



WELCOME



FLORIDA KEYS COASTAL STORM RISK MANAGEMENT DRAFT INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT

Virtual Public Meetings July 2020

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FLORIDA KEYS COASTAL STORM RISK MANAGEMENT DRAFT INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT

DRAFT REPORT RELEASE PUBLIC MEETING

Norfolk District
U.S. Army Corps of Engineers
July 2020



US Army Corps
of Engineers®



MONROE COUNTY
FLORIDA



<https://www.saj.usace.army.mil/FloridaKeysCSRMFeasibilityStudy/>



OUTLINE



- Opening Remarks
- Overview: Authority, Scope, Problems/Opportunities, Objectives/Constraints
- Tentatively Selected Plan
- Compliance and Considerations
- Schedule
- How to Provide Comments
- Related USACE Studies
- Question and Answer

STUDY BACKGROUND



- Bipartisan Budget Act of 2018, Public Law 115-123 authorizes the government to conduct the study at full federal expense.
- The study must be completed in 3 years and for \$3 Million.
- The Florida Keys CSRM study will investigate solutions that will reduce damage and risks from impacts of coastal storms while considering sea level rise.
- A draft Integrated Feasibility Report and Environmental Impact Statement (EIS) has been prepared. The study will conclude in September 2021 with a final version of the document.





NATIONAL ENVIRONMENTAL POLICY ACT OVERVIEW



- The National Environment Policy Act (NEPA) requires federal agencies to evaluate how their actions affect the human and natural environment.
- In accordance with NEPA, compliance with other federal laws and statutes is also documented and addressed (i.e. Endangered Species Act, Clean Water Act, National Historic Preservation Act, Coastal Zone Management Act).
- This document has been prepared as an Environmental Impact Statement (EIS) based on a 10% (conceptual) design level.



USACE COASTAL STORM RISK MANAGEMENT (CSRM) STUDY AUTHORITY



Authorized

- Measures that reduce risks from coastal storms considering property and life safety/critical infrastructure
- Inclusion of increases in storm surge over time due to sea level rise
- 10% (conceptual) design development

Not Authorized

- Direct inclusion of federal property
- Sea level rise impacts not occurring during a coastal storm event
- Improvements to reduce rainfall/stormwater flooding
- Natural features with no direct, quantifiable reduction in coastal storm risks
- Recreational or aesthetic features
- Project construction or operation and maintenance

SMART Feasibility Study Process: Florida Keys Coastal Storm Risk Management Study

Concurrent review





COORDINATION



STAKEHOLDER WORKSHOP AND PLANNING CHARETTE

- Held on 14 November 2018
- Representation from federal and state agencies and other groups including: Monroe County, 4 of the 5 Municipalities, FDOT, FDEP, NOAA, FL Keys Aqueduct Authority, Key Largo Wastewater Treatment District, University of Florida

PUBLIC MEETINGS

- NEPA Scoping meetings held in December 2018
- Public meetings held in September 2019

COUNTY AND MUNICIPALITY BRIEFINGS

- Briefings at Monroe BOCC meetings in February 2020, May 2020, and June 2020
- Briefing on the TSP to staff of Municipalities in February and March 2020
- Briefing all 5 City Councils in June 2020

ONGOING COORDINATION

- Weekly update calls with the non-Federal Sponsor
- Interagency meetings held roughly bimonthly
- Coordination with USACE Jacksonville District and South Atlantic Division





PROBLEMS, OPPORTUNITIES, OBJECTIVES AND CONSTRAINTS

PROBLEMS

- Structures are vulnerable to damage from inundation caused by coastal storm surge.
- Critical infrastructure is vulnerable to damage from inundation caused by coastal storm surge.
- Critical transportation routes and U.S. Route 1 specifically are vulnerable to damage from wave energy and erosion caused by coastal storms.
- Inundation caused by coastal storm surge limits or in some locations prevents vehicle travel on U.S. Route 1.
- The reduced evacuation efficiency and structure inundation caused by coastal storm events creates life safety risks to the population of the Florida Keys.
- There are rich environmental resources that are unique to the study area that are vulnerable to the effects of coastal storms. Some of these resources, mangroves for example, provide a reduction in the impacts of coastal storms on the study area and their loss increases the risk of storm damage to the built environment in the study area.

