

# South Atlantic Coastal Study (SACS) Northeast Florida Focus Area Action Strategy

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Jacksonville District

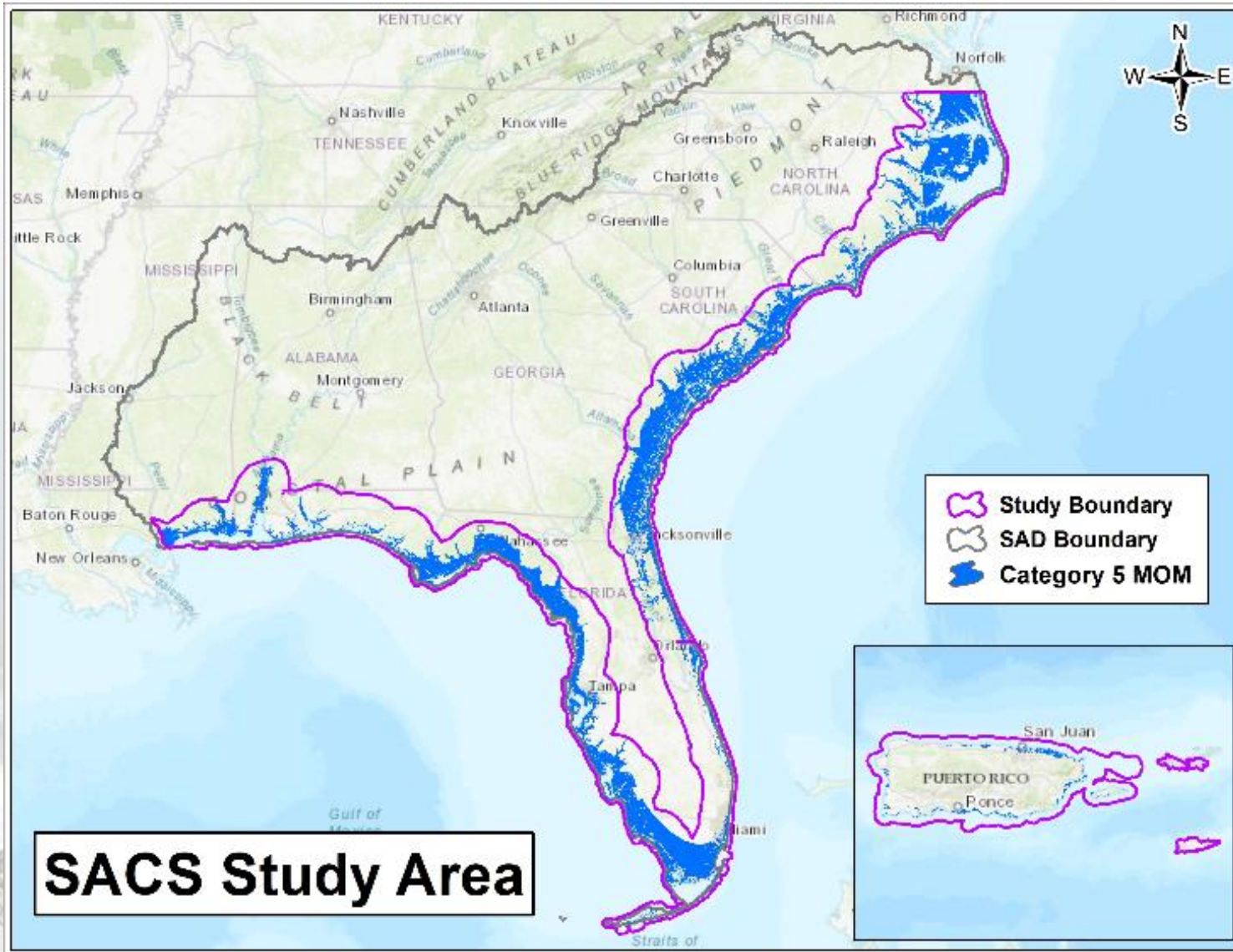
August 12, 2020



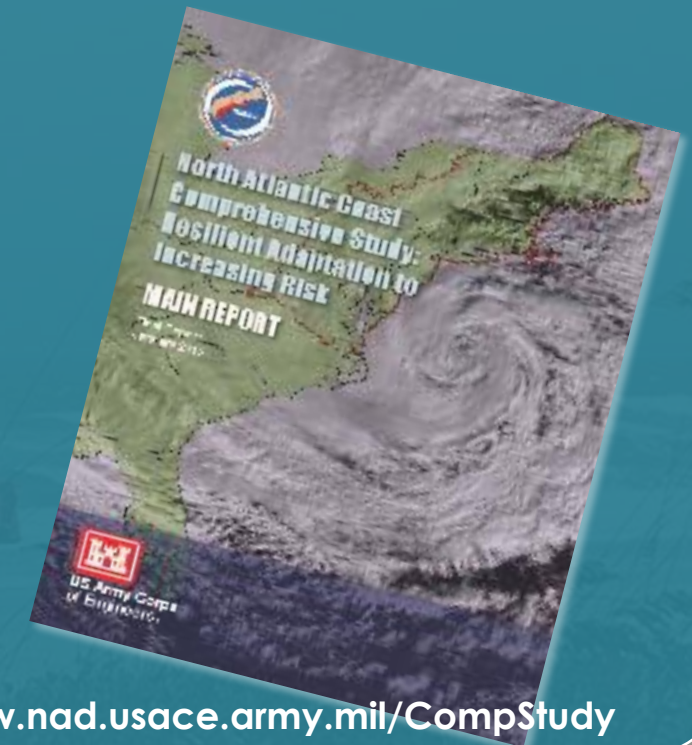
US Army Corps  
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– National Climate Assessment, 2018



[www.nad.usace.army.mil/CompStudy](http://www.nad.usace.army.mil/CompStudy)





# SACS Study Goals

Identify risks and vulnerabilities to increased hurricane and storm damage as a result of sea level rise.

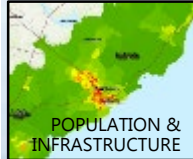
-Section 1204, WRDA 2016



- 1 Provide a Common Operating Picture of Coastal Risk**
  - Provide decision-makers at all levels with a comprehensive and consistent regional assessment of coastal risk.
- 2 Identify High-Risk Locations and Focus Current and Future Resources**
  - Enable resources to be focused on the most vulnerable areas.
- 3 Identify and Assess Risk Reduction Actions**
  - Assess actions that would reduce risk to vulnerable coastal populations
- 4 Promote and Support Resilient Coastal Communities**
  - Ensure a sustainable coastal landscape system, considering future sea level rise scenarios and climate change.
  - Provide information to stakeholders to optimize existing efforts to reduce risk.
- 5 Promote Sustainable Projects and Programs**
  - Develop and provide consistent foundational elements to support coastal studies and projects.
  - Regionally manage projects through Regional Sediment Management and other opportunities.
