WELCOME

MIAMI-DADE BACK BAY COASTAL STORM RISK MANAGEMENT DRAFT INTEGRATED FEASIBILITY REPORT AND PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

Virtual Public Meeting June 2020

For audio please call:

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MIAMI-DADE BACK BAY COASTAL STORM RISK MANAGEMENT DRAFT INTEGRATED FEASIBILITY REPORT AND PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

DRAFT REPORT RELEASE PUBLIC MEETING

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

US Army Corps of Engineers®

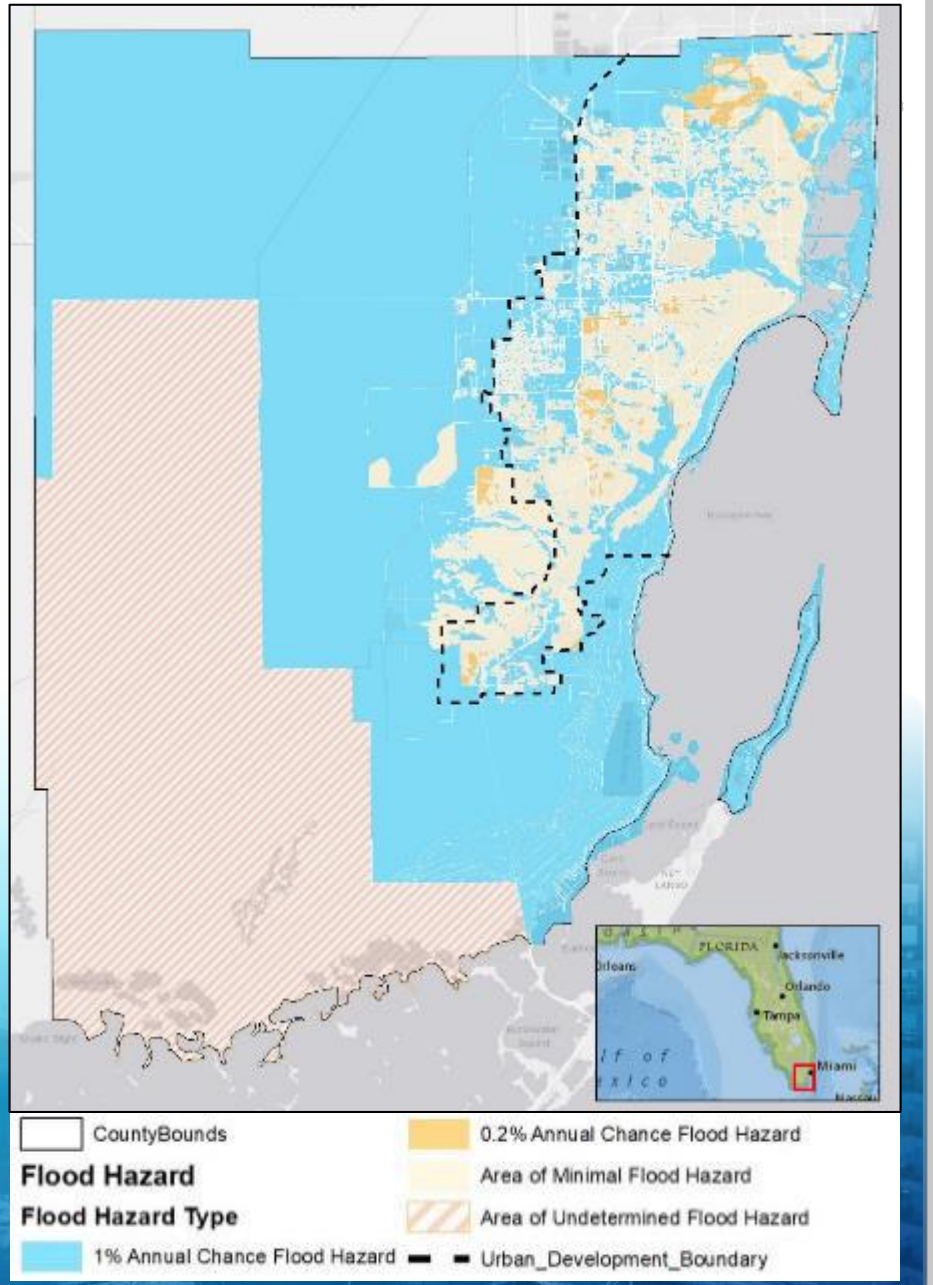
https://www.saj.usace.army.mil/MiamiDadeBackBayCSRMFeasibilityStudy/

OUTLINE

- Opening Remarks
- Overview: Authority, Scope, Problem/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,
- 3 years and $3 Million to complete study,
- The Miami-Dade Back Bay CSRM will investigate solutions that will reduce damages and risks from impacts of coastal storms while considering sea level rise. The study will not address federally owned land (e.g. Everglades National Park), but will focus primarily on the urban and coastal areas of the county,
- A draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (EIS) has been prepared. The study will conclude in the Fall of 2021 with Final versions of the documents.



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 a Programmatic Environmental Impact Statement (EIS) based on a 10% (conceptual) design level; future NEPA documentation will be prepared for site specific project as designs advance.

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.
- Pump stations associated with structural barriers such as floodwalls or surge barriers.
- Natural features where there is a benefit to reducing storm surge impacts.
- 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 reduction in coastal storm risks.
- Recreational or aesthetic features.
- Construction or Operation and Maintenance.

SMART Feasibility Study Process:
Miami-Dade Back Bay Coastal Storm Risk Management Study

Concurrent review

SCOPING & PLANNING STRATEGY

Execute Feasibility Agreement with non-Federal Sponsor:
9 Oct 2018
- Initiate Scoping
- Invite Agencies to Participate
- Examine Existing and Future Without Project Conditions
- Identify Problems, Opportunities, Objectives and Constraints

ALTERNATIVE FORMULATION & ANALYSIS

1

Alternatives Milestone:
9 Jan 2019
- Receive Stakeholder Input on Potential Measures
- Develop Screening Criteria
- Formulate Initial Array of Alternatives

FEASIBLITY-LEVEL ANALYSIS TO TSP

2

Tentatively Selected Plan (TSP) Milestone: Jan 2020

Alternative Evaluation and Comparison:
- Environmental Considerations
- Parametric Costs and Determine Preliminary Benefits (Future With Project Conditions)
- Final Array of Alternatives
- Detailed Benefit-to-Cost Ratio
- Stakeholder Input
- Determine the TSP
- Develop Draft Report

FEASIBILITY-LEVEL ANALYSIS TO ADM

3

Agency Decision Milestone (ADM): Oct 2020
- Release Draft Report (Integrated Environmental Impact Statement) and Respond to Comments
- Initiate Multiple Levels of Quality Review
- Finalize Environmental Mitigation Plans
- Develop Final Report