OPPORTUNITIES

- Reduce economic damage caused by coastal storms to the built environment in the Florida Keys.
- Reduce damage caused by coastal storms to the natural environment in the Florida Keys.
- Reduce the risks to human life, health, and safety caused by coastal storm events.
- Reduce the vulnerability of Route 1, the primary and only evacuation route from the Keys, to the effects of coastal storms including limited vehicle travel and damage to the roadway structure.
- Increase the resilience of the Florida Keys to the impacts of coastal storms and flooding (Note: the USACE principles of resilience are Prepare, Absorb, Recover, and Adapt).
- Protect and/or restore the natural coastal system of defenses that are existing or were historically present in the study area.
- Improve residential canals to include measures that address sediment management, debris removal, erosion control, and water quality.
- Provide incidental risk reduction to the Department of Defense facilities located in the vicinity (ex. the Naval Air Station in Key West) of the measures recommended by this study.
- Reduce impacts of general sea level rise (sunny day flooding) in the Florida Keys.

OBJECTIVES

- Reduce the risk of damage to U.S. Route 1 caused by wave action and erosion associated with coastal storms in the Florida Keys over the 50 year period of analysis.
- Reduce the risk of damage to critical infrastructure caused by storm surge inundation associated with coastal storms in the Florida Keys over the 50 year period of analysis.
- Reduce the risk of damage to development (residential and non-residential structures) caused by storm surge inundation associated with coastal storms in the Florida Keys over the 50 year period of analysis.
- Reduce the risk to human life, health, and safety to the population in the Florida Keys that is caused by the inundation of development and critical infrastructure and the reduced evacuation efficiency that is associated with coastal storm events over the 50 year period of analysis.

CONSTRAINTS

- Risk to human health and life safety should not be increased by the recommended plan.
- The recommended plan should not create new inundation/flooding problems and/or exacerbate existing coastal storm risk.



MANAGEMENT MEASURES



- Structural Measures – most screened out because not feasible and/or effective in reducing storm surge, high cost, and/or unacceptable environmental impacts, but shoreline stabilization was carried forward to reduce wave and erosion damage to U.S. Route 1.
- Nonstructural Measures – all nonstructural measures carried forward for consideration in alternatives, elevation, floodproofing, and acquisition would reduce damage and life risk.
- Critical Infrastructure – Asset categories were determined through coordination with Monroe County and are consistent with what is considered in the Miami-Dade Back Bay CSRM study.
- Natural and Nature Based Features (NNBF) – Were considered in coordination with local resource agencies and stakeholders, but ultimately no sites were identified where NNBF would provide quantifiable risk reduction and not impact existing protected habitat.