- 6 Leverage Supplemental Actions**
  - Multiple supplemental studies and construction efforts will inform, and be informed by, the SACS.

# SOUTH ATLANTIC COASTAL STUDY KEY PRODUCTS

## RISK ASSESSMENT



Assessment based on exposure of population and infrastructure, environmental and cultural resources, and social vulnerability to inundation hazards.

SACS TIER 1 RISK ASSESSMENT  
<https://sacs.maps.arcgis.com/apps/MapSeries/index.html?appid=c54beb5072a04632958f2373eb1151cf>

## REGIONAL SEDIMENT MANAGEMENT (RSM) OPTIMIZATION



OPTIMIZATION PILOT:  
2016 USACE INNOVATION OF THE YEAR

Identifies and quantifies total contribution of RSM principles to projects in the SACS study area that support long-term coastal resiliency.

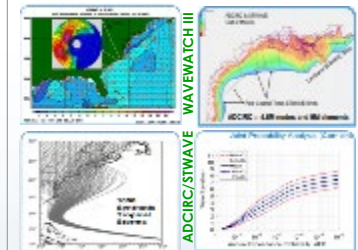
## SAND AVAILABILITY & NEEDS DETERMINATION (SAND)

Determines the need and availability of sediment to maintain beaches for the next 50 years.



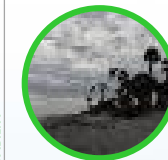
## COASTAL HAZARDS SYSTEM (CHS)

Provides current and projected water elevation data for the study area.



## GEOPORTAL

Provides the public access to study datasets, products, and documentation.



HABITAT AND ENVIRONMENT DATASETS

POPULATION INFRASTRUCTURE DATASETS

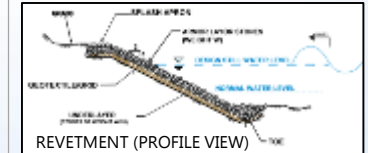
HAZARD DATASETS

FOCUS AREA DATA  
DERIVED PRODUCTS



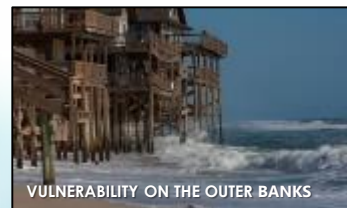
## MEASURES & COSTS LIBRARY

Detailed list of Coastal Storm Risk Management (CSRM) measures and their costs developed to a screening level for use in USACE and stakeholder planning.



