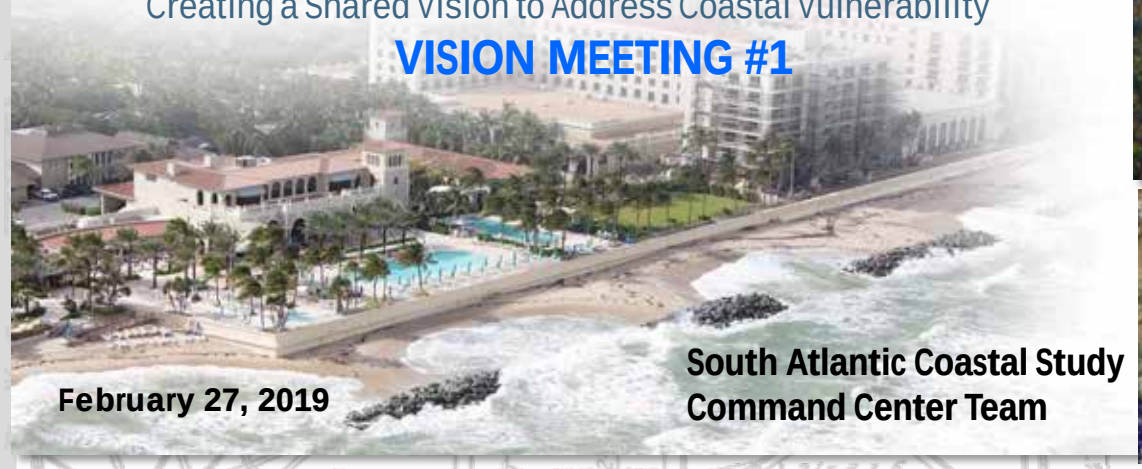
The South Atlantic Coastal Study:

Creating a Shared Vision to Address Coastal Vulnerability

VISION MEETING #1



February 27, 2019

South Atlantic Coastal Study
Command Center Team

RSM RCX

US Army Corps of Engineers ®

U.S.ARMY

SOUTH ATLANTIC COASTAL STUDY

Stakeholder representation – Where are you from and what stakeholder group do you represent?

Place an “x” on the group you represent.

Citizen	Federal Agency	Tribal Nation
Local Agency	County Agency	State Agency
NGO	Industry	Academia
International		other

As of: 16 Feb 2016
POC: Jackie Keiser

SACS VISION MEETING #1: AGENDA

- Meeting Purpose
- Background & Study Area
- Overview of Study Scope
- Study Outputs and Timelines
- Next Steps

For Coastal Resilience and Sustainability

VULNERABILITY ON THE OUTER BANKS

SAVANNAH FLOODING

CHARLESTON FLOODING

FLORIDA PANHANDLE

SOUTH ATLANTIC COASTAL STUDY

Law, Guidance & Funding

Section 1204, WRDA'16

- **(a)** Identify risks and vulnerabilities of [coastal areas within SAD AOR] to increased hurricane and storm damage as a result of sea level rise (SLR).
- **(b)(1)** Conduct a comprehensive analysis of current CSRM measures with an emphasis on RSM practices to sustain/enhance current storm protection.
- **(b)(3)** Recommend measures to address coastal vulnerability of areas affected by SLR.
- **(b)(4)** Develop a long-term strategy to address increased hurricane/storm damages resulting from SLR and identify opportunities to enhance resiliency and lower risks
- **(c)** Submit a report recommending specific and detailed actions.

Guidance – Nov. 16, 2017

- Follow planning guidance applicable to watershed assessments.
- Integrated NEPA as appropriate (SACS will not include NEPA).

