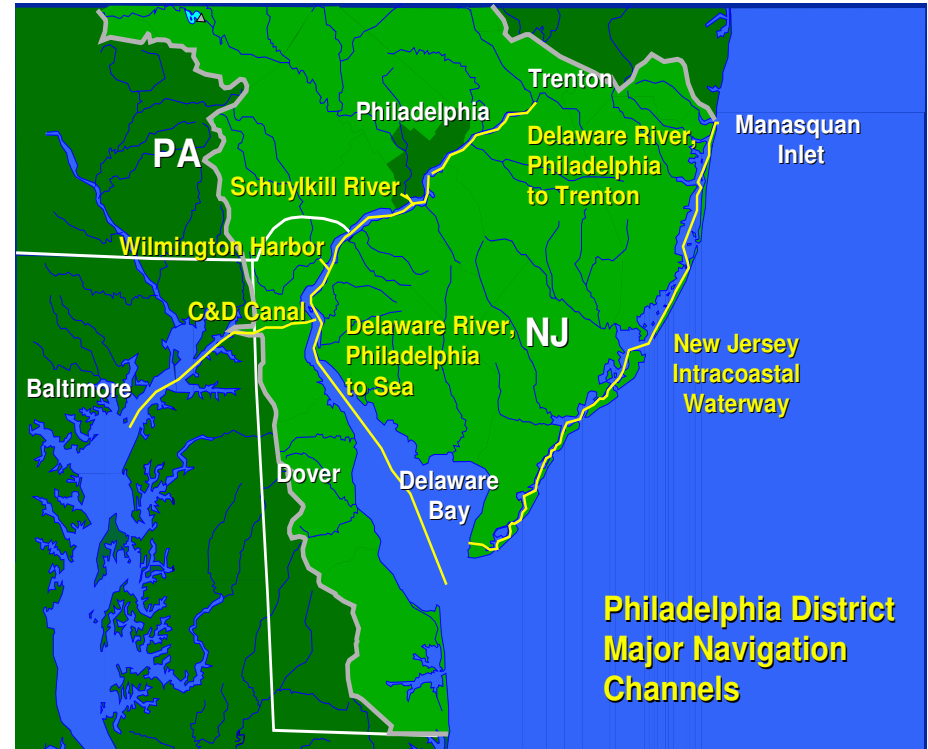
## An RSM Initiative for the Major Philadelphia District Navigation Projects Larry Cocchieri & Rich Thorsen, NAD; Monica Chasten and Tim Rooney, NAP

### 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



# FY15 RSM-EWN IPR

## Development of RSM & EWN Actions and Strategies for the Barnegat Inlet and Bay System

**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....



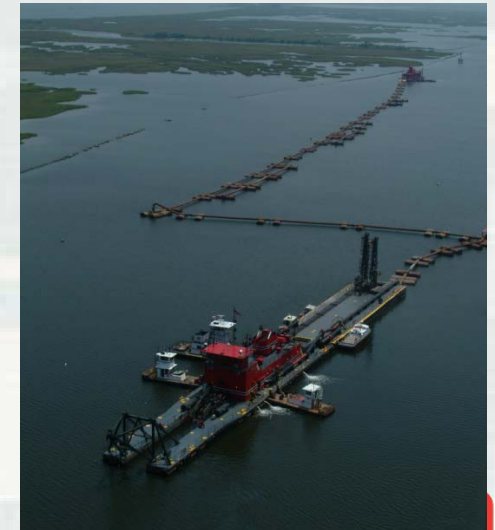
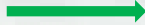
“Business as Usual”....Confined Disposal Facilities (CDF)



