

# The N-EWN Knowledge Series

## A Continuing Education Series about Engineering with Nature



**Jeff Morris**  
*Senior Planning & Economics Consultant*  
*Moffatt & Nichol*

### The Proposed Future of Planning for USACE Water Resources Investments

The central theme of this presentation, “The Proposed Future of Planning for USACE Water Resources Investments”, focuses on the evolution of Federal objectives since the proposed practices for economics analysis in 1950 to the most recently proposed USACE’s Agency Specific Procedures (ASP) for Implementation of the Principles, Requirements, and Guidelines (PR&G) for Water Resources Investments.

Save the date!

Upcoming webinars will take place the 3<sup>rd</sup> Thursday of the month.

Jul. 18  
12:30pm ET

*Jeff Morris, Senior Planning & Economics Consultant, Moffatt & Nichol*  
The Proposed Future of Planning for USACE Water Resources Investments

Aug. 15  
12:30pm ET

*Pippa Brashear, Principal, Scape Landscape Architecture DPC*  
Living Breakwaters and Other Nature-Based Adaptation Projects

Sep. 19  
12:30pm ET

*Abel Porras, Supervising Engineer, City of Austin Watershed Department*  
Watershed Modeling Efforts in the City of Austin

Register here:  
<https://bit.ly/3gR9ADL>



1 Continuing Education Credit (CEC) is available to attendees

Recorded webinars will be posted online at: <https://n-ewn.org/resources/n-ewn-knowledge-seminars/>

Presented by:



Questions? Please contact:  
**Sage Paris, LimnoTech**  
[sparis@limno.com](mailto:sparis@limno.com)

# The Proposed Future of Planning for USACE Water Resources Investments

## N-EWN Knowledge Series

July 18, 2024



moffatt & nichol





# NETWORK FOR ENGINEERING WITH NATURE

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## DEVELOPING METHODS AND STANDARDS

New tools, techniques and guidance are needed to effectively plan, design, construct and operate natural infrastructure at different scales



## ASSESSING BENEFITS AND COSTS

Natural infrastructure provides communities with a broad array of economic, environmental and social benefits. Improved approaches are needed to evaluate, quantify and forecast these benefits to support planning and decision making



## MONITORING PERFORMANCE AND OUTCOMES

Technically sound, efficient and applicable methods are needed to track natural infrastructure performance over time, develop the evidence base for future designs, ensure compliance with policy and inform project operations and adaptive management



## INTEGRATING PEOPLE AND POLICY

Providing infrastructure that supports human wellbeing and equitably meets the needs of diverse communities requires integration of human values, attitudes, beliefs, perceptions and policies with modern communication and collaboration practices

# Presentation Outline

- › Evolution of Federal Objectives for Planning Water Resources Investments
- › USACE's Agency Specific Procedures (ASP) for Implementation of the Principles, Requirements, and Guidelines (PR&G) for Water Resources Investments
- › Miami-Dade County Back Bay Coastal Storm Risk Management Study

12066 Federal Register / Vol. 89, No. 32 / Thursday, February 15, 2024 / Proposed Rules

**DEPARTMENT OF DEFENSE**  
Department of the Army, Corps of Engineers  
33 CFR Part 234  
[Docket ID: COE-2023-0005]  
RIN 0710-AB41

**Corps of Engineers Agency Specific Procedures To Implement the Principles, Requirements, and Guidelines for Federal Investments in Water Resources**

**AGENCY:** U.S. Army Corps of Engineers (Corps), Department of Defense (DoD).  
**ACTION:** Proposed rule.

**SUMMARY:** This proposed rule establishes Agency Specific Procedures (ASPs) for the Corps' implementation of the Principles, Requirements, and Guidelines for water resources investments. It provides a framework to govern how the Corps would evaluate proposed water resource investments, including identification of which Corps programs and activities are subject to the Principles, Requirements, and Guidelines. The Corps is proposing this rule in response to congressional direction provided in authorizing language in the Water Resources Development Act of 2020.

or otherwise protected, through [regulations.gov](https://www.regulations.gov) or email. The [regulations.gov](https://www.regulations.gov) website is an anonymous access system, which means we will not know your identity or contact information unless you provide it in the body of your comment. If you send an email directly to the Corps without going through [regulations.gov](https://www.regulations.gov), your email address will be automatically captured and included as part of the comment placed in the public docket and made available on the internet. If you submit an electronic comment, we recommend that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If we cannot read your comment because of technical difficulties and cannot contact you for clarification, we may not be able to consider your comment. Electronic comments should avoid the use of any special characters, any form of encryption, and be free of any defects or viruses.

**Docket:** For access to the docket to read background documents or comments received, go to <http://www.regulations.gov>. All documents in the docket are listed. Although listed in the index, some information is not publicly available, such as CBI or other information whose disclosure is



and nationally coordinated basis were central to the Water Resources Planning Act of 1965 (Pub. L. 89-80) and were reflected in Federal guidance, the Principles and Standards for Planning Water and Related Land Resources (P&S), issued by the Water Resources Council in 1973 (36 FR 24778). The Water Resources Council was established by the Water Resources Planning Act of 1965 (Pub. L. 89-90) to assess and make recommendations on national water-related matters and policies (further information can be found at 18 CFR 701.3). The P&S reflected two Federal objectives for water resources planning, which were to enhance national economic development and to enhance the quality of the environment.

Federal water policy moved away from this dual-objective concept with the 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G).<sup>1</sup> The P&G combined the two objectives of the P&S into a single, integrated Federal objective, which was "to contribute to national economic development consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other planning requirements". The Water Resources Council developed the P&G

**MIAMI-DADE BACK BAY COASTAL STORM RISK MANAGEMENT Feasibility Study**

February 10, 2023  
*Biscayne Bay Watershed Management Advisory Board Meeting*

Jim Murley  
Chief Resilience Officer  
Miami-Dade County

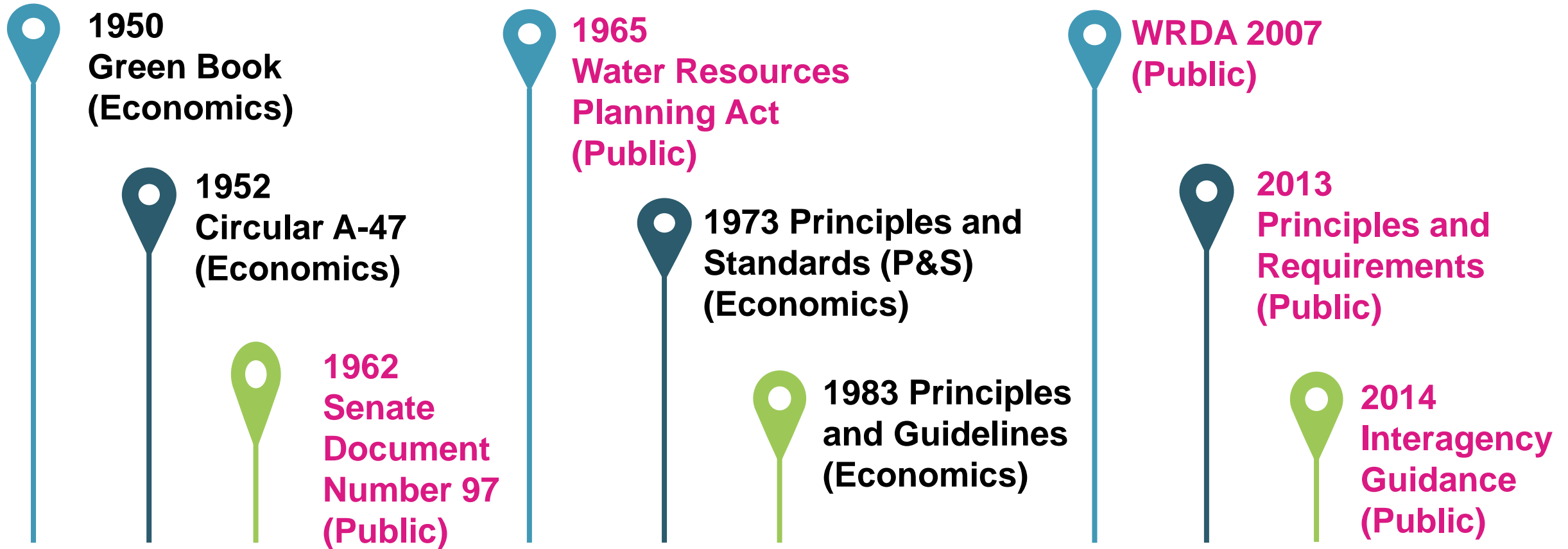


<https://www.saj.usace.army.mil/MiamiDadeBackBayCSRMFfeasibilityStudy/>

# Which principle is best-suited for determining water resources investments?

- ❑ Maximizing Net Economic Benefits
  - Recommendation based solely on economic effects
- ❑ Maximizing Net Public Benefits
  - Recommendation based on economic, environmental, and social effects