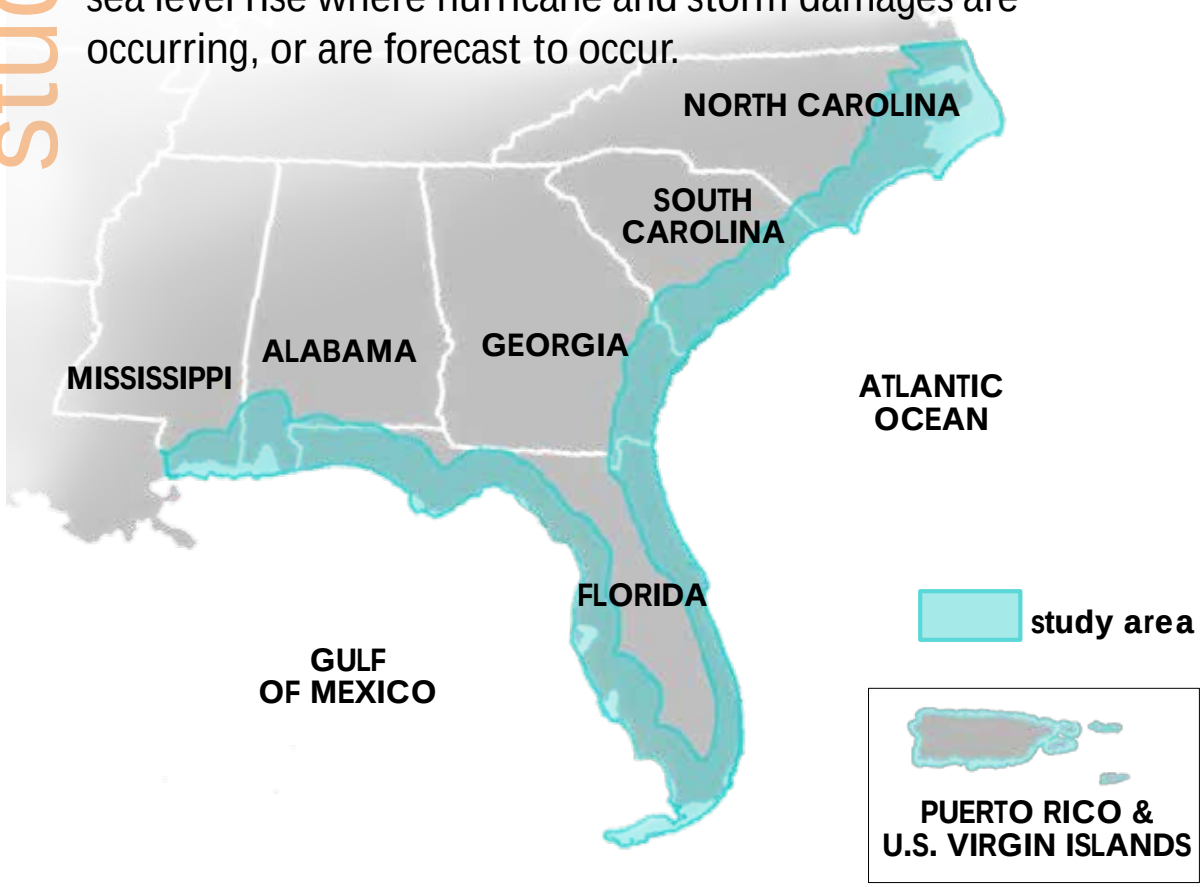
P.L 115-123

- 100% Federal funding in the amount of $16M

SOUTH ATLANTIC COASTAL STUDY (SACS)

study area

Over 65,000 miles of tidally influenced coastline affected by sea level rise where hurricane and storm damages are occurring, or are forecast to occur.



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POC: Jackie Keiser

SOUTH ATLANTIC COASTAL STUDY (SACS)

STUDY GOALS:

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.

SOUTH ATLANTIC COASTAL STUDY (SACS)

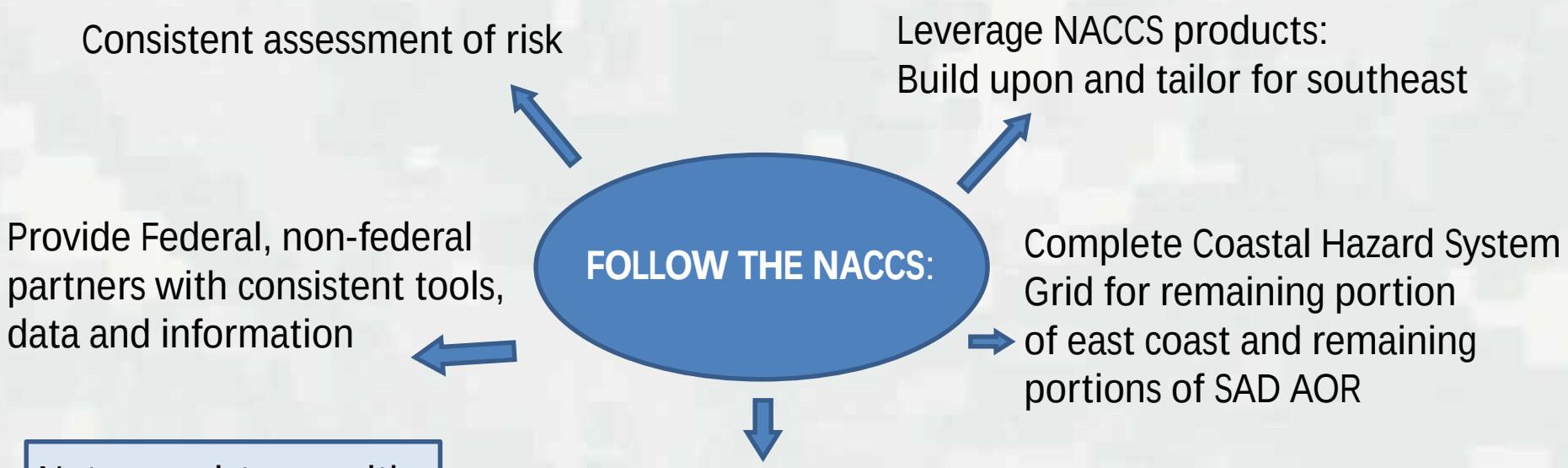
STUDY GOALS:

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.

