

# SUPPORTING RESILIENT SHORELINES THROUGH RSM

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RSM Regional Center of Expertise  
USACE Jacksonville District

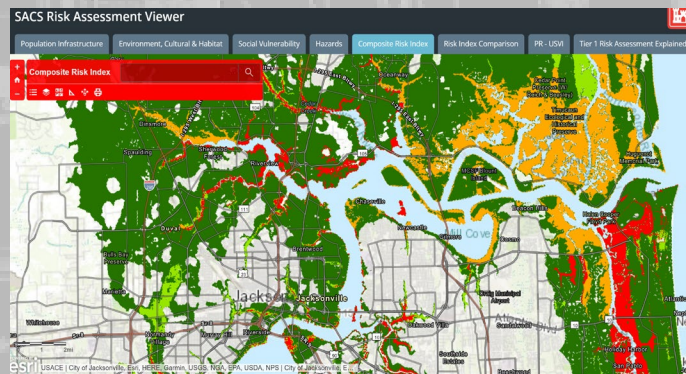
Florida Shore and Beach Preservation  
Association Annual Meeting

Date: 18 September 2019

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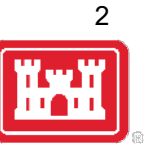


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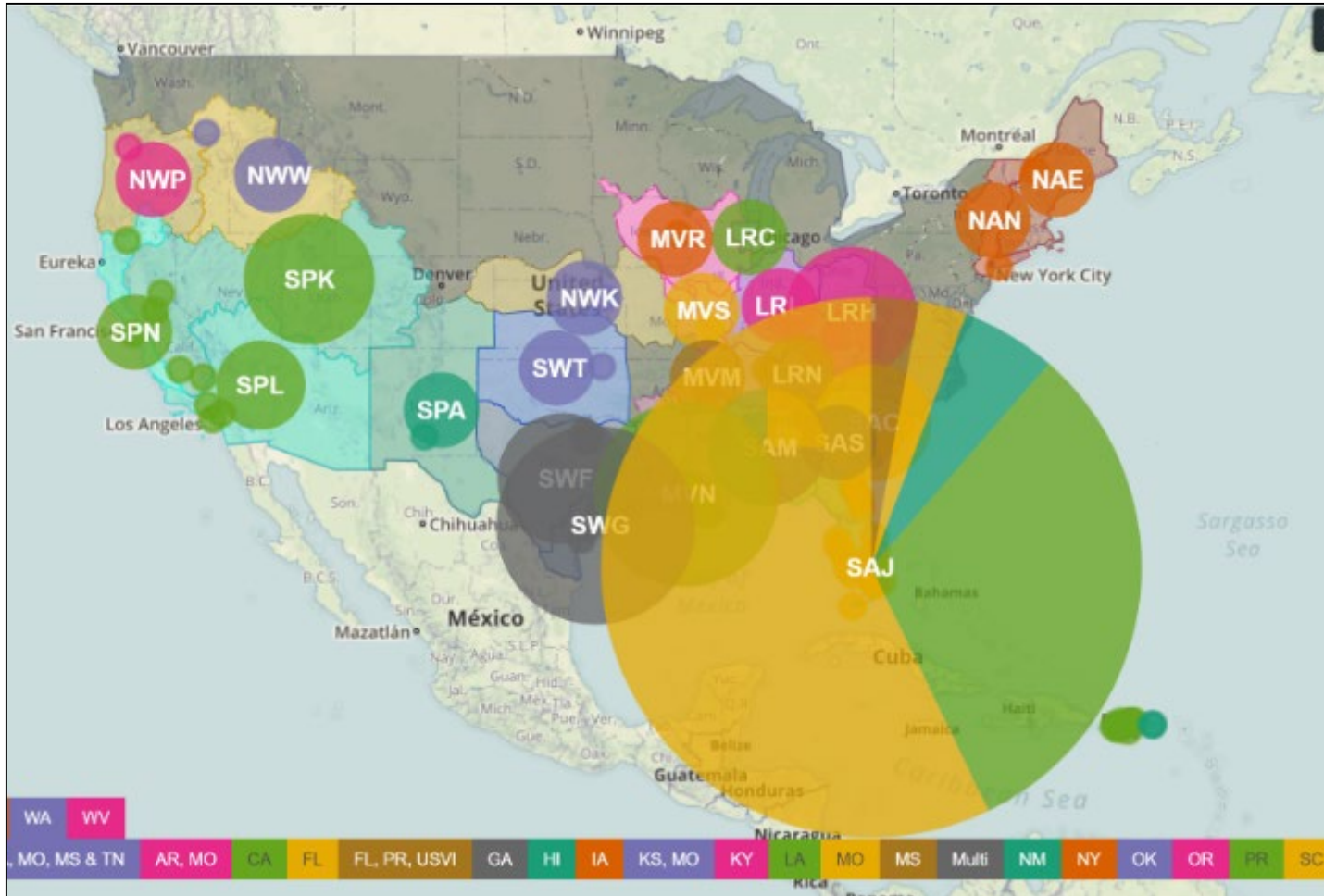