# Evolution of Federal Objectives for Planning Water Resources Investments



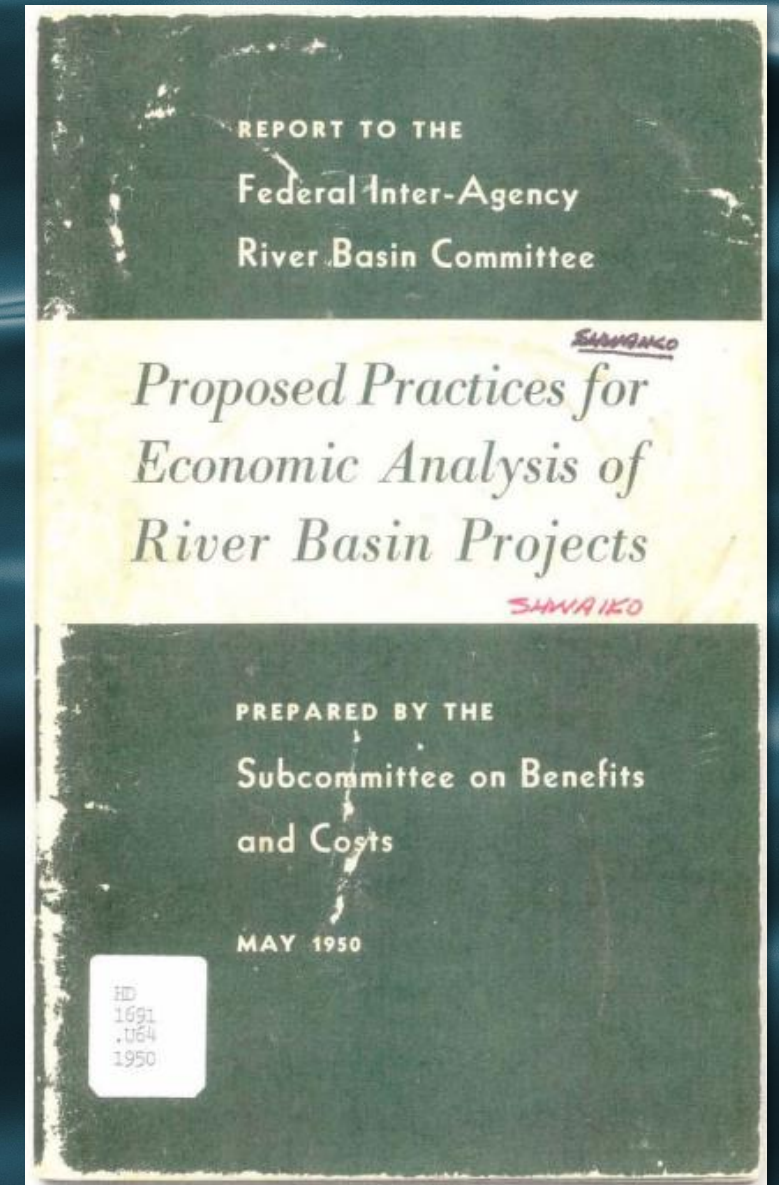
# History of Water Resources Planning Principles

## 1950 Green Book

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**Established principle of maximizing net benefits**

**Economic justification only criteria mentioned**

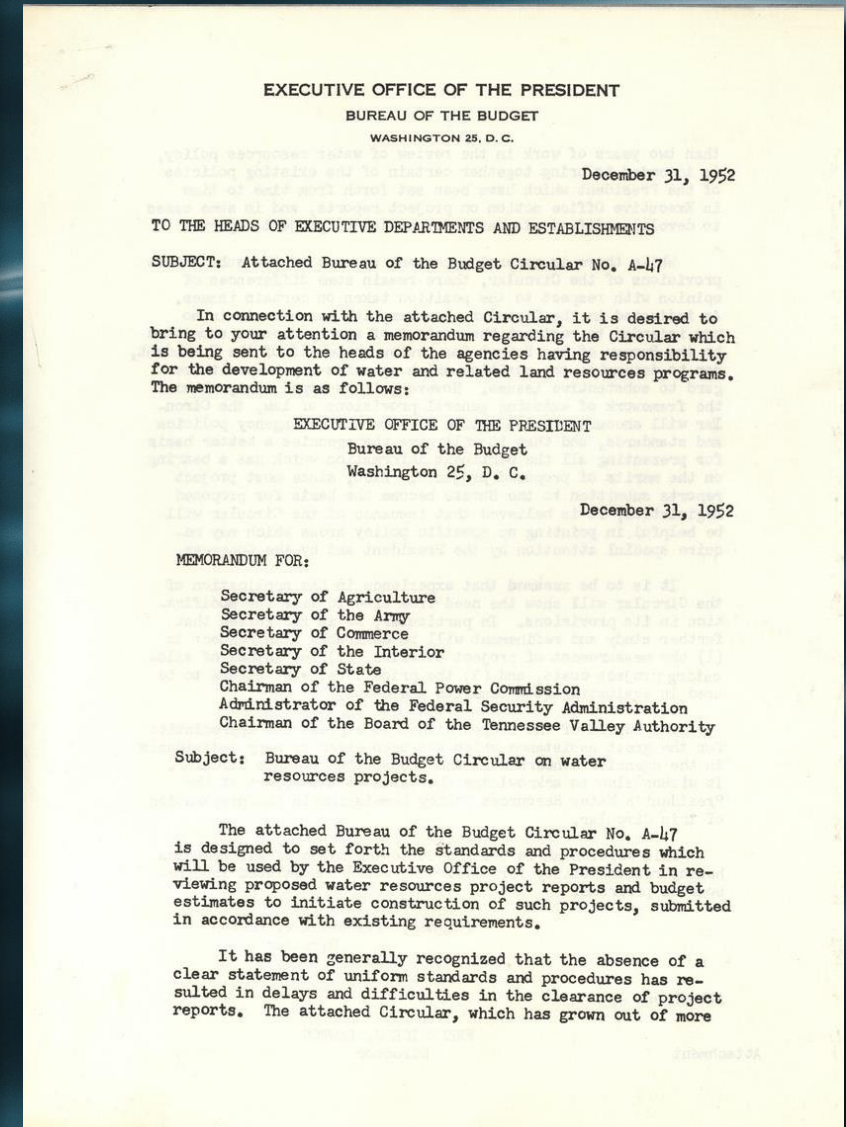


# History of Water Resource Planning Principles

## 1952 Circular A-47

- › Bureau of the Budget issued Circular A-47 to water resources agencies to establish standards and procedures to review proposed water resources reports

**National Economic  
Efficiency**





# History of Water Resource Planning Principles

## 1962 Senate Document Number 97

- › In 1962, President Kennedy requested changes that superceded Circular A-47
- › The environment was added as a distinct objective for the first time
- › “Well-being of all people shall be the overriding determinant in considering the best use of water and related land resources”