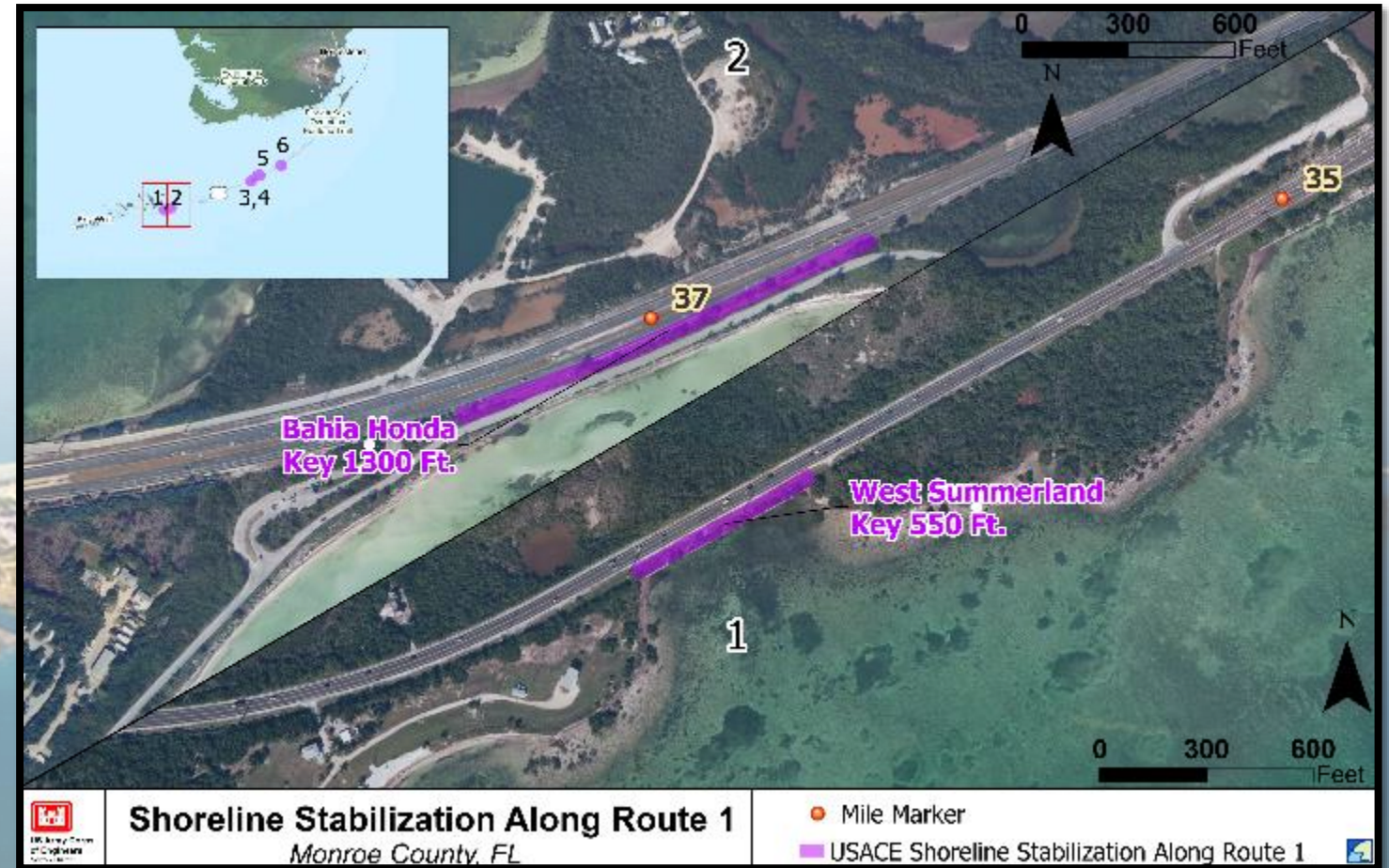
ARRAY OF ALTERNATIVES



Alternative	Description
1	Revetment for six segments of U.S. Route 1 identified as at risk to storm damage from erosion and/or waves.
2	Floodproofing for critical infrastructure identified as at risk to storm damage.
3	Elevation or acquisition for residential structures and floodproofing for non-residential structures identified as at risk to storm damage.
4	Combination of Alternatives 1 + 2
5	Combination of Alternatives 1 + 3
6	Combination of Alternatives 2 + 3
7	Combination of Alternatives 1 + 2 + 3
8	No Action