SACS TECHNICAL APPROACH



Note: consistency with regional datasets from Coastal Texas and MSCIP benefit

Benefit from Lessons Learned:

- User friendly products
- Searchable web platforms
- Emphasize actionable outcomes for/by all

FRAMEWORK/MAIN REPORT
(Tier 1 Analysis)

STATE APPENDICES
(Tier 2, Focus Areas)

TECHNICAL REPORTS & DATA

SACS EXECUTION TEAM

Oversight/Organization

- Senior Advisory Committee – Facilitate Washington level coordination
- Executive Committee – Overall guidance, approval, vertical coordination
- Command Center Team/Regional Sediment Management Center of Expertise - Study Execution

Project Delivery Team

- USACE South Atlantic Division
- FIVE Corps district teams
- Internal/External SMEs
- State & Federal Agency Partners
- NGOs
- Contractors
- Stakeholders
- Consultants

SACS EXECUTION TEAM

COMMAND CENTER TEAM

§ Jackie Keiser/SAJ	Program Manager
§ Pam Castens/SAW	Regional PM
§ Matt Schrader/SAJ	Plan Formulation
§ Kelly Legault/SAJ	Engineering Lead
§ Clay McCoy/SAJ	RSM
§ Idris Dobbs/SAJ	Economics
§ Kristina May/NAB	Environmental
§ Monica Simon-Dodd/SAS	Outreach
§ Trevor Lancaster/SAW	Geospatial

SACS MAJOR PRODUCTS

- Framework for stakeholders to assess and manage coastal risk
- State/Territory Appendices
- Coastal Hazards System (CHS)
- Focus Area Damage Estimation (FADE)
- Sand Availability and Needs Determination (SAND)
- Regional Sediment Management (RSM) Optimization
- GIS geodatabase