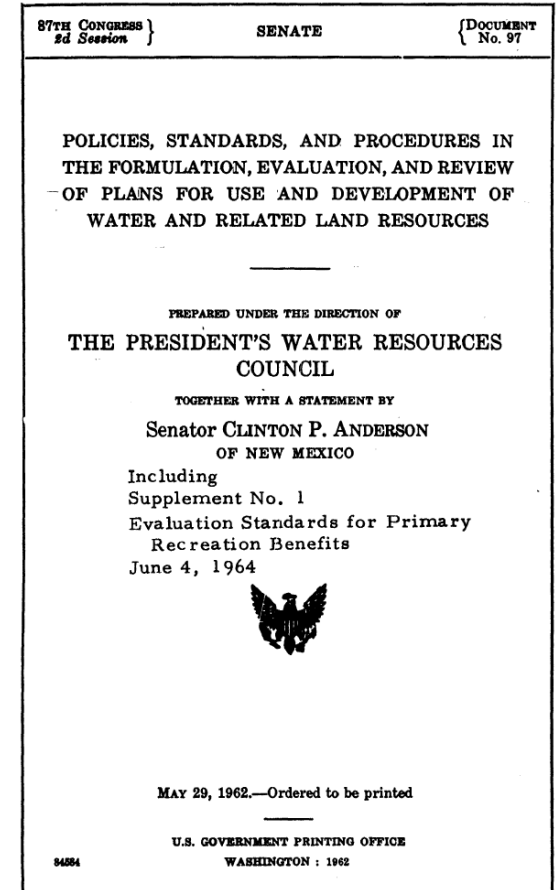
**National  
Economic  
Development**



**Preservation**



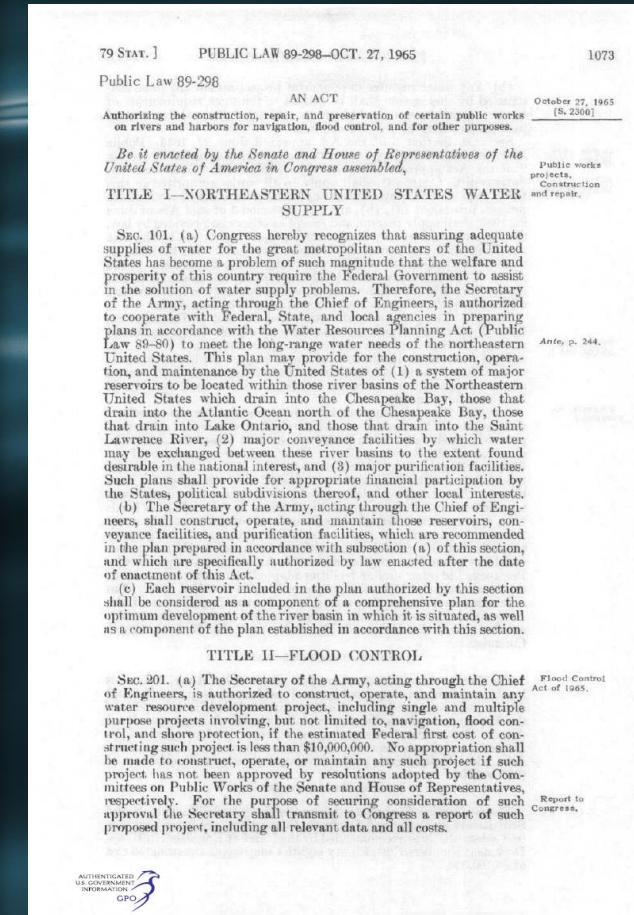
**Well-Being  
of People**



# History of Water Resource Planning Principles

## 1965 Water Resources Planning Act

- › Established and mandated Water Resources Council's principles and standards for planning water and related land resource projects
- › The Orange Books suggested multiple Federal objectives



# History of Water Resource Planning Principles

## 1973 Principles and Standards (P&S)

- › Enforced 2 Federal objectives for water resources planning

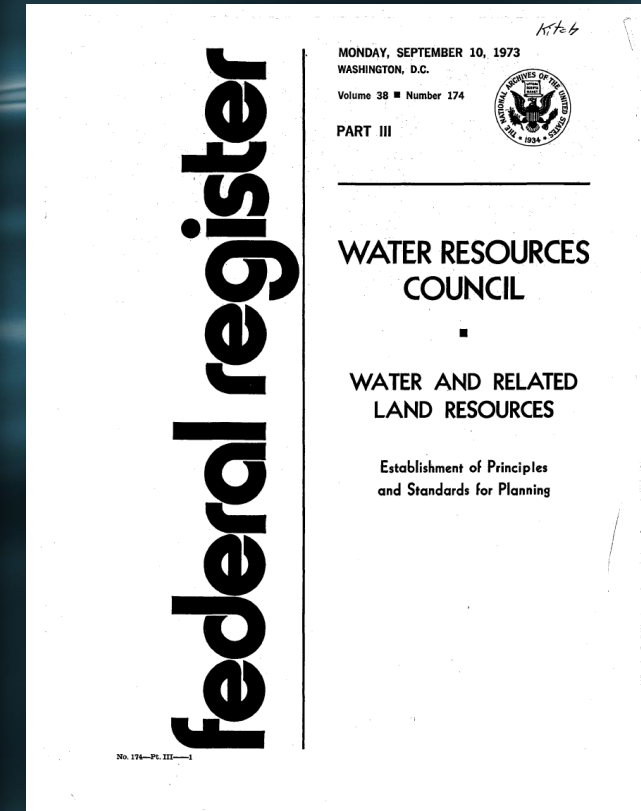
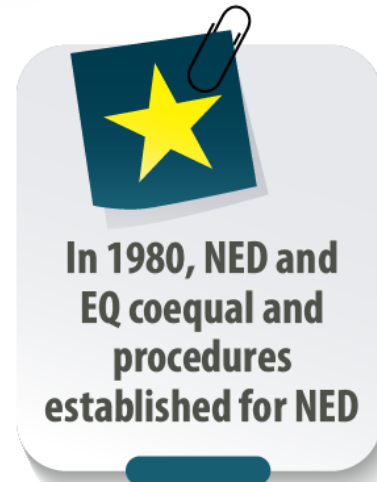


**National  
Economic  
Development**



**Environmental  
Quality**

- › 4 System of Accounts:
  - › National Economic Development
  - › Environmental Quality
  - › Regional Development
  - › Social Well-Being



# History of Water Resource Planning Principles

## 1983 Principles and Guidelines (P&G)

- › The Reagan Administration repealed P&S and replaced it



**National  
Economic  
Development**

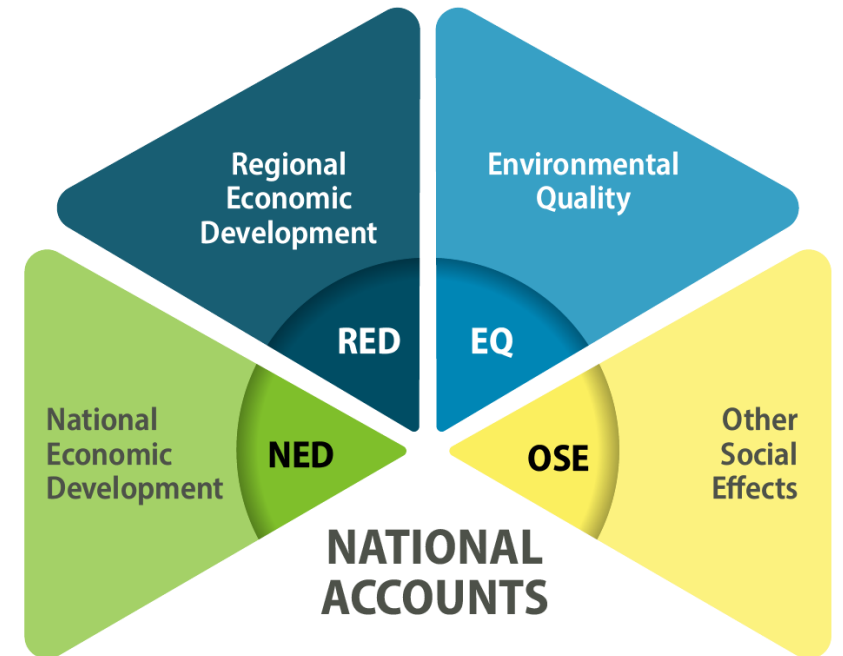
**ECONOMIC AND ENVIRONMENTAL  
PRINCIPLES AND GUIDELINES  
FOR WATER AND RELATED LAND RESOURCES  
IMPLEMENTATION STUDIES**

March 10, 1983

# History of Water Resource Planning Principles

## 1983-Present: The P&G Era

- › The NED Plan
  - › *Only required Federal objective*
  - › *Primary driver in decision-making*
- › Four National Accounts
  - › *National Economic Development (NED)*
  - › *Regional Economic Development (RED)*
  - › *Environmental Quality (EQ)*
  - › *Other Social Effects (OSE)*

