



DEPARTMENT
OF REGULATORY
AND ECONOMIC
RESOURCES

OFFICE OF RESILIENCE

HOW LOCAL ACTION AND REGIONAL COLLABORATION ARE BUILDING RESILIENCE IN SOUTHEAST FLORIDA



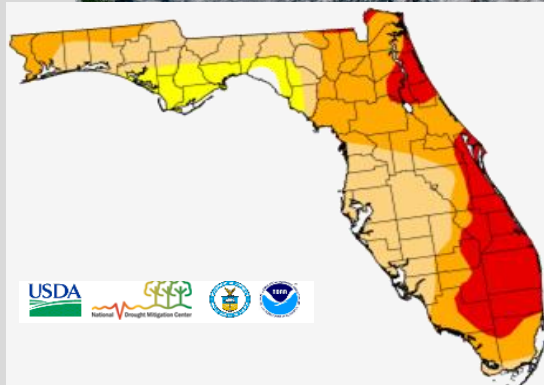
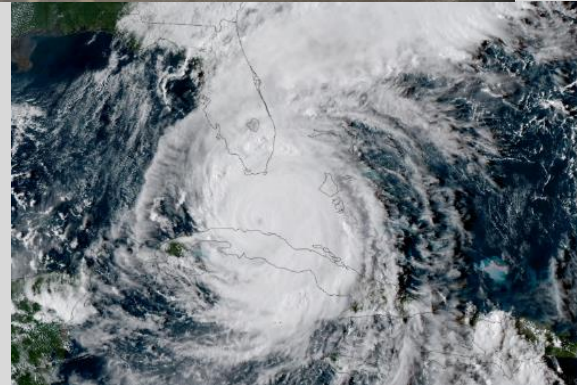
NICHOLE HEFTY
DEPUTY RESILIENCE OFFICER, MIAMI-DADE COUNTY

