Innovating with the Players to Evolve the Game

U.S. Army Corps of Engineers

Miami-Dade County Back Bay Coastal Storm Risk Management Study

2025 State of the Coast

Presented by

Lynette Cardoch, PhD

Chief's Report Signed

August 26, 2024

"I submit for transmission to Congress my report on coastal storm risk management recommendations for the Miami-Dade County, Florida."

Scott A Spellmon
Lieutenant General, USA
Chief of Engineers

3 ways to manage storm surge flood risk with U.S. Army Corps

Surge Barrier Gates

Raised Roads, Levees, Beachwalks

Hybrid Reefs

Reinforced Dune Systems

Living Shorelines

Mangrove Restoration

Wetland & Canal Restoration

Elevate Residential Homes

Floodproof other buildings

A Structural measures

Storm surge barriers

limit storm surge with a structural reinforced line of defense

(may involve temporary closures)

B Nature-based Solutions (NBS)

Lower water levels by absorbing and reducing wave energy

use or restore natural, nature-based, and green or hybrid infrastructure

C Nonstructural measures

Elevate and adapt assets

reduce damage from incoming flood at smaller scale

2024 Report Components

New Comprehensive Study Framework

3 Pillars

1) Multiple Lines of Defense

2) Adaptive Management process

3) Integration efforts

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

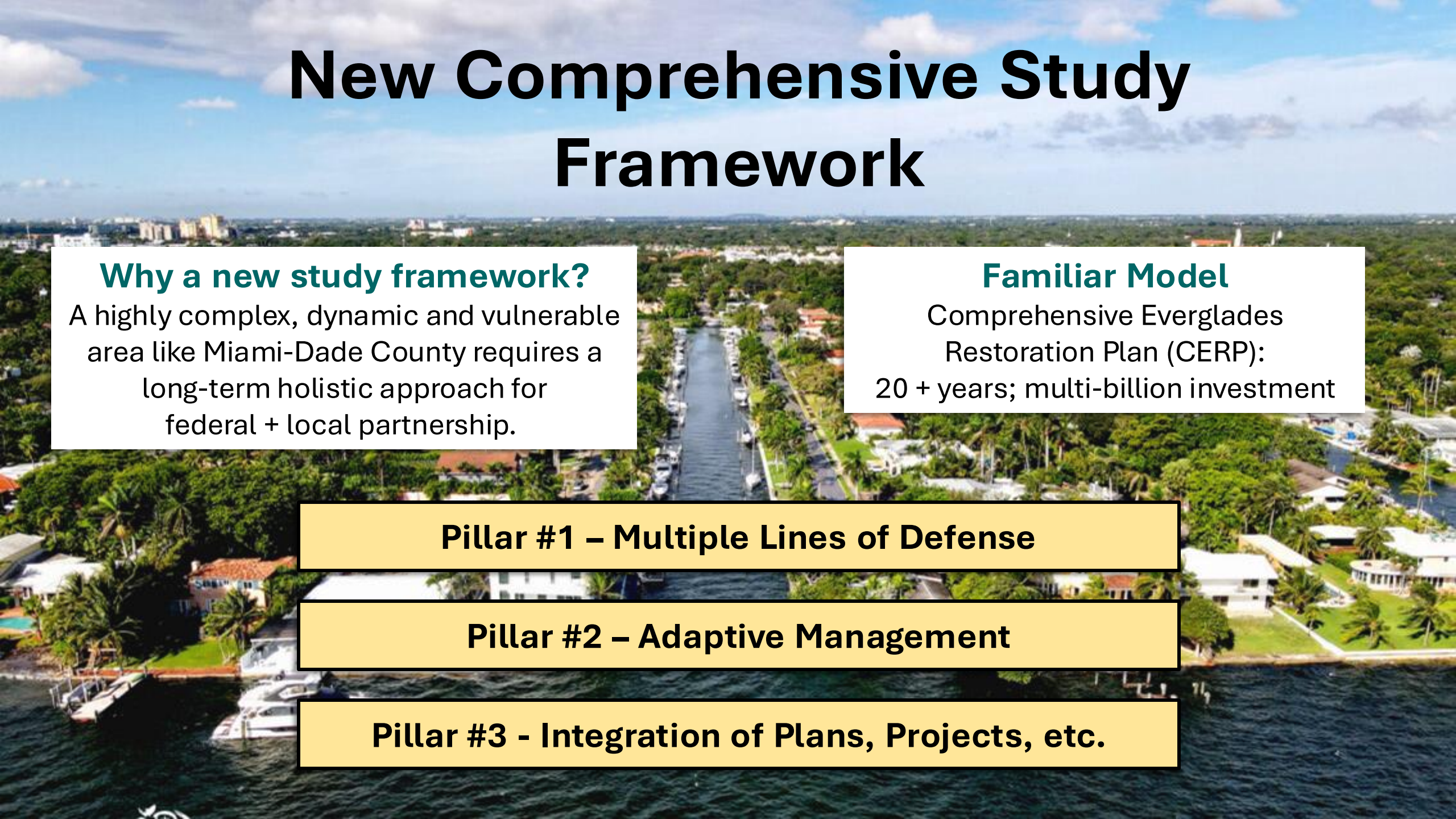
** No significant environmental or in-water impacts*