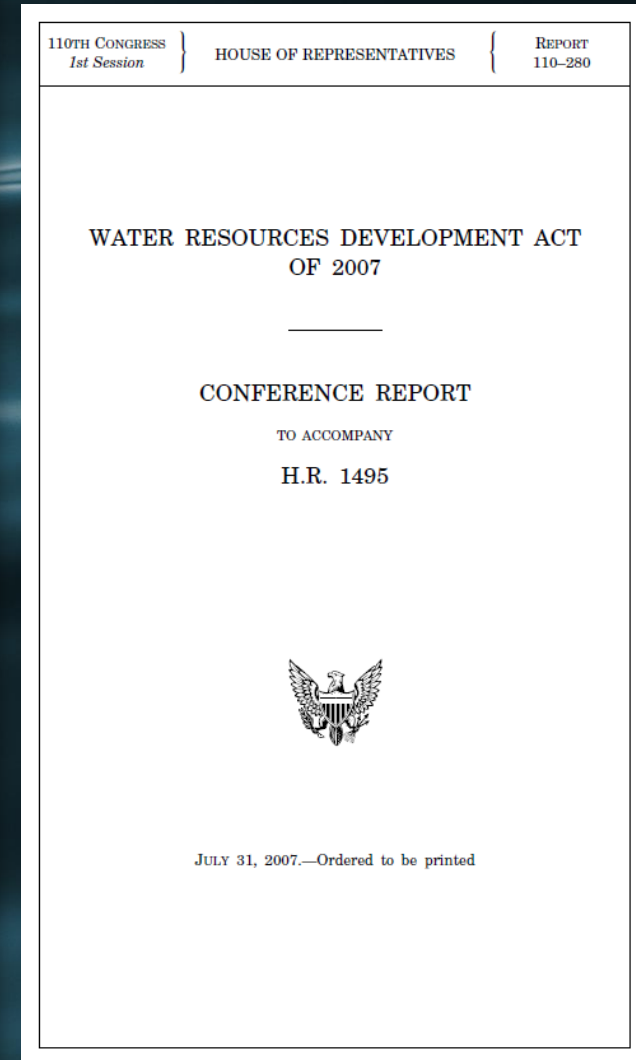


- › ASA(CW) may allow recommendation of a non-NED plan

# History of Water Resource Planning Principles

## WRDA 2007

- › Section 2031 of WRDA 2007 (PL 110-114) called for the Secretary of the Army to **revise the 1983 P&G**
- › Specifying that Federal water resources investments shall reflect **national priorities, encourage economic development, and protect the environment**
- › Ensuring that water resources projects are justified by **maximizing net public benefits**
- › Ensure **no hierarchal relationship** exists among environmental, economic, and social goals.



## History of Water Resource Planning Principles

# 2013 Principles and Requirements (P&R)

States that following completion of Interagency Guidelines (2014), each Federal agency will develop Agency-Specific Procedures (ASP) to direct the implementation of these Principles, Requirements and Guidelines (PR&G) to their pertinent missions and authorities

# History of Water Resource Planning Principles

## Principles, Requirements, and Guidelines

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- › In 2014, the Council on Environmental Quality (CEQ) completed interagency guidelines to update the 1983 P&G, which became effective on **June 15, 2015** (79 FR 77460)
- › This effort resulted in the **Principles, Requirements and Guidelines (PR&G)**
- › It gave **more prominence** to ecological, public safety, environmental justice, and related concerns for Federal decisions on water resources investments

Principles and Requirements for Federal Investments in  
Water Resources

March 2013



## Proposed Water Resource Planning

# Components of PR&G

› The PR&G, which governs how Federal agencies evaluate proposed water resources development, include the following three components:

- 1) Principles and Requirements for Federal Investments in Water Resources (P&R, 2013)
- 2) Interagency Guidelines (IG, 2014)
- 3) Agency Specific Procedures (ASPs)



# Recent Water Resources Development Act

## WRDA 2020

- › Section 110 of the Water Resources Development Act of 2020 (**WRDA 2020**) (Division AA of Pub. L. 116-260) **directed the Army to issue its final ASPs** necessary for the Corps' Civil Works program to implement the PR&G.
- › It also provided that the Army **must develop Corps projects in accordance with the PR&G** as well as Section 2031 of WRDA 2007
- › The WRDA 2020 directed the Army to **provide notice and opportunities for engagement and public comments** on the development of the ASPs.



Subcommittee on Water Resources and Environment | Prepared by T&I Democratic Staff

### THE WATER RESOURCES DEVELOPMENT ACT OF 2020: DIVISION AA OF H.R. 133, CONSOLIDATED APPROPRIATIONS ACT, 2021

The Water Resources Development Act (WRDA) is essential to everyday American life. Nearly 80 percent of traded goods that Americans rely on is moved through our Nation's ports, harbors, and inland waterways. Projects for flood damage reduction help protect both our rural and urban communities, thus benefiting millions of Americans. Ecosystem restoration projects restore and maintain our vital natural resources. This work, carried out by the U.S. Army Corps of Engineers (Corps), is made possible through the enactment of WRDA.

WRDA 2020 continues the bipartisan tradition of the Committee on Transportation and Infrastructure to move a new WRDA every two years to respond to local water resource needs and to ensure continued congressional oversight over the Corps.

Earlier this year, the U.S. House of Representatives unanimously approved WRDA 2020 (H.R. 7575), sponsored by Transportation and Infrastructure Committee Chairman Peter A. DeFazio (D-OR), Ranking Member Sam Graves (R-MO), Water Resources & Environment Subcommittee Chairwoman Grace F. Napolitano (D-CA), and Ranking Member Bruce Westerman (R-AR). Division AA of H.R. 133, includes the final House-Senate agreement on WRDA 2020, which incorporates significant policy advancements from H.R. 7575.

### IMPROVES U.S. WATER RESOURCES INFRASTRUCTURE

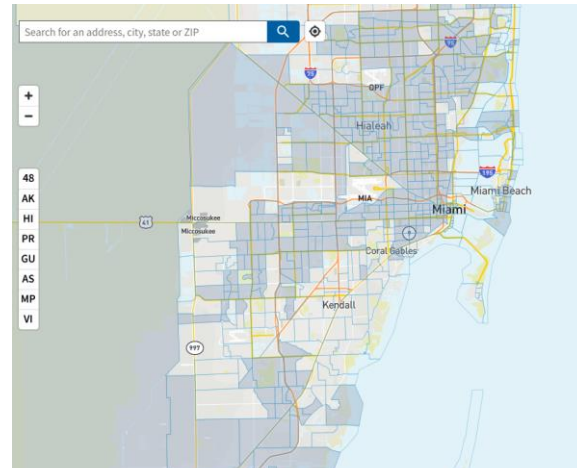
WRDA 2020 authorizes the study and construction of locally driven projects that were developed in cooperation and consultation with the Corps. These projects are key to preserving our Nation's economy, to protecting our communities, and to maintaining our quality of life.


#### WRDA 2020:

- Authorizes the construction of all **46 pending Corps Chief's Reports** received since the enactment of WRDA 2018. Chief's Reports are the final recommendations to Congress by the Chief of the U.S. Army Corps of Engineers on rigorously-studied water resources infrastructure priorities.
- Authorizes **27 feasibility studies** for water resources development projects, including those identified through the public review process established by section 7001 of the Water Resources Reform and Development Act of 2014.
- Directs the Corps to complete **six comprehensive river basin studies** for the Great Lakes, the Lower Mississippi River, the Upper Mississippi River, the Lower Missouri River Basin, the Upper Missouri River, and the Sacramento River.

