SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Climate Change and Water Management in South Florida

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SFWMD Governing Board, Projects & Lands Committee
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Confronting Climate Change

- Regional Water Resources System
- Two pronged approach:
  - What does science (global & regional) tell us?
  - Coordination with local/state /federal agencies
- Potential impacts on our mission
- Adopting a more measured approach

Confronting Climate Change (cont.)

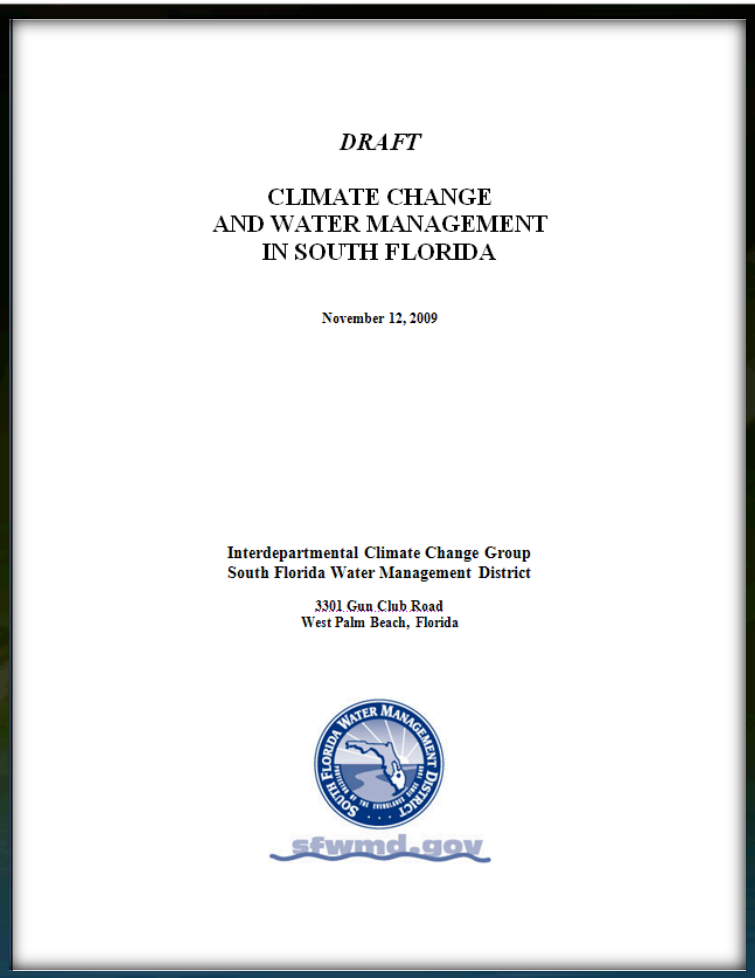
- Two Important Questions:
  - Which decisions are likely to be affected and could benefit from adaptation strategies (Type I) in the short term?
  - Which decisions are likely to be affected but for which adaptation strategies (Type II) could be deferred without serious consequences?

Interdepartmental Climate Change Group at SFWMD

District Leadership Team Members		
Deena Reppen	Ken Ammon, P.E.	Sharon Trost

Staff (Over 30) members from:	
Creative Services	Operations & Maintenance
Everglades Restoration	Regulation
Intergovernmental Programs	Restoration Sciences
Modeling	SCADA & Hydro Data Management
Office of Counsel	Water Supply