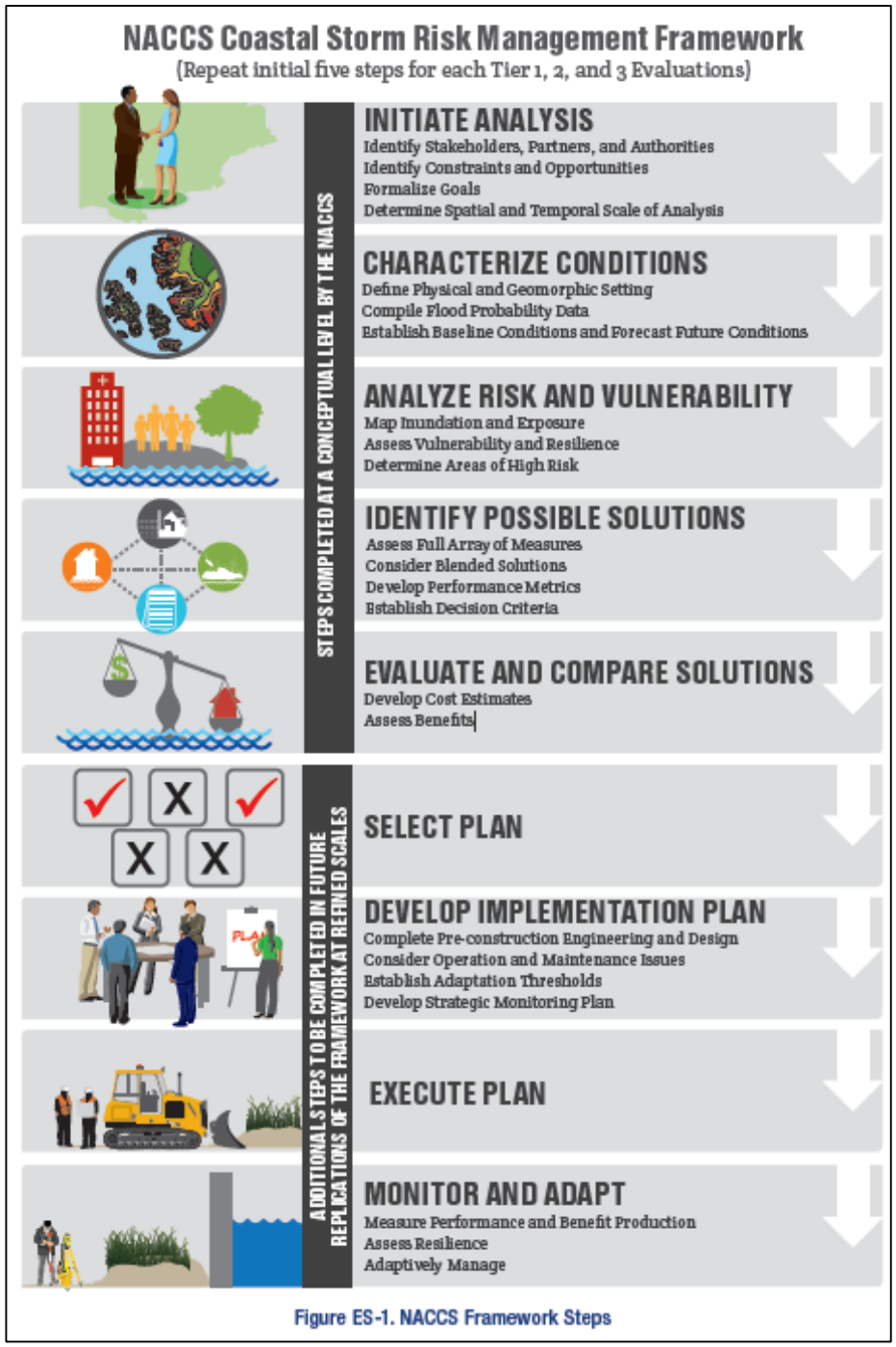


Figure ES-1. NACCS Framework Steps

SACS Framework

SACS

- Consistent with the NACCS
- Based on the NOAA/USACE Infrastructure Systems Rebuilding Principles
- Process to address coastal risk to vulnerable populations and resources
- Customizable to multiple scales

Post-SACS*

*However, multiple SACS products will inform current/planned USACE and stakeholder actions to assess and address risk.

Shared Vision Milestone (August 2019)

Purpose: define the overall shared vision for the study and to present the associated activities and stakeholder roles supporting the vision.

Key Activities to Support the Milestone:

- Assemble a team that includes participation with **partners and stakeholders**.
- Define the study area with **partners and stakeholders** to capture impacts and influences of **broadly identified problems and opportunities**.
- Work with partners and stakeholders to develop a **concise shared vision statement**.
- Develop **broad study goals and objectives**.
- Document **partner and stakeholder support**.
- Identifying the **roles and responsibilities of USACE and its partners**, with associated tasks that will advance the shared vision.
- Describe how these tasks incrementally contribute to the shared vision.
- Consider how **various agency authorities** may be combined to align and prioritize actions.

Example Shared Vision Statements

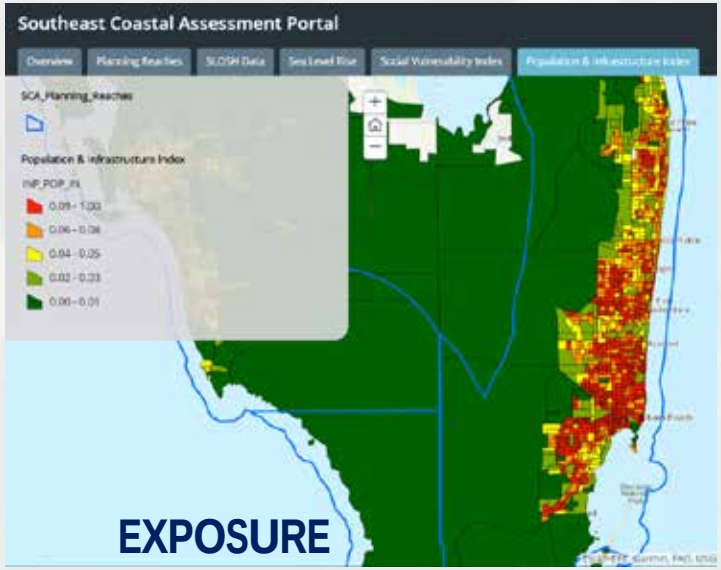
Vision Statement

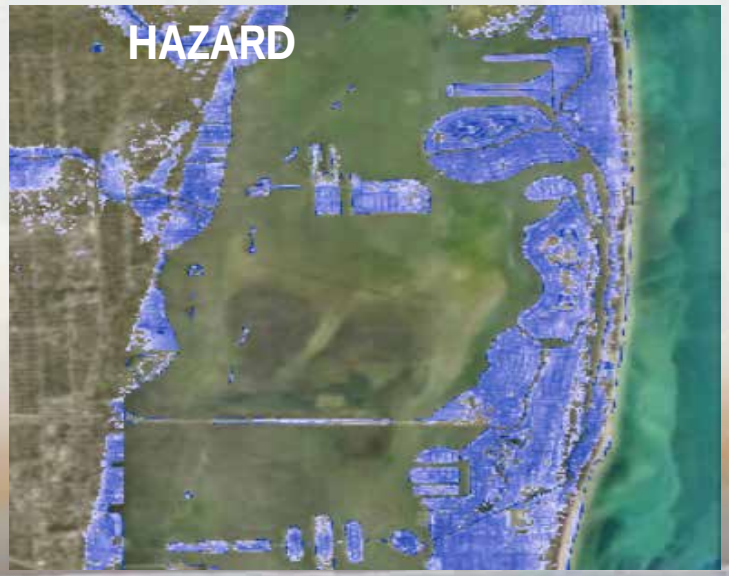
Water in the West is an increasingly scarce and precious resource, given population growth and an expanding range of often competing economic and ecological demands, as well as changing social values. Surface and ground water supplies in many areas are stressed, resulting in a growing number of conflicts among users and uses. A secure and sustainable future is increasingly uncertain given our climate, aging and often inadequate water infrastructure, limited knowledge regarding available supplies and existing and future needs and uses, and competing and sometimes un-defined or ill-defined water rights. Effectively addressing these challenges will require a collaborative, cooperative effort among states and stakeholders that transcends political and geographic boundaries.