4

District Engineer transmits final report package
April 2021

CHIEF'S REPORT

5

Sept 2021
- Release Final Report
- Complete National Environmental Policy Act (NEPA) Conclusions

Draft Report Release: 5 June 2020

COORDINATION

STAKEHOLDER WORKSHOP AND PLANNING CHARETTE

- Held on 8-9 November 2018 with over 70 attendees
- Representation from federal and state agencies, universities, Attendees included: USEPA, City of Miami, SFWMD, South Florida Regional Planning Council, U of M, FIU, Miami-Dade County (MDC) DER, MDC Office of EM, Florida DEP

PUBLIC MEETINGS

- NEPA Scoping meeting held on December 2018
- Public meeting held September 2019

WORKSHOP

- Held on March 21-22, 2019 in Miami, Florida with the non-Federal sponsor to refine focus areas

- Interagency meetings held roughly bimonthly
- Weekly update calls with the non-Federal Sponsor
- Bi-Weekly update calls with the Jacksonville District to discuss Miami-Dade Back Bay CSRM, Miami-Dade CSRM, and Miami Harbor study

PROBLEMS, OPPORTUNITES, OBJECTIVES AND CONSTRAINTS

PROBLEMS

- The geographic location, low elevation, and high population of Miami-Dade County make it vulnerable to storm surge from hurricanes and tropical storms.
- Increasing high tides and king tides resulting from sea level rise result in recurrent flooding to roads and properties.
- Increasing groundwater elevations from sea level rise result in flood risks to inland areas.
- Increasing flooding from rain events due to the higher groundwater elevations and higher tailwater elevations from sea level rise threaten properties and infrastructure.

OPPORTUNITIES

- Reduce risk of loss of life due to high flooding events or infrastructure failure.
- Reduce coastal storm-related economic damages and improve economic resiliency of the local economy and communities, particularly low-income communities.
- Increase resiliency and structural integrity of critical infrastructure
- Reduce transportation and evacuation route impacts during high flooding events.
- Utilize available natural areas and open spaces for improving wave attenuation, water retention, and/or water storage.

OBJECTIVES

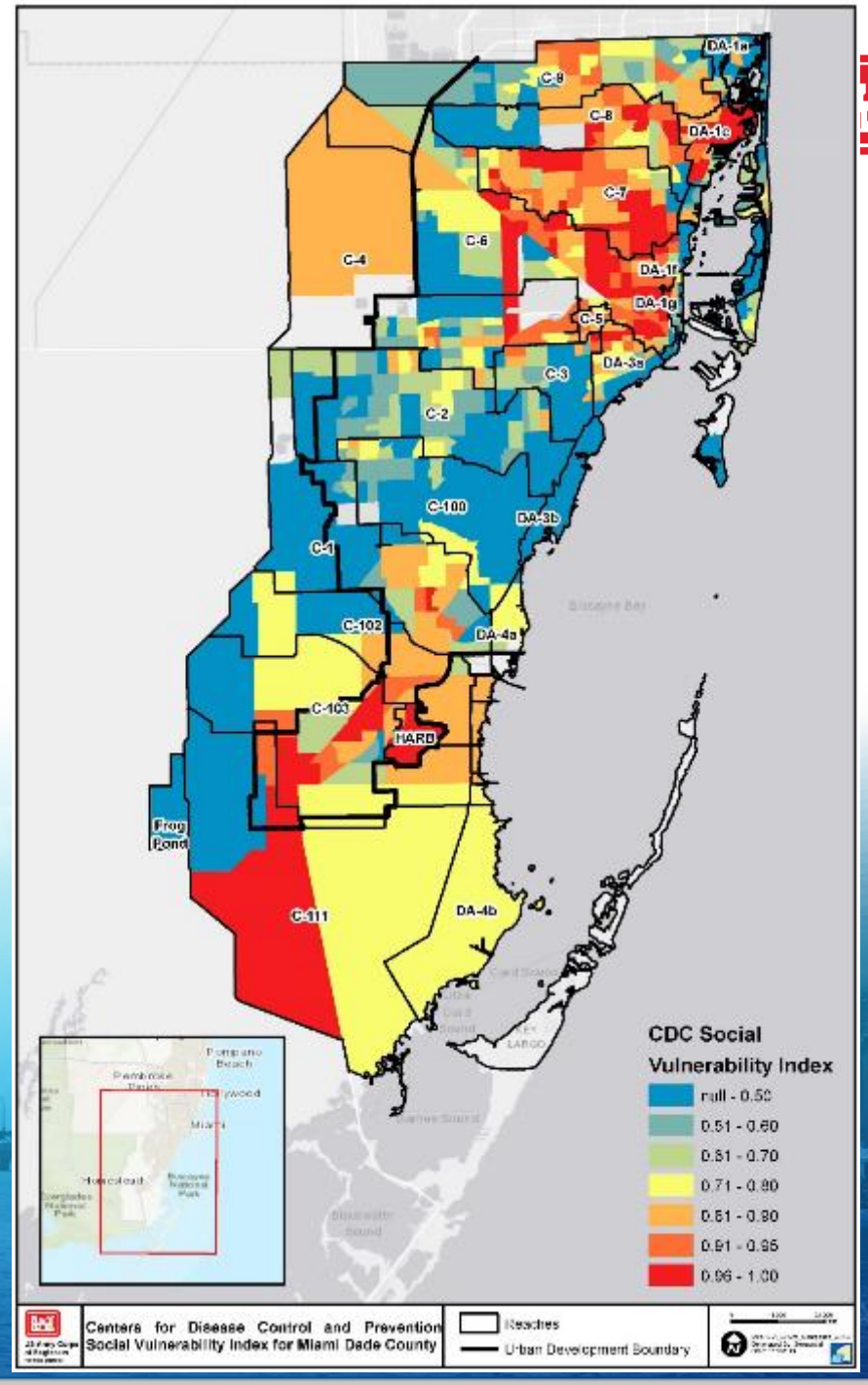
- Increase the resiliency of Miami-Dade County to function effectively before, during, and after coastal storm events by decreasing the vulnerability of critical infrastructure to flooding damages from SLR and storm surge.
- Reduce economic damages to structures in communities vulnerable to severe flooding damages from SLR and storm surge.
- Incorporate natural and nature based features to reduce flood damages and complement the recommended nonstructural and structural measures.

CONSTRAINTS

- Avoid creating or exacerbating flooding within the project area, to other local municipalities, and to local military installations.
- Avoid flooding solutions for the study area that would induce increased flooding issues in locations outside of the study area.
- Avoid impacts to environmental and cultural/historic resources in the study area and nearby (e.g. Everglades National Park, Biscayne Bay National Park).
- Cannot exacerbate saltwater intrusion which will negatively impact fresh water for drinking and agriculture.

