

# **Building Resilience to Sea Level Rise in SE Florida**

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# Miami-Dade's Long-Standing Climate Leadership

1993-  
2005

- ICLEI Cities for Climate Protection
- Urban CO2 Reduction Plan (2005 reduction goal)

2006-  
2011

- Climate Change Advisory Task Force

2007

- Chicago Climate Exchange (CCX)
- ICLEI's Climate Resilient Communities Program Pilot
- Sustainable Buildings Program established

2008

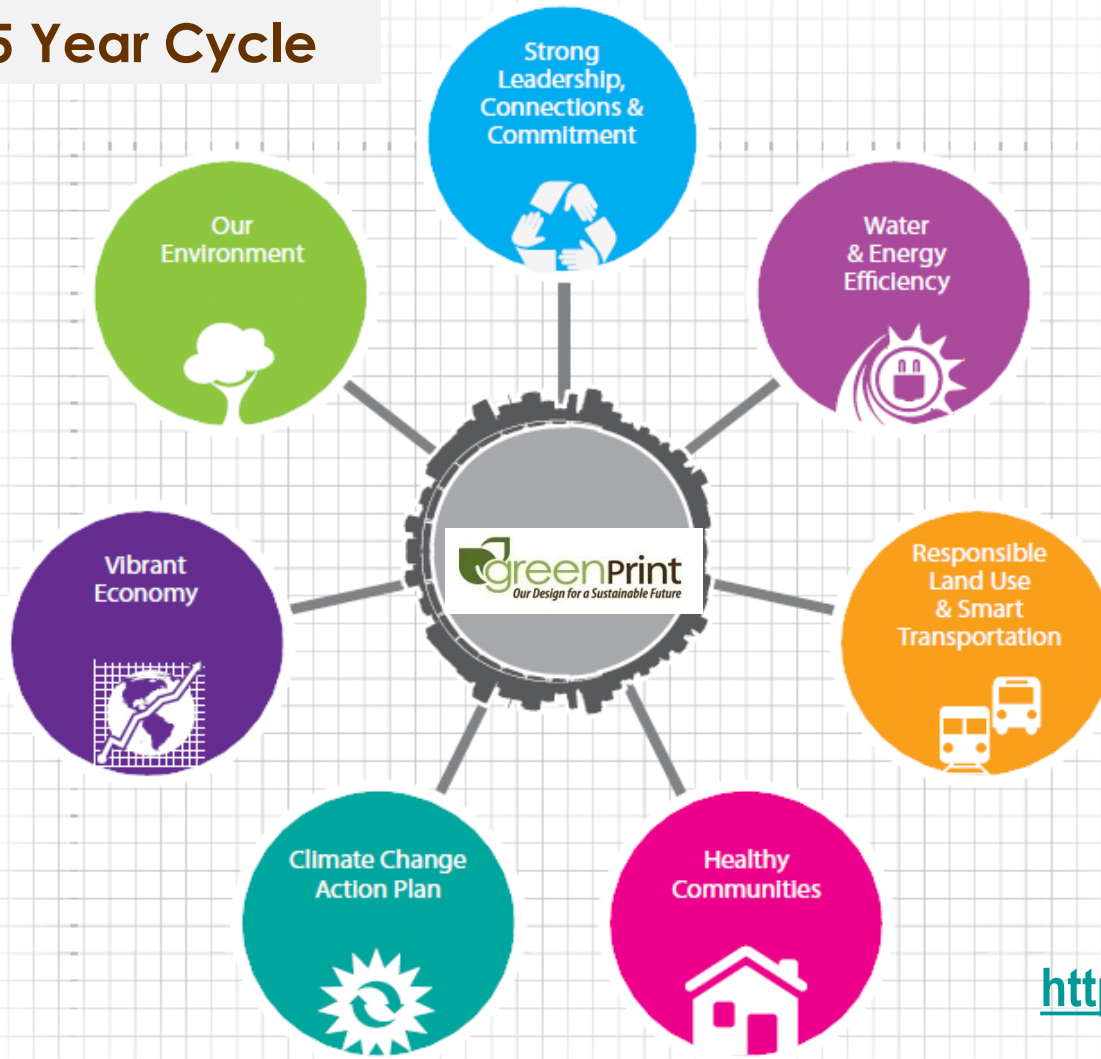
- "Cool Counties" commitment: Reduce GHG emissions by 80% by 2050