## COASTAL PROGRAM GUIDE

Outreach and information package to help communities better leverage needed resources on a disaster-wide, statewide, or community-wide basis.



## STATE & TERRITORY APPENDICES

Specific information for each state and territory will be provided in stand-alone appendices to the main report.



APPENDICES:  
North Carolina  
South Carolina  
Georgia  
Florida  
Alabama  
Mississippi  
Puerto Rico  
U.S. Virgin Islands

## PRIORITY ENVIRONMENTAL AREA IDENTIFICATION

Priority environmental areas will be identified using Tier 1 data, the USFWS Planning Aid Report, and stakeholder tools. Resiliency to coastal storms and sea level rise will be evaluated and measures to increase resiliency will be recommended.



## PLANNING AID REPORT (U.S. FISH AND WILDLIFE SERVICE [USFWS])

Report of priority biological resource habitats in the South Atlantic region that are vulnerable to harm from coastal storms and sea level rise with a focus on areas used by federally listed species. Report will also include a description of risk to coastal national wildlife refuges.



## INSTITUTIONAL & OTHER BARRIERS REPORT

Document identifies institutional and other barriers to providing comprehensive protection for affected coastal areas. The report will include information on the performance of existing federal CSRM projects and recommendations for improvement.



FLORIDA BEACH AFTER 1962 NOR'EASTER - WITHOUT FEDERAL CSRM PROJECT



FLORIDA FEDERAL CSRM PROJECT POST-TROPICAL STORM FAY, 2008

## FOCUS AREA ACTION STRATEGIES

Focus area action strategies (FAAS) will use SACS products in combination with other resources to develop actionable risk reduction strategies with stakeholders. FAAS will serve as examples for how vulnerabilities in other high risk locations can be addressed.



SOUTH ATLANTIC REGION HURRICANES

FOR MORE INFORMATION, VISIT THE SACS WEBSITE: <https://www.sad.usace.army.mil/SACS/>