Climate Change Impacts in South Florida

CHANGING PATTERNS



EXTREME WEATHER

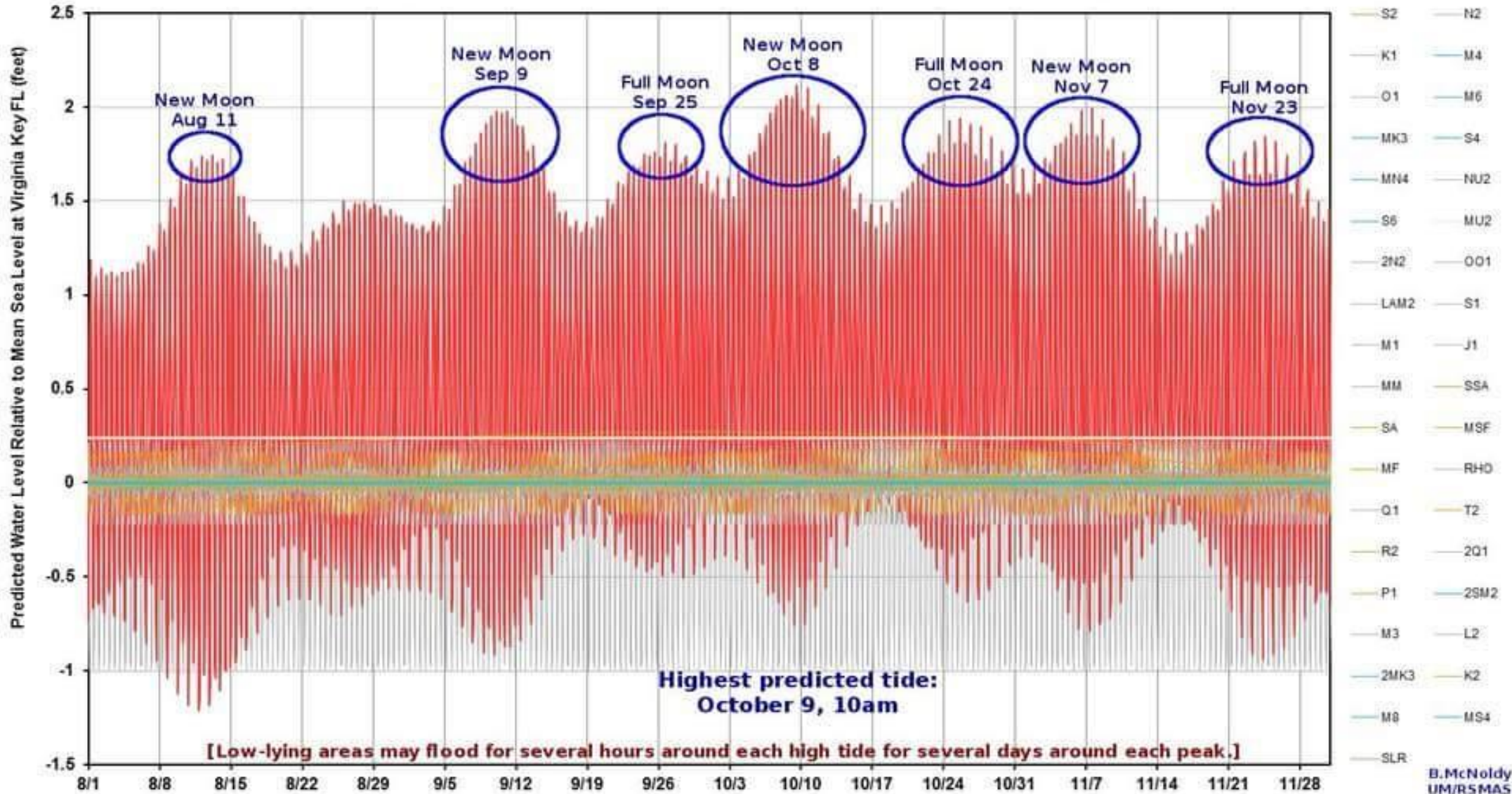


SEA LEVEL RISE



Climate Change Impacts in South Florida

Hourly Water Level Predictions at Virginia Key, FL for 2018
 (includes contributions from the standard 37 harmonic constituents + SLR)



Challenges of a gravity-based stormwater system



A long history of adapting and building resilience...