2009

- \$12.5 million in EECBG funding
- The Office of Sustainability (OOS) realigned and strengthened
- **Southeast Florida Regional Climate Change Compact**
- **ICLEI Sustainability Planning Toolkit Pilot – GreenPrint Began**

# GreenPrint – Our Design for a Sustainable Future

5 Year Cycle



137 Initiatives

29 Strategies



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

# The SE Florida Regional Climate Change Compact



- Fully Ratified January 2010
- Commitments include:
  - **Policy Collaboration**
  - **Develop Regional Tools**
    - Unified SLR Projection
    - Inundation Maps
    - GHG Emissions Baseline
  - **Create a Regional Action Plan**
    - Mitigation and adaptation strategies
  - **Convene Annual Summits**



Delivering Excellence Every Day

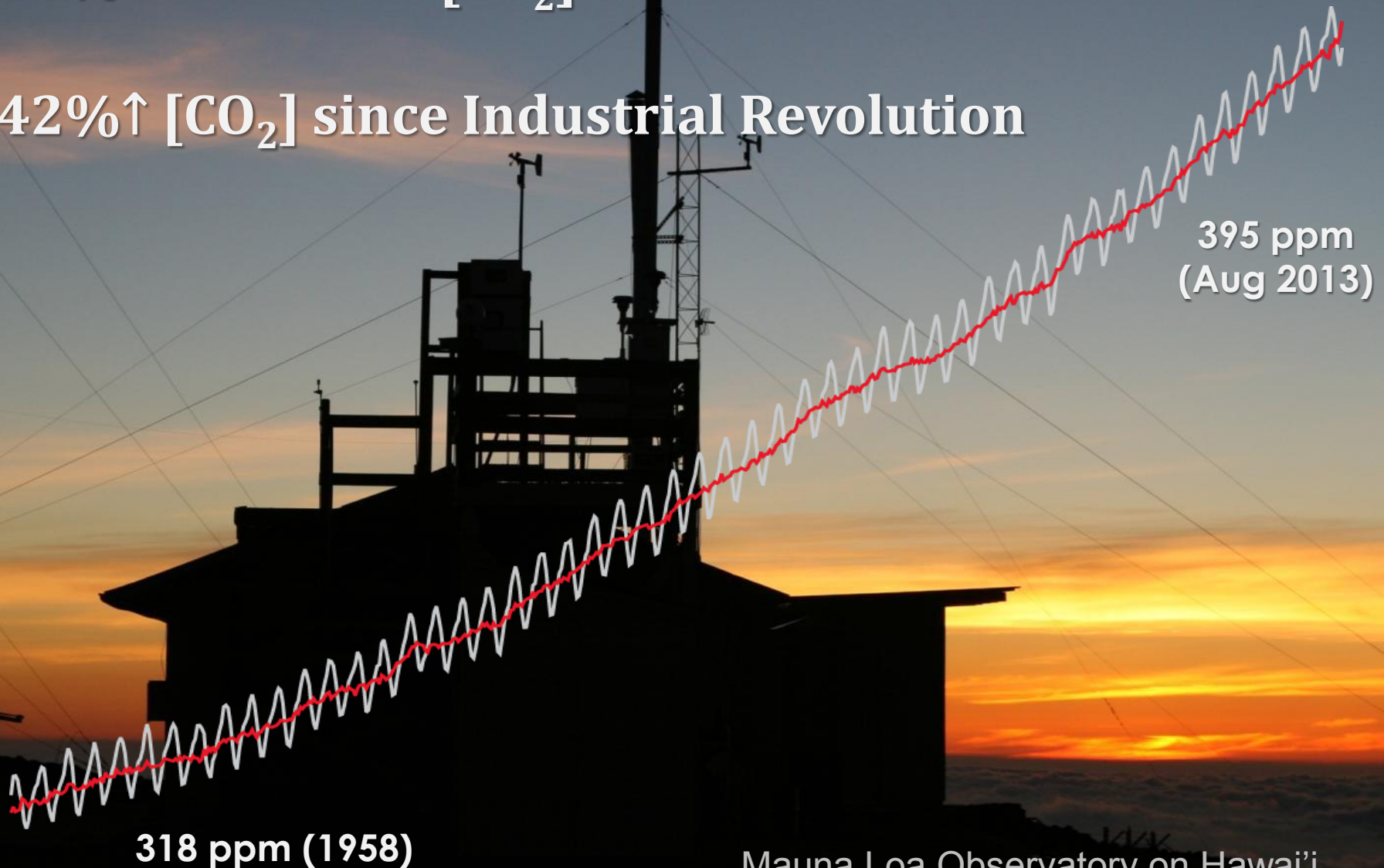
21<sup>st</sup> Century Schools Bond Advisory Committee Mtg.  
March 18, 2014