U.S. ARMY CORPS OF ENGINEERS | SOUTH ATLANTIC DIVISION



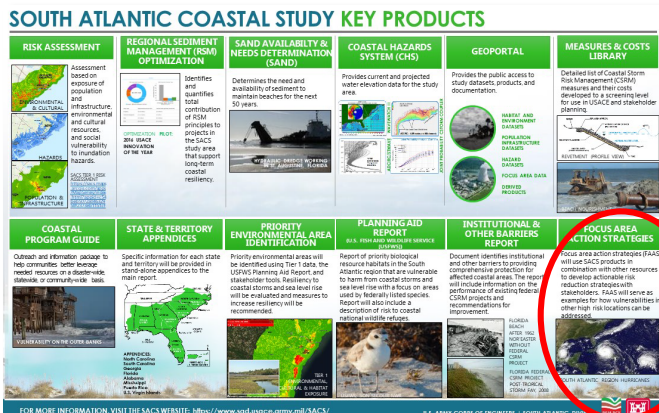
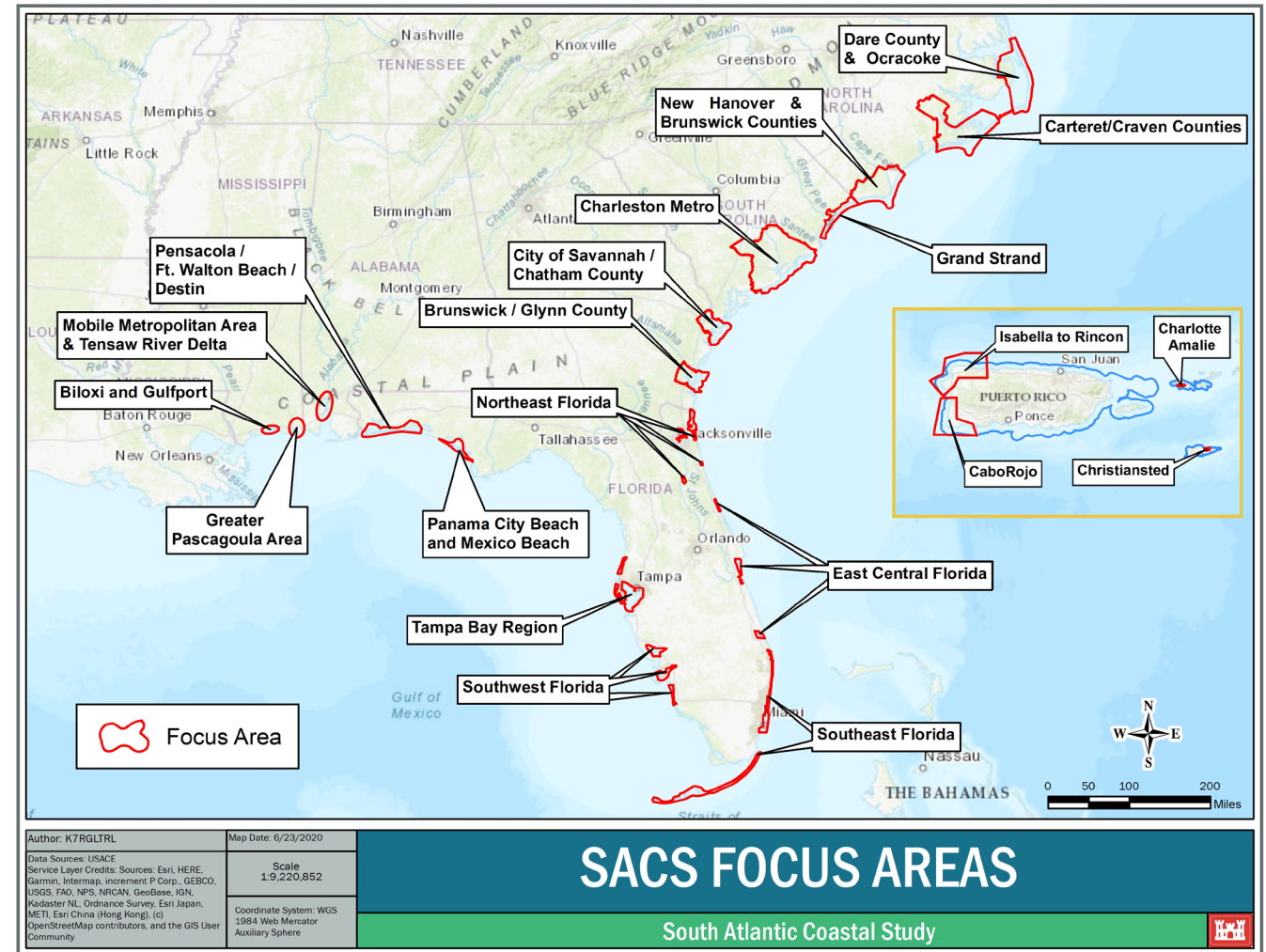




# SACS FOCUS AREAS



- Geographic area(s) highly vulnerable to storm damages as a result of SLR that warrants additional analysis in the State/Territory Appendix
- At least one per state/territory
- 21 Total
- 7 in Florida
  - 5 in Jacksonville District
  - 2 in Mobile District



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# FOCUS AREA ACTION STRATEGY GOALS