ENVIRONMENTALLY ENDANGERED LANDS PROGRAM



STRONGER BUILDING CODES



SOUTHEAST FLORIDA REGIONAL CLIMATE CHANGE COMPACT



100 RESILIENT CITIES



1975

1990

1992

1995

1998

2010

2013

2016



BEACH RENOURISHMENT BEGINS



STORMWATER MANAGEMENT PROGRAM

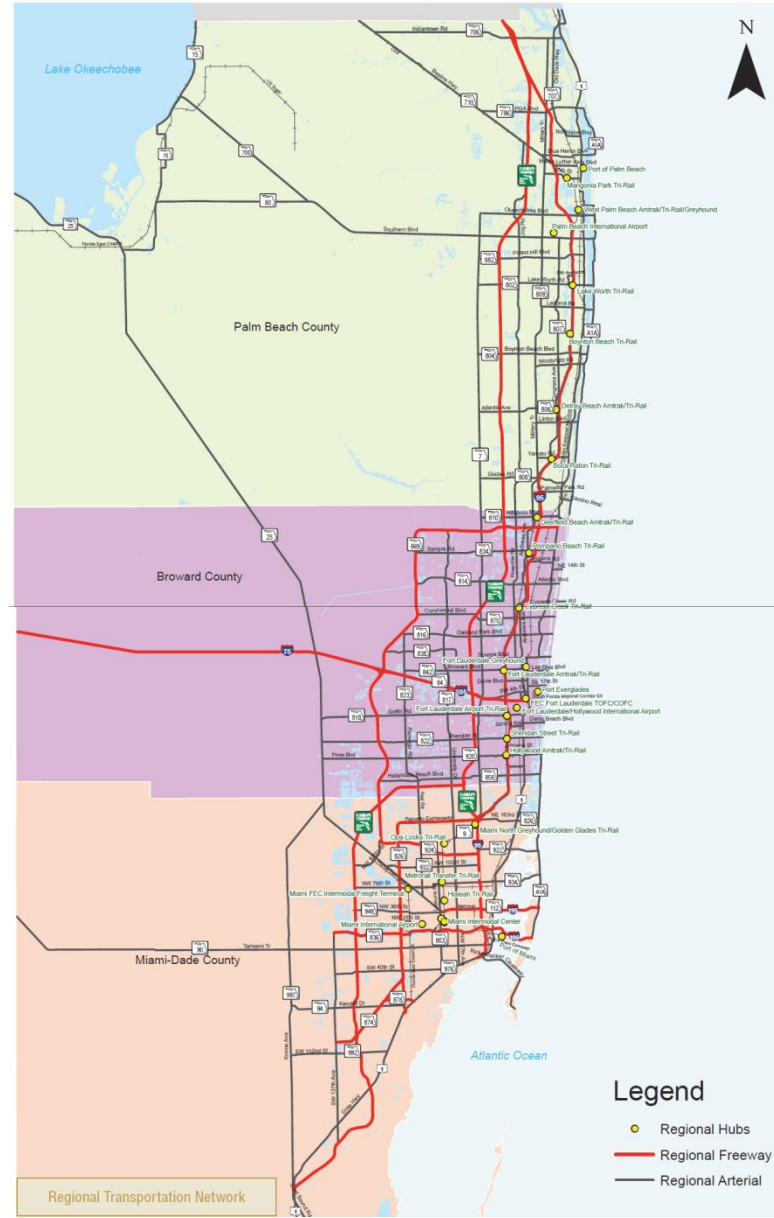
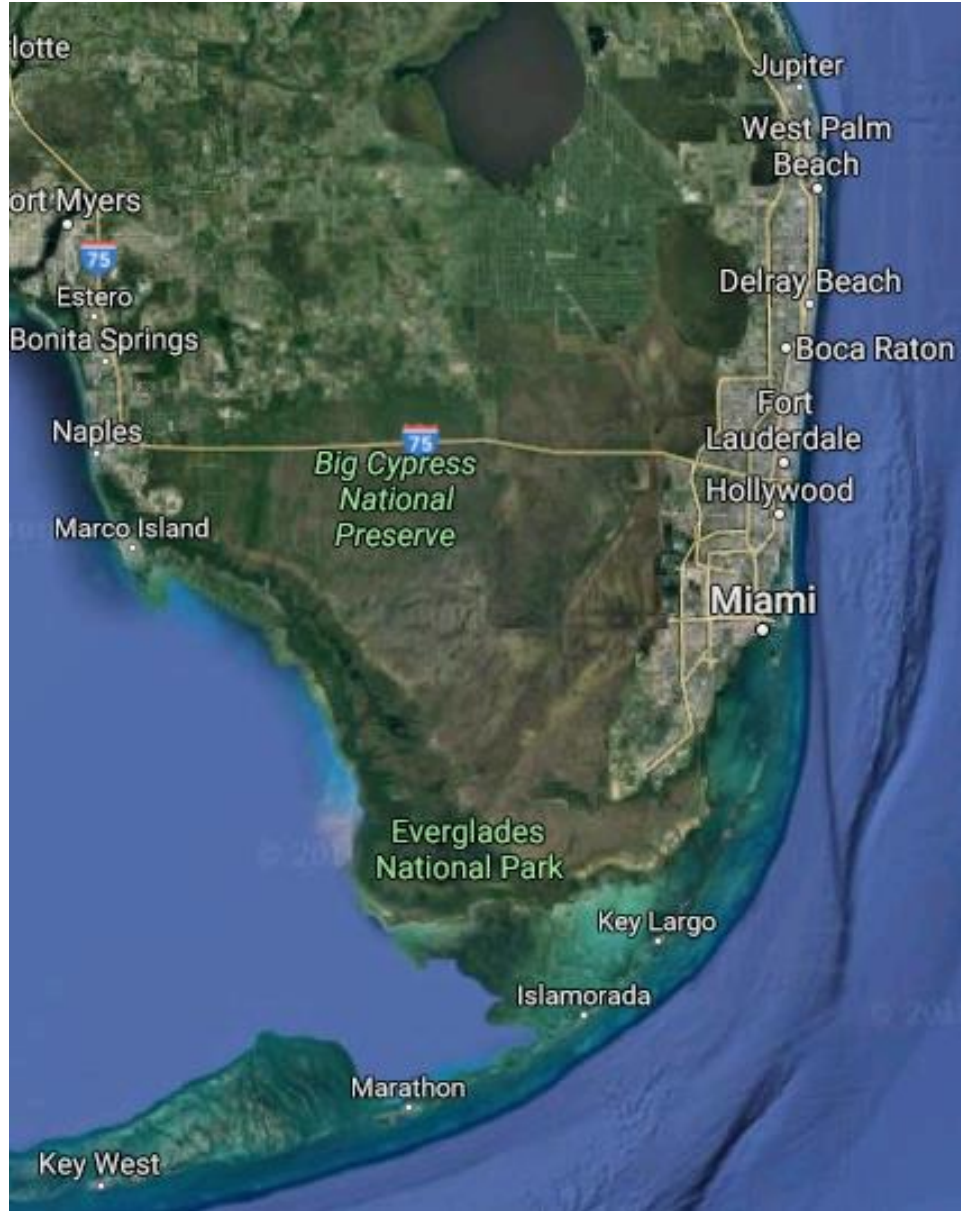