# Recent Policies, Guidance, & Directives

## Comprehensive Documentation of Benefits




 Climate and Economic Justice Screening Tool



**FEDERAL REGISTER**  
The Daily Journal of the United States Government



 Proposed Rule

## Corps of Engineers Agency Specific Procedures To Implement the Principles, Requirements, and Guidelines for Federal Investments in Water Resources

A Proposed Rule by the Engineers Corps on 02/15/2024



# Single to Multiple Federal Objectives

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**Comprehensive Documentation  
of Benefits in Decision  
Documents, January 5, 2021**

**Maximize Net  
NED Benefits**

**USACE ASPs To Implement the  
PR&G for Federal Investments  
in Water Resources**

**Maximize Net  
Public Benefits**

# Alternatives Required for Comprehensive Documentation of Benefits

**Each study must include, at a minimum, the following plans in the final array of alternatives for evaluation:**

(1) A “No Action” alternative

(2) For flood-risk management studies, a nonstructural plan, which includes modified floodplain management practices, elevation, relocation, buyout/acquisition, dry flood proofing, and wet flood proofing

(3) A plan that maximizes net benefits consistent with the study purpose

(4) A plan that maximizes net total benefits across all benefit categories

(5) A locally preferred plan, if requested by a non-federal partner, if not one of the aforementioned plans

# Alternatives Required for USACE Agency Specific Procedure

**Each study must include, at a minimum, the following plans in the final array of alternatives for evaluation:**

- (1) A “No Action” alternative
- (2) A nonstructural alternative: An alternative, if one exists, that can effectively address the problem through the feasible use of nonstructural approaches
- (3) A nature-based solution alternative: An alternative, if one exists, that can effectively address the problem through the feasible use of nature-based solutions (including natural systems and ecosystem processes)
- (4) An environmentally preferred alternative
- (5) An alternative that seeks to maximize net public benefits
- (6) An alternative that is locally preferred. If this alternative differs from the net public benefits alternative, it will be required to have a comparable level of detail and analyzed using the same analytical framework as the net public benefits alternative

A plan that maximizes net benefits is no longer mentioned



# Who made comments on solicitations for the USACE ASP for Implementation of the PR&G for Water Resources Investments?

- ❑ I made comments
- ❑ I read the ASP but did not comment
- ❑ I did NOT read the ASP



# USACE ASP Solicitations

- › Nonstructural
- › Evaluating and Displaying Public Benefit Categories
- › Life Safety Benefits
- › Comparing Alternatives with Multiple Objectives
- › Scoping Limitations Due to Study Authority
- › Programs, Projects, and Plans Excluded or Included in ASP



# USACE ASP Solicitations

## Nonstructural

- › *Section 234.2(l) Nonstructural approaches.*
  - › Should modification be made to the term “nonstructural”?
- › *Section 234.6(h) Formulate Alternatives.*
  - › Should the Corps consider alternatives beyond their mission that are supported by the non-Federal interest?

# USACE ASP Solicitations

## Evaluating and Displaying Public Benefit Categories

- › *Section 234.4(c) Net public benefits.*
  - › Should net public benefits be consolidated into one category?
- › *Section 234.9(c) Consideration of benefits and costs.*
  - › Should the three categories (economics, environmental, and social effects) be eliminated?

# USACE ASP Solicitations

## Life Safety Benefits

- › *Section 234.4(c) Net public benefits.*
  - › Should life safety benefits be specifically identified?
  - › If so, under which benefit category (social, environmental, or economic category)?
- › *Section 234.6(c)(3) Healthy and resilient ecosystems.*
  - › Should life loss be monetized?

# USACE ASP Solicitations

## Comparing Alternatives with Multiple Objectives

- › *Section 234.10(a) Comparing alternatives.*
  - › Are there multi-objective decision frameworks or approaches that may have successfully been used?
  - › How can the Corps best compare options and develop project proposals (objectively and consistently) with a national perspective?
  - › What framework supports objective analysis and sound decision-making for tradeoffs between monetary and nonmonetary and quantitative and qualitative output?
  
- › *Section 234.10(b) Tradeoffs.*
  - › Should maximizing net benefits be a primary metric for use in comparing alternatives, evaluating tradeoffs, and clarifying the decision framework?

# USACE ASP Solicitations

## Scoping Limitations Due to Study Authority

- › *Section 234.6(f) Identify purpose, problems, needs, and opportunities.*
- › How should specific limitations be addressed in the scoping process due to the following factors?
  - › Scope of the study authority
  - › Cost sharing requirements
  - › Non-Federal interest support
  - › Corps mission areas and core capabilities

# USACE ASP Solicitations

## Programs, Projects, and Plans Excluded or Included in ASP

- › *Section 234.4(d) Applicability.*
  - › What additional projects and programs should be covered under the PR&G or, conversely, what additional projects and programs should not be covered under the PR&G?
  - › Should these studies and program be included or excluded under the PR&G?
    - › Watershed studies
    - › Dredged material management plans
    - › Tribal Partnership Program
    - › Continuing Authorities Program
    - › Major Rehabilitation Evaluation Reports

# What's Excluded from the ASP?

- › Small and Routine, Low Dollar Federal Investments\*
- › NEPA Categorical Exclusions\*
- › Not a Water Resources Investment
- › Not an USACE Water Resources Investment
- › State and Local Water Resources Plans
- › Not well-suited

\* Not automatic. May apply in certain conditions.

# What applies to the ASPs?

- › Non-Federal interests who undertake feasibility studies, such as under **Section 203 of WRDA 1986**, as amended
- › Regulatory compliance actions related to activities that are subject to the PR&G, such as **compliance with the Endangered Species Act**.
- › **Significant changes to O&M plans** that are proposed or changes to meet new goals that raise additional considerations for water resources investments
- › Should watershed studies, which do not result in a water resources investment recommendation, be included?



# So What?

- › **What can change with the ASPs?**
  - › NED Plan is no longer primary reason for selecting the recommended plan
  - › If recommended plan does not maximize net public benefits, it requires an ASA(CW) exception. “The Army believes that exception requests would be a rare condition.”
  - › Study objectives can be all inclusive
  - › Alternatives may be formulated to improve the well-being of people

# Incorporation of Nature-Based Solution in Civil Works Projects

- › “As USACE incorporates the PR&G ASPs in relevant planning guidance, inclusion of NBS and the consideration of these solutions should also be explicit. USACE must work to identify tools which can help assess benefits and costs associated with NBS.”

“The Army will continue to support resourcing further NBS research and developing pilot programs, such as in Miami-Dade, Florida, to overcome some of the issues identified.”

ASA(CW) Memorandum  
for Commanding General  
USACE: Incorporation of  
NBS in CW Projects

**APRIL 23, 2024**

# Who made comments on the Draft Miami-Dade Back Bay Coastal Storm Risk Management Study?

- ❑ I made comments
- ❑ I read it but did not comment



# USACE Miami-Dade County Back Bay Coastal Storm Risk Management Study



**February 2018**  
Congress enacts Bipartisan Budget Act of 2018 authorizing \$17.4 billion in USACE disaster relief activities

**October 2018**  
BCC Reso [R-1011-18](#)  
Authorized start for 100% federal funded 3-year \$3 million study; supported by MDC in-kind staff time

**Nov. 2018 - 2020**  
Community engagement, charrettes & public meetings & comments

**June 2020**  
Draft Integrated Feasibility Report and Programmatic EIS a.k.a. the Tentatively Selected Plan (TSP) Published for Public Comment

Stakeholders express significant concerns

**December 2021**  
Mayor sends letter to USACE requesting waiver & ability to explore alternatives

**August 2022**  
ASA(CW) approves 2-part restudy with \$8.2 million over 5 years:

- Part 1 (Aug '22 – '23)
- Part 2 (Aug '23 – '27)

**Nov. – June '23**  
Community engagement, charrettes & public meetings

**August 2023**  
'Go/No Go' Meeting w/ Mayor and Assistant Secretary of the Army for Civil Works (ASA(CW)) to restart study to further evaluate new alternatives during 2023-2027

**Original 3-year Study**  
2018-2021

**Part 1**  
Aug 2022- Aug 2023

**Part 2**  
2023-2027+



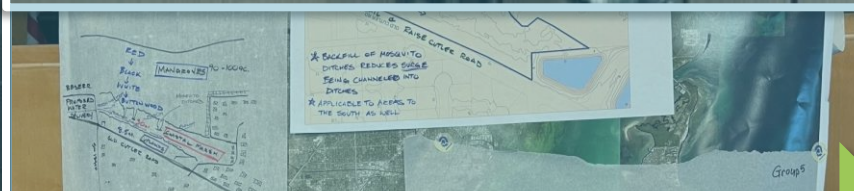
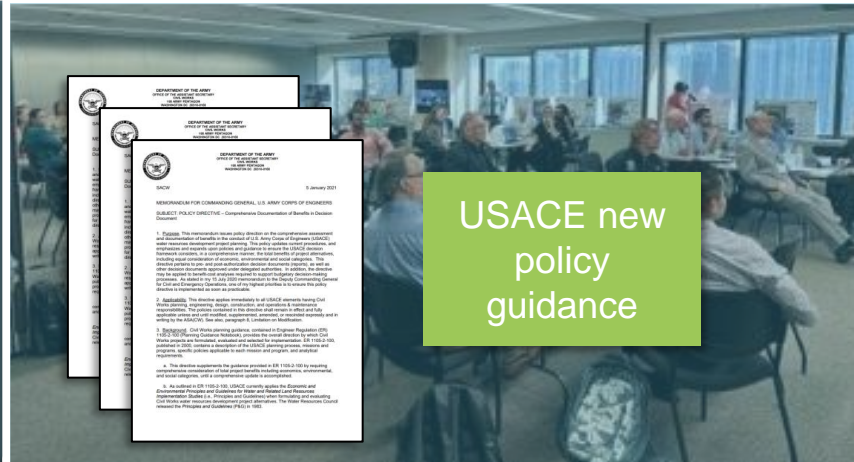
## Original Study (2018-2021)