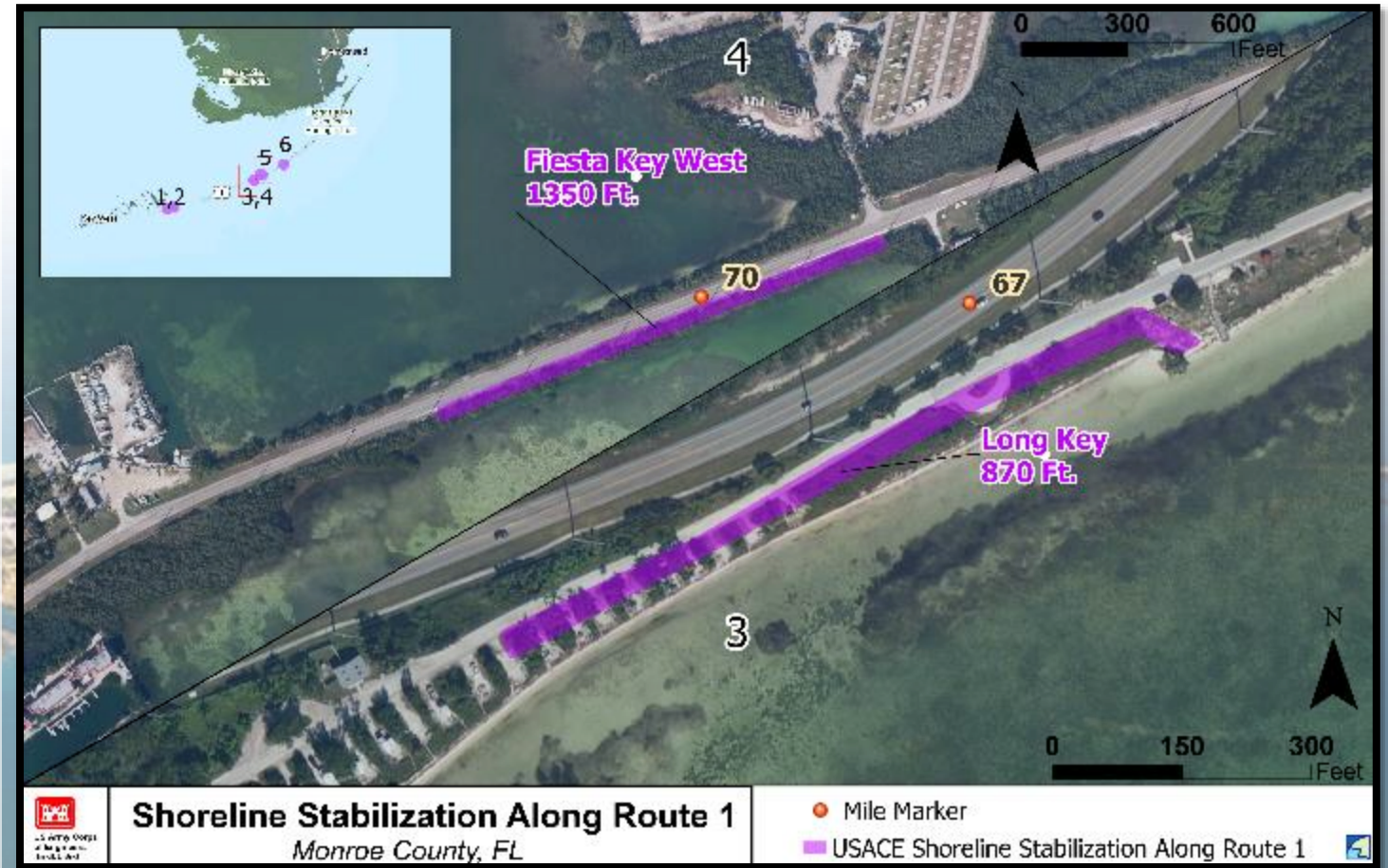
ALTERNATIVE 1: U.S. ROUTE 1

- Address 6 segments of U.S. Route 1 identified as vulnerable to coastal storm damage
- Shoreline stabilization revetments to reduce erosion impacts on the roadway itself
- Revetments will be constructed using riprap to armor the shoreline
- Shoreline stabilization will be economically justified primarily by reduction in damage to the roadway infrastructure itself and transportation benefits are currently being evaluated