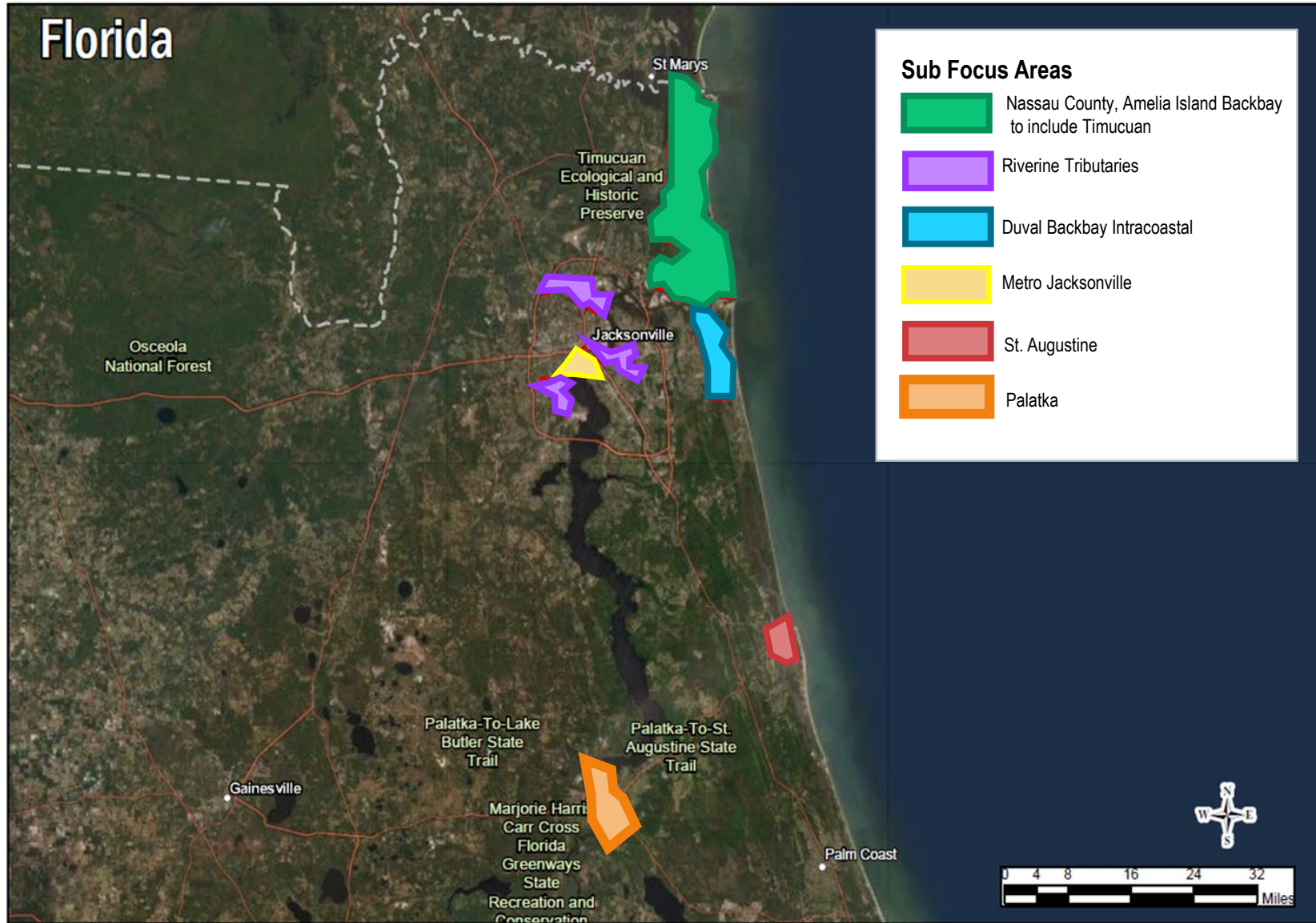


Overall goals will vary depending on site specific issues and current ongoing efforts outside of SACS:

- Improved understanding of coastal storm risk as a result of sea level rise
- More resolution on key drivers of risk
- Evaluation of stakeholder near-, mid-, and long-term objectives
- Documenting institutional and other barriers
- Goal may be to close gaps in an already developed strategy
- Documenting actions and responsible party to incrementally contribute to shared vision
- Build understanding of stakeholder current efforts and determine what else is needed
- Recommended actions to build on completed and current work



# NORTHEAST FLORIDA FOCUS AREA







# FOCUS AREA SELECTION PROCESS



- **Tier 1 Composite Risk**
- **Tier 1 Composite Risk where potential risk may substantially increase with sea level rise**
- **Stakeholder input on draft focus areas**
- **Potential for existing stakeholder groups and/or political boundaries (e.g. counties) to support planning and implementation of risk reduction measures**
- **Support consistent with SACS guidance**
- **Diversity among focus areas across the entire study area**
- **Potential for USACE and stakeholder actions to address problems**
- **Additional considerations included: national "significance" (cultural/historic/environmental)**