New Program Authorization

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

Nonstructural Program
Requested Amount: $200 million

New Comprehensive Study Framework



Why a new study framework?

A highly complex, dynamic and vulnerable area like Miami-Dade County requires a long-term holistic approach for federal + local partnership.

Familiar Model

Comprehensive Everglades Restoration Plan (CERP):
20 + years; multi-billion investment

Pillar #1 – Multiple Lines of Defense

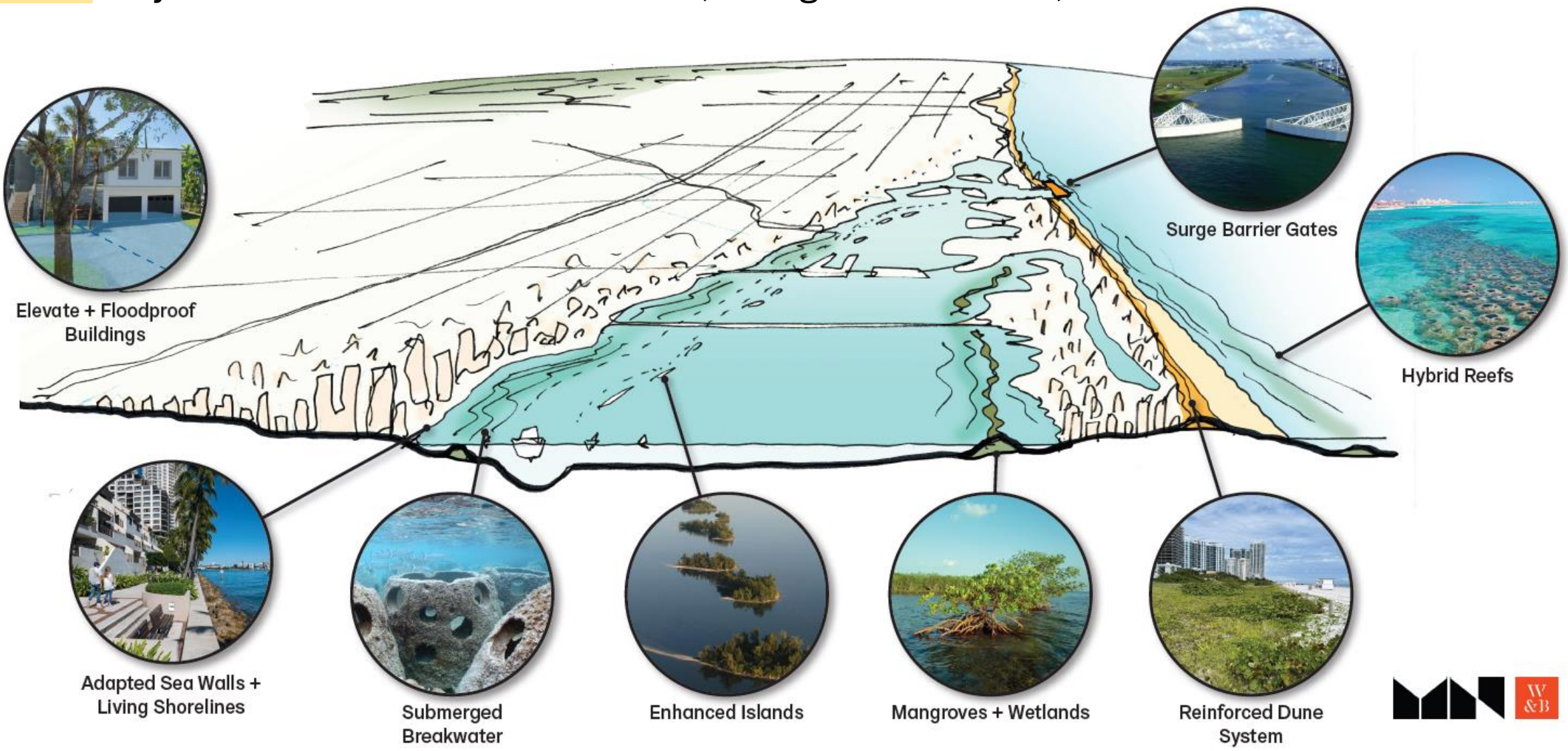
Pillar #2 – Adaptive Management

Pillar #3 - Integration of Plans, Projects, etc.

Pillar #1

Multiple Lines of Defense

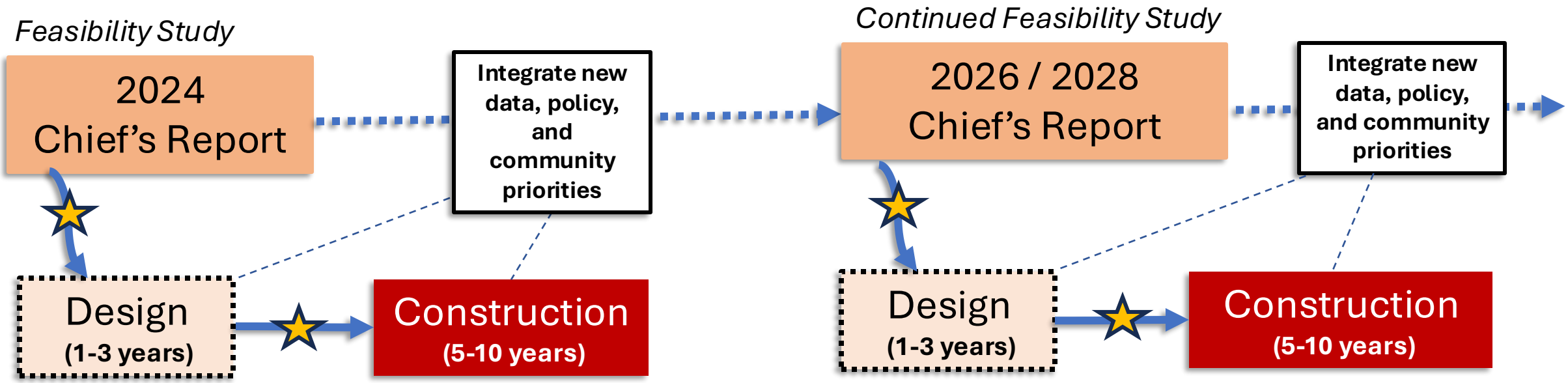
the vision for reducing coastal storm risk across the range of natural, built, and hybrid environments in the water, along the shoreline, and on land.



Pillar #2

Adaptative Management

the flexible decision-making process for addressing evolving circumstances as well as short- and long-term needs.