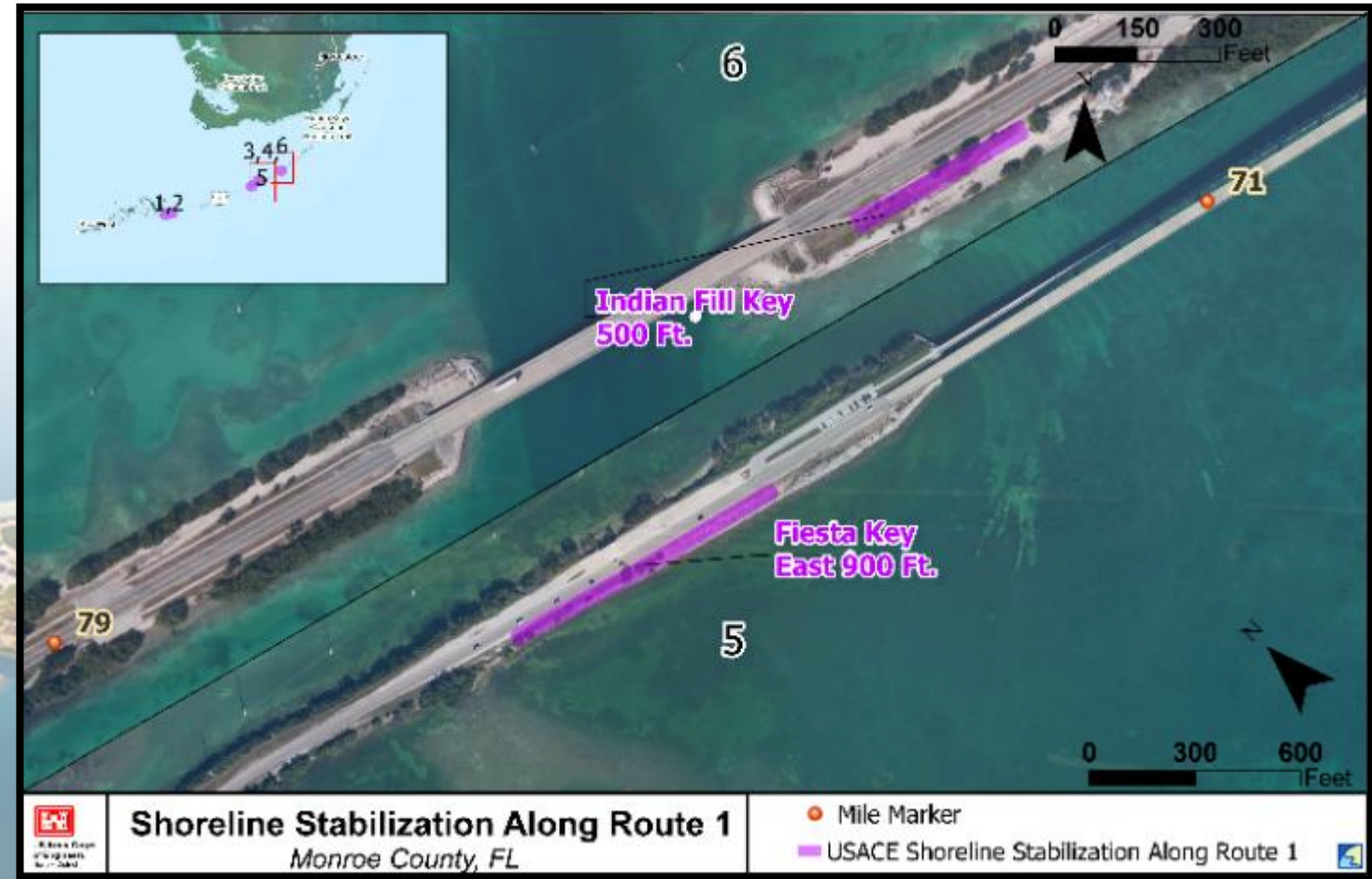
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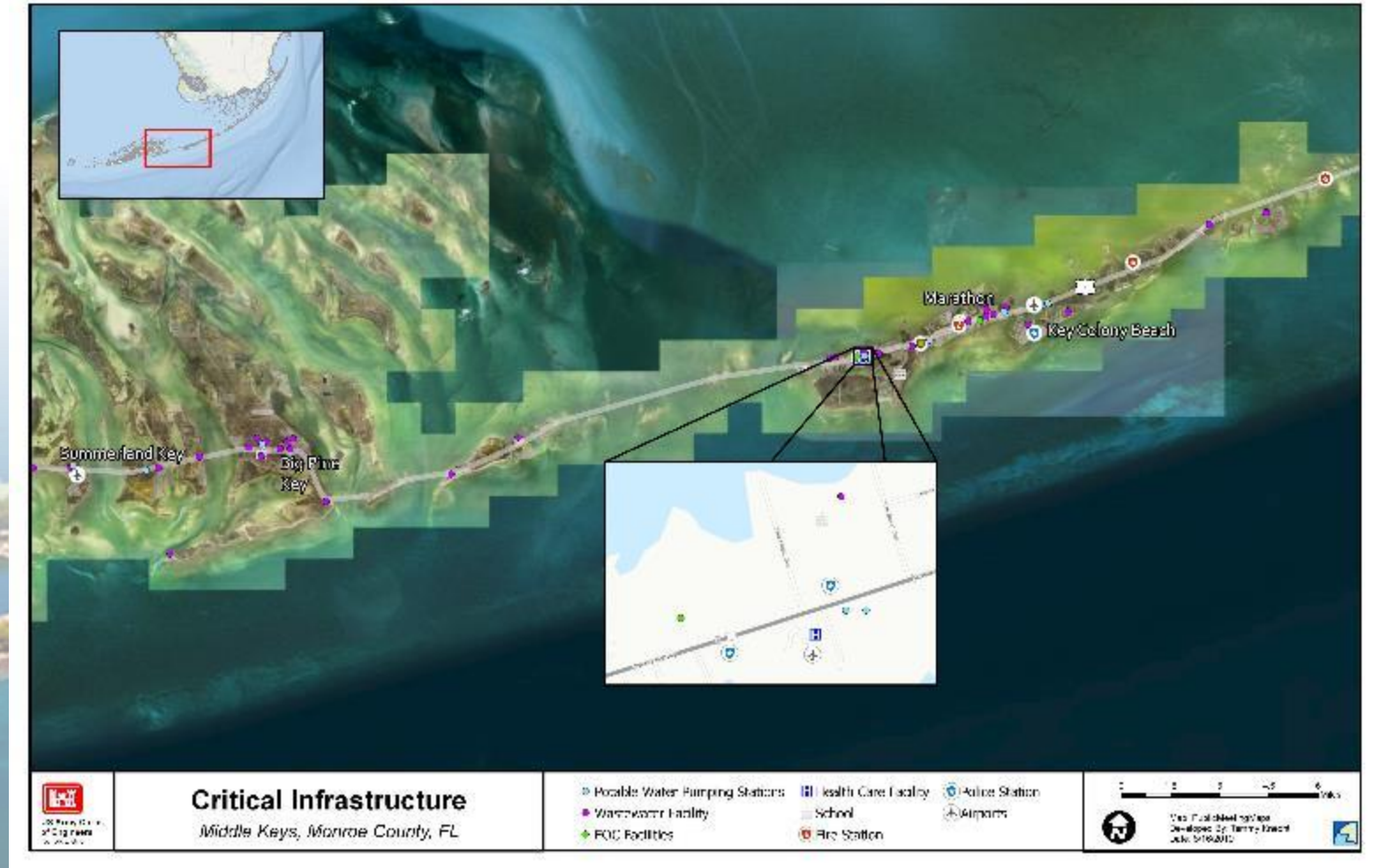
ALTERNATIVE 2: CRITICAL INFRASTRUCTURE