# Atmospheric Carbon Dioxide

- 24%↑ measured [CO<sub>2</sub>] since 1958
- 42%↑ [CO<sub>2</sub>] since Industrial Revolution



Mauna Loa Observatory on Hawai'i

# Leading Indicators of Change

**TIME**



Leading

↑ CO<sub>2</sub>

Lagging

↑ Air Temp

↑ Air Temp

↑ Ice Melt/ Thermal  
Expansion

↑ Ice Melt/TE

↑ Sea Level Rise

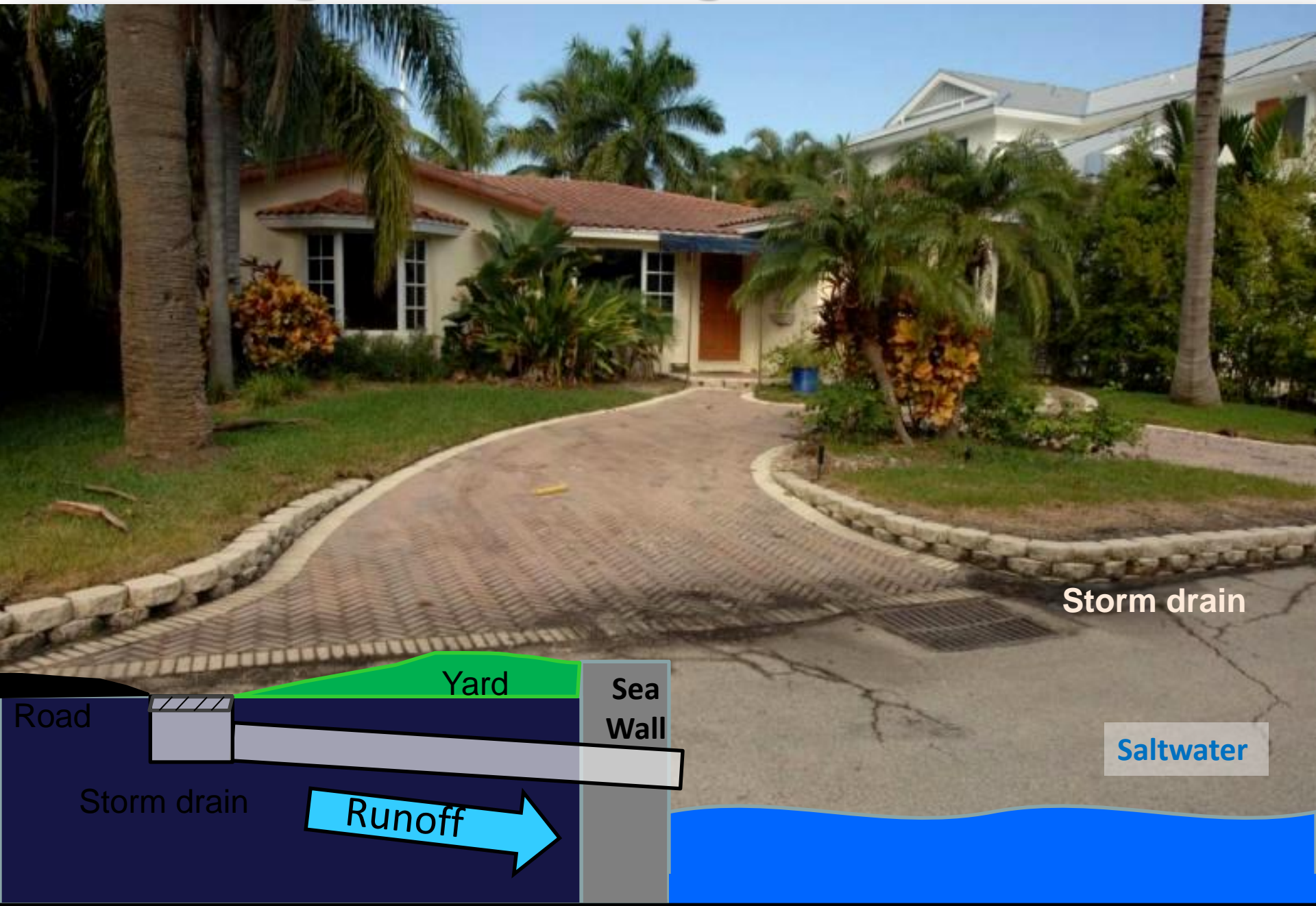
# Sea Level Rise Implications for SE Florida