Single Objective Decision Criterion: Maximize NED Net Benefits

Reduce economic damages to building and critical infrastructure

Limited to 7 focus areas

Single Line of Defense



## What's Changed?



## Comprehensive Approach (2024-2028+)

NED Waiver to Maximize Net Public Benefits

Comprehensive Benefits

Multiple Lines of Defense

Prioritized Disadvantaged Communities

Interim Report for actionable items

Nonstructural Program

Nature-Based Solution Pilot Program

Study & Project Integration

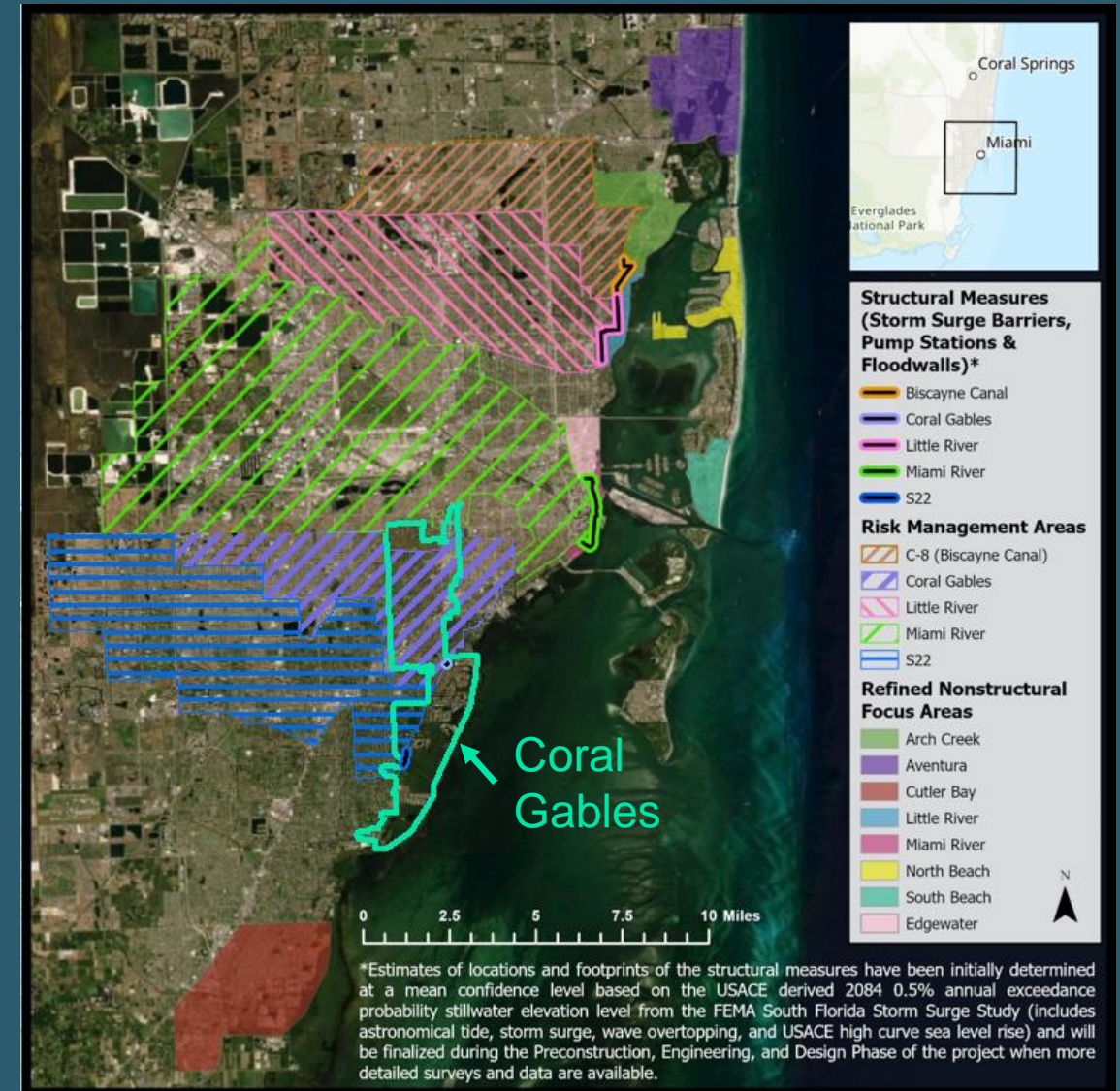
to work on re-initiating the Miami-Dade Back Bay Coastal Storm Risk Management study.

Play (k) Moffatt & Nichol

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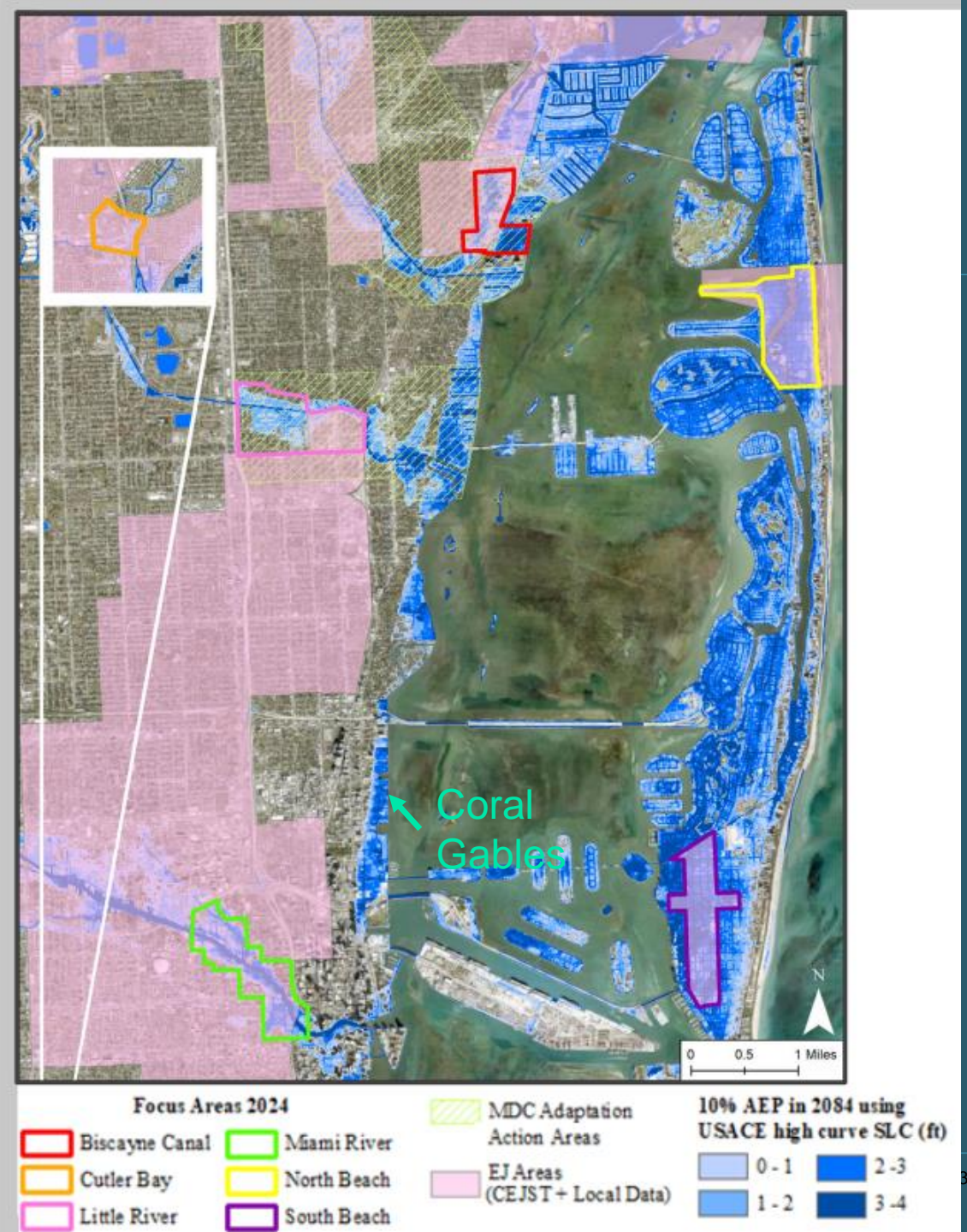
# 2020 MDC Back Bay CSRM Study TSP