SFWMD White Paper



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CLIMATE CHANGE
AND WATER MANAGEMENT
IN SOUTH FLORIDA

November 12, 2009

Interdepartmental Climate Change Group
South Florida Water Management District

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West Palm Beach, Florida

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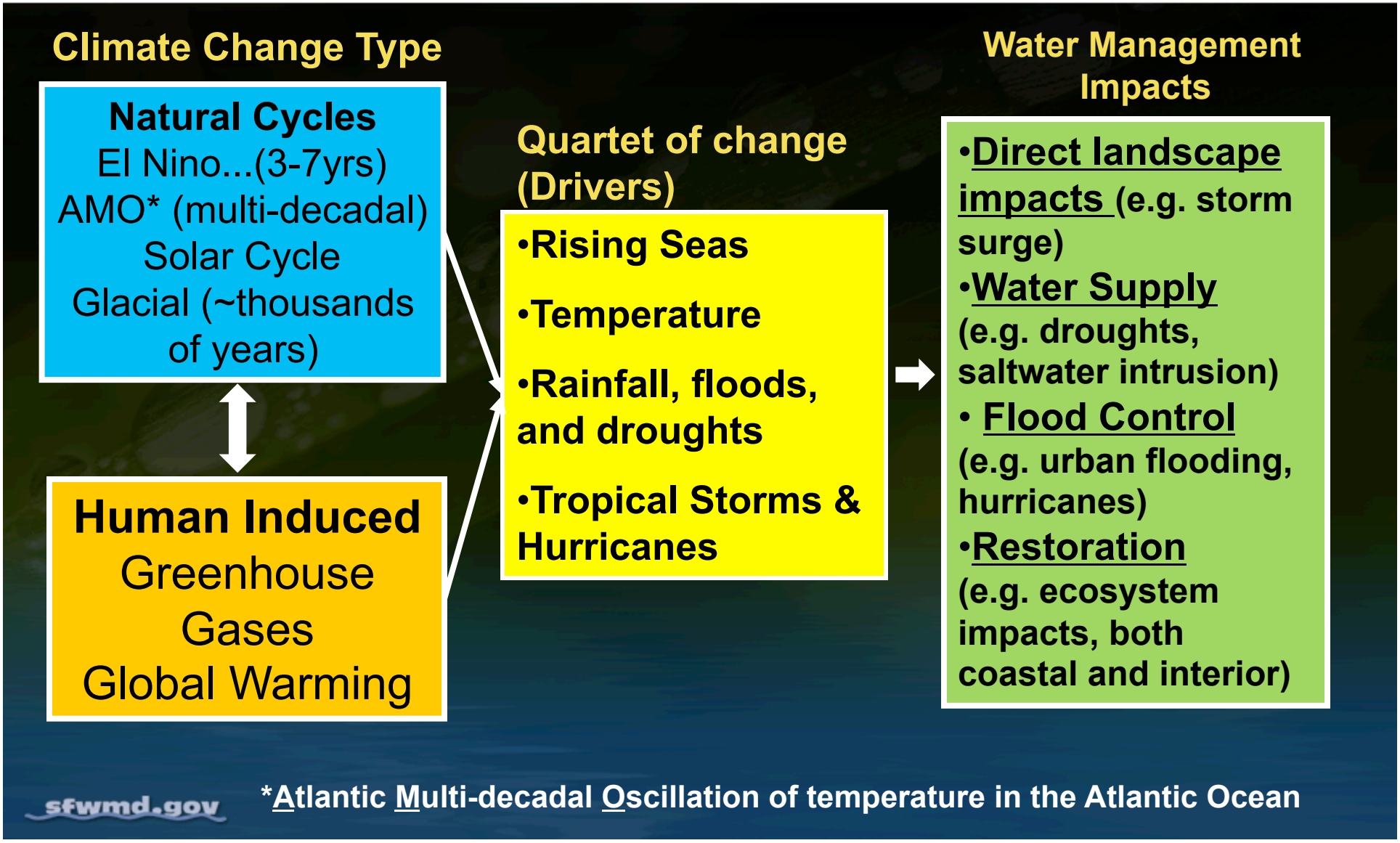
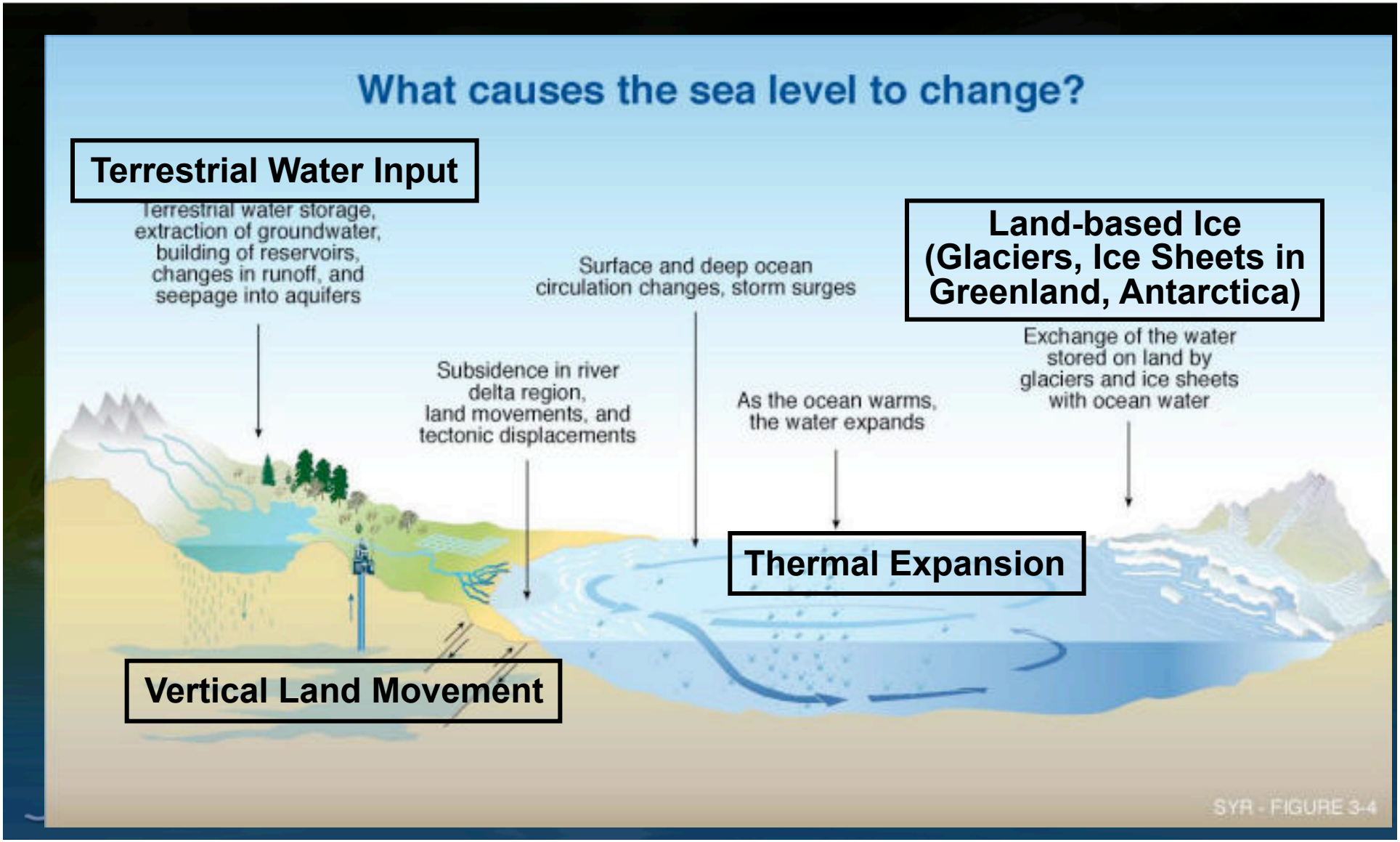
Includes: What is known, What is probable, What is possible, and Information gaps