Central Valley Integrated Flood Management Study Vision

Federal and State governments share a vision for an integrated flood management system in the Central Valley to provide for safe, healthy and thriving communities while protecting and restoring the environment. The problem is so overwhelming that achievement of this shared vision can only be through pursuit of mutual priorities. The State's flood risk management priorities of public safety, environmental stewardship, and economic stability match the Federal administration's priorities of protecting the American people, restoring and protecting the environment, and improving the nation's economy.

Draft Tier 1 Risk Assessment





Exposure: Number of assets, people, sensitive environmental and cultural resources within the hazard footprint.

Three Exposure Indices Combined into Composite

1. Infrastructure and Population
2. Environmental and Cultural Resources
3. Social Vulnerability

Hazard: Footprint of the hazard and probability of the hazard.

Three Extreme Water Level Events

1. Category 5 MOM **(extreme event flood)**
2. 1% Annual Chance Flood
3. 10% Annual Chance Flood **(nuisance flood)**

*Sea level rise is included by adding 3 feet to the 1% and 10% events

Risk = Composite Exposure x Hazard

Draft Tier 1 Risk Assessment

Review and Revision

- Draft Tier 1 risk assessment reviewed by USACE districts (March 2019)
- Review by stakeholders (April/May 2019)

feedback needed

- Revisions, as needed, (June/July 2019)
- Finalize Tier 1 risk assessment (August 2019)

The corner of Bee Street and Lockwood Drive on the afternoon of September 11, 2017. Photo credit: Erin Spencer

As of: 16 Feb 2016
POC: Jackie Keiser

SACS Main Report

- Outline the CSRM framework to conduct three levels of analysis (Tiers 1-3).
- Provide SAD region-wide information on the Tier 1 risk assessment.
- Display high-level management measures and costs to address risk.
- Summarize stakeholder efforts (current and planned) to address risk.
- Provide summaries of state/territory appendices components and other major SACS products.
- Describe the results of a long-term strategy and actions, conducted in coordination with stakeholders, to address the risks and vulnerabilities due to increased hurricane and storm damage as a result of sea level rise.

State/Territory Appendices

- State/territory-specific conditions and info relevant to comprehensive coastal storm risk management strategies.

- Key Components
  - Environmental, cultural, and social data.
  - Refine Tier 1 risk based on vulnerability and local/regional knowledge.
  - Focus Area identification.
  - Focus Area Action Strategies:
    - Multi-disciplinary/multi-agency teams
    - Measures for actionable solutions
  - Performance of existing Federal CSRM projects and recommendations to improve.
  - Stakeholder studies/plans to address risk and how SACS can support.

Duval Co., FL before Federal CSRM

Duval Co., FL CSRM – post-Tropical Storm Fay, 2008

Coastal Program Guide

Outreach and information package for states/territories. A resource for relevant Federal and non-federal programs and contacts relevant to all states/territories.

State/territory-specific information will be included in relevant appendices.

For Coastal Resilience and Sustainability

VULNERABILITY ON THE OUTER BANKS

SAVANNAH FLOODING

CHARLESTON FLOODING

BREVARD COUNTY, FLORIDA EROSION

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Institutional & Other Barriers Report

Documents the collaboration, screening of major themes and identification of institutional and other barriers to providing protection to the affected coastal areas.

Information from existing documents/efforts will be leveraged and results from stakeholder outreach will provide additional input.

Credit: http://direxin.blogspot.com/2013/06/bad-decision-or-was-it-mistake.html

Environmental and Cultural Activities and Products

- Partner and collaborate with federal, state and local agencies, non-governmental organizations, tribal nations

- Provide input on SACS report and products
  - Tier 1 Risk Assessment – Environmental and Cultural Resources Exposure Index
  - Focus Area Damage Estimation (FADE) library of management measures/costs
  - Tier 2 input on environmental impacts and management measures in Focus Areas

- Provide environmental and cultural information for the State/Territory Appendices

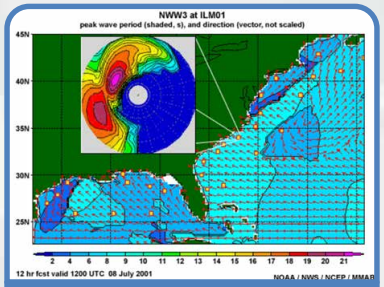
- Planning Aid Report

- Lay out foundation for future National Environmental Policy Act (NEPA) compliance documents

COASTAL HAZARD SYSTEM
The Need for CHS Products

The Coastal Hazard System will provide oceanographic and storm information to engineers, planners and managers across the South Atlantic and Northern Gulf of Mexico. This information will help for the design of effective coastal storm damage solutions to *reduce wave attack*, *provide flood protection* and *create robust environments* that can provide a buffer to coastal flooding. *At a minimum*, this information will contain ***storm surge and the storm wave characteristics***. The CHS will provide this information and more.