- Saltwater intrusion into the aquifer
- Drainage and flood control compromised
- Impacts to public and private infrastructure
- Beach erosion
- Impacts to coral reefs
- Impacts to Everglades





# Drainage under Average Tidal Conditions



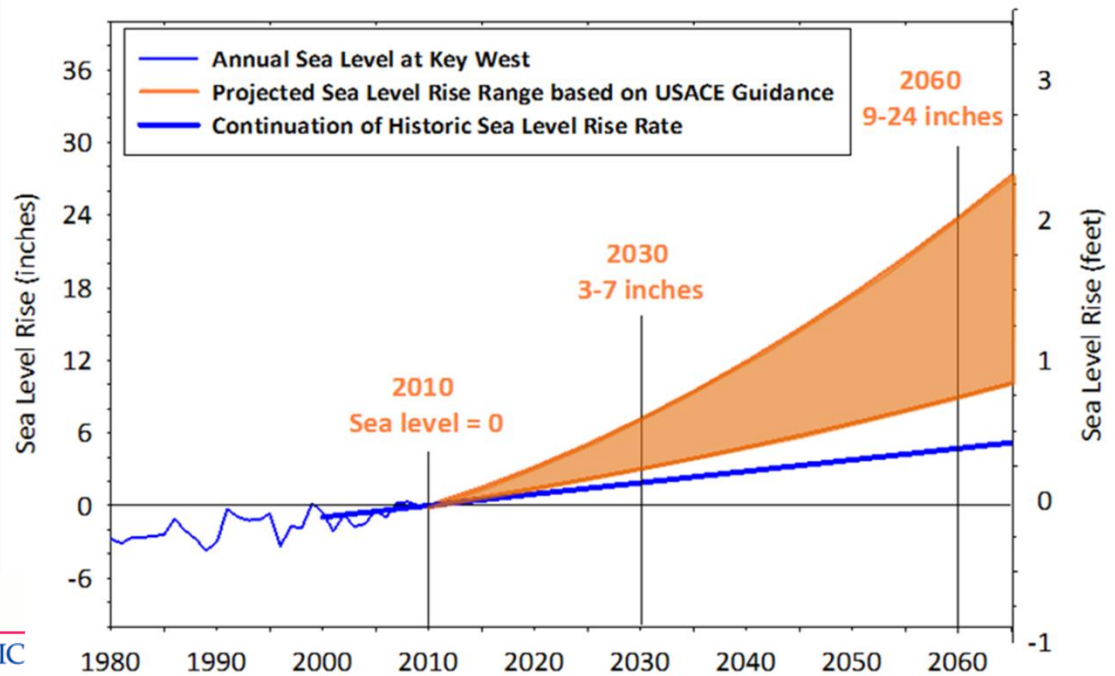


# Drainage Challenge with Sea Level Rise



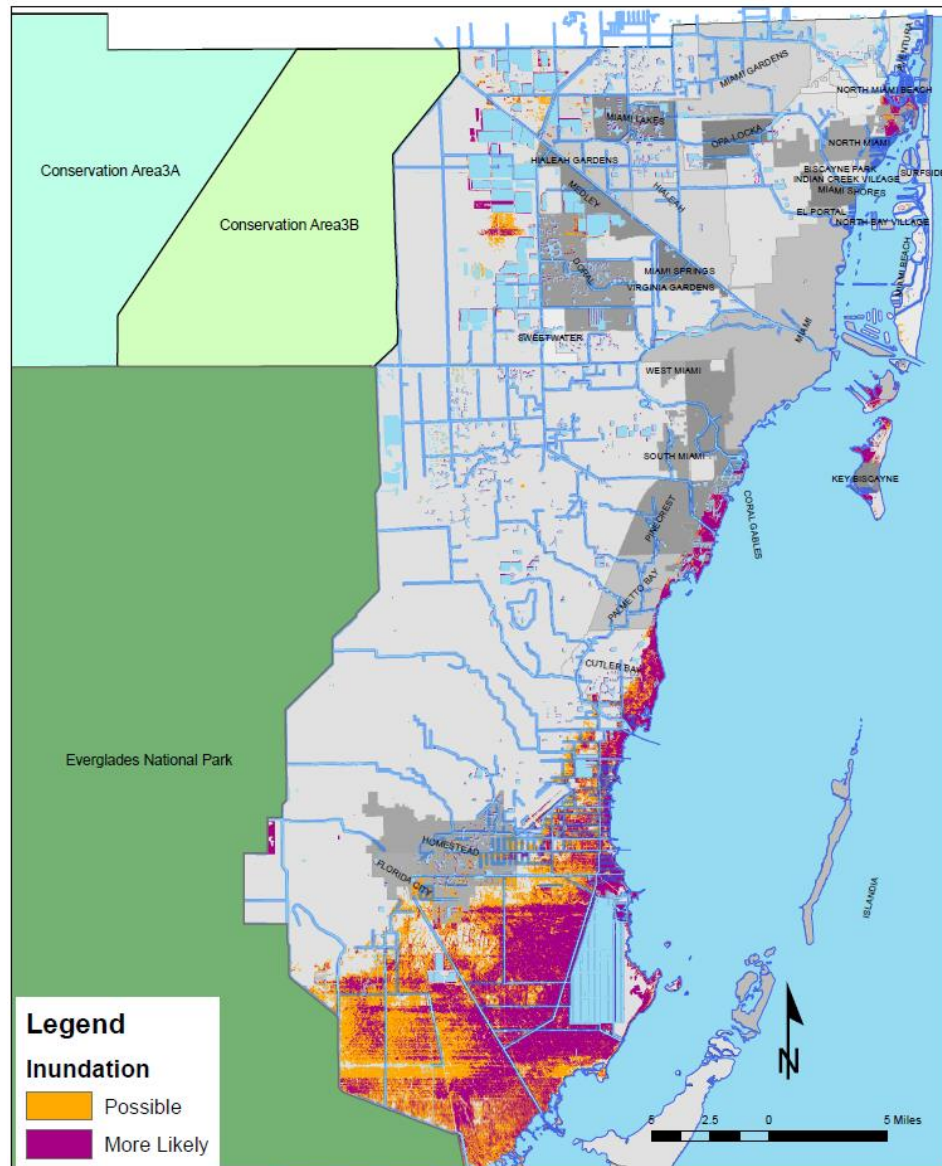
# A Solution – A Unified SLR Rise Projection

- Included scientists from local and regional universities
- Brought in stakeholders from Climate Change Advisory Task Forces
- Utilized experts from state & national scientific organizations – NOAA, USACE, Water Mgmt. District
- Utilized best, most current data and science available
- Agreed to reach a consensus