Critical infrastructure analyzed throughout the entire county. 47 critical structures were recommended for floodproofing to reduce coastal storm damage.

Critical asset categories considered include:

- Fire Stations
- Medical Facilities
- Police Stations
- Shelters/evacuation centers
- Wastewater and potable water facilities
- EOC Facilities
- Airport facilities



ALTERNATIVE 3: POPULATION/DEVELOPMENT

Reduce storm damage to structures identified at risk by implementing one of the following nonstructural measures based on structure type and risk:

- Elevation – approximately 7,100 structures (residential only)
- Acquisition – approximately 300 structures (residential only)
- Dry floodproofing – approximately 3,800 structures (non-residential only)



elevation



floodproofing



TENTATIVELY SELECTED PLAN (ALTERNATIVE 7)



- U.S. Route 1 shoreline stabilization in 6 areas
- Critical infrastructure: floodproofing 47 structures
- Nonstructural measures: elevation, acquisition, floodproofing
 - Estimated Number of Structures Elevated: 7,100
 - Estimated Number of Structures to Floodproof: 3,800
 - Estimated Number of Structures Eligible for Acquisition: 300
- First Cost (65/35): currently estimated at \$5.5B
- Total Average Annual Cost: \$217,703,000
- Total Average Annual Benefit: \$364,084,000
- Total Average Annual Net Benefit: \$146,381,000
- BCR is 1.7



NONSTRUCTURAL MEASURES INCLUDED IN ALTERNATIVE 7

- Current USACE policy requires that acquisition must be implemented, even if it requires the use of eminent domain
- Monroe County will not support a plan with mandatory acquisition and has submitted a formal request to USACE for a waiver from the current policy
- Waiver request must be approved by USACE leadership and is currently under consideration
- Draft report does not include addresses, maps, etc. identifying homes recommended for acquisition in the TSP
- If the request is denied, the County would choose to move forward with a Locally Preferred Plan



RESOURCES AREAS EVALUATED WITH NO ANTICIPATED SIGNIFICANT IMPACTS



RESOURCE

Air quality	Geology, Physiography, and Topography
Hazardous, Toxic, and Radioactive Materials and Wastes	Wildlife and Terrestrial Habitat
Cultural Resources	Recreational Resources
Noise and Vibration	Utilities
Water Quality	Floodplain
Wetlands and Mangroves (impacts mitigated)	Bathymetry, Hydrology, and Tidal Processes
Fish and Fishery Resources	Benthic Resources
Transportation	Navigation
Aesthetics and Visual Resources	Safety

Potential impacts to resource areas listed above range from adverse to beneficial, temporary to permanent, and negligible or minor to moderate. For impacts to specific resources, please refer to Chapter 8 of the draft report.