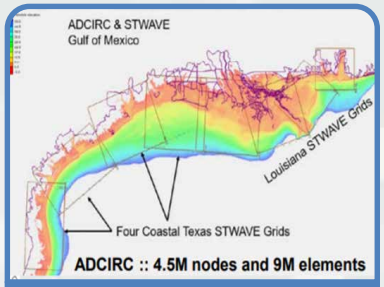
Coastal Hazards System



WaveWatch III

Deepwater Waves for
- Atlantic / Caribbean Basin
- Gulf of Mexico Basin

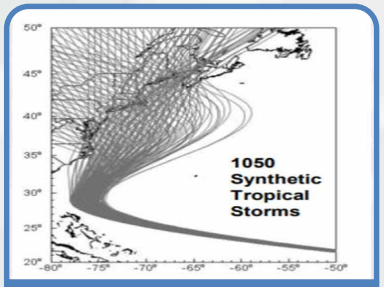
- Grid / Validation Reviews



ADCIRC and STWAVE

- SE Atlantic Mainland
- Northeast GoMex
- PR/USVI

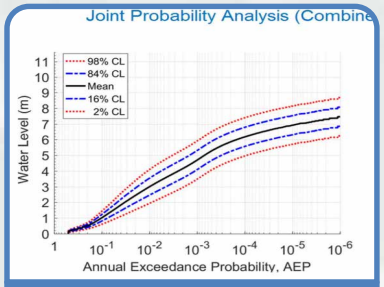
- Grid / Validation Reviews
- Bathymetry data
- Node Attributes
- Save Point Creation
- FAAs



CSTORM Coupler

- 1000's of storms through each ADCIRC / STWAVE Grid

- Incorporate Hazard Information to State Appendices - FAAs



Joint Probability

- Report and archive statistics associated with plausible storms

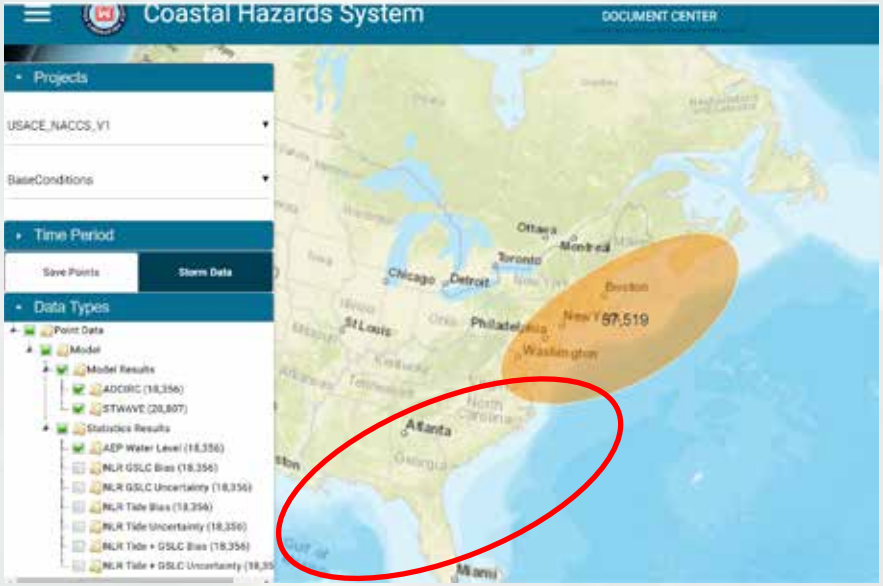
- CHS Products
- Future Feasibility and Design

CHS Products

https://chswebtool.erdc.dren.mil/

Through the USACE Coastal Hazards System website, users can download model results related to:

- Meteorological conditions
- Wave climate
  - (wave height, wave period)
- Storm Surge elevations
  - (10yr, 100yr, 1000yr)
- Storm Tracks
  - (pressure center, translational speed)
- NDBC and NOAA wave climate and water levels
- Statistics related to storm probabilities



These types of data are used by engineers, planners and designers to better understand the probability and extent of present and future storm surge as well as the magnitude of wave attack so that more reliable engineering projects can be designed and so that communities can plan for the future.

FOCUS AREA DAMAGE ESTIMATION

1) Detailed Measures & Cost Library
2) Focus Area Damage Estimation
3)High Rise Damage Estimation

FADE – Focus Area Damage Estimation

- **Detailed Risk Management Measure & Cost Library**
  - Standardized list of risk reduction measures
  - Location will be considered
  - Performance, benefits, & impacts will be assessed
  - **Range of ROM costs will be included**
- **Needs/Useful Input**
  - Risk reduction measures of interest to stake holders
  - Impacts, views, and cost information on non-structural measures

FADE – Focus Area Damage Estimation

- **Focus Area Damage Estimation**
  - Estimate economic risk for Tier 2 Focus areas assessment
  - Determine NED, RED, & OSE risk
  - Method still in development stages
- **Needs/Useful Input**
  - Information on impact of coastal flooding on local economy
  - Debris cleanup and emergency cost
  - Information on risk to life, health, and public safety