## 1-foot Sea Level Rise In Miami-Dade County

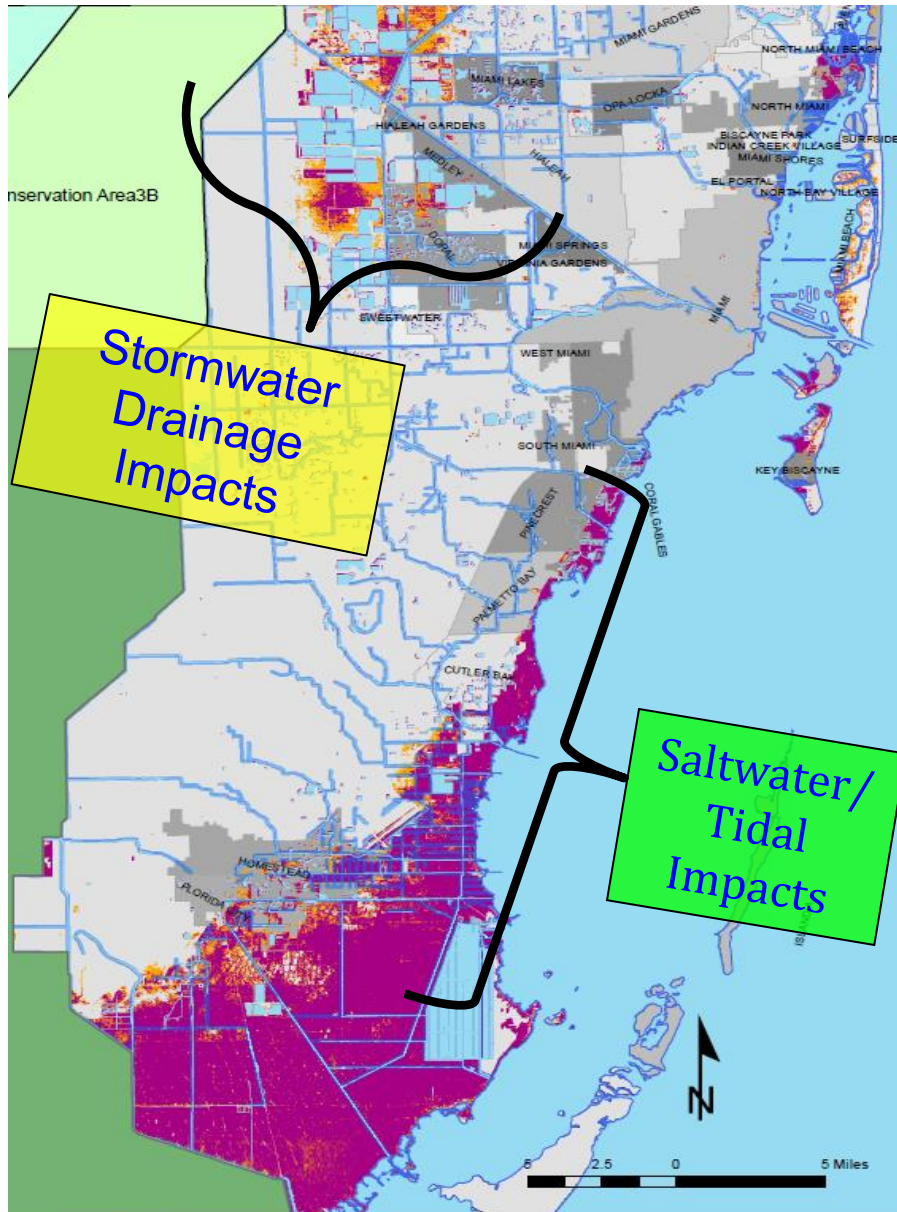


# SE FL Regional Vulnerability Analysis

- Identifies area with elevations below Mean Higher High Water (MHHW)
- Planning tool to identify areas of concern

**Timeline for 1 ft. SLR Scenario  
~2040 – 2070**





# SE FL Regional Vulnerability Analysis

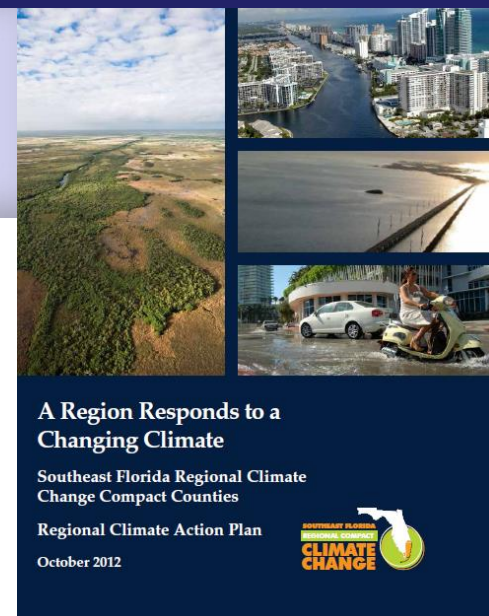
- 2 ft. SLR Scenario Timeline:  
~2060 – 2115
- None of the schools in Unincorporated Miami-Dade County were impacted

**This is not just a coastal issue!**

# The Regional Climate Action Plan

*To **integrate** climate adaptation and mitigation into existing systems.  
To implement through existing local and regional organizations.  
5 year timeframe*

- **Sustainable Community and Transportation Planning**
- **Water Supply, Management and Infrastructure**
- **Risk Reduction and Emergency Management**
- **Energy and Fuel**
- **Natural Systems and Agriculture**
- **Outreach and Public Policy**