SELECTION OF FOCUS AREAS

- Focus areas were selected based on
  (1) the Social Vulnerability Index and
  (2) expected flooding damage
- **Social Vulnerability Index** (SVI) from the Centers for Disease Control and Prevention (CDC) uses U.S. census data to determine social vulnerability by census tract. Each tract was ranked on 15 factors grouped into four themes which include:
  - Socioeconomic status
  - Household composition / disability
  - Race / ethnicity / language / minority status
  - Housing/transportation
- **Flooding damage** was estimated using the HAZUS model using FEMA's 1% (100-year) annual chance flood with 4' of SLR.
- 4000' x 4000' grids made to narrow down damage areas
- Flooding damage was multiplied by SVI to obtain a composite risk map which showed seven socially vulnerable economic damage centers



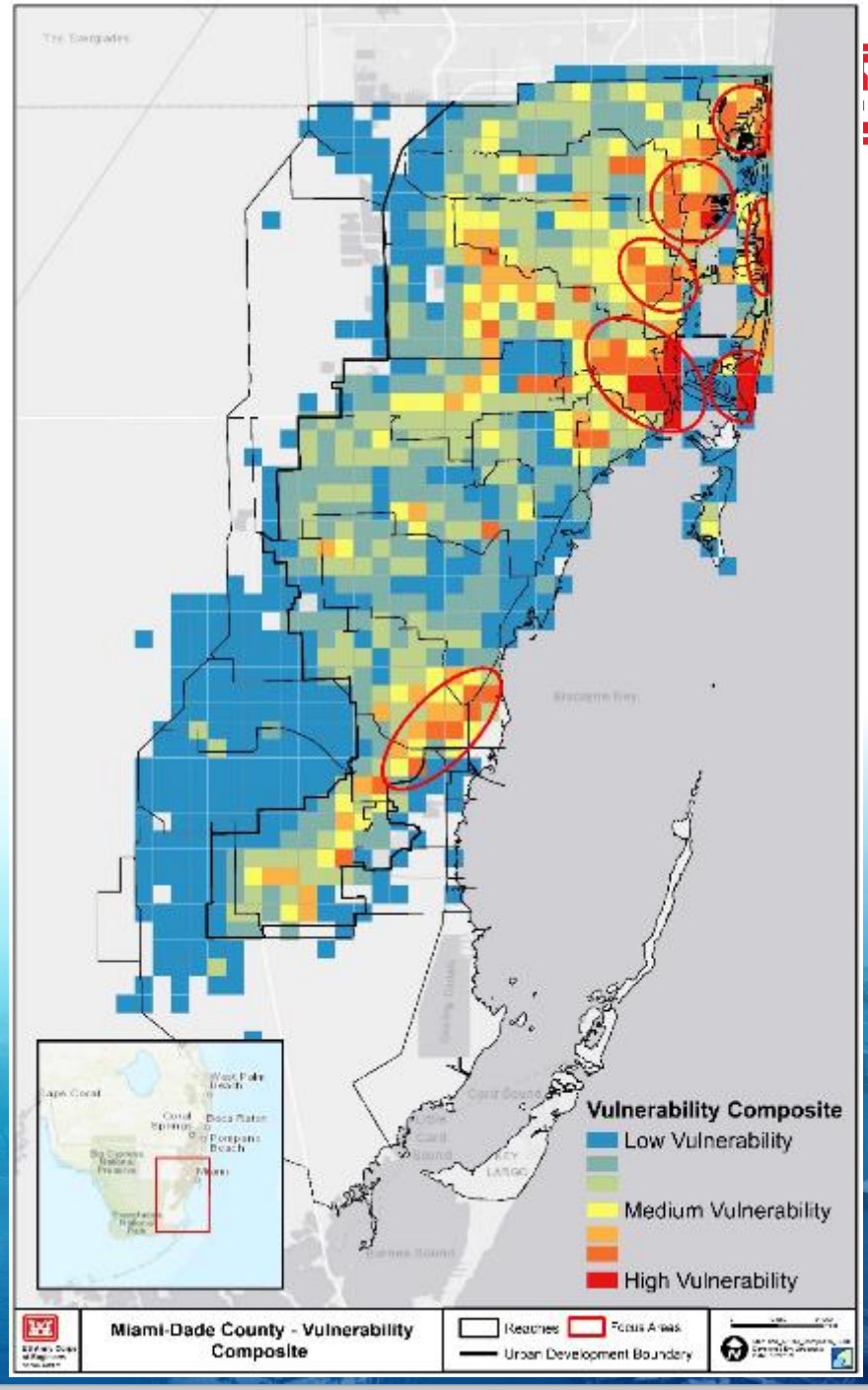
MANAGEMENT MEASURES

- Structural Measures – screened based on seven focus areas identified, preliminary real estate and engineering concerns, and non-Federal sponsor input.

- Nonstructural Areas – areas narrowed down to seven focus areas based on preliminary flood damage analysis and the Social Vulnerability Index (SVI).

- Critical Infrastructure – Asset Categories were determined through scoping meetings and in-line with Miami-Dade County's Rapid Action Plan which consists of vulnerable critical infrastructure.

- Natural and Nature Based Features (NNBF) – Identified through coordination with local stakeholders. Designed to work in conjunction with non-structural and structural measures.



ARRAY OF ALTERNATIVES

ALTERNATIVE NUMBER	ALTERNATIVE NAME	DESCRIPTION
1	No Action	No Action
2	Critical Infrastructure Only	Analyzing critical infrastructure throughout all of Miami-Dade County on priority asset categories. This includes wet and dry floodproofing structures.
3	Miami River Basin + Alternative 2	Surge barrier at Miami River (with associated floodwalls and pump stations) + Floodwall at Edgewater + Nonstructural outside of surge barrier.
4	Nonstructural + Alternative 2	Acquiring, elevating, and wet and dry floodproofing of structures in seven socially vulnerable, economic damage centers defined by Hazus and the Centers for Disease Control and Prevention (CDC) Social Vulnerability Index which include Miami River, Little River, Arch Creek River, Aventura, North Beach, South Beach, and Cutler Bay areas.
5	Inland Storm Surge Reduction (Structural) + Alternative 2	Surge barriers (with associated floodwalls and pump stations) at the most socially vulnerable, economic damage centers which include Miami River, Little River, and Biscayne Canal.
6	Alternative 2 + 3 + 4	Miami River Basin + Nonstructural + Critical Infrastructure
7	Alternative 2 + 4 + 5	Nonstructural + Structural + Critical Infrastructure
8	Alternative 2 + 4 + 5 + EW NS - EW FW	Nonstructural + Structural + Critical Infrastructure + Nonstructural at Edgewater - (without) Floodwall at Edgewater