LOCAL MITIGATION STRATEGY



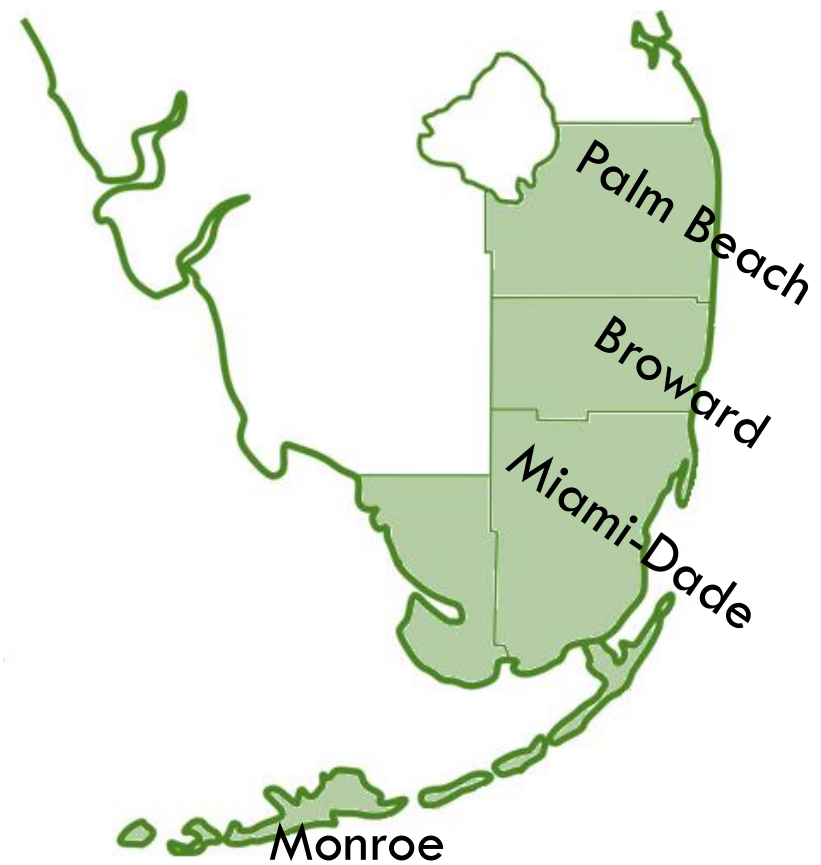
SEA LEVEL RISE TASK FORCE

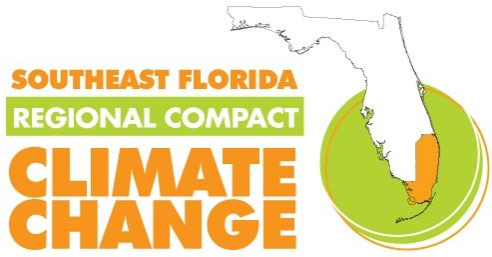
Regional Collaboration Makes Sense



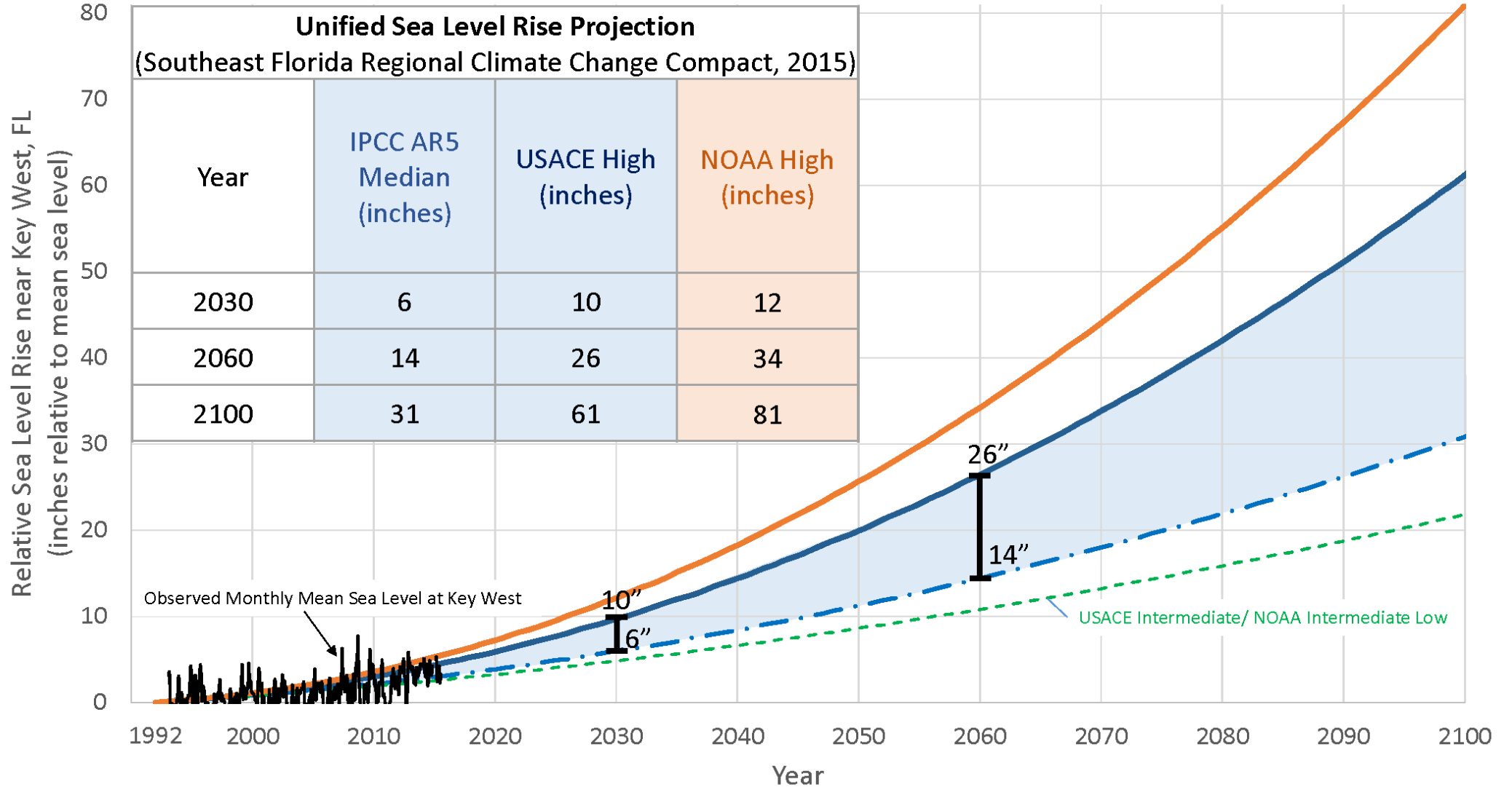


Advancing resilience solutions through regional action





UNIFIED SEA LEVEL RISE PROJECTION





REGIONAL CLIMATE ACTION PLAN

Welcome to RCAP 2.0

[BUILD YOUR OWN PLAN](#)

[GET STARTED](#)

New Focus Areas:

- Public Health
- Social Equity
- Economic Resilience

Regional Climate Action Plan

The Regional Climate Action Plan (RCAP) is the Compact's guiding tool for coordinated climate action in Southeast Florida to reduce greenhouse gas emissions and build climate resilience. The RCAP provides a set of recommendations, guidelines for implementation, and shared best practices for local entities to act in-line with the regional agenda.

[LEARN MORE](#)



We're strategizing...

Strengthening Infrastructure

Ensuring Resilient Communities

ADAPTATION FRAMEWORK

Promoting Economic Resilience

Enhancing Natural Protections

and we're taking action...