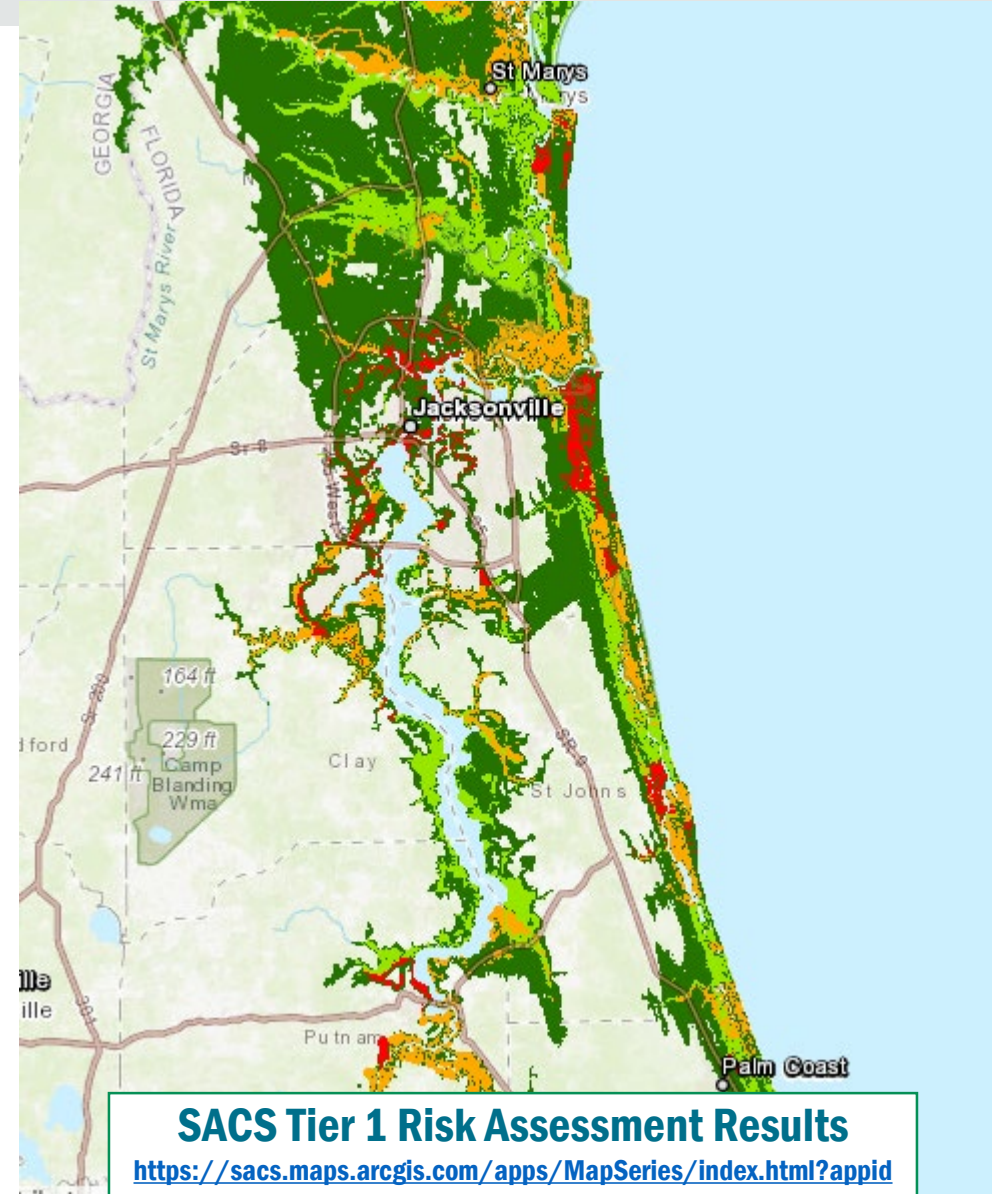




# FOCUS AREA SELECTION PROCESS



**SACS Sub Focus Areas**



**SACS Tier 1 Risk Assessment Results**

<https://sacs.maps.arcgis.com/apps/MapSeries/index.html?appid=c54beb5072a04632958f2373eb1151cf>



# OVERALL FOCUS AREA WORKSHOP SCHEDULE



**Each Focus Area will hold three webinars:**

**Jul**

## **1. Kick-Off (90 mins)**

- **Focus Area Details**
- **Shared Vision Statement for Focus Area**
- **Preparation for Strategy Development Workshop**

**Aug/Sept**

## **2. Strategy Development Workshop (3-4 hours)**

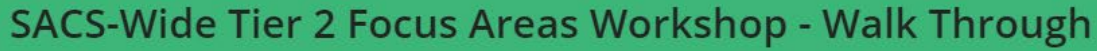
- **Step through Framework**
  - **Overview Feedback**
  - **Technical Discussions**
- **Develop Focus Area Action Strategies (FAAS)**