- › **Critical infrastructure** risk management on priority asset categories outside of structural measures such as fire stations, police stations, hospitals, evacuation centers, emergency operation centers, pump stations, etc. (not shown on map).
- › **Surge barriers** at Biscayne Canal, Little River, Miami River, Coral Gables, and S22 all of which include associated pump stations, floodwalls, and tide gates.
- › **Nonstructural** risk management at refined focus areas outside of structural measures
  - › Elevations: 5,800
  - › Floodproofing: 4,600
- › **Nature-based Solutions** (mangrove and wetland restoration) at the North Cutler Bay site.



# 2024 MDC Back Bay CSRM Study Draft Report

- › Six focus areas
  - › Areas with high frequency storm surge inundation
  - › Environmental Justice Communities
- › Approximately 2,487 buildings evaluated
  - › Critical Infrastructure
  - › Residential
  - › Non-residential





# 2024 MDC Back Bay CSRM Draft Report Components

## New Comprehensive Study Framework

### 3 Pillars



1) Multiple Lines of Defense



2) Adaptive Management Process



3) Integration Effort

## Recommended Measures

Across six initial focus areas at highest risk + represent environmental justice communities:

- 27 Critical Infrastructure Buildings Floodproofing
- ~2100 Elevations of residential buildings
- ~400 Floodproofing of nonresidential buildings



Photo Credit: Flood Control America, LLC

\* No significant environmental or in-water impacts

## New Program Authorization Requests



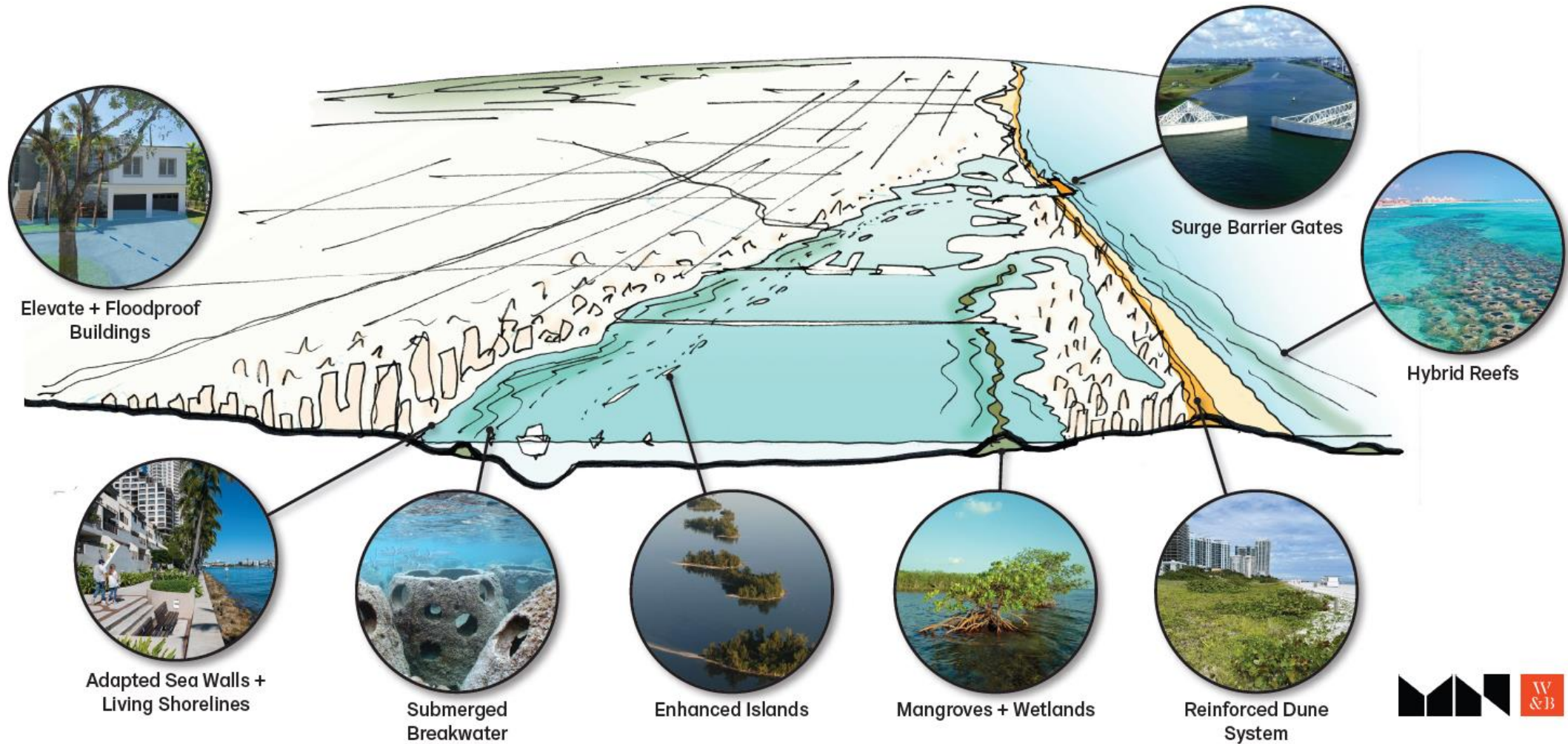
**Nature-Based Solutions (NBS) Pilot Program**  
Requested Amount: \$180 million



**Nonstructural Program**  
Requested Amount: \$200 million

# Multiple Lines of Defense

the vision for reducing coastal storm risk across the range of natural, built, and hybrid environments in the water, along the shoreline, and on land.



# Miami-Dade County Back Bay Coastal Storm Risk Management Study Recommended Measures 2024 Draft Report

## › Criteria for Focus Areas

- › Highest risk to storm surge (10 percent AEP storm surge floodplain)
- › CEJST to identify EJ Communities
- › MDC Adaptation Action Areas were used to adjust focus areas for Biscayne Canal and Little River basins
- › FEMA repetitive loss data from the NFIP were used to ensure incorporation of any cluster of repetitive loss or severe repetitive loss buildings into Focus Areas

## › Critical Infrastructure Measures

- › 27 critical facilities
- › Includes fire stations, police stations, emergency operations centers, evacuation shelters, wastewater treatment plants, and communication buildings
- › Includes dry floodproofing and elevation of exterior equipment (i.e., HVAC units, generators)

## › Nonstructural Measures

- › 2,057 residential elevations
- › 403 dry floodproofings of nonresidential buildings

\* *No in-water impacts*



# Miami-Dade County Back Bay Coastal Storm Risk Management Study Recommended Measures 2024 Draft Report

Alternative	NED (\$1000s)	EQ	RED	OSE Score
Alternative 1. No Action / FWOP	N/A	No significant impacts to the environment	Value added: \$0 FTE <sup>4</sup> jobs: 0	0
Alternative 2. CI Alternative	<b>AAB:</b> <sup>1</sup> \$9,000 <b>AAC:</b> <sup>2</sup> \$4,300 <b>NAB:</b> <sup>3</sup> \$4,700 <b>BCR:</b> 2.1	No significant impacts to the environment	Value added: \$114.5 million FTE jobs: 1,150	10
Alternative 3. Nonstructural Alternative	<b>AAB:</b> \$53,000 <b>AAC:</b> \$113,000 <b>NAB:</b> -\$60,000 <b>BCR:</b> 0.47	No significant impacts to the environment	Value added: \$2.5 billion FTE jobs: 24,200	17
Alternative 4. CI + Nonstructural Alternative	<b>AAB:</b> \$62,000 <b>AAC:</b> \$117,000 <b>NAB:</b> -\$55,000 <b>BCR:</b> 0.53	No significant impacts to the environment	Value added: \$2.7 billion FTE jobs: 25,300	33
Alternative 5. CI + Subset of Nonstructural Alternative	<b>AAB:</b> \$41,000 <b>AAC:</b> \$70,000 <b>NAB:</b> -\$12,000 <b>BCR:</b> 0.59	No significant impacts to the environment	Value added: \$1.6 billion FTE jobs: 15,200	22

