

# Regional Sediment Management in the Delaware Estuary

## RSM Plan Overview

PDE Delaware Estuary Summit  
January 2013



US Army Corps of Engineers  
**BUILDING STRONG**



# Regional Sediment Management

- Manage sediment and dredged material as a resource within a systems-based approach
- Coordinate dredged material and management activities to achieve environmental and economic benefits
- Improve program effectiveness through collaborative partnerships
- Identify and overcome policy, regulatory and institutional impediments
  - Federal least-cost management requirement for dredged material
  - Programmatic linkages among different business lines



# Team Building

- RSM Workgroup Genesis
- National Policy
- Funding
- Outreach



# Timeline

- September 2009: Commence RSM Workgroup and RDT
- December 2012: Final RSMP and Technical/Agency Review
- February 2013: Commence Implementation Meetings
- March 2013: Agency Technical Review/Support
  - DRBC Water Management Advisory Committee
  - PDE STAC/EIC
- July 2013: Agency Approval
  - PDE Steering Committee
  - Develop resolution that incorporates RSMP into the 'Basin Plan'
- August 2013: Disseminate RSMP



# RSM Plan

- **Comprehensive long-term blueprint** to coordinate a RSM approach to identify and implement **coordinated estuary-wide sediment/dredged material management actions** including beneficial use opportunities
- Details a shared **multi-objective management vision** (Navigation/commerce, ecosystem restoration, and flood control) for the Delaware Estuary
- Maximize **the ecological and economic benefits** of the Delaware Estuary considering appropriate monetary and non-monetary values.
- **Living document** that is periodically reviewed and updated in response to the successful implementation of its various components and increased knowledge of the estuarine ecosystem





# Benefits

- Improving environmental conditions in sediment-starved marsh and littoral systems to facilitate ecosystem services
- Extending the useful life of existing dredged material
- Leveraging resources by coordinating projects and management activities
- Clarifying and streamlining the regulatory review processes for sediment management and beneficial use opportunities
- Identifying optimal beneficial use sites
- Sharing regional data management systems
- Performing outreach activities to facilitate sediment management and beneficial use projects
- Improving the viability and sustainability of waterborne commerce



# Technical White Papers

- **Quality:** Manage sediment quality in the system to ensure it is capable of supporting a healthy ecosystem, meets water quality standards and supports beneficial use of the sediments.
- **Quantity:** Manage sediment as a resource such that areas that need sediment get it and those that don't need sediment have outlets/methods to remove sediment or keep it out.
- **Dredged Material Management:** Evaluate and enhance dredging and dredged material management such that navigational (commerce) needs are met while ensuring protection of other resource uses/benefits.
- **Beneficial Use/Restoration:** Promote beneficial use of sediment for restoration, remediation and development such that the capacity for navigational dredging is supported and restoration goals are met.



# Recommended Action Functional Categories

- Operational Management
- Environmental Management
- Education and Outreach Needs
- Funding Limitations
- Programmatic and Regulatory Issues
- Science and Research Needs





**Delaware Estuary Regional Sediment Management Plan**

**Table ES-1: Recommendations Overview**

	A	B	C	D	E	F	G	H
1	<b>Recommendation</b>			<i>Ongoing</i>	<i>Short Term (1-3) years</i>	<i>Long Term (4+ years)</i>	<i>Resources Needed</i>	<i>Lead Agency</i>
2	<b>Operational Management (OM)</b>							
3	#1	OM-1A	Convert CDFs to CMFs to facilitate beneficial use		X		\$\$\$	USACE/States
4	#2	OM-2A	Develop estuary-wide database of potential sites for beneficial use		X		\$\$	PDE
5		OM-2B	Develop marketing program to promote beneficial use in estuary		X		\$\$	RSMIW
6		OM-2C	Identify and evaluate demonstration projects	X			\$	RSMIW/RDT
7	<b>Environmental Management (EM)</b>							
8	#1	EM-1A	Identify tidal wetlands at risk of loss to be protected through beneficial use		X		\$\$	PDE
9		EM-1B	Coordinate RSMP implementation with other habitat restoration plans	X			\$	RSMIW/PDE
10		EM-1C	Establish interagency workgroup to identify opportunities for beach nourishment using materials from navigation channels	X			\$	RDT
11	#2	EM-2A	Coordinate with non-tidal watershed erosion control projects to understand impacts to regional sediment management		X		\$	RSMIW/NRCS/PWD/States
12	#3	EM-3A	Review and identify BMPs for dredge operations to reduce water quality impacts	X			\$	RDT
13	<b>Education and Outreach Needs (EON)</b>							
14	#1	EON -1A	Develop education and outreach campaign to general public to explain importance of the economics with navigation, dredging and beneficial use		X		\$\$	USACE
15	#2	EON-2A	Develop education and outreach campaign to general public to change the perception of dredged material as a waste		X		\$\$	USACE/EPA
16	<b>Funding Limitations (FL)</b>							
17	#1	FL-1A	Coordinate with legislators and others - Harbor Maintenance Trust Fund allocations	X			\$	RSMIW
18		FL-1B	Coordinate with legislators and others - added economic service values RSM		X		\$	RSMIW
19	#2	FL-2A	Develop more flexible interpretation of "least cost standard" to consider full range of economic benefits for dredged material management	X			\$	USACE
20		FL-2B	Evaluate existing/alternative authorities to more easily beneficially use dredged materials, especially for habitat restoration	X			\$	USACE

**Delaware Estuary Regional Sediment Management Plan**

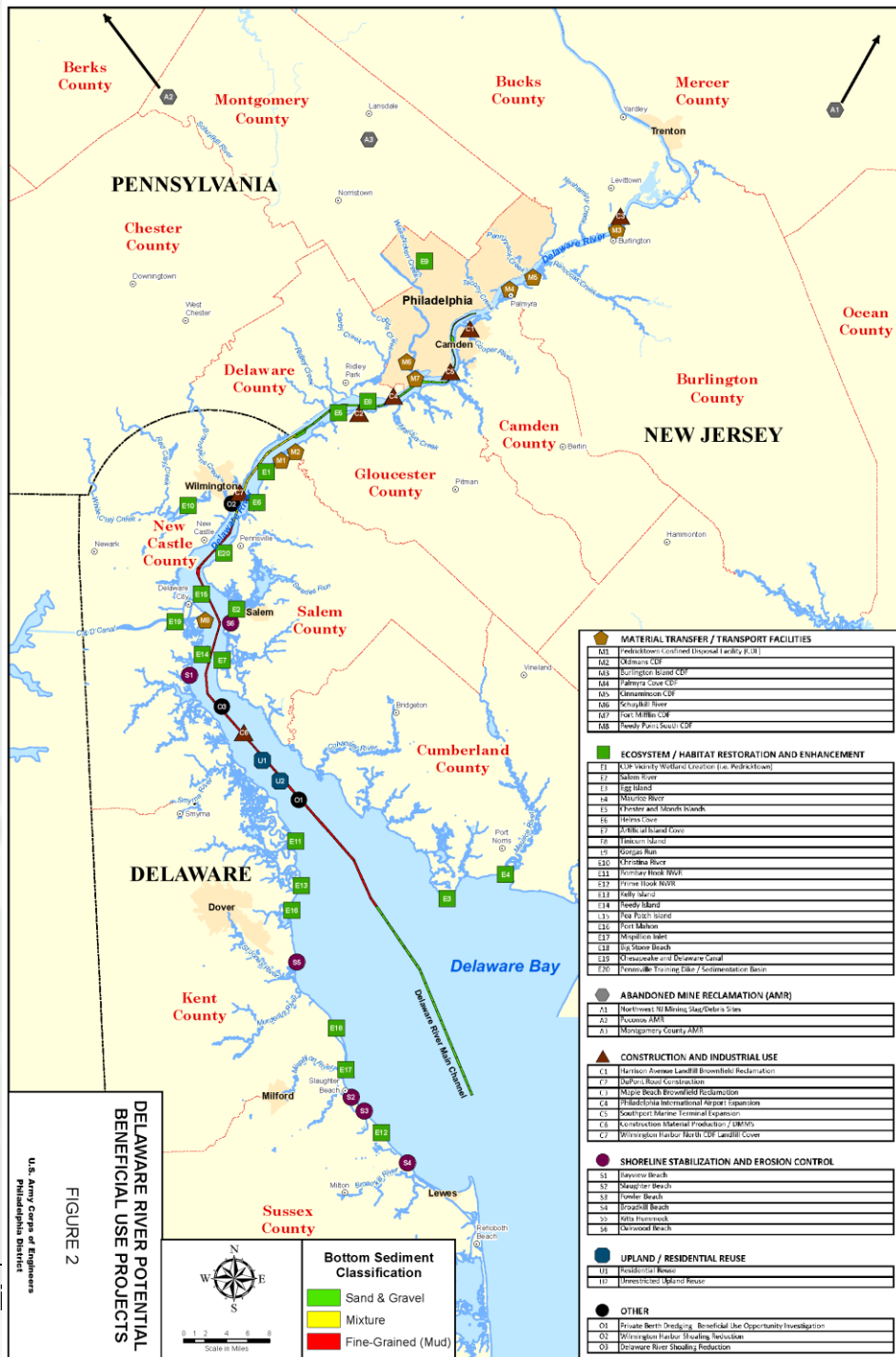
**Table ES-1: Recommendations Overview**

	A	B	C	D	E	F	G	H
21	#3	FL-3A	Identify Federal/State funding programs to implement RSMP	X			\$	RSMIW
22		FL-3B	Explore private/public funding opportunities with commercial entities		X		\$	RSMIW
23		FL-3C	Identify potential demonstration projects - especially for private-public funding		X		\$	RSMIW
24	<b>Programmatic and Regulatory Issues (PRI)</b>							
25	#1	PRI-1A	Joint federal/state effort to develop consistent programs - dredging operations, management and beneficial use		X		\$	Fed/State
26		PRI-1B	Determine practicality of developing general permits for beneficial use projects		X		\$	RDT
27	#2	PRI-2A	Develop regional dredged material management plan - using asset management approach		X		\$\$	RDT/RSMIW
28		PRI-2B	Agencies review programs to consider potential project impacts on RSM		X		\$	Fed/State
29		PRI-2C	RDT to continue to convene and share information	X			\$	RDT
30		PRI-2D	Develop regional data sharing capability and analytical tools - re: sediment management		X		\$\$	States
31	<b>Science and Research Needs (SRN)</b>							
32	#1	SRN-1A	Develop better understanding of the estuarine sediment dynamics through a variety of research projects	X		X	\$\$\$	USACE/DRBC
33		SRN-1B	Fully characterize sediment processes and outputs for upstream watersheds			X	\$\$\$	NRCS
34	#2	SRN-2A	Develop better understanding of importance of sediment and the related processes to ecological processes/habitats, in particular wetlands			X	\$\$\$	PDE
35		SRN-2B	Implement demonstration projects to gain additional knowledge		X		\$\$\$	All
36	#3	SRN-3A	Monitor and evaluate contamination of sediments throughout system - target list of contaminants of concern	X			\$\$	EPA/DRBC/ States
37		SRN-3B	Develop interagency workgroup to develop regional criteria for beneficial use of dredged material in aquatic restoration projects		X		\$	RSMIW
38		SRN-3C	Identify sediment hot spots and sources to develop a plan to address		X		\$	EPA/States
39	#4	SRN-4A	Evaluate application of engineering modifications and alternative technologies to reduce dredging or change local sediment dynamics		X		\$\$	USACE
40		SRN-4B	Evaluate the use of alternative dredging methods and techniques that could reduce dredging needs		X		\$\$	USACE
41	\$ Key: \$ = <\$100,000, \$\$=<500,000, \$\$\$=<1,000,000, \$\$\$\$=>\$1,000,000							

# Operational Management

- Convert CDFs to CMFs to facilitate beneficial use
- Develop marketing program to promote beneficial use in the estuary
- Identify and evaluate demonstration projects





U.S. Army Corps of Engineers  
Philadelphia District

FIGURE 2

**DELaware RIVER POTENTIAL BENEFICIAL USE PROJECTS**

Delaware Estuary Reg



**BUILDING STRONG**

# Environmental Management

- Identify sensitive tidal wetlands to be protected through beneficial use
- Coordinate RSMP implementation with other habitat restoration plans
- Identify beneficial use of dredged material opportunities for beach nourishment





# Education and Outreach Needs

- Develop education and outreach campaign to:
  - Explain economic benefits of RSM, navigation, dredging and beneficial use
  - Advertise the capability of dredged material as a resource





# Funding Limitations

- Coordinate with legislators about RSM economic service values
- Reevaluate Federal least-cost standard to consider economic benefits along multiple business lines
- Identify Federal/State funding programs to implement RSMP



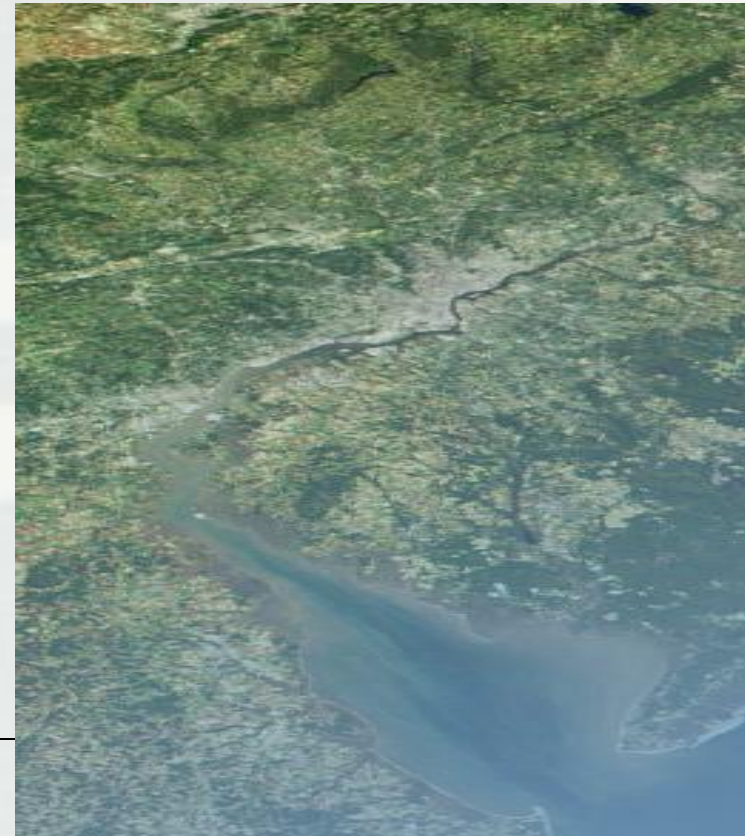
# Programmatic and Regulatory Issues

- Develop joint Federal/State effort to develop consistent dredging operations, management and BU programs
- Develop regional dredged material management plan using asset management approach



# Science and Research Needs

- Develop improved understanding of:
  - estuarine sediment dynamics
  - Importance of sediment and related process to ecological processes/habitats



# RSM Implementation

- Adopt RSMP vision, objectives and recommendations
- Identify leads for prioritized individual recommendations
- Collaborate with RDT to facilitate RSM and BU opportunities
- Meet quarterly starting in February
- Rotating Chairperson
- Craft metrics for assessing success/progress
- Identify funding strategies for recommendations and projects
- Timeline
  - RSMP agency review
  - Commence Implementation Workgroup meetings
  - Disseminate RSMP August 2013





# Regional Sediment Management in the Delaware Estuary

## Discussion/Questions

J. Bailey Smith

[j.b.smith@usace.army.mil](mailto:j.b.smith@usace.army.mil)

[www.nap.usace.army.mil/Missions/CivilWorks/RegionalSedimentManagement](http://www.nap.usace.army.mil/Missions/CivilWorks/RegionalSedimentManagement)