# FLASHBACK: CLEARWATER BEACH, FSBPA 2018



## USACE PL115-123 C & I SUPPLEMENTAL PROGRAM NUMBER APPROVED PROJECTS BY STATE



Jacksonville District has more projects than any other Division in USACE!

- 61 projects
- \$3,215,107,000 approved\*

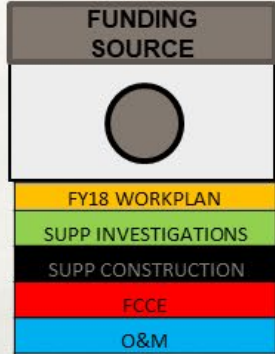
\*does not include brokered work

Investigations		FCCE		O&M		Construction, Florida		Construction, Puerto Rico		Construction (CAP)	
Study	\$	Project	\$	Project	\$	Project	\$	Project	\$	Project	\$
COLLIER COUNTY BEACH EROSION CONTROL*	\$3,000,000	BREVARD COUNTY, South Reach	\$9,020,000	ANCLOTE RIVER		BREVARD COUNTY	\$2,000,000	RIO DE LA PLATA	\$500,000,000	MT. SINAI MEDICAL CENTER (SEC 14)	\$4,594,000
DADE COUNTY	\$2,000,000	BROWARD COUNTY, Segment II	\$29,237,000	CANAVERAL HARBOR, FL		BROWARD COUNTY	\$2,000,000	RIO GRANDE DE ARECIBO	\$82,892,000	LOIZA, PR (SEC 14)	\$5,170,000
MIAMI BACK BAY*	\$3,000,000	BROWARD COUNTY, Segment III	\$66,838,000	CANAVERAL HARBOR, FL, Sand Bypass		DUVAL COUNTY	\$2,000,000	RIO GRANDE DE LOIZA	\$250,000,000	SALUD CREEK AT SAN GERMAN, PR (SEC 14)	\$2,066,000
MONROE COUNTY*	\$3,000,000	DUVAL COUNTY, FL	\$16,500,000	CENTRAL & SOUTHERN FLORIDA, FL		LEE COUNTY	\$2,000,000	RIO GUANAJIBO at MAYAGUEZ	\$60,000,000		
PINELLAS COUNTY	\$2,000,000	LEE COUNTY, FL, Gasparilla	\$7,171,000	CHANNEL FROM NAPLES TO BIG MARCO PASS		NASSAU COUNTY	\$2,000,000	RIO NIGUA at SALINAS	\$60,000,000		
FL Subtotal	\$13,000,000	PALM BEACH COUNTY, Jupiter	\$16,458,000	FORT MYERS BEACH		PALM BEACH COUNTY	\$2,000,000	RIO PUERTO NUEVO	\$1,552,453,000		
SOUTH ATLANTIC COASTAL STUDY, FL, PR & USVI	\$16,000,000	PALM BEACH COUNTY, Ocean Ridge	\$8,955,000	HORSESHOE COVE		SARASOTA COUNTY (VENICE)	\$2,000,000				
PUERTO RICO COASTAL	\$3,000,000	PALM BEACH COUNTY, Delray	\$8,285,000	IWW, JACKSONVILLE TO MIAMI		ST. JOHN'S COUNTY	\$2,000,000				
RIO CULEBRINAS*	\$400,000	PALM BEACH COUNTY, North Boca	\$13,815,000	MANATEE HARBOR, FL		DADE COUNTY	\$158,300,000				
RIO GRANDE de MANATI*	\$1,200,000	RIO PUERTO NUEVO	\$8,285,000	MIAMI HARBOR, FL		FLAGLER COUNTY	\$17,500,000				
RIO GUAYANILLA*	\$3,000,000			OKEECHOBEE		HERBERT HOOVER DIKE	\$514,208,000				
SAN JUAN METRO AREA	\$3,000,000			PALM BEACH HARBOR, FL		MANATEE COUNTY	\$14,300,000				
SAVAN GUT PHASE II, ST. THOMAS	\$400,000			PONCE DE LEON INLET		PALM BEACH COUNTY, MID-TOWN SEGMENT	\$25,000,000				
TURPENTINE RUN, ST. THOMAS	\$400,000			SUWANNEE RIVER		ST. LUCIE COUNTY, SOUTH SEGMENT	\$20,276,000				
				TAMPA HARBOR, FL		ST. JOHN'S COUNTY, VILLANO SEGMENT	\$36,834,000				
				FL Subtotal							
				ARECIBO HARBOR		<b>FL Construction</b>		<b>PR Construction</b>			
				MAYAQUEZ HARBOR		<b>\$802,418,000</b>		<b>\$2,135,345,000</b>			
<b>INV \$27,200,000</b>		<b>FCCE \$184,564,000</b>		<b>O&amp;M \$53,750,000</b>		<b>Total Long Term Construction \$2,937,763,000</b>					