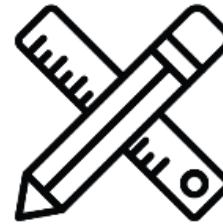


RAPID ACTION PLAN

767
total assets
(properties)



602
assets exposed
to SLR & SS



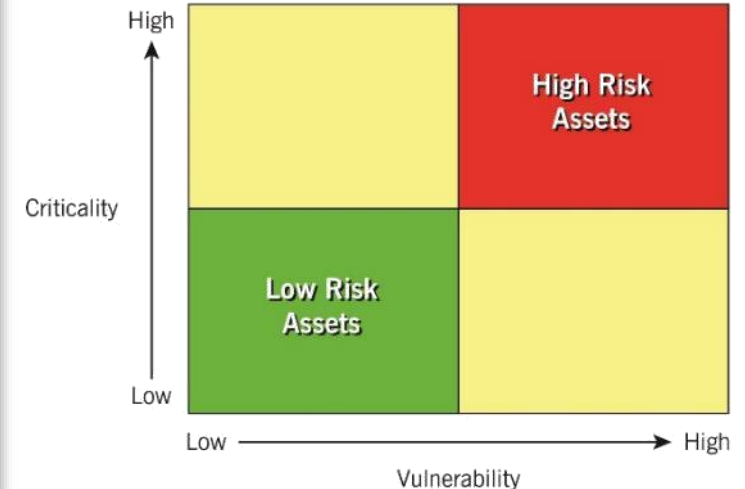
154
PRIORITY
Projects

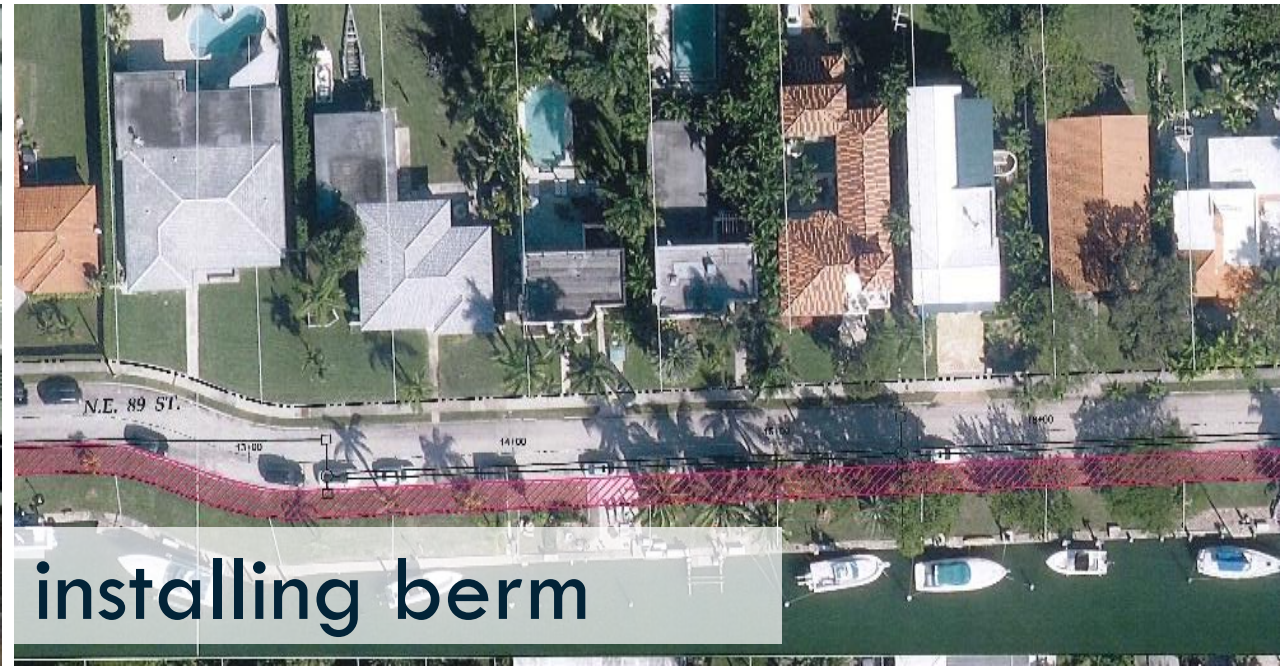
The standardized procedure developed considered the whole county and focused our attention on projects at the most vulnerable of our critical assets.