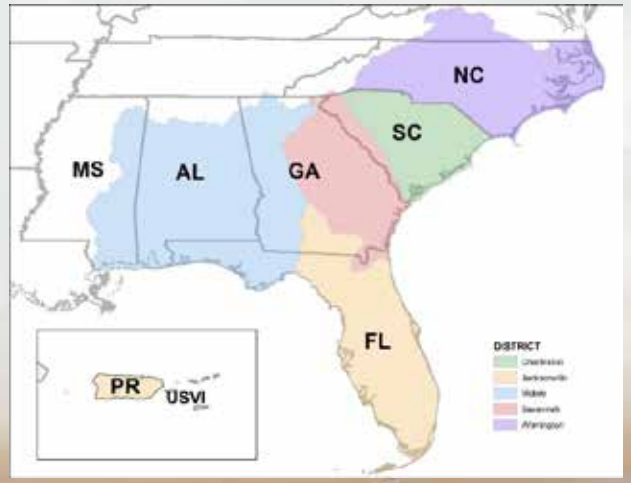
FADE – Focus Area Damage Estimation

- **High Rise Damage Estimation**
  - Classify High Rises
  - Determine damageable value
  - Understand how damages occur
  - Include in damage estimation for CSRM planning efforts
- **Needs/Useful Input**
  - Sources of information, contacts with high rise owners, managers, with information on this topic

Sand Availability and Needs Determination (SAND)

Scope:

- Examine all federal and non-federal beaches/projects within the limits of the SAD footprint with regard to need and availability of sediment to maintain beaches for the next 50 years.
- Sources will include offshore (federal & state), RSM NAV sources, upland DMMA sources, as well as existing economically, environmentally, and socially viable upland mine sources.



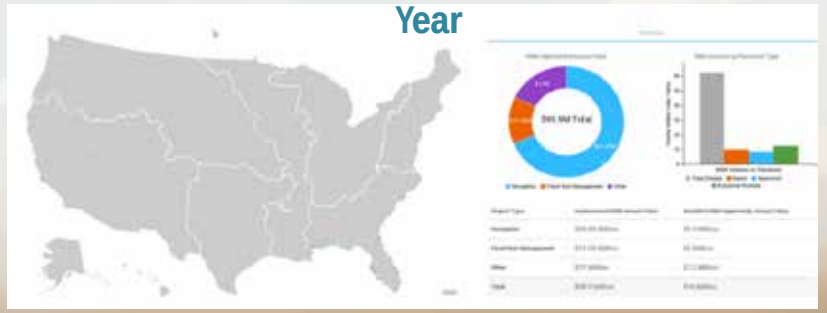
BUILDING STRONG®

Regional Sediment Management Optimization

Scope: Updates to all projects evaluated in the 2016 study and an analysis of beneficial use sources for all non federal projects such as navigation channels and other coastal areas. The assessment will determine total contribution of RSM principles to federal and non-federal projects/beaches in SAD to support long term coastal resiliency.

Updates to federal projects will be conducted through direct coordination among SAD employees. Data for non-federal projects/beaches in SAD will be acquired through the Sand Availability and Needs Determination (SAND.) Website will be updated and made available to the public.

Optimization Pilot: 2016 USACE Innovation of the Year



SACS Geoportal

This web based platform will support discovery, visualization, and analysis of SACS data products

Habitat and Environment Datasets

Hazard Datasets

Population Infrastructure Datasets

Derived Products

Focus Area Data

Communications Strategy

GOALS:

- Develop a common understanding on the purpose and expected outcomes of the SACS.
- Promote creative methods for USACE to receive input and feedback from the diverse stakeholder community.
- Facilitate positive relationships and leverage expertise among Federal/State agencies, NGOs, academia, and stakeholders.
- Maintain transparency by keeping all stakeholders and partners fully informed and engaged.
- Provide a forum for the USACE to develop and deliver a consistent message to diverse audiences.
- Focus areas outreach (Districts)

METHODS:

- Quarterly updates/webinars
- Live study email inbox/access
- Study web site
- Collaborative face-to-face workshops
- Participation/presentation at conferences/regional meetings

Opportunities for Engagement

FEB 2019 - Vision Meeting 1: input on study scope and shared vision

FEB/MAR 2019 – Kick-off meetings with States/territories

APR 2019 – Vision Meeting 2: refine shared vision, present Tier 1 Risk Assessment

EARLY SUMMER 2019 – Collaborative workshops in each state/territory re: Tier 1 Risk assessment an Focus Area Identification