Change: Types and Potential Impacts

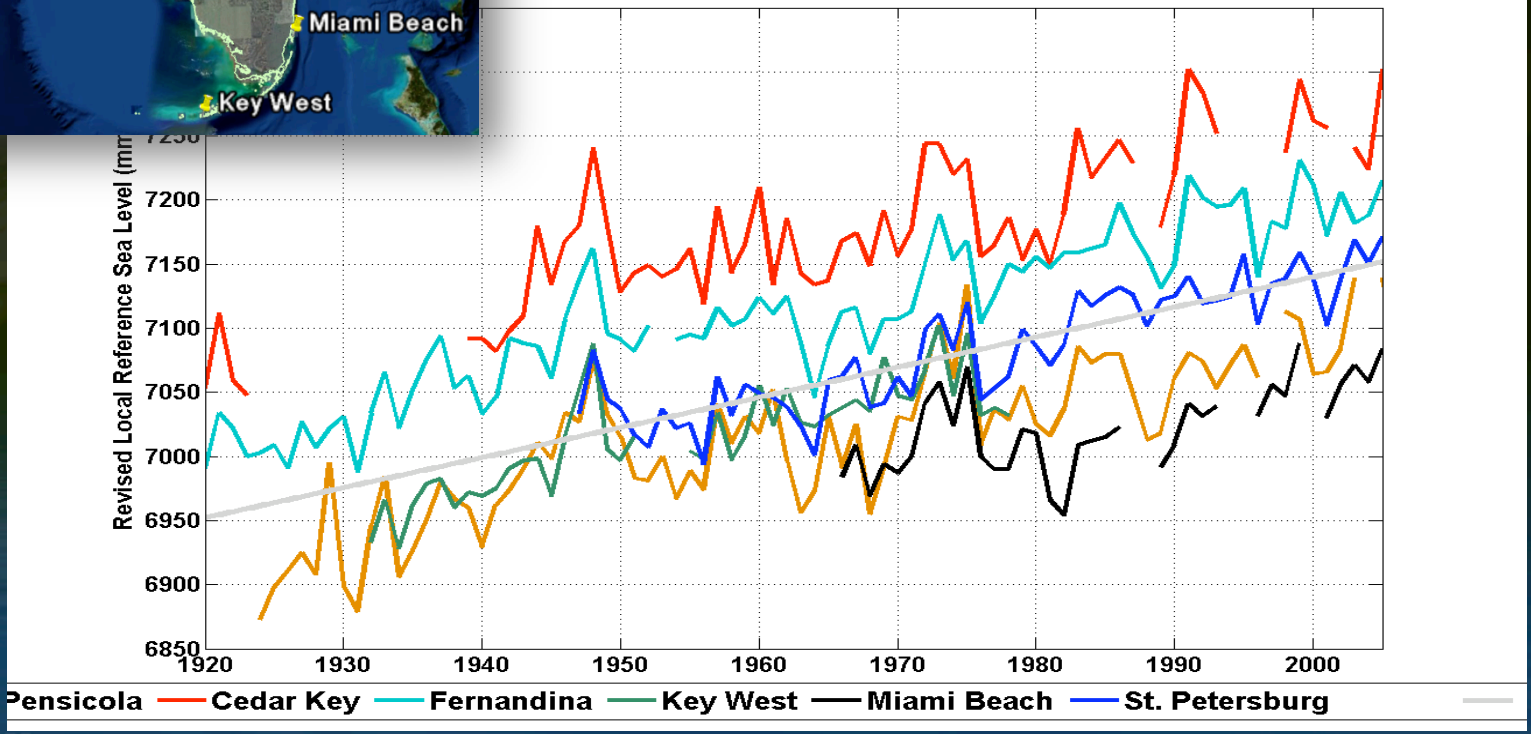


*Atlantic Multi-decadal Oscillation of temperature in the Atlantic Ocean