*Includes companion  
Implementation Guide*

*>100 Recommendations  
Adaptation and Mitigation*

**[Download at www.southeastfloridaclimatecompact.org](http://www.southeastfloridaclimatecompact.org)**

# CDMP Policy as a Strong Foundation

- Climate Change policies woven into existing Plan elements

**Land Use**



**Transportation**



**Water, Sewer & Solid Waste**



**Coastal Management**



**Conservation, Aquifer Recharge & Drainage**



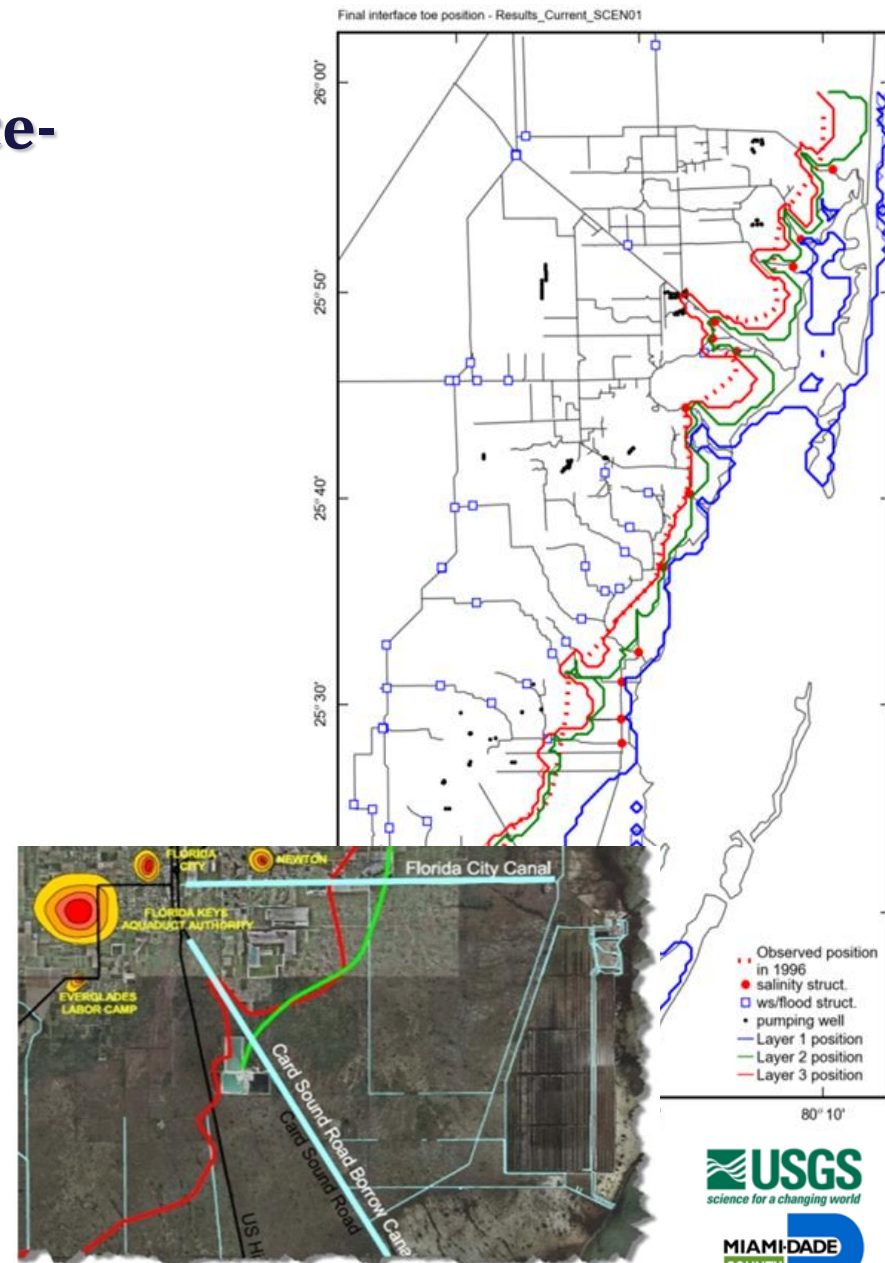
**Intergovernmental Coordination**





# Implementation Tool: Urban Miami-Dade County Surface- Water/Groundwater Model

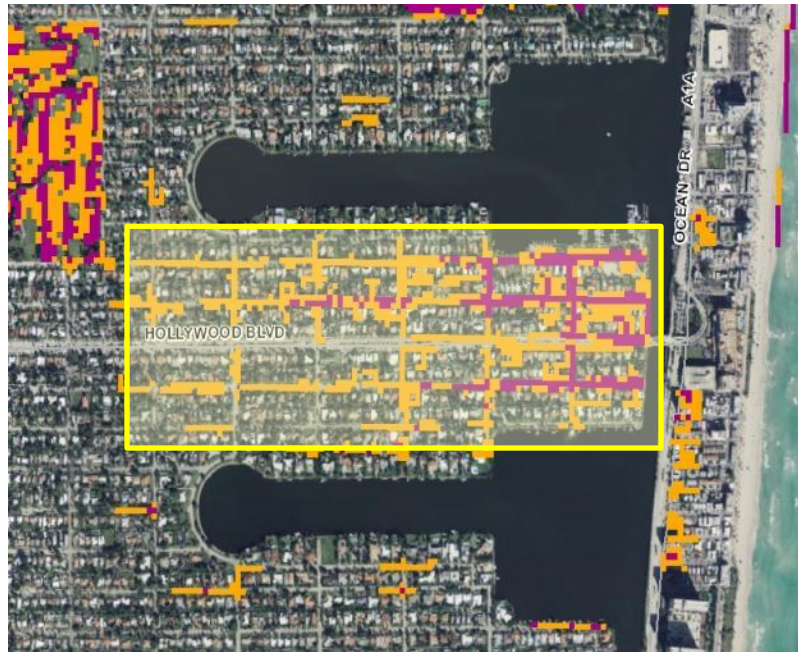
- Interaction of surface water and groundwater
- Various sea level and precipitation scenarios
- Key information to inform other planning programs
  - Adaptation Action Areas
  - Stormwater Planning (local and regional)
  - Local Mitigation Strategy
- Goal to expand to the Region



# Implementation Tool

## Adaptation Action Areas (AAA)

### 1-Foot SLR Scenario



#### LEGEND

##### Inundation

- Possible
- More likely

Example  
AAA