RESOURCES AREAS EVALUATED WITH POTENTIAL SIGNIFICANT IMPACTS



RESOURCE

Socioeconomics and Land Use, due to acquisition (elevation and floodproofing are voluntary)

- Approximately 300 acquisitions
- Approximately 7,100 residence elevations
- Approximately 3,800 floodproofing for critical infrastructure and commercial
- Adverse effects on low income or minority populations possible

Special Status Species (moderate but not likely significant: consultation ongoing)

Potential impacts to resource areas listed above range from adverse to beneficial, temporary to permanent, and negligible or minor to moderate. For impacts to specific resources, please refer to Chapter 8 of the draft report.



INTERAGENCY COORDINATION AND CONSULTATIONS

- ❑ Environmental Protection Agency (EPA), the Florida Keys National Marine Sanctuary (FKNMS), National Marine Fisheries Service (NMFS), and the Florida Department of Transportation (FDOT) served as Cooperating Agencies.
- ❑ Proposed structural measures have the potential to result in adverse effects to federally protected threatened and endangered species. Formal consultation with the U.S. Fish and Wildlife Service (USFWS) is ongoing. Preliminary Findings:

Federally listed species, may affect: Piping Plover and Critical Habitat, red knot, roseate tern, loggerhead sea turtle and Critical Habitat, Cape Sable Thoroughwort and Critical Habitat

Federally listed species, may affect, not likely to adversely affect: American crocodile, American alligator

- ❑ Fish and Wildlife Coordination Act coordination is ongoing
- ❑ National Historic Preservation Act coordination is ongoing



ENVIRONMENTAL AND CULTURAL RESOURCE MITIGATION



- ☐ Approximately 10,250 square feet of herbaceous wetlands would be impacted
- ☐ A wetlands jurisdictional determination would be conducted during later project phases to ascertain impacts and wetland mitigation requirements.
- ☐ Approximately 15,000 square feet of beach dune vegetation would be impacted.
- ☐ An Environmental Mitigation Plan for wetland and dune mitigation is provided in the appendix of the document.
- ☐ Adverse effects on Cultural Resource are anticipated for buildings eligible for the National Register of Historic Places.
- ☐ A Programmatic Agreement (PA) has been prepared to address Cultural Resources adverse effects and mitigation, in accordance with the National Historic Preservation Act.



FEASIBILITY STUDY MILESTONE SCHEDULE



Signing of Feasibility Cost Share Agreement	09 Oct 2018 (A)
Alternatives Milestone	15 Jan 2019 (A)
Tentatively Selected Plan Milestone	16 Jan 2020 (A)
Release of Draft Report/EIS for Concurrent Reviews	26 Jun 2020 (A)
Agency Decision Milestone	26 Oct 2020 (S)
Submit Final Report Package to Vertical Team	13 Apr 2021 (S)
Signed Chief's Report	24 Sep 2021 (S)



PUBLIC COMMENT OPTIONS



- **Deadline: 10 August 2020**
- **Email:** FloridaKeysCSRM@usace.army.mil
- **Written Comments:**
Environmental Analysis Section, Norfolk District
803 Front Street
Norfolk, Virginia 23510
- For any accessibility issues that prevent written comments, please call (757) 201-7218.
- **Project Documents are Located Online:**
<https://www.saj.usace.army.mil/FloridaKeysCSRMFeasibilityStudy/>