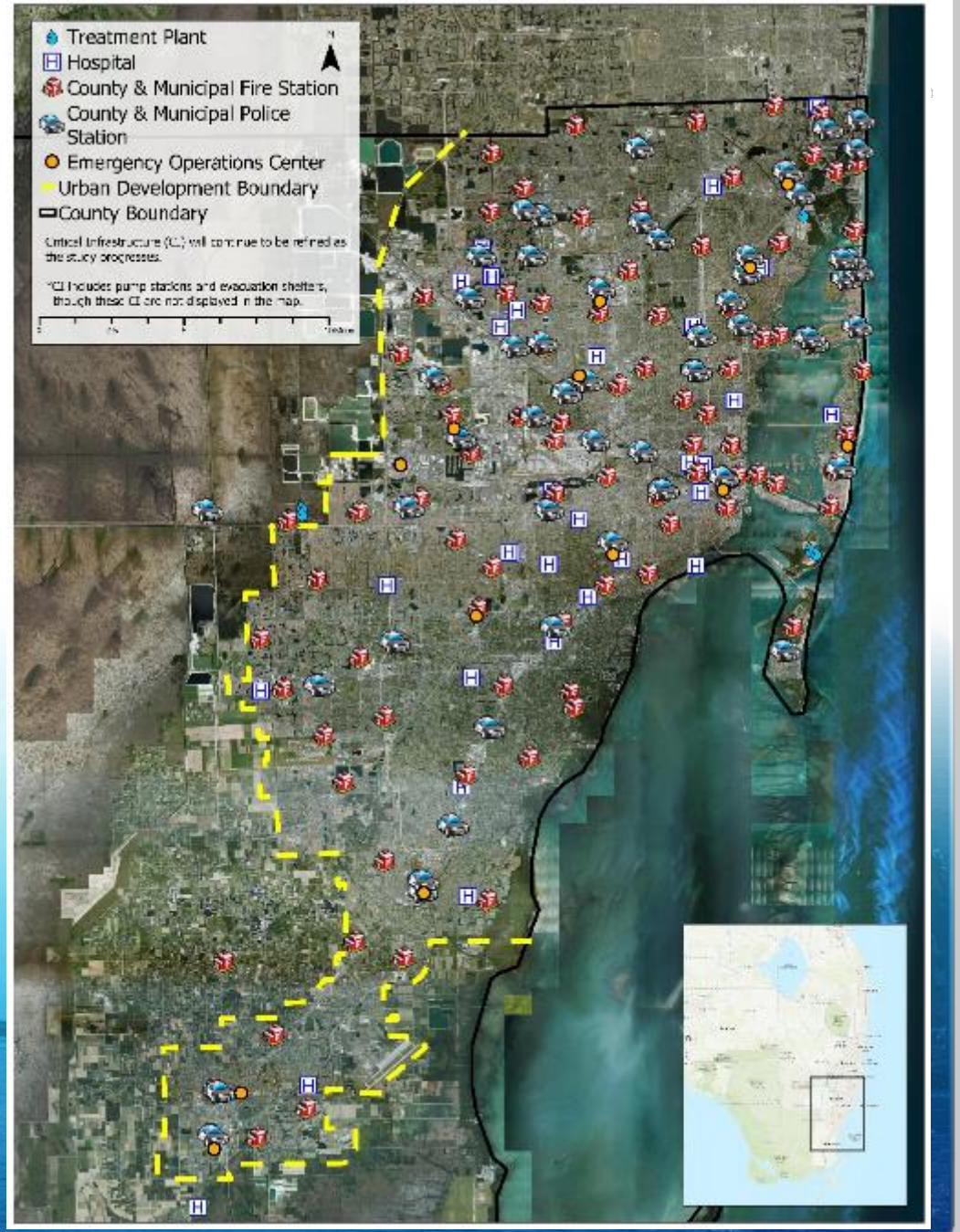
MEASURES CONSIDERED: CRITICAL INFRASTRUCTURE

Critical infrastructure analyzed throughout the entire county.

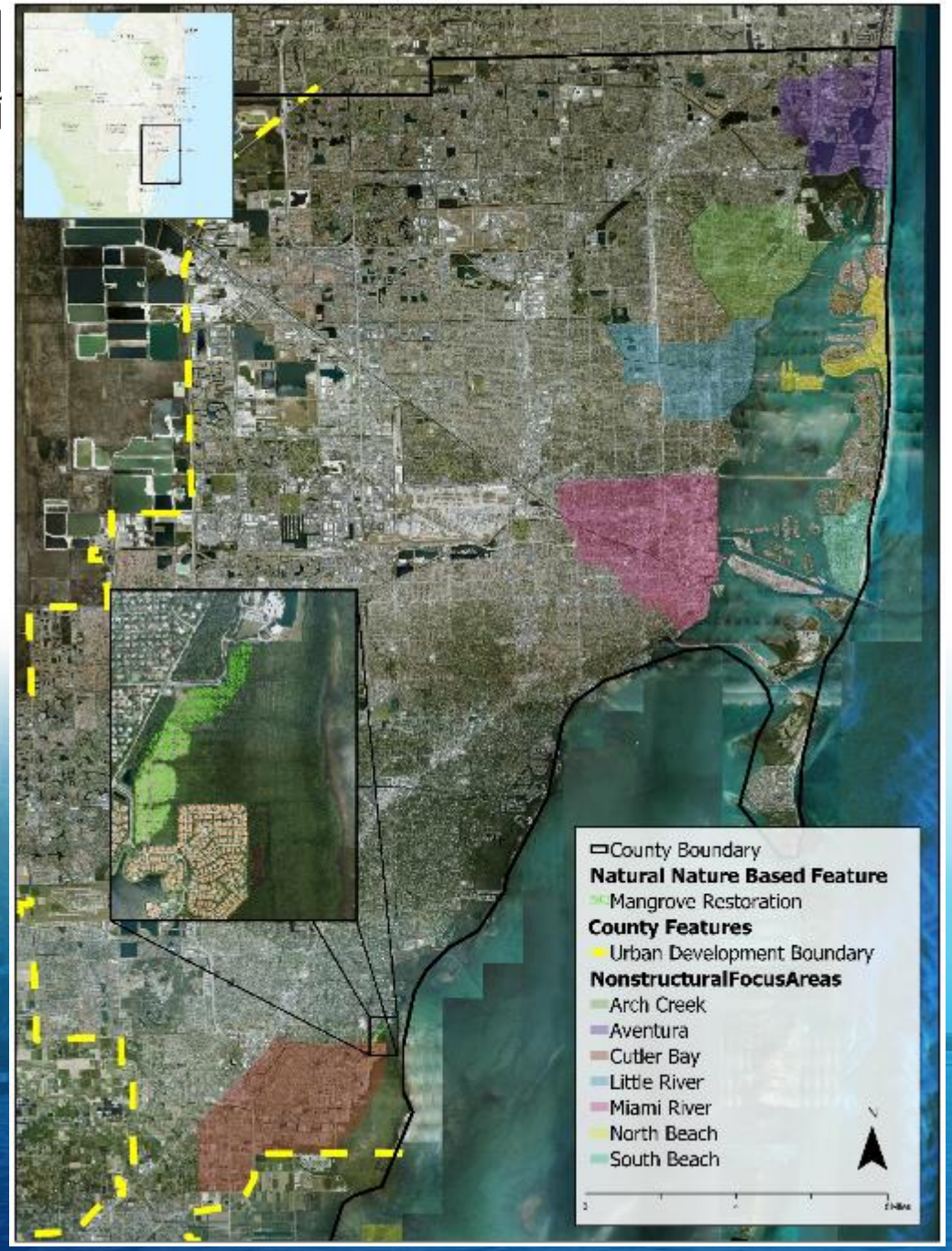
Critical asset categories to include in study:

- Fire Stations
- Medical Facilities
  - Significant hospital / emergency facilities
- Police Stations / 311 centers
- Shelters / evacuation centers
- Wastewater and potable water facilities
  - Treatment plants, pump stations
- EOC Facilities
- Vulnerable airport facilities from the Rapid Action Plan (RAP)
- Railway electrical substations
- Erosion at Rickenbacker Causeway and Venetian Way

Critical Infrastructure	Count
Emergency Operations Center Command Centers	13
Evacuation Centers	81
Fire Stations (County)	71
Fire Stations (Municipal)	30
Hospitals	40
Police Stations (County)	8
Police Stations (Municipal)	58
Pump Stations	458
Treatment Plants	9



MEASURES CONSIDERED: NONSTRUCTURAL



Seven socially vulnerable economic damage centers

- Arch Creek, Aventura, Cutler Bay, Little River, Miami River, North Beach, and South Beach

Nonstructural measures includes:

- Elevating structures, wet and/or dry floodproofing of structures, acquiring structures and relocating structures and utilities

EXAMPLE NONSTRUCTURAL MEASURES

elevation

floodproofing

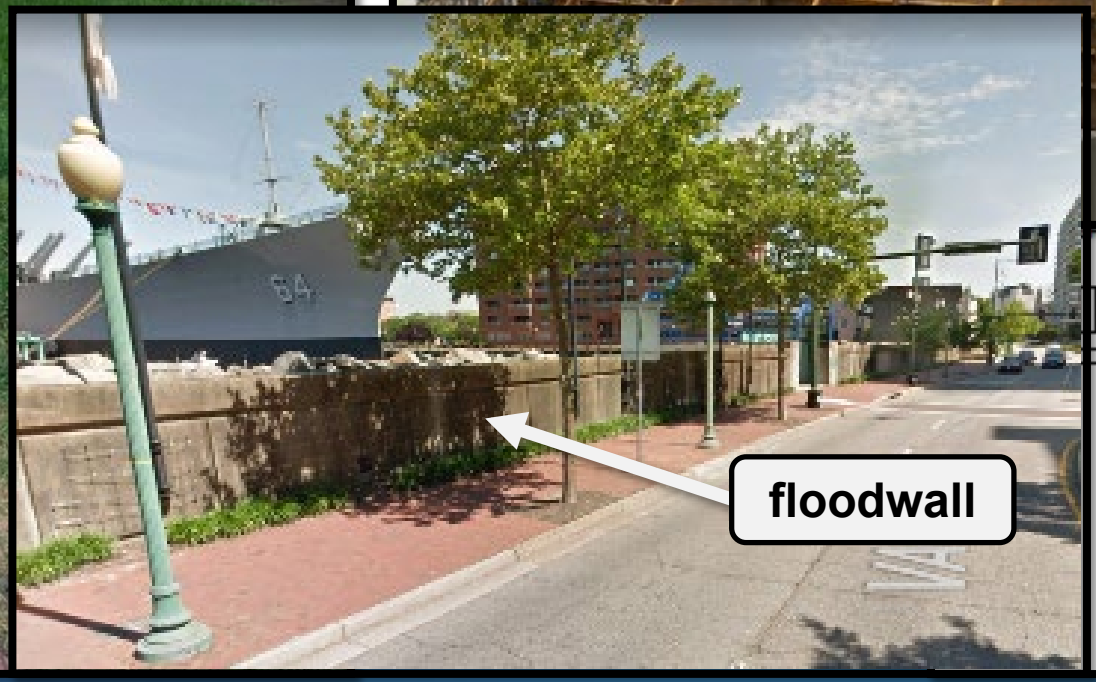
MEASURES CONSIDERED: STRUCTURAL

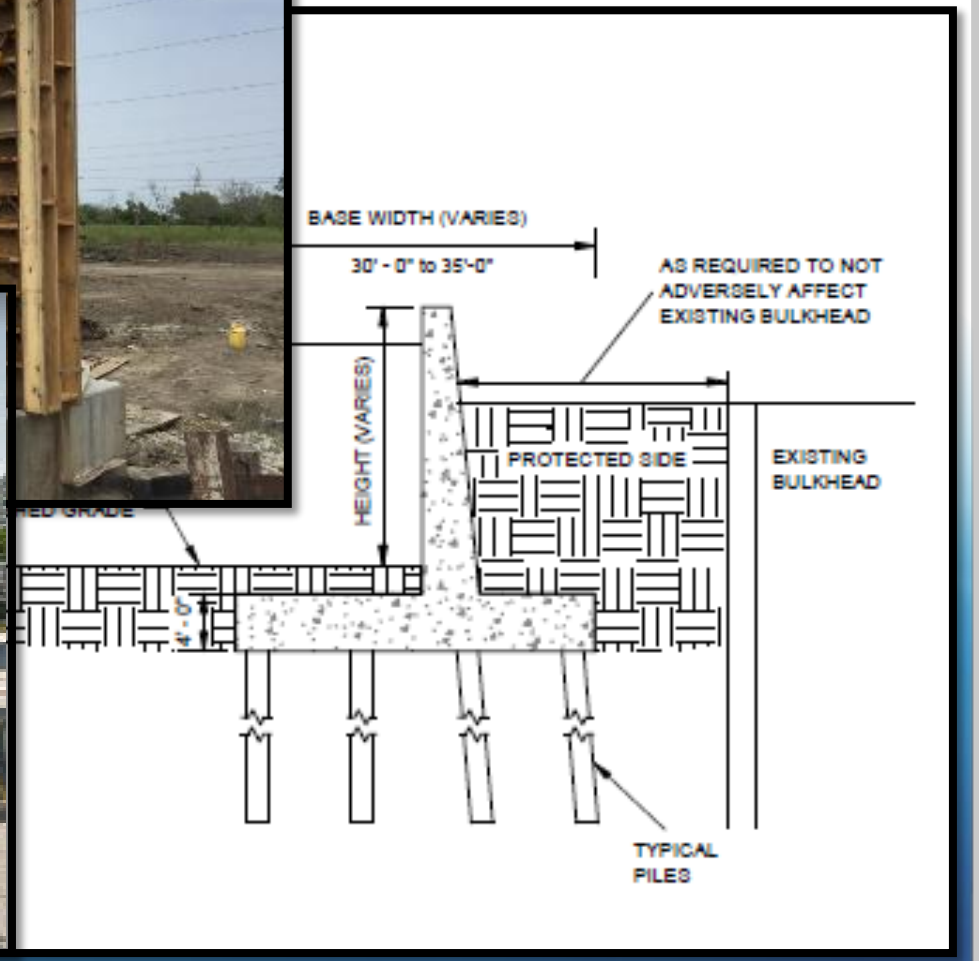
- Surge barriers at Biscayne Canal, Little River, and Miami River including associated pump stations and floodwalls

- Floodwall at Edgewater, examined, but not included in the Tentatively Selected Plan.