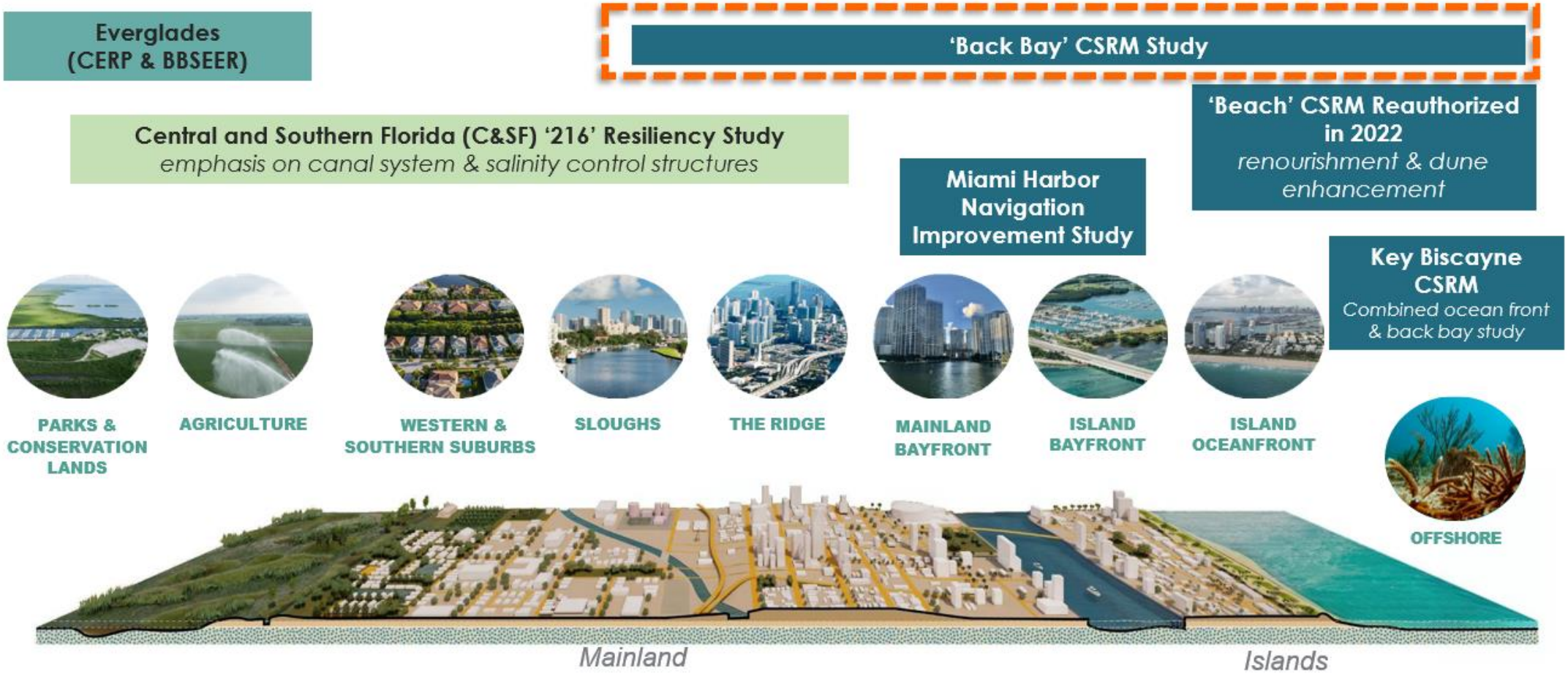
Congressional authorization (WRDA) + appropriation required

Goal: Continuously learn, collaborate and adjust to recommend projects in Congressional WRDA every 2 years

Pillar #3

Integration of Programs, Projects, and Studies

the collaborative effort for ensuring the development of plans, policies, programs, & projects that are streamlined, complementary & equitable across scales.



New Programs for Authorization Request

Final 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

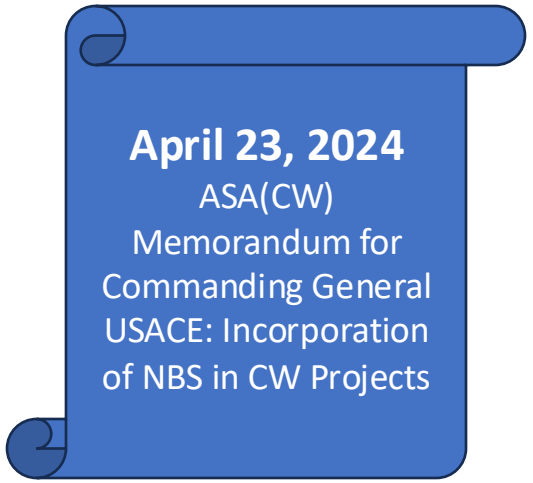
Requested Amount: $200 Million

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 .

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."



PRINCIPLES FOR SUCCESS

BASED ON COMMUNITY INPUT

Multiple Lines of Defense

Comprehensive Benefits

Environmental Justice

Integration

Acknowledgments

- Dr. Patricia Gomez
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Visit Miami-Dade County Sea Level Rise Strategy Hub

Visit USACE study website

Stay in Touch!

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