RELATED USACE STUDIES



Miami-Dade County CSRM Study

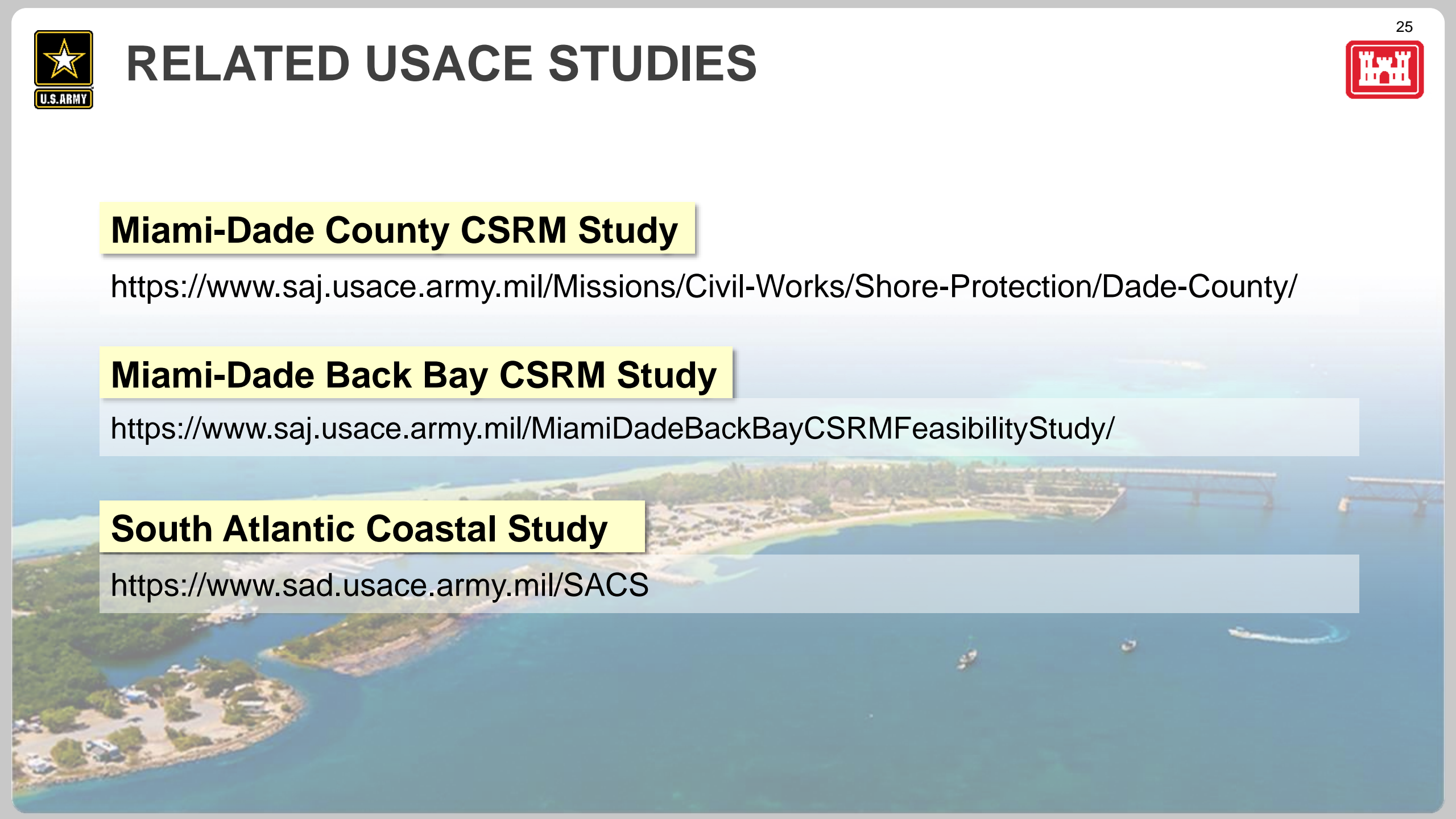
<https://www.saj.usace.army.mil/Missions/Civil-Works/Shore-Protection/Dade-County/>

Miami-Dade Back Bay CSRM Study

<https://www.saj.usace.army.mil/MiamiDadeBackBayCSRMFeasibilityStudy/>

South Atlantic Coastal Study

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





THIS CONCLUDES THE PRESENTATION



To ask a question, please scroll towards the lower middle section of your screen.

Click on the chat feature.



A box on the right side of the screen should appear. Please identify yourself, and organization (if applicable) when typing your question.

Responses will be provided verbally. There may be a several minute delay in receiving a response.

If your question is not answered today due to a high volume of questions received, please contact us by telephone during the Public Virtual Office Hours (Question and Answer session only) provided below:

Public Virtual Office Hours

July 9, 2020 from 1 – 2 pm

July 14, 2020 from 5 – 6 pm

Dial-in information for the teleconference line is the same as the virtual meeting information and can also be found at the project website link provided below:

<https://www.saj.usace.army.mil/FloridaKeysCSRMFeasibilityStudy/>