**BUILDING STRONG®**



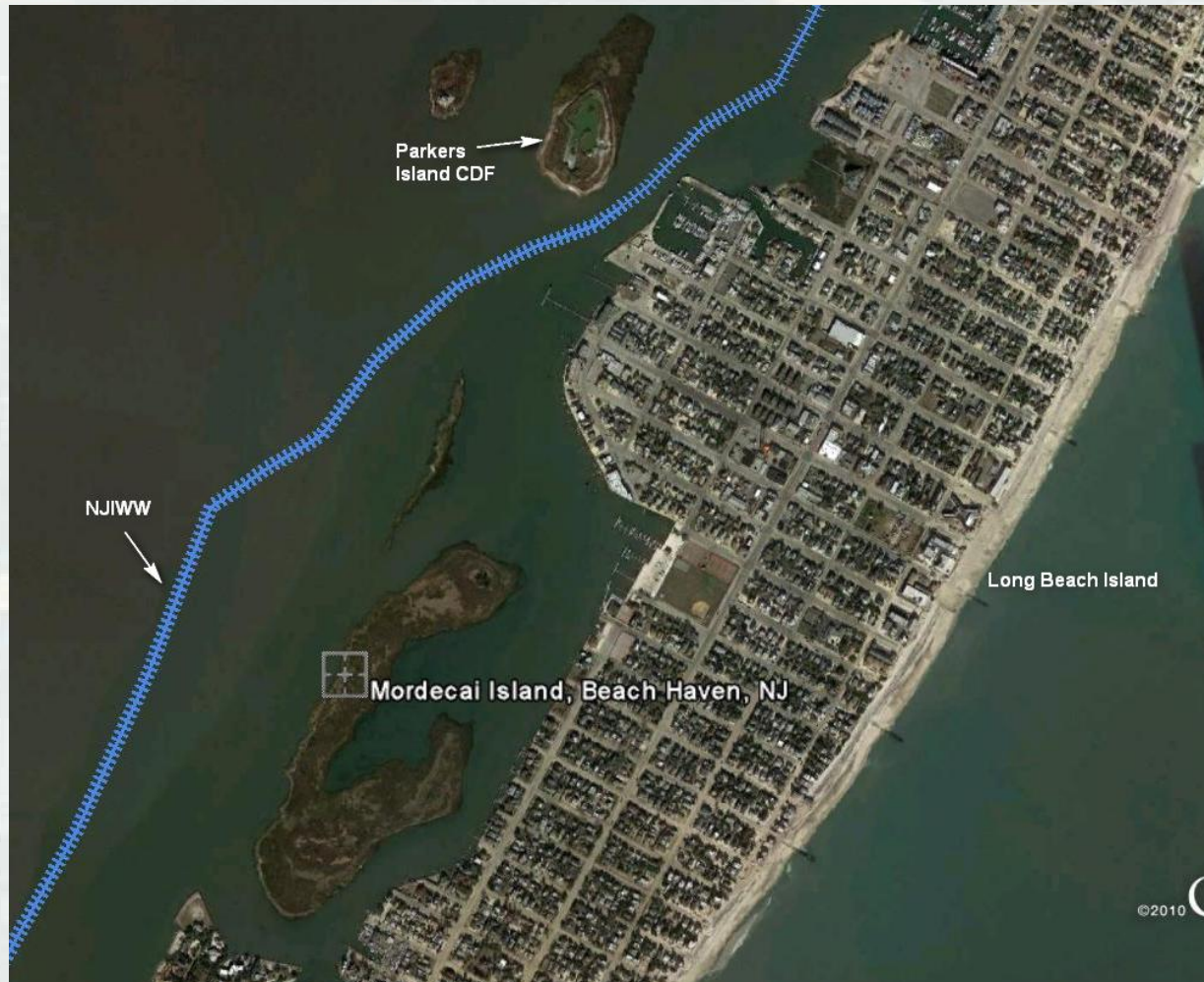
# *A Sediment Progression: From Confinement to In-Water Creation*



**BUILDING STRONG®**



# Accelerating Progress with an RSM/EWN Approach: Mordecai Island



**BUILDING STRONG®**

## An aerial photograph showing a vast, flat, muddy landscape, likely a tidal flat or salt marsh. A long, straight, dark line, possibly a pipeline or road, runs diagonally across the middle of the frame. To the right, a small boat is visible in the water, with several people on board. The water is a light blue-green color, and the land is a mix of brown and grey mud. The overall scene suggests a coastal or estuarine environment.





# 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








# 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.



# RSM.USACE.ARMY.MIL

**REGIONAL SEDIMENT MANAGEMENT**

**RELEVANT  
READY  
RESPONSIVE  
RELIABLE**  
*Proudly serving the Armed Forces and the Nation now and in the future.*

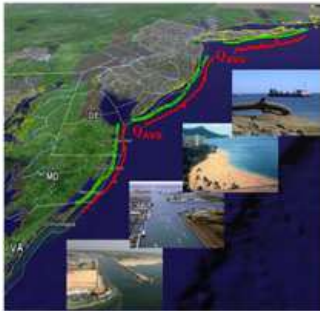
[Home](#)
[Tools & Databases](#)
[Workshops & Meetings](#)
[Initiatives](#)
[Publications](#)
[Related Sites](#)
[About RSM](#)

### Regional Sediment Management (RSM) Program

Managing sediment to benefit a region potentially saves money, allows use of natural processes to solve engineering problems, and improves the environment. As a management method, RSM:

- Includes the entire environment, from the watershed to the sea
- Accounts for the effect of human activities on sediment erosion as well as its transport in streams, lakes, bays, and oceans
- Protects and enhances the nation's natural resources while balancing national security and economic needs

The Corps of Engineers holds in trust and manages lands and waterways across the U.S. Using regional sediment management concepts will significantly improve the Corps' mission accomplishment. The Corps' engineers and scientists develop new technologies through research to make management decisions more accurate and efficient. Simultaneously, they evaluate RSM concepts through projects that highlight and improve sediment management activities.



#### What's New?

- [COE District Survey](#)
- [FY13 Request for Proposals](#)
- [Navigation Research, Development and Technology Strategic Needs and Priorities Document, v1.0](#)
- District Project Templates:
  - [Fact Sheets](#)
  - [Quarterly Reports](#)
- SBAS for ArcGIS 10
  - [Addin \(zip\)](#)
  - [User's Guide \(pdf\)](#)

Updated March 2012

HQ USACE Oversight  
Navigation Business  
Line Manager  
James E. Walker

Technical Director,  
Navigation R&D  
Jeff Lillycrop, ERDC-CHL

RSM Program Manager,  
[Linda Lillycrop](#), ERDC-CHL

RSM MSC and  
District POs

**August 2012**

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

**September 2012**

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

<<      -||-      >>

[Full Calendar](#)

US Army    US Army Corps of Engineers

Linda.S.Lillycrop@usace.army.mil