**Sept/Oct**

## **3. Wrap-up (1 hour)**

- **Overview Overall Strategy**
- **Gather Input before Finalization**





## SACS Tier-II Economic Risk Assessment

 Focus Area Work Shop Prep - August 2020



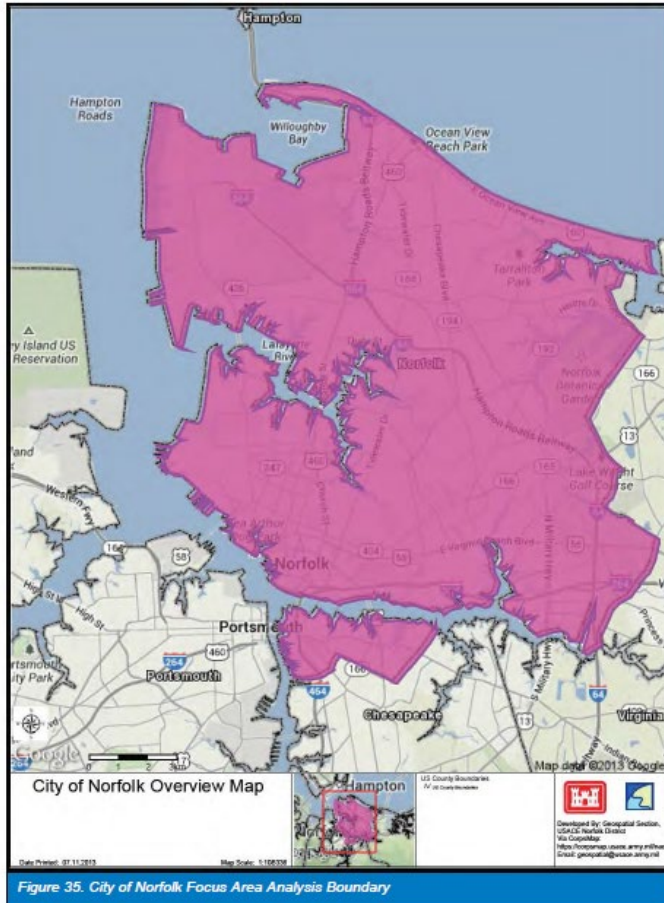




# FOCUS AREA ACTION STRATEGY EXAMPLE



North Atlantic Coast Comprehensive Study (NACCS)  
United States Army Corps of Engineers



A number of causes contribute to the flooding experienced by the City of Norfolk. The city is surrounded by water on three sides, the Chesapeake Bay to the north, and the Elizabeth River to the West and

92 - D-10: Commonwealth of Virginia



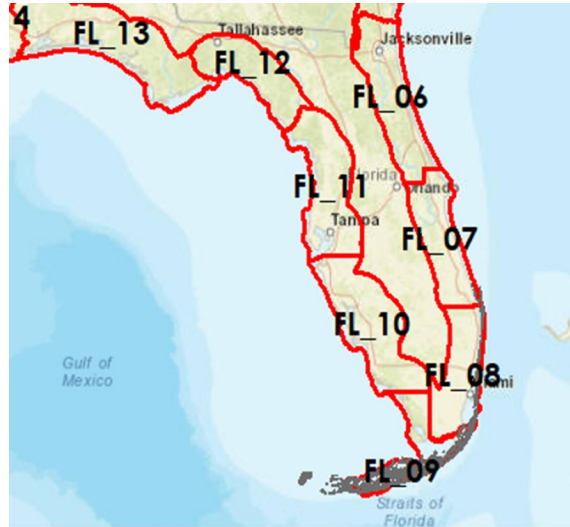
North Atlantic Coast Comprehensive Study (NACCS)  
United States Army Corps of Engineers

Table 14. Measures for Additional Analysis

Area	Structural Measures							Non-Structural Measures			Comments
	Beach Replenishment	Berm, Levee	Floodwall, Bulkhead	Flood or Tide Gate	Road Raise	Shoreline Protection	Stormwater Improvements	Bayou/Relocation	House Raising	Restore Natural Storage	
Area 1	X	X	X	X	X		X	X	X		
Bay Shoreline	X										
Pretty Lake			X	X	X		X	X	X		
Mason Creek			X	X			X	X	X		Improve existing tide gate.
Lake Whitehurst		X	X		X						Protect freshwater in lake from outside flooding sources.
Area 2			X	X	X	X	X	X	X	X	
Watershed Protection			X	X	X		X	X	X	X	
Localized Neighborhoods			X			X	X	X	X	X	
Lamberts Point						X					Erosion protection from storm surge events.
Area 3		X	X	X	X		X	X	X		
West Ghent		X	X				X	X	X		
Fort Norfolk			X				X				
The Hague (Ghent)			X	X	X		X				
Freemason			X				X				
Downtown Norfolk			X				X				Increase level of protection existing Floodwall.
Area 4			X	X	X		X	X	X	X	
Tidewater Dr.			X	X	X		X	X	X	X	
Ohio Creek			X	X	X		X	X	X	X	
Broad Creek			X	X	X		X	X	X	X	
Berkley and Camptostella			X		X		X	X	X	X	