SEP 2019- SEP 2021: Stakeholder/Partner Progress Briefs via webinar

OCT 2021: Draft Report available for review

JAN 2022-AUG 2022: Stakeholder/Partner Progress Briefs via webinar

Points of Contact

SACS Regional PM:	
Pam Castens	pamela.g.castens@usace.army.mil
SACS Outreach Lead:	
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Mobile District:	
Tom Smith	thomas.e.smith@usace.army.mil
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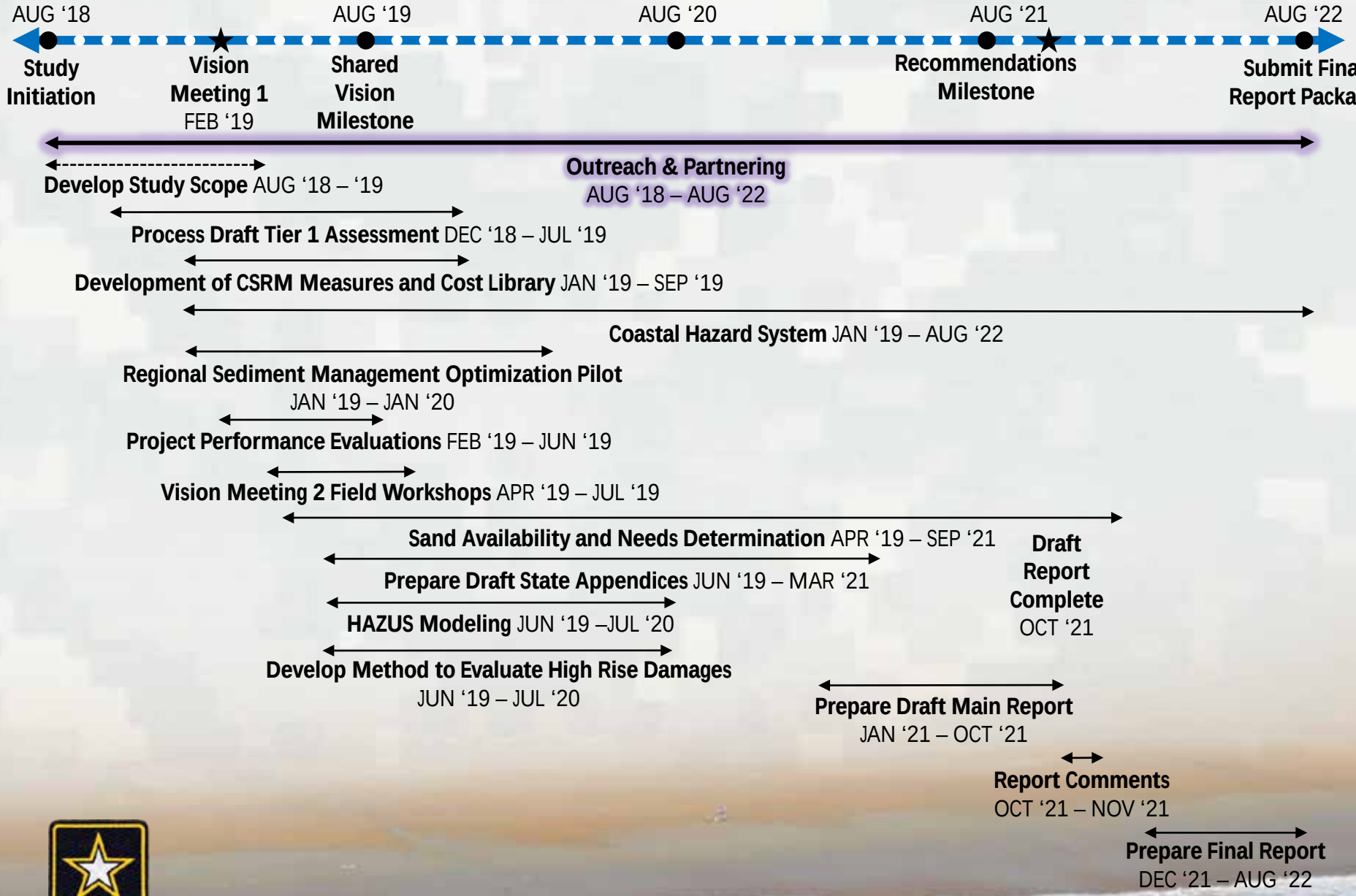
Savannah District:	
April Patterson	april.n.patterson@usace.army.mil

TIMELINE & STUDY PRODUCTS



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Look Ahead

- **Next two weeks:** please submit comments on scope and input for Shared Vision Statement by email

- **April 2019: Vision Meeting #2**
  - Feedback on draft Shared Vision Statement
  - Rollout of draft Tier 1 Regional Risk Assessment and Focus Areas

- **Early Summer:** Field Workshops

- **August 2019:** Shared Vision Milestone (USACE)

Comments/Questions/Input

Comments and questions are appreciated by March 20, 2019

Send to: SACS@usace.army.mil

Please provide input on:

- Broadly defined risks and vulnerabilities of populations, infrastructure, environmental and cultural resources within the study area to increased hurricane and storm damage as a result of sea level rise.
- Opportunities to reduce risks and vulnerabilities. Specify multiple stakeholder roles and responsibilities where possible.
- Shared Vision Statement: where do we want to be and how do we work together to get there?
- Email your contact information if it was not provided prior to, or when logging into, this webinar.
- Questions will help us develop a Frequently Asked Questions (FAQ) document for posting.

THANK YOU!