VULNERABILITY



CRITICALITY





Nature-Based Coastal Defenses in Southeast Florida

INTRODUCTION

Miami Beach skyline. ©ines Hojodre-Garcia, 2013.

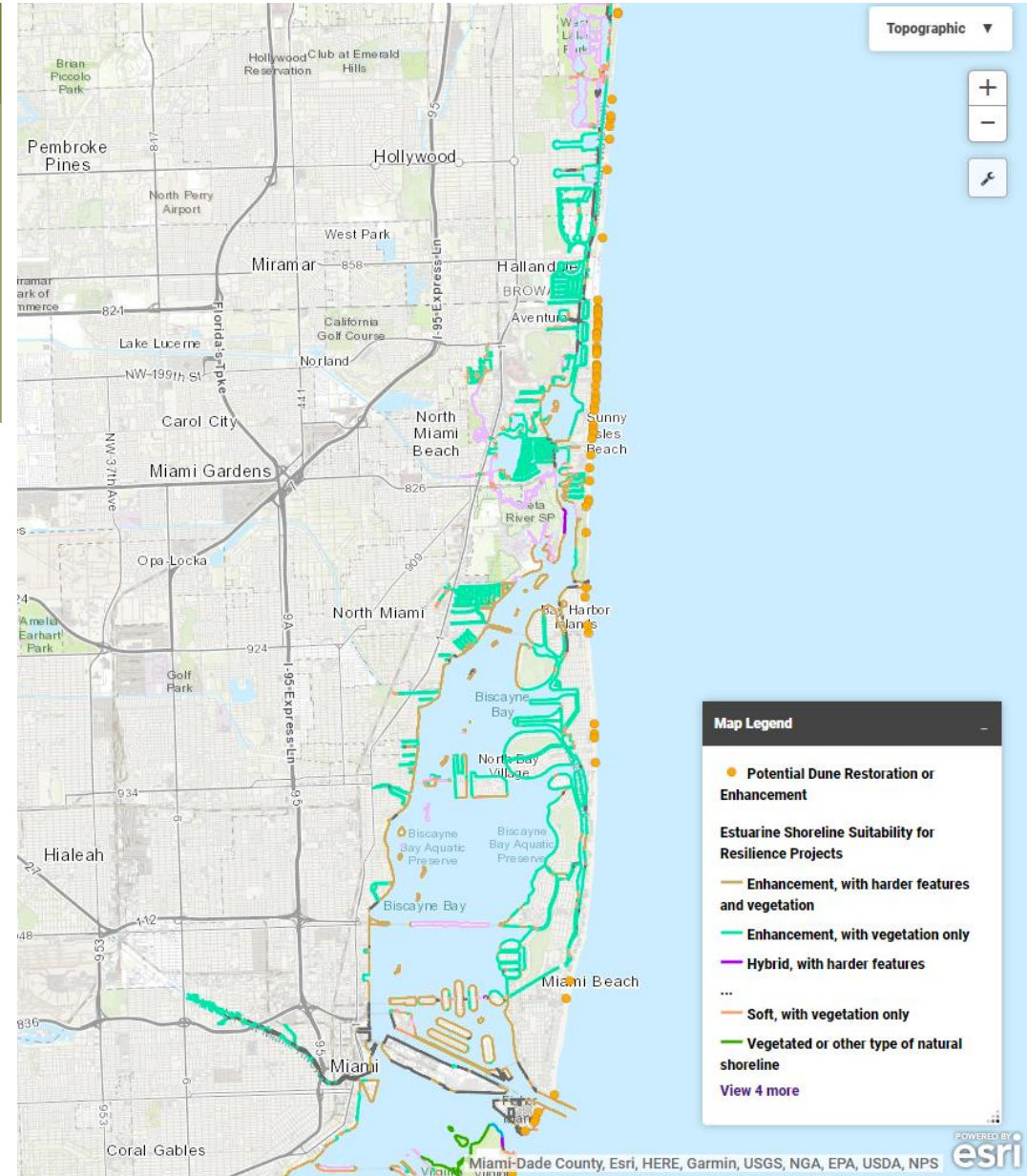
NATURE-BASED COASTAL DEFENSES IN SOUTHEAST FLORIDA

Virginia Key North Point Ecosystem Restoration Project

Virginia Key is a 1,000-acre barrier island containing a variety of upland and wetland plant communities including sea-grass beds and inter-tidal sand/mud flats, mangrove wetlands, beach dune communities and coastal maritime hammock. The island is located in Biscayne Bay, south of Fisher Island and bordering the Atlantic Ocean. The City of Miami is the present landowner of the north point of Virginia Key, and the Park and Recreation Department manages the park site for the City. On July 22, 2010, the City of Miami approved a comprehensive master plan for Virginia Key that is guiding the development of public park space and natural areas on the north point of the island.

Through mitigation and environmental grant funds already secured, the City of Miami, in partnership with Miami-Dade County (MDC), the Miami Science Museum (MSM) and other City Park nonprofit partners will restore and enhance approximately 17 acres of coastal habitat consisting of hammock, coastal strand, beach dune, and freshwater wetlands communities on the northern end of Virginia Key. While the island is non-residential and most of it is undeveloped, the Miami-Dade County Central District Wastewater Treatment Plant is located southwest of the project site. This project will enhance a segment of the coastal buffer which provides the front line of defense against erosion and other storm impacts on the facility.

The island contains more than 300 acres of mangroves, approximately 18 acres of coastal hammock (one of the rarest plant communities in the county due to coastal development), and 16 acres of beach and dune communities. Virginia Key provides habitat for ten endangered threatened plant and animal species. Virginia Key and all of the barrier islands along South Florida have historically provided prime turtle nesting habitat due to the prevalence of sandy beach habitat. However, due to coastal development and light pollution, limited historic sea turtle habitat remains in South Florida. Invasive non-native plants, such as Australian pine have colonized landward swaths of beach where turtles historically nested, thereby limiting the width of beach available for nesting females to lay their nests. The proposed restoration effort will significantly enhance endangered species habitat on Virginia Key.