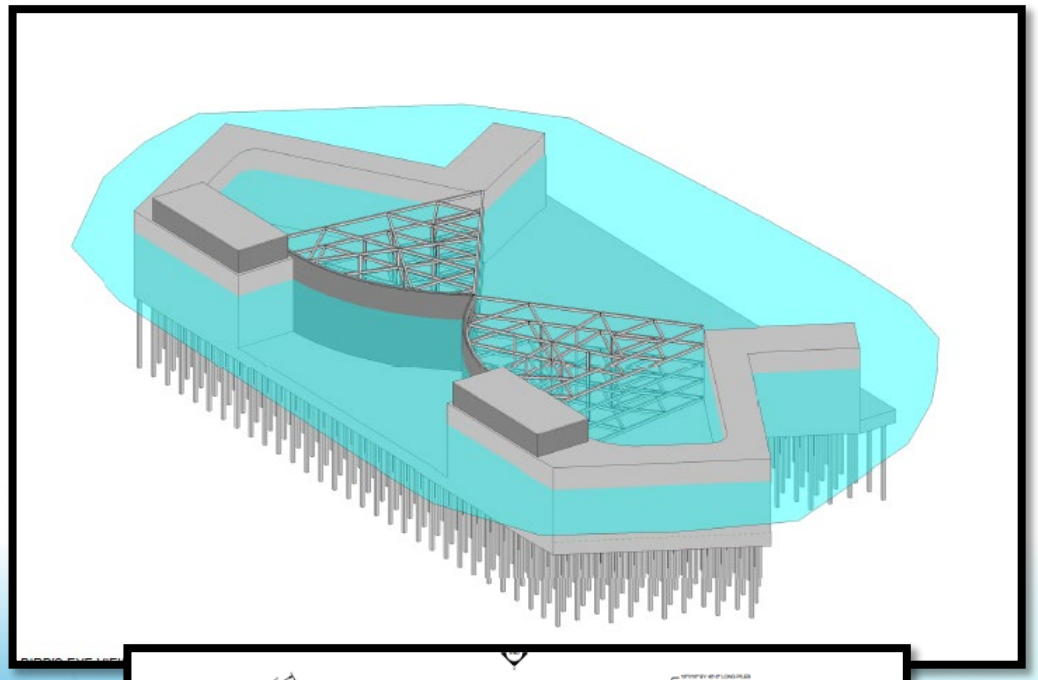
- The proposed top of wall elevation varies from 1 to 13 feet above ground depending on location and is greater in height where the wall is in the water. Optimization will occur for different storm frequencies prior to the final report.