**NOAA**

NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
UNITED STATES DEPARTMENT OF COMMERCE



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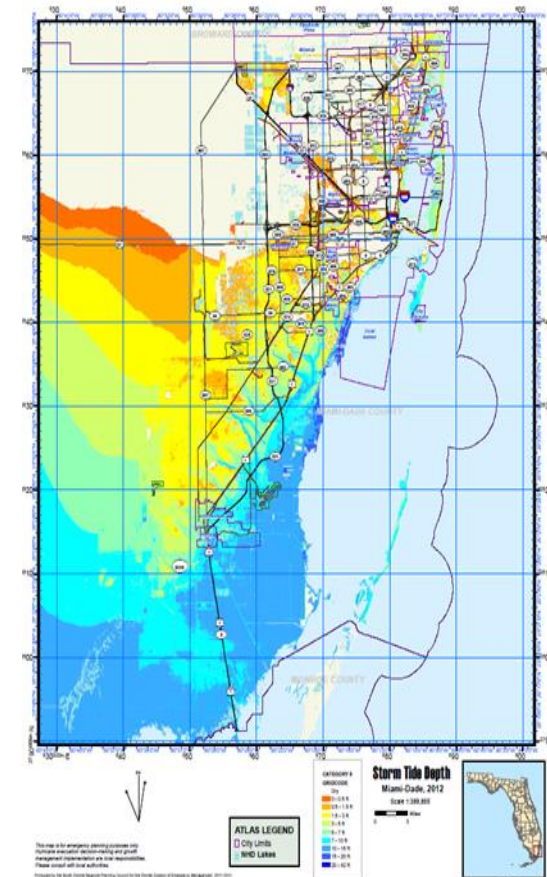


Florida Law now allows local governments to:

- Designate AAA for the purpose of
  - Identifying areas of SLR/Coastal flooding concern
  - Prioritizing funding for adaptation
- Working regionally on a “how to” guide
- Working with Ft. Lauderdale on pilot implementation

# Additional On-Going Work

- Regional Coordination of Hazard Mitigation Planning
- FHWA South FL Climate Change Vulnerability Assessment & Adaptation Pilot Project
- Florida Building Resilience Against Climate Effects (BRACE)
- Miami-Dade Sea Level Rise Task Force



**LMS**  
Miami-Dade



# Next Steps

- **Sea Level Rise Task Force Report & Recommendations**
- **Revisit Sea Level Rise Projection**
- **Modeling Analysis Results & Incorporation into Planning Processes**
- **Explore Additional Collaborative Opportunities Between The County and The School Board**



# Questions?

## Thank you!

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