Climate Change Adaptation

Shoreline Resilience in Southeast Florida

Goals of the Working Group

Regional Goals
Identification of discrete project locations has been the primary focus of the Shoreline Resilience Working Group (SRWG) for some time. The concept of regional goals was created to provide a general idea of what the SRWG hopes to see accomplished over time and to ground the individual projects in the Compact's broader regional context.

Coral Reef Goals:

- No net loss, or increase in, live coral cover.
- No net loss, or increase in, coral reef area.

Nearshore Hardbottom Goals:

- Protect and restore nearshore hardbottom above and beyond what may be required by permit conditions.
- Develop a worm rock restoration and enhancement technology.

Beach/Dune Goals:

- A continuous, functional dune system complements every beach from Key Biscayne to Jupiter Inlet.
- Invasive exotic vegetation covers less than 5% of total vegetated area of the region's dunes.

Coastal Wetland Goals:

- No net loss, or increase in, mangrove/marsh area.

Living Shoreline and Hybrid Grey/Green Approaches Goals:

- New, public and private coastal protection/shoreline stabilization projects along inland waters use living shoreline or hybrid approaches instead of traditional armoring or wave breaking approaches.
- Existing hardened shoreline along inland waters is converted to living shoreline or hybrid approaches.

Hard Infrastructure Goals:

- Develop or promote seawall designs that maximize habitat value and other ecosystem services.
- Breakwaters and other hard coastal protection features are designed to minimize environmental impacts and maximize habitat value as well as other ecosystem services.

Creating Awareness of Living Shorelines

Proactive counties, municipalities and other actors have already implemented natural



PIONEERED BY THE
ROCKEFELLER FOUNDATION

100

RESILIENT CITIES

THE
ROCKEFELLER
FOUNDATION



MIAMI BEACH
RISING
ABOVE





**GREATER MIAMI
& THE BEACHES**



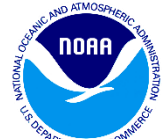
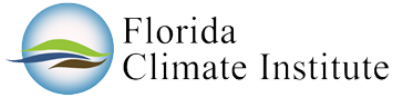
@resilient305



Six Discovery Areas



Aligning Efforts and Drawing in Resources



Questions?

Thank you!

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<http://www.miamidade.gov/green/>

<http://southeastfloridaclimatecompact.org/>