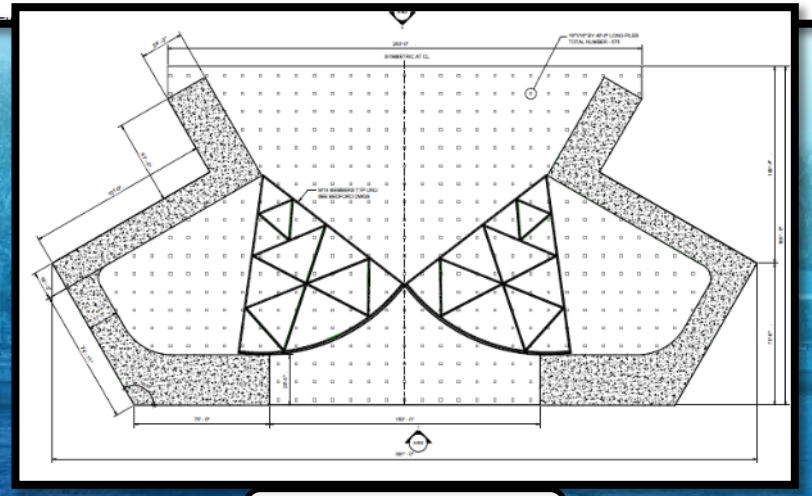
EXAMPLE FLOODWALLS AND DESIGN



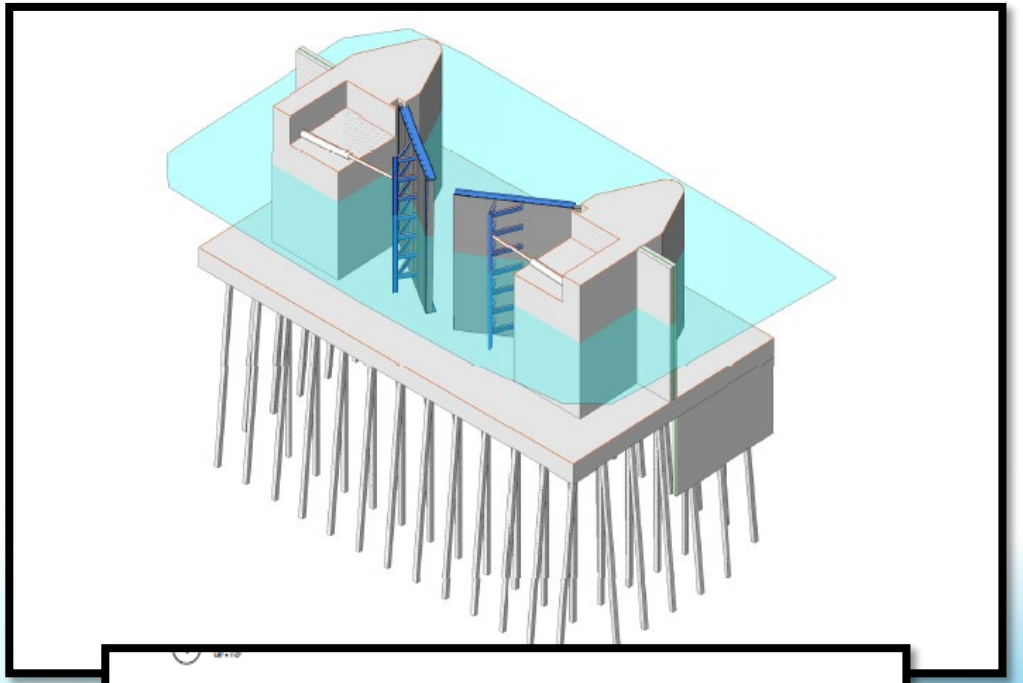


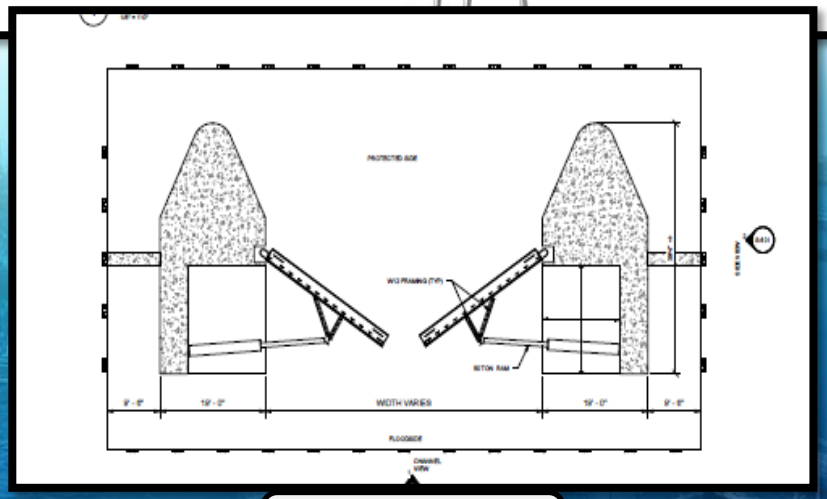
EXAMPLE SURGE BARRIER DESIGN





sector gate

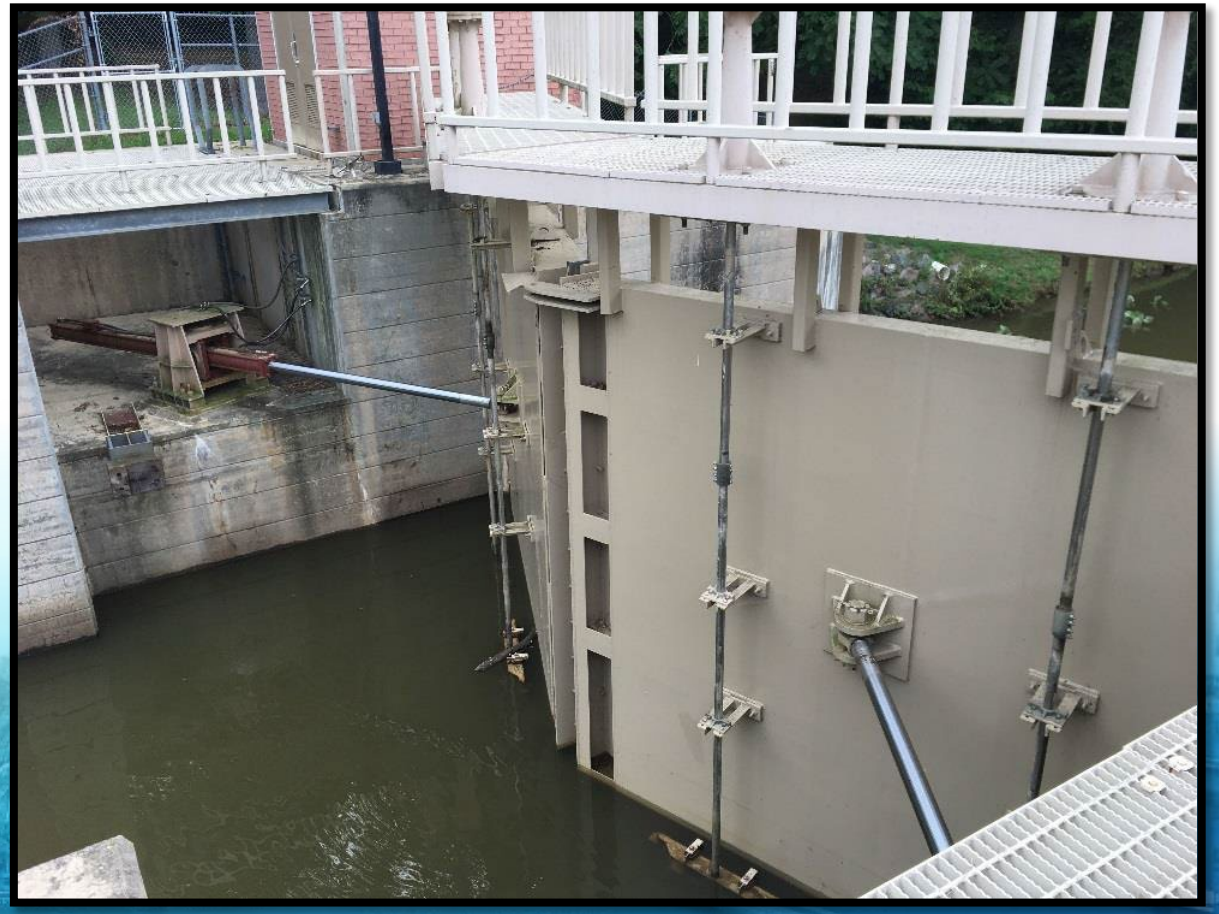




miter gate

EXAMPLE SURGE BARRIERS

sector gate



miter gate

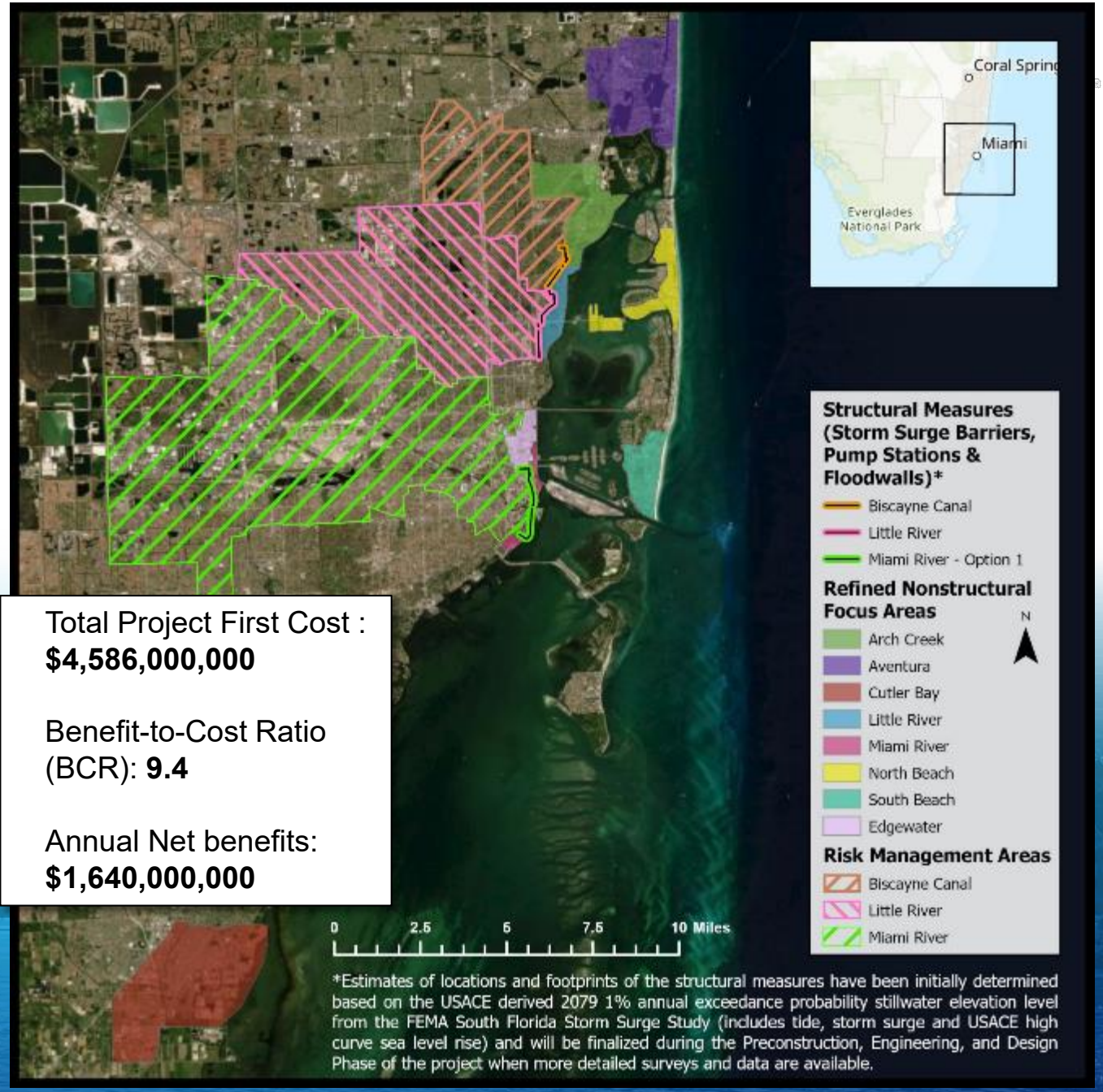
MEASURES CONSIDERED: NATURAL AND NATURE-BASED FEATURES

Natural and Nature-Based features (NNBFs) considered for this study included mangrove and other native vegetation plantings, coral reefs, living shorelines, submerged aquatic vegetation, and marsh island creation/enhancements.

- The NNBF selected for this study is the planting of native vegetation including mangroves at the Cutler Bay Site
- Vegetation such as mangroves serve to dissipate storm surge and provide a natural form of coastal protection.

TENTATIVELY SELECTED PLAN (ALTERNATIVE 8)

- Surge barriers at Biscayne Canal, Little River, and Miami River all of which include associated pump stations and floodwalls
- Nonstructural mitigation at seven socially vulnerable economic damage centers
  - Outside structural measures at Arch Creek, Little River, and Miami River/Edgewater.
  - Aventura, Cutler Bay (not shown on map), North Beach, and South Beach
- Natural and Nature-Based Features are being considered at the Cutler Bay site
- Critical infrastructure mitigation on priority asset categories throughout all of Miami-Dade County (not shown on map)



Total Project First Cost : **$4,586,000,000**

Benefit-to-Cost Ratio (BCR): **9.4**

Annual Net benefits: **$1,640,000,000**

REAL ESTATE CONSIDERATIONS

- Real Estate actions for structural measures
  - Permanent and temporary easements, fee acquisition and relocations will be needed to support construction of structural measures.

- Real Estate actions for non-structural measure
  - Elevations: approximately 2,300 properties
  - Floodproofing commercial and critical infrastructure: approximately 3,800 properties

- Expectation is that the real estate impacts will continue to be refined as the project is optimized.

RESOURCES AREAS EVALUATED WITH NO SIGNIFICANT IMPACTS

RESOURCE AREA	
Air quality	Geology, Physiography, and Topography
Hazardous, Toxic, and Radioactive Materials and Wastes	Wildlife and Terrestrial Habitat
Cultural Resources	Plankton Community
Noise and Vibration	Utilities
Water Quality	Floodplain
Wetlands and Mangroves	Bathymetry, Hydrology, and Tidal Processes

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 AREA	
Fish and Fishery Resources	Recreational Resources
