How Local Action and Regional Collaboration are Building Resilience in Southeast Florida

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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)

Highest predicted tide: October 9, 10am

Low-lying areas may flood for several hours around each high tide for several days around each peak.

E. McNulty
UM/RSMAS
Challenges of a gravity-based stormwater system
A long history of adapting and building resilience...

- **1975**: Beach renourishment begins
- **1990**: Environmentally endangered lands program
- **1992**: Stronger building codes
- **1995**: Southeast Florida regional climate change compact
- **1998**: Environmentally endangered lands program
- **2010**: Stormwater management program
- **2013**: Local mitigation strategy
- **2016**: Sea level rise task force

100 Resilient Cities
Regional Collaboration Makes Sense
Advancing resilience solutions through regional action

Compact Staff Steering Committee
**UNIFIED SEA LEVEL RISE PROJECTION**

**Unified Sea Level Rise Projection**  
(Southeast Florida Regional Climate Change Compact, 2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>IPCC AR5 Median (inches)</th>
<th>USACE High (inches)</th>
<th>NOAA High (inches)</th>
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</thead>
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<tr>
<td>2030</td>
<td>6</td>
<td>10</td>
<td>12</td>
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<tr>
<td>2060</td>
<td>14</td>
<td>26</td>
<td>34</td>
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<tr>
<td>2100</td>
<td>31</td>
<td>61</td>
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**Observed Monthly Mean Sea Level at Key West**

- 1992 to 2000: Observed data
- 2000 to 2010: Trend line
- 2010 to 2100: Projections

**USACE Intermediate/ NOAA Intermediate Low**

- Year 2030: 10 inches
- Year 2060: 14 inches
- Year 2100: 26 inches
Welcome to RCAP 2.0

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.
We’re strategizing…

Strengthening Infrastructure

Ensuring Resilient Communities

Promoting Economic Resilience

Enhancing Natural Protections

and we’re taking action…
Assessing vulnerability our most critical assets

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.
Strengthening our infrastructure

design standards

pump stations

raising roadways

installing berm
Shoreline Resilience Working Group

Nature-Based Coastal Defenses in Southeast Florida

Virginia Key North Point
Ecosystem Restoration Project

Virginia Key is a 1,200-acre barrier island containing a variety of upland and wetland plant communities including saw grass balds and intertidal mud flats, mangrove wetlands, back-lagoon communities, and coastal maritime forest. The island is located in Miami-Dade County south of Biscayne Bay and north of the Atlantic Ocean. The City of Miami is the present landowner of the western portion of Virginia Key, and the Park and Recreation Department manages the park site for the City. On April 12, 2013, 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 portion of the island.

Through mitigation and environmental goals already secured, the City of Miami, in partnership with Miami-Dade County (MDC), the Miami Science Museum (MSM), and other City Park and Recreation partners, will execute and enhance improvements at the location of an existing mangrove preserve and coastal wetland located at the north end of Virginia Key. The island is a rare residential and natural area of undeveloped, the Miami-Dade County Coastal Resilience Transformation Plan identified northeast of the property site. The project will enhance existing services of the coastal buffer which provides the foreline of defense against erosion and other storm impacts on the facility.

The island contains more than just nature and mangroves, approximately 60 acres of coastal hardwood forest and the rare plant community in the country due to coastal development and in a coastal buffer and their communities. Virginia Key provides several coastal communities, historically provided prime nesting habitat for the productivity of many seabirds and the natural environment. The island is a rare residential and natural area of undeveloped, the Miami-Dade County Coastal Resilience Transformation Plan identified northeast of the property site. The project will enhance existing services of the coastal buffer which provides the foreline of defense against erosion and other storm impacts on the facility.

The proposed construction effort will significantly enhance structurally and spatially habitat of Virginia Key.

Goals of the Working Group

Regional Goals:
Identification of shoreline projects 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 guide the individual projects in the Compact's broader regional context.

Coastal Goals:
- No net loss, or an increase in, tree canopy cover.
- No net loss, or increase in, coastal wetland areas.

Enhanced Natural Areas Goals:
- Protect and restore native habitats and ecosystems.
- Develop a coastal flood protection and enhancement technology.
- Implement the South Florida Water Management District’s Comprehensive Coastal Resilience Plan.
- Implement the South Florida Water Management District’s Comprehensive Coastal Resilience Plan.
- Enhance the existing coastal wetland areas.
- Enhance the existing coastal wetland areas.

Creating Awareness of Shorelines:
- Promote coastal awareness and stewardship.
- Promote coastal awareness and stewardship.
Aligning Efforts and Drawing in Resources

7 Livability Principles

Regional Climate Action Plan

4 Counties

7 Goal Areas

137 Initiatives

Climate Action Plan
• Local Mitigation Strategy
• Stormwater Master Planning
• CDMP

2 Regional Planning Councils
Questions?

Thank you!

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

http://southeastfloridaclimatecompact.org/