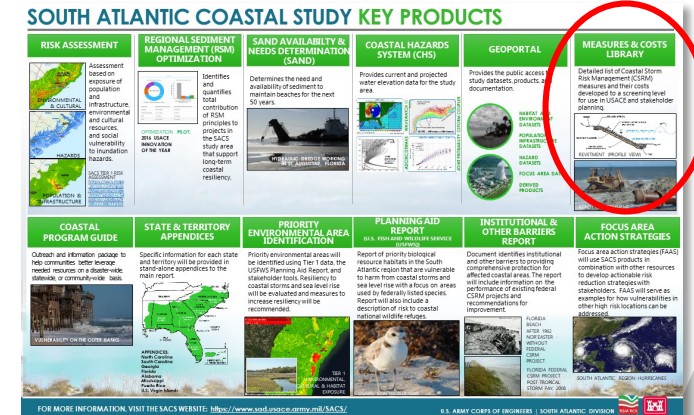
# MEASURES & COST LIBRARY



- Detailed list of structural, non-structural, and natural and nature-based coastal storm risk management measures per SACS planning reach.
- Costs developed to a screening level for use in planning efforts.

Measure Code	S-4	Description
Measure Name	Bulkhead	
Measure Category	Structural	
Unit	Cost/LF	
Unit Cost Reference Array	S_4	
Technician Accountable		
		Bulkheads are vertical shoreline stabilization structures that primarily retain or prevent sliding of the land. A secondary purpose is to protect the upland against erosion due to low- to moderate waves. Types of bulkheads consist primarily of anchored and cantilevered walls commonly built of vinyl, concrete, steel, aluminum or timber.

Compute ROM Cost Ranges for S-4			
S-4: ROM Cost Range Computation: 1) Using the MCL Tool, select the planning reach of interest from the drop down list. 2) Enter the LF of bulkhead. The total cost range provides the estimated cost in constant dollar terms. The annualized cost ranges provide the cost in annualized terms and can be compared to HAZUS-MH dollar damage risk computations.	Select Planning Reach:		FL_06
	Enter the bulkhead length in LF:		100
	Total S-4 Cost	Low	\$1,687,011
	Range	High	\$2,370,632
	Annualized S-4	Low	\$62,488
	Cost Range	High	\$87,810





# FOCUS AREA ACTION STRATEGY EXAMPLE CONT.



Focus Area B								
Reach: AB_01 - Risky Town								
Sub-area: back bay								
Measure/Action		Measure/Action Status (implemented/planned/needed)	Location	Description	Responsible Stakeholder	Summary of Specific Actions Needed to Implement	Timeframe (short, mid, long-term)	Priority (1 = high, 2 = medium, 3 = low)
NS-1	Buyout_Acquisition	needed	back bay A Beach	Coordination of non-structural measures	Property owners, city, federal agencies	see description in Section 1	long	3
NS-Y	Outreach	planned	back bay	Public outreach	City, planning council, marinas	baseline survey, id priority topics	short	1
NS-Z	Analysis: SLR scenario impacts	needed	back bay	SLR vulnerability analysis	City, county	Agreement on SLR scenario(s).	short	1
S-4	Bulkhead	planned	Numerous private properties	Adoption of consistent bulkhead height	Property owners, respective cities, counties, USACE (regulatory)	threshold analysis to determine height range	mid	2
NNBF-3	Wetland	needed	City marinas	Thin layer placement to increase marsh elevation.	City, planning council, marinas, USACE	determine sediment sources, suitability, and target elevation	mid, long	2

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# FOCUS AREA ACTION STRATEGY EXAMPLE RECOMMENDATIONS



## Recommendations could include:

- Initiation of site-specific feasibility studies where there is potential federal interest
  - Look at possible mitigation measures for identified flood pathways (creeks, roads, etc.)
  - Utilize the Coastal Hazard System data to refine coastal risk
  - Use the Measures and Cost Library in order to identify planning level costs for various measures in an area
- Policy changes (new or revisions to existing)
  - Use HAZUS to create stage-damage curves to identify critical design elevations
- Identification of:
  - design efforts that might be warranted
  - activities under Flood Plain Management Service (FPMS), Planning Assistance to States (PAS) or Continuing Authorities Program (CAP)



# THANK YOU

**JACKSONVILLE DISTRICT PROJECT MANAGER**

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**ADDITIONAL INFORMATION**

**<https://www.sad.usace.army.mil/SACS/>**

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