- FL Coastal
- FL FRM
- FL NAV
- FL CAP
- PR Coastal
- PR/USVI FRM
- PR/USVI NAV
- PR/USVI CAP



# FY18/BBA UNPRECEDENTED COASTAL PROGRAM



- Total FCCE \$196,547,197
  - Construction FY18 Work plan \$41,837,000
  - O&M (Canaveral Sand bypass)\$18,000,000
  - Construction Supplemental \$288,210,000
  - Investigations \$38,000,000
- Total FL Coastal Program: \$582M**

Cost shared  
 \*Resiliency work is intended to programmatic, not necessarily \$2M per project  
 \*\* Not including RSM value created  
 \*\*\*Funding Estimate not approved





# RCX SUPPLEMENTAL FOCUS: SEDIMENT RESOURCES

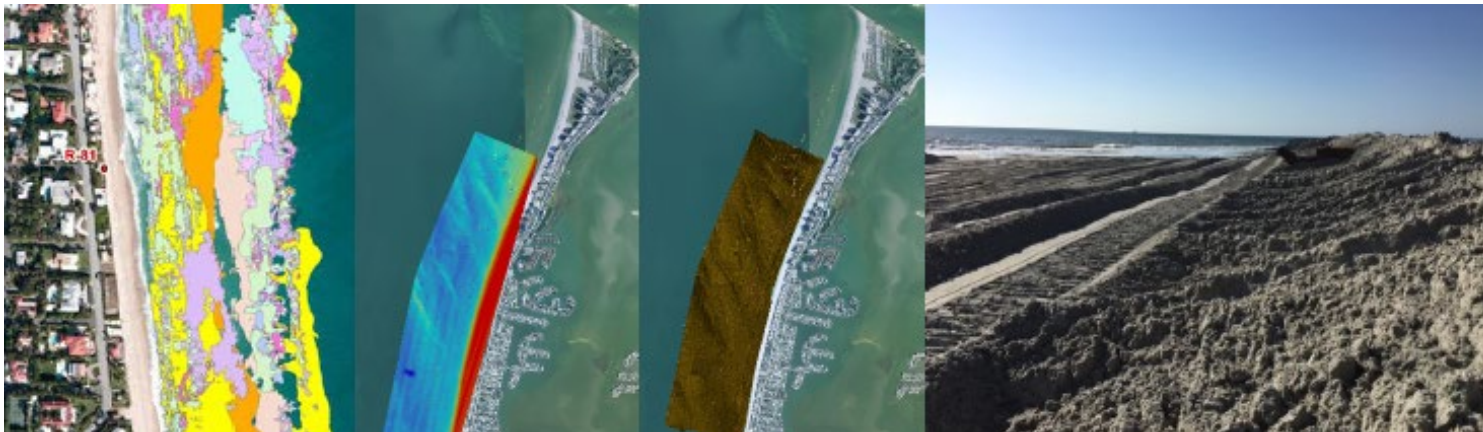
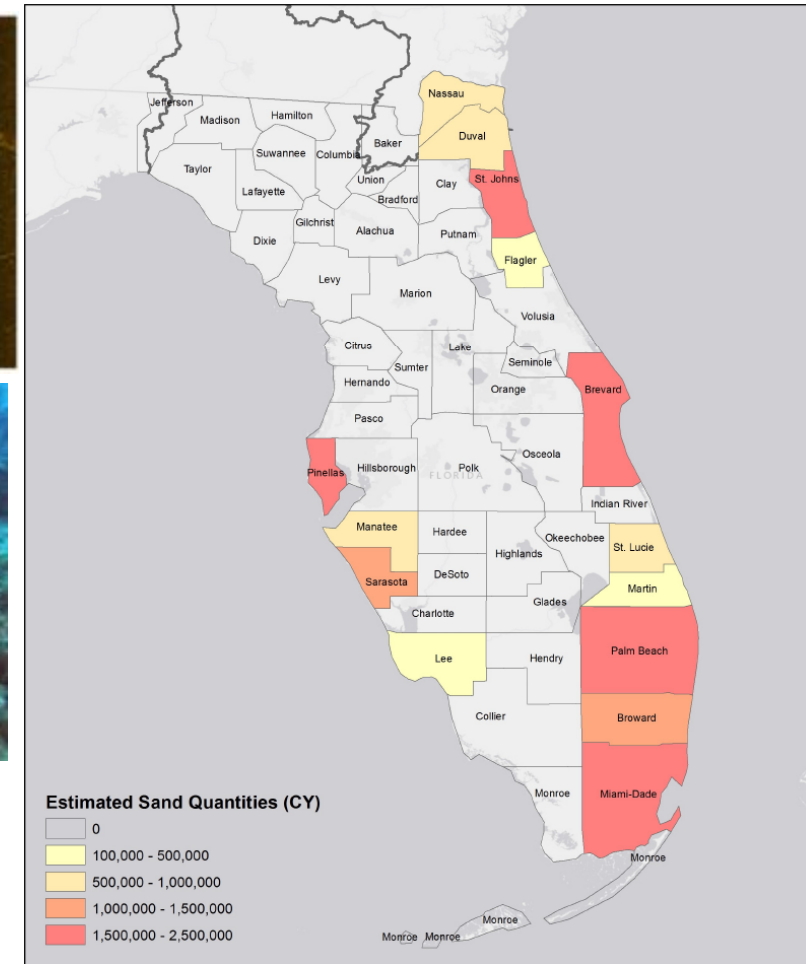
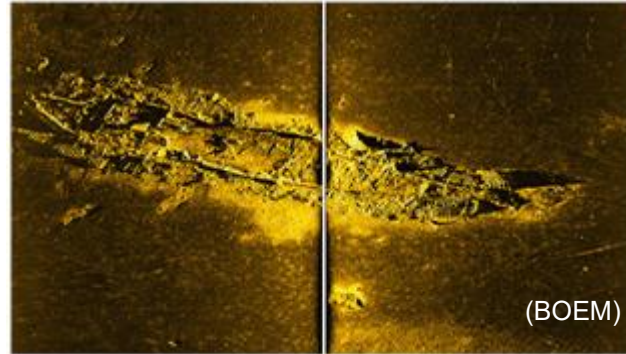