Benthic Resources	Aesthetic and Visual Resources
Special Status Species	Navigation
Socioeconomics	Safety
Transportation	Land Use

Potential significant impacts to resource areas listed above range from adverse to beneficial and are considered major. For impacts to specific resources, please refer to Chapter 8 of the draft report.

INTERAGENCY COORDINATION AND CONSULTATIONS

- 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 and the National Marine Fisheries Service is anticipated. Interagency coordination is ongoing.

  Federally protected species evaluated: Nassau grouper, smalltooth sawfish, boulder star coral, Elkhorn coral, lobed star coral, mountainous star coral, pillar coral, rough cactus coral, staghorn coral, West Indian manatee including critical habitat, Florida bonneted bat, American crocodile, green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, and Johnson's seagrass including critical habitat, piping plover, and red knot

- The final design and siting of project features would not occur until later project phases. Resource surveys, including benthic surveys and a wetlands jurisdictional determination, would be conducted during later project phases.

- Future NEPA documentation would be prepared for site-specific projects as designs advance and more detailed resource data becomes available.

FEASIBILITY STUDY MILESTONE SCHEDULE

Signing of Feasibility Cost Share Agreement	09 Oct 2018 (A)
Alternatives Milestone	09 Jan 2019 (A)
In Progress Review	07 May 2019 (A)
Tentatively Selected Plan Milestone	17 Jan 2020 (A)
Release of Draft Study for Concurrent Reviews	5 June 2020 (A)
Agency Decision Milestone	15 Oct 2020 (S)
Submit Final Report Package/Policy and Legal	
Compliance Review Team	23 April 2021 (S)
Signed Chief's Report	24 Sep 2021 (S)

PUBLIC COMMENT OPTIONS

- Deadline: 20 July 2020
- Email: MDBB-CSRMStudy@usace.army.mil
- Public Web-Page Web Mapper Tool: http://arcg.is/fm0Xe
- Written Comments:

  Environmental Analysis Section, Norfolk District
  803 Front Street
  Norfolk, Virginia 23510
- For any accessibility issues that prevent written comments, please call (757) 201-7728.

- Project Documents are Located:

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

RELATED USACE STUDIES

Miami-Dade County CSRM Study

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

Monroe County CSRM Study

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

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
June 10, 2020 from 1–2 pm
June 18, 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/MiamiDadeBackBayCSRMFeasibilityStudy/