## › Recommended Plan: Alternative 4

- › Maximizes net 'public' benefits
- › Scored highest for Other Social Effects account including:
  - › Greatest reduction in loss of lives at 87% (437 lives saved)
  - › Highest categorical quantitative value for human health
  - › Best score for social connectedness and community resilience on EJ communities
  - › Highest score for economic vitality
  - › Highest value added and number of jobs created for Regional Economic Development account

# New Programs for Authorization Request Draft 2024 Report



**Nature-Based Solutions  
Pilot Program**



**Nonstructural Program**

## **Requested Amount: \$180 Million**

### Example NBS Types

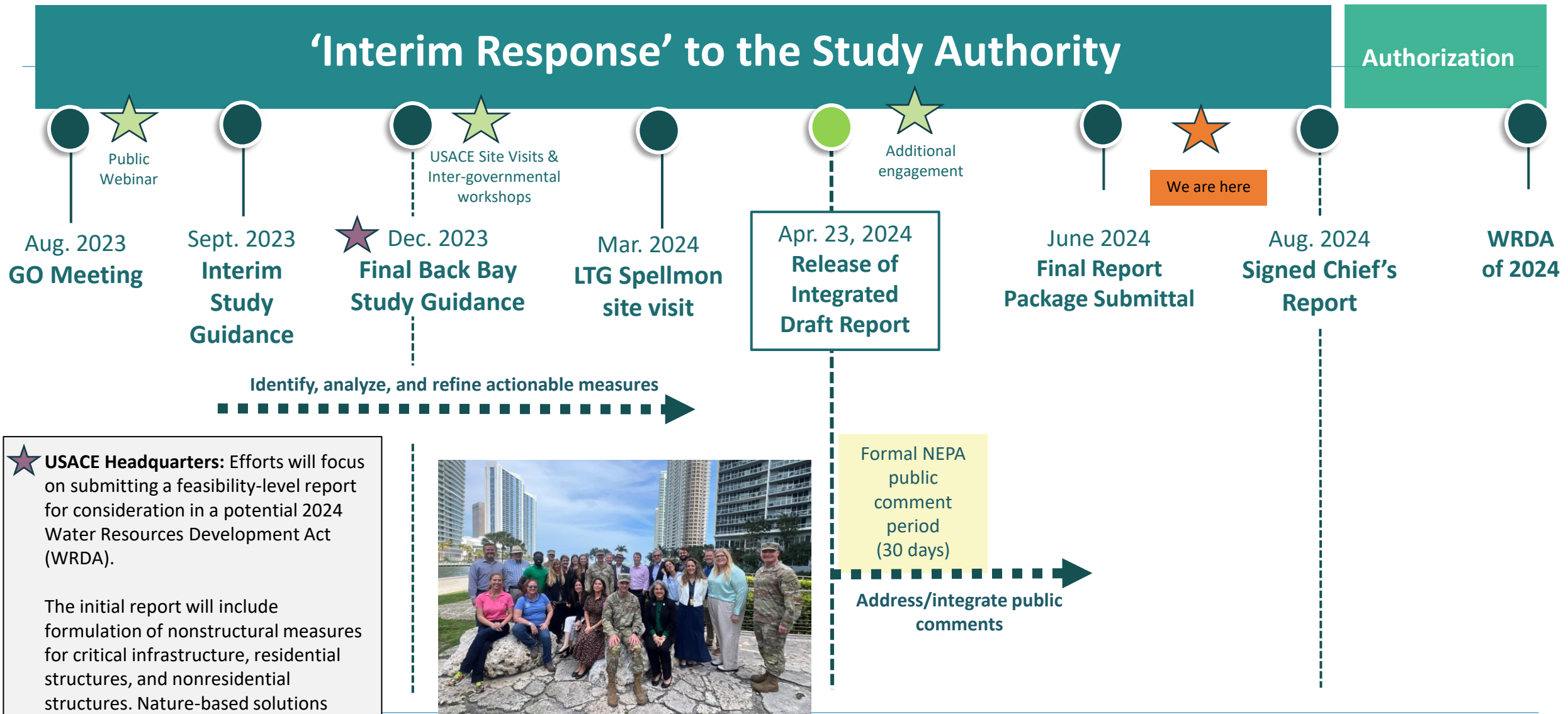
- Hybrid reef structures
- Dune reinforcement and/or modification
- Human-made island enhancement
- Living shorelines
- Mangrove and wetland restoration
- Restoration of canal/mosquito ditches and dredge holes
- Hydrological parks

## **Requested Amount: \$200 Million**

The Nonstructural Program will identify, evaluate, and recommend ***flood resilience measures for more complex buildings*** such as hospitals, multifamily residences, and other critical infrastructure and non-residential facilities identified by the community .



# Schedule to 2024 Chief's Report



## Sources

- › Yoe, C.E. and K.D. (1996). Planning Manual. Institute for Water Resources, U.S. Army Corps of Engineers. Available at <https://planning.erdc.dren.mil/toolbox/library/IWRServer/96r21.pdf>
- › Proposed Rule: Corps of Engineers Agency Specific Procedures to Implement the Principles, Requirements, and Guidelines for Federal Investments in Water Resources Federal Register Notice. Available at <https://planning.erdc.dren.mil/toolbox/guidance.cfm?Id=269&Option=Principles,%20Requirements%20and%20Guidelines>

## Sources

- › Comprehensive Documentation of Benefits in Decision Document, January 5, 2021, issued by the Assistant Secretary of the Army (Civil Works). Available at [https://planning.erdc.dren.mil/toolbox/library/MemosandLetters/ComprehensiveDocumentationofBenefitsinDecisionDocument\\_5January2021.pdf](https://planning.erdc.dren.mil/toolbox/library/MemosandLetters/ComprehensiveDocumentationofBenefitsinDecisionDocument_5January2021.pdf)
- › Miami-Dade Back Bay Coastal Storm Risk Management Feasibility Study: Draft Integrated Feasibility Report and Environmental Assessment, April 2024. Available at <https://www.saj.usace.army.mil/MiamiDadeBackBayCSRMFfeasibilityStudy/>



# Q & A



# Thank you!

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# The N-EWN Knowledge Series

## A Continuing Education Series about Engineering with Nature



**Jeff Morris**  
*Senior Planning & Economics Consultant*  
*Moffatt & Nichol*

### The Proposed Future of Planning for USACE Water Resources Investments

The central theme of this presentation, “The Proposed Future of Planning for USACE Water Resources Investments”, focuses on the evolution of Federal objectives since the proposed practices for economics analysis in 1950 to the most recently proposed USACE’s Agency Specific Procedures (ASP) for Implementation of the Principles, Requirements, and Guidelines (PR&G) for Water Resources Investments.

Save the date!

Upcoming webinars will take place the 3<sup>rd</sup> Thursday of the month.

Jul. 18  
12:30pm ET

*Jeff Morris, Senior Planning & Economics Consultant, Moffatt & Nichol*  
The Proposed Future of Planning for USACE Water Resources Investments

Aug. 15  
12:30pm ET

*Pippa Brashear, Principal, Scape Landscape Architecture DPC*  
Living Breakwaters and Other Nature-Based Adaptation Projects

Sep. 19  
12:30pm ET

*Abel Porras, Supervising Engineer, City of Austin Watershed Department*  
Watershed Modeling Efforts in the City of Austin

Register here:  
<https://bit.ly/3gR9ADL>



1 Continuing Education Credit (CEC) is available to attendees

Recorded webinars will be posted online at: <https://n-ewn.org/resources/n-ewn-knowledge-seminars/>

Presented by:



Questions? Please contact:  
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