Q: How to maintain Florida beaches and support coastal resiliency?

- Scarce resource in high demand
- Regulations and constraints
- Multi-user resource management conflicts

A:

- Find more sand
- Be more efficient with identified resources
- Coordinated effort among stakeholders and management community to solve problems and develop agile policies and regulations



\*2018 - 2019 SAJ CSRM Sediment Requirements  
(\*Several 2018 contracts in place as of May 2018)



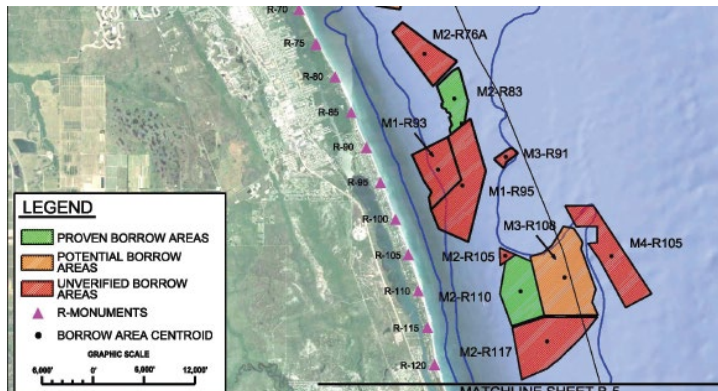
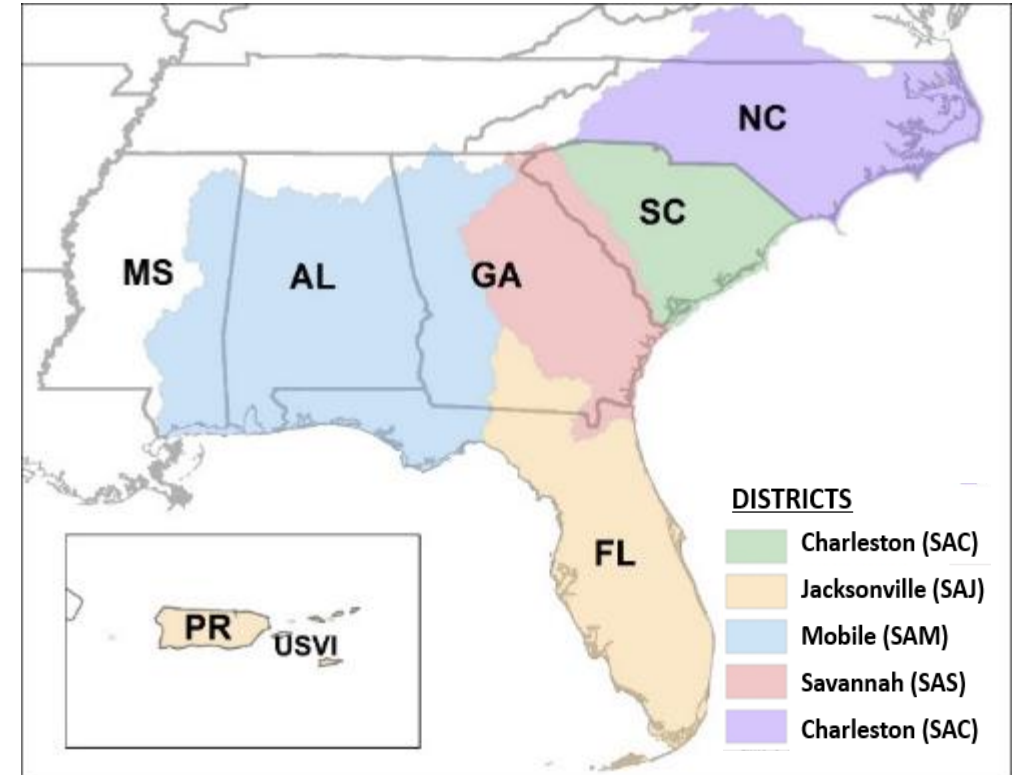


# SOUTH ATLANTIC COASTAL STUDY (SACS): SAND AVAILABILITY AND NEEDS DETERMINATION



THE STUDY WILL:

- Define regional resource needs
- Define areas of critical sand needs
- Inform borrow area search locations
- Inform long-term coastal resource management strategies local to federal
- **Support coordinated actions across the region by stakeholders and government to enhance coastal resilience**





# PROJECT INFORMATION



CONTRACT AWARDED TO: Taylor Engineering

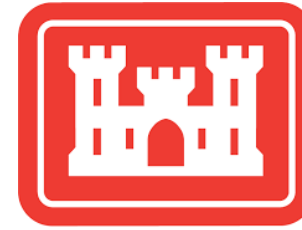
PERIOD OF PERFORMANCE: 14 June 19 to 16 Sep 20

## DESKTOP ANALYSIS:

- Identify **ALL (federal and non federal)** beach nourishment needs in SAD over the next 50 years
- Document **ALL (federal and non federal)** sources of beach sediment in SAD
  - Offshore borrow areas
  - RSM/Beneficial use sources
  - Dredged material management areas

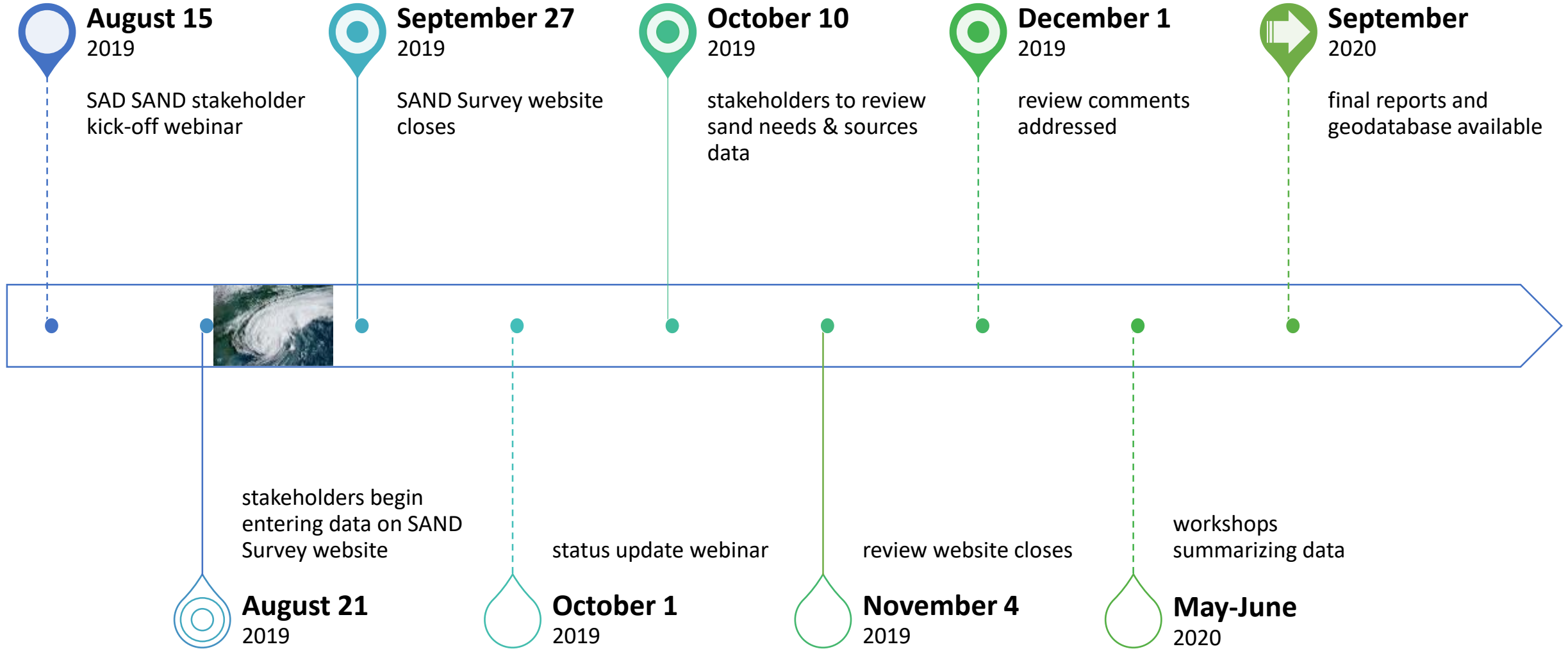
## PRODUCTS: AVAILABLE TO ALL

- Final Report
- Databases: Sand needs, sand resources, DMMA resources
- Regional workshops





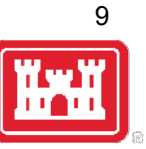
# SAND SCHEDULE







# WE WANT YOUR INPUT



- Stakeholder Kick-off on 15 Aug: 160 participants!
- Online SAND NEEDS and SOURCES databases
- Pre-populated with available data
- Requesting sponsors to input and review data

## CONTACTS: USACE (FL)

- Clay McCoy: Clay.A.Mccoy@usace.army.mil
- Barbara Nist: Barbara.U.Nist@usace.army.mil
- Mike FitzHarris (Mobile District):  
Michael.S.Fitzharris@usace.army.mil

## Taylor Engineering

- Ken Craig: KCraig@taylorengeering.com
- Angela Schedel: ASchedel@taylorengeering.com

USACE-SAD | Sand Availability and Sand Needs Evaluation

Welcome Clay McCoy! [Sign Out](#)

### Tutorials

Please watch the survey tutorial video and stakeholder webinar video shown below. These will help to answer questions and provide a guide for you while completing the sand survey.

#### Survey Tutorial

USACE-SAD | Sand Availability and Sand Needs Evaluation

Welcome John Messer! [Sign Out](#)

Please sign in:

you@example.com

Password

[Sign In](#)

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#### Stakeholder Kickoff Webinar

**SOUTH ATLANTIC COASTAL STUDY (SACS):  
SAND AVAILABILITY AND NEEDS DETERMINATION**

STAKEHOLDER KICK-OFF MEETING  
15 AUG 2019

Agenda:

1. Welcome/introductions
2. SAND Project Summary
3. Taylor Engineering Presentation
4. Q/A

• A recording of this webinar will be available afterwards  
 • Please ask questions via Q&A button below  
 • Use the chat to address webinar technical difficulties

Download a PDF of the powerpoint here:  
[Stakeholder Kickoff Presentation](#)

#### Stakeholder Kickoff Webinar Questions

View the question and answers from the stakeholder kickoff webinar here:  
[Kickoff Webinar Q&A.pdf](#)

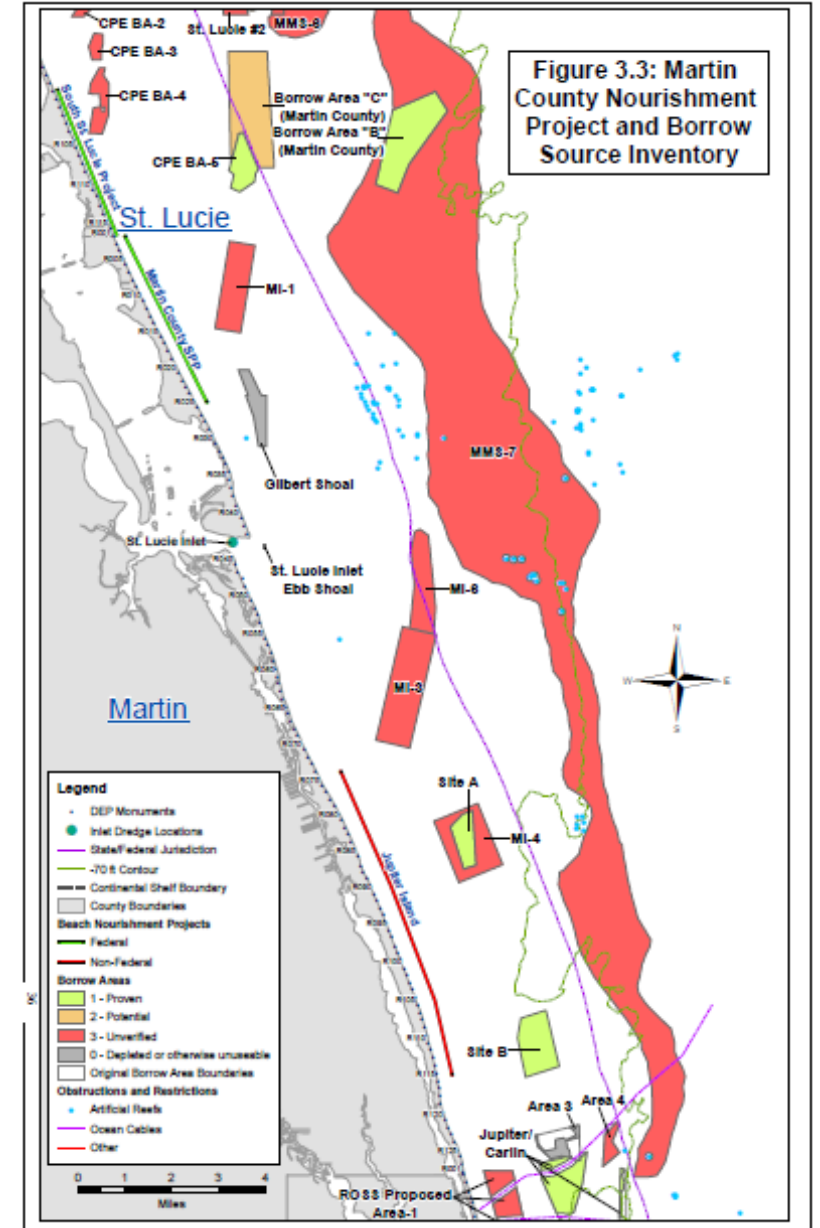


# JACKSONVILLE DISTRICT SAND SEARCH



## SAND DESKTOP ANALYSIS WILL INFORM \$1M SAND SEARCH IN JACKSONVILLE DISTRICT\*

- Geophysics – side scan, subbottom profiling
- Reconnaissance-level geotechnical borings



\*District funded sand search



# DREDGED MATERIAL MANAGEMENT AREAS



## PROBLEM:

- Roughly half of all SAD dredged material is placed upland or offshore
- Management of upland placement facilities is expensive
- Valuable material is wasted

## 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.

## BENEFITS:

- Save money
- Reduce upland disposal needs
- Enhance coastal resiliency
- Environmentally responsible thing to do
- Strengthen partnerships with sponsors and stakeholders





# REGIONAL RECON AND IN DEPTH APPROACHES



## REGIONAL DESKTOP ANALYSIS: SAND

GOAL: Promote beneficial re-use of DMMA material through development of a comprehensive database characterizing all DMMA's utilized by USACE in SAD and identifying uses and potential end users to support offloading

USACE DISTRICT	ESTIMATED NUMBER OF USACE DMMA's	ESTIMATED NUMBER OF PORTS	ESTIMATED NUMBER OF U.S. NAVY FACILITIES	TOTAL
WILMINGTON	314	3	--	317
CHARLESTON	97	3	1 (Beaufort)	101
SAVANNAH	68	5	1 (Kings Bay)	74
JACKSONVILLE	66 (FIND) + 31 (WCIND)	9	3 (Mayport, Panama City, Pensacola)	109
MOBILE	29	19	--	48
<b>TOTAL</b>	<b>605</b>	<b>39</b>	<b>5</b>	<b>649</b>

## IN-DEPTH LONG-TERM ANALYSIS: KINGS BAY

GOAL: Develop strategies to manage dredged material through 2080.

- Beneficial re-use, offloading, SLR adaptations, new DMMA's, new placement strategies???



