RSM RCX: Project Implementation

Clay McCoy, PhD

Asst. Director, RSM Regional Center of Expertise

Jacksonville, FL

11 Oct 2017

Trusted Partners Delivering Value Today for a Better Tomorrow





US Army Corps of Engineers BUILDING STRONG®















NEW YORKER

ANNALS OF GEOLOGY MAY 29, 2017 ISSUE

THE WORLD IS RUNNING OUT OF SAND

It's one of our most widely used natural resources, but it's scarcer than you think.



By David Owen





PBSM



Miami Beach has run out of sand. Now what? For years the sea has been eating away at the shore, and the city has spent millions of dollars pumping up sand from the seafloor to replace it, only to have it wash away again.

THEVERGE.COM

The Economist explains Why there is a shortage of sand

It may be plentiful, but so is the demand for it





Machine Crushes Beer Bottles Into Sand to Save New Zealand Beaches - Geek.com

Drink beer, save the environment. That's the rallying cry of DB Breweries, a New Zealand-based company helping to combat the global sand shortage. The firm, as...



3

RSM-RCX: DRIVING POLICY



BUILDING STRONG

WIIN/WRDA 2016

- S. 1122 Beneficial Use of Dredged Material Pilot Program. Regional Beneficial Use Teams. Cost Sharing under Section 204 of WRDA 92.
 - Status: Waiting on Implementation Guidance from HQ.
- S. 1122(i) Changes language of CAP Section 204 to allow for repeated events, fed or non fed sources of sediment, and ability to accept NF funds to place dredged sediment
- S. 1188 Sense of Congress State WQC and disposal of dredged material, open-water disposal should be reduced to maximum extent practicable.
- S. 1189 Disposal of Dredged Material not the Federal Standard if it violates the State WQ standards approved by EPA.
- S. 1204 South Atlantic Coastal Study. Geographical boundaries of SAD, identifying risks and vulnerabilities of HSDR due to Sea Level Rise with focus on Regional Sediment Management.
 - Status: Authorized but not funded, see SCA.
- S. 1115 Reservoir Sediment. Pilot program to allow non-Federal entities to remove sediment behind Federal dams



DIRECTOR OF CIVIL WORKS 21 June MEMO



•Issued June 21st 2017 for MSCs and districts.

•Paragraph 6: "Incorporate Social and Environmental Benefits into Project Formulation, Design, and Implementation."

•RSM quantifies and qualifies benefits to multiple projects within a region.

•RSM-RCX is currently working on efforts to quantify environmental benefits of projects.

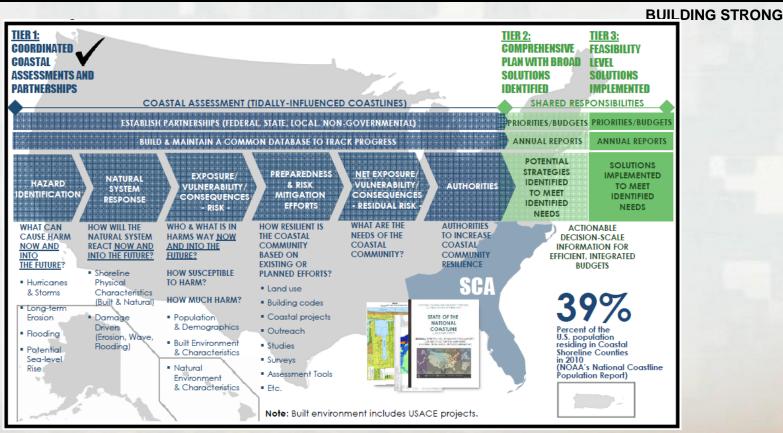
•RSM gives a broader picture of the lifecycle benefits to inform decision making.

		BUILDING STRONG
AL SECTION		
	DEPARTMENT OF THE U.S. ARMY CORPS OF ENG WASHINGTON, D.C. 2000	
	MASHINGTON, D.C.	ARMY
CECW-ZB	411 G STREET, NW WASHINGTON, D.C. 20014	1000
MEMORAL	I FOR MAJOR SUBORDINATE COMM er Advancing Project Delivery Efficienc	
SIGNANDUA	FORMAL	
Chelline Fun	SUBORDINA -	JUN 2 1 2012
Works Unit	I FOR MAJOR SUBORDINATE COMM er Advancing Project Delivery Efficienc 2017, this office will embark on thorities, policies	AND S
	a roject Delivery Free	AND DISTRICT
7. Beginning 1 L	2017, this office will embark on a comp thorities, policies, regulations, and proc cy and effectiveness by red project del making to the most practical and are computed to price the second second this here the second second second second this here the second se	Y and Effects
outcome of current a	2017, this off	inveness of USACC
organization identif	norities, policies will embark as	-HOE
authority for deflicie	ncy and interesting and comp	Drehenet
service organization	making to the sectiveness billing procession of the section of the	edures. The organizational
Managem time, and	2017, this office will embark on a comp thorities, policies, regulations, and proce opy and effectiveness by reduced project del making to the most practical and appro within budgited. To delivery delivery	ivery and increasing
Sualedies er accluba	oudget + reliably day approv	print and data
Part of the allow in	Solution and so we wering the	and level A ganna
these deal all levels in all	to accept has and uncertainties, and de set accept has and uncertainties, and de organization, and how contrained to the organization, and how contrained to the propriate level. The following five parage nuise all to advance. Inalize Risk-Informed Decision Machi- management acrose contrained to the contrained to the contrained to the contrained to the contrained to the contrained to the contrained to the	mplement projects and
O STORE	international and then I and the not	Project J
Our het	os all to advance following five	ine in de decision
Dersti	Dana.	GOUTIME
communities Communities	management	-spilling the key
project ensive Works w	malage Risk-Informed Decision Makin management across Civil Works and in hodels, prioritorites, and dialogue with spo II undertake the following staps to deve ency: cular entitled USACE Risk Con-	ICI INI
project delivery across the ag a. Publish an C-	g and and the following and in	our policies change
will establish come Engineer Cir	informed decis	lop a more
will articulate principles and principles risk and uncertainty to Civil Won b. Require functional areas a processes for key decisions; and	g and application of risk-informed with apo ency: cular entitled USACE Risk Framework. cular entitled USACE Risk Framework. that ensure the consideration and extivities and decisions; ad programs to develop risk in a	ion making and
uncertainty to Charle pra	ctices the standard framework	
b. Require t	is activities and comments	This document
ocesses for key de anal areas	thes and decisione	nicating risk
WECKION C	IG Dress	dontinger 4
s a key come all levels of the	to develop risk-inform	
pport these effect of project d	nization to	ecision make
Works, Civil Works	tices that ensure the consideration of the second operation of the second operation of the second operation and the second operation and the second operation of the second operation oper	aking
-ina W	undertake the cay business decis	in
	nd programs to develop risk-informed di hization to embrace risk-informed decis ery in our day-to-day business in Civil v Il undertake the following activities:	Vorke
	intes;	10
and the second design of the s		



Southeast Coastal Assessment





http://www.sad.usace.army.mil/SCA/ Project Managers: Jackie Keiser and Laurel Reichold

Southeast Coastal Assessment

Challenge:

The SAD AOR has a large and diverse coast that experiences frequent storms and is expected to see significant increases in population. Natural and fiscal resource constrains threaten the sustainability of the current program which is isolated to ocean facing shorelines.

2,500 MILES OF OCEAN COASTLINE 6,000 MILES TIDALLY INFLUENCED COASTLINE

217 Listed Species

2010 2011 2012 2013 2014 2015 2016 2020 2030 2040

Homes Below 6' MHHW by USACE Division & State of Florida

SAD Population Growth

suo 68

> 53 48

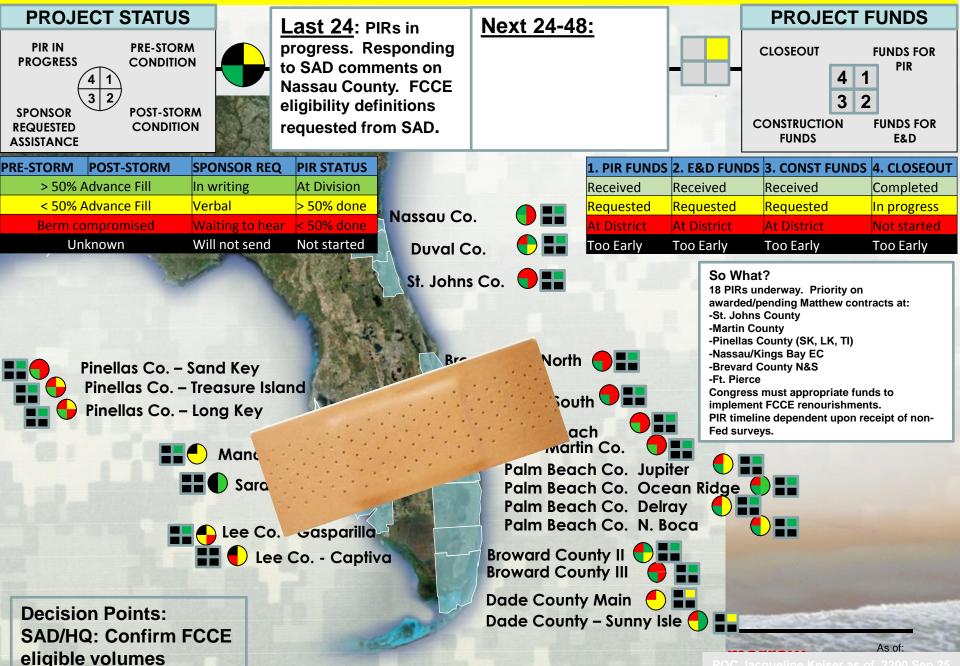
58

170,699 , 7% 31,739 , 1% 52,018 , 2% 105,777 , 4% 260 HURRICANES STRIKES (1851 - 2017)

> 260 South Atlantic Division (115 Florida) 68 North Atlantic Division 59 Southwest Division 57 Mississippi Valley Division

SAD 58% Florida 49% ^{245,293,99}

Status of SAJ Federal CSRM Projects – PL 84-99





USACE District Office

Post Irma

Downtown Jacksonville



BUILDING STRONG

DOES COASTAL RISK MANAGEMENT STOP AT THE OCEANFRONT?





Sediment Exchange Program (SedX)

Goal:

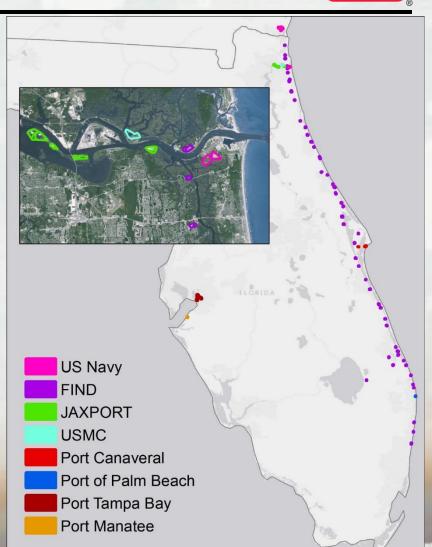
Promote beneficial re-use of dredged material placed in upland sites in the South Atlantic Division through collaboration and engagement with the dredging community.

Problem:

- Majority of dredged material is placed upland or offshore
- Management of upland placement facilities is expensive
- Lots of valuable material is wasted Sediment is a resource!







As of:

POC:





Who: Site owners/operators and end-users What: Develop inventory of upland placement sites

- Sediment characteristics, available volumes, points of contact, logistical considerations for offloading, best practices
- RSM Opportunities beach/dune placement, marsh restoration/enhancement, habitat creation
- Other BU Opportunities construction fill, commercial uses

Products:

- Public-facing website, GIS database
- Fact sheets





- Implementation and achievement of Integrated Water Resource Management
 - Cross business lines approach (Navigation, Flood Risk Management, Environmental)
- Benefits include:
 - tangible sustainability results for projects, people, and processes
 - saving millions of appropriated dollars
 - maintenance of low-use projects
 - Iocal & regional benefit at no cost to the federal government







What does maximum efficiency look like in the budget?

- Federal: FRM, NAV, Eco (Federal Standard)
- Non-Federal

What are Districts doing well? Where are opportunities?

Identify challenges (R&D, policy, environmental)

Maximize use of existing data/tools and provide for:

- Transparent and defendable value dashboard & tool
- Knowledge management









Consult with District Experts

Define all reasonable dredging/placement options and beneficial uses

- Determine total project costs: USACE labor, Contract Cost (mob/demob, dredge volume x per CY cost)
- Lifecycle benefits of placement for FRM projects
- Unquantified value: cost of developing/maintaining upland/offshore placement areas, wetland creation (environmental value)

Calculate total costs and value for identified placement options



SAD RSM Optimization: Results



BUILDING STRONG

Annual SAD Dredging

- > 100+ Dredging Projects, 35.5 MCY/yr
- Cost: \$220M(NAV)+\$30M(FRM)=\$250M
- Through RSM Efficiency/Value
 - Creating \$97M in Total Value
 - Increasing Federal project execution by: Total USACE: \$80M or 32% NAV ONLY: \$65M or 30% FRM ONLY: \$16M or 53% Non USACE (regional/local): >\$17M



Regional contracts can increase savings by \$25M/yr





Total Dredge Volume and Value of RSM Implemented SAD NAV-FRM Projects



BUILDING STRONG

District	*Total Dredge Volume (CY)	% Managed by RSM Strategies	Annual RSM Value (\$ M)
SAD Total	62,421,600	49%	\$97.3
Charleston	17,726,100	58%	\$38.9
Jacksonville	lle 10,027,000 53%		\$27.6
Mobile	Mobile 18,996,500		\$18.3
Savannah	6,572,000	4%	\$0.0
Wilmington	9,100,000	48%	\$12.5

*Total dredge volume calculated as the sum of all material dredged from NAV projects per dredge cycle.



Projects with \$2+ Million in Annual RSM Value



BUILDING STRONG

Project	<u>Material</u> <u>RSMed</u>	<u>Annual RSM</u> Value (\$ M)	<u>Primary</u> <u>Benefactor</u>	Pascagoula
Charleston Harbor	57%	\$37.6	NAV	River Pascagoula Precognalizative Beach
Mobile Harbor	51%	\$11.9	NAV	Singing River Pascagoula Island Upper Sound
Tampa Harbor	70%	\$4.5	Other	-Bayou Casotte
Pinellas Shallow Draft	100%	\$4.4	FRM	
St. Aug - St. Johns	100%	\$4.2	NAV	
Wilmington Harbor	29%	\$3.8	Other	-Pascagoula Lower Sound
Morehead City	42%	\$2.8	Other	
Fort Myers	100%	\$2.5	FRM-NAV	
Pascagoula Harbor	65%	\$2.5	NAV	Horn Island Pass
Kings Bay - Nassau Co	28%	\$2.4	NAV	Pert door list
Baker's Haulover-Miami				Nearshore-Littoral Placement Pascagoula Bar
Harbor	100%	\$2.2	FRM	Thin Layer Placement Wetland Creation 0 0.5 1 2 Miles



SAD Optimization: 2016 USACE Innovation of the Year

2016 USACE INNOVATION OF THE YEAR



BUILDING STRONG

- SAD Optimization Part II
- Optimization is about understanding and communicating value
- Next step is to go after unrealized potential- IMPLEMENT
- SAD Pilots established to take optimization to the next level
- SAD Focus Areas
 - TLP and In water placement
 - Nearshore feeder berms
 - Turbidity/Fate of fines
 - Mitigation Credit
 - Ecosystem Value
 - Industry Collaboration
- Show the value, get the \$





Next step is to go after unrealized potential

- SAD Pilots established to take optimization to the next level
 - Brevard Co SPP/Canaveral O&M
 - Jekyll AIWW
 - Folly River/Beach
 - Kings Bay-Fernandina
 - Brunswick Harbor
 - Regional Contracts
 - SAD Focus Areas -
 - TLP and In water placement
 - Nearshore feeder berms
 - Turbidity/Fate of fines
 - Mitigation Credit
 - Ecosystem Value
 - Industry Collaboration
 - Communication

Advancing policy and regulations to save Millions annually



NAD RSM Optimization



BUILDING STRONG

- Status: In progress
- > Areas of Interest:
 - Coupling NAV and ECO projects (NAB-Chesapeake Bay)
 - Lifecycle management costs and federal standard
 Offloading is expensive!