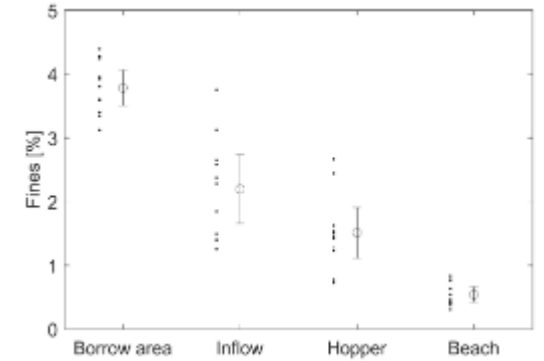


# FATE OF FINES PHASE 2



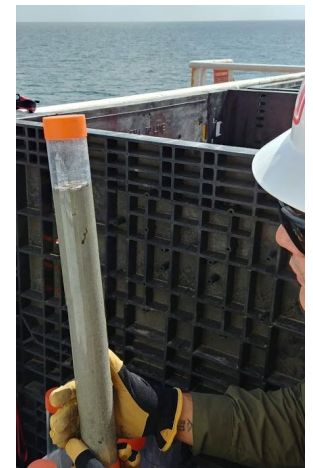
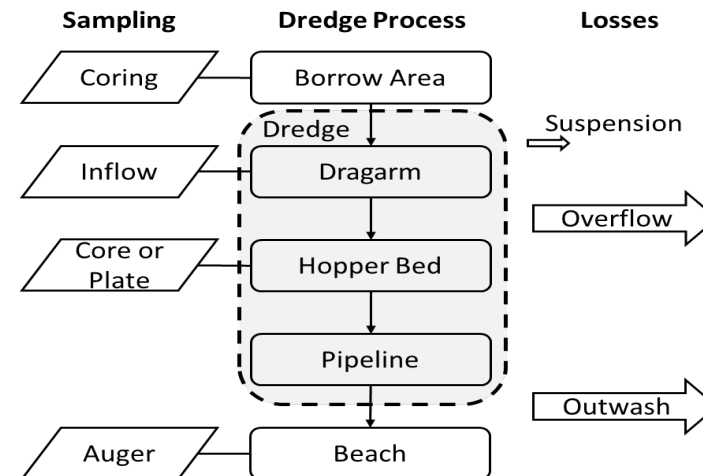
## PHASE 1: Completed Jan 2019

- Refined field and lab methodologies from Egmont Study
- Total fines loss: 87%
- Approximately 50% loss of fines at each stage



## PHASE 2:

- 2 year study
- Interagency Agreement signed: Aug 2019
- Coordination and project development with FDEP
- Goal to use borrow source with  $\geq 10\%$  fines in Florida (likely NE)





# BUILDING COASTAL RESILIENCE WITH MUD:

## JEKYLL CREEK AIWW (GA) BENEFICIAL USE PILOT PROJECTS





# THE JEKYLL PILOTS TEAM



## Primary Team:

USACE: Savannah District, Jacksonville District, RSM RCX  
 Georgia Dept. of Natural Resources Coastal Resources Division  
 Jekyll Island Authority  
 The Nature Conservancy  
 Atlantic Intracoastal Waterway Association



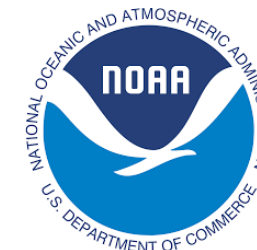
## Contracted Support Team:

Georgia Southern University (TLP Environmental Monitoring)  
 LG2 (Open Water Dispersal Monitoring)  
 Cottrell Contracting (Dredging Contractor)



## Additional Coordination:

National Oceanic and Atmospheric Administration  
 U.S. Fish and Wildlife Service  
 Environmental Protection Agency





# THIN LAYER PLACEMENT (TLP)



- Proactive approach to support coastal resilience by increasing marsh surface elevations in small lifts
- Navigation O&M RSM/Beneficial Use placement strategy, not USACE ecosystem restoration project
- 1<sup>st</sup> TLP project in Georgia
- 1<sup>st</sup> TLP project executed by USACE in South Atlantic Division







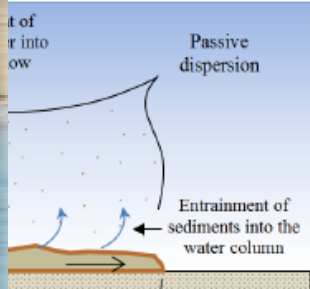
# OPEN WATER DISPERSAL



Monitoring & Control

Gear Winches (5) Hydraulic

Pipe w/ Offset Spreader End



(photo: CBS)

Underflow spreading



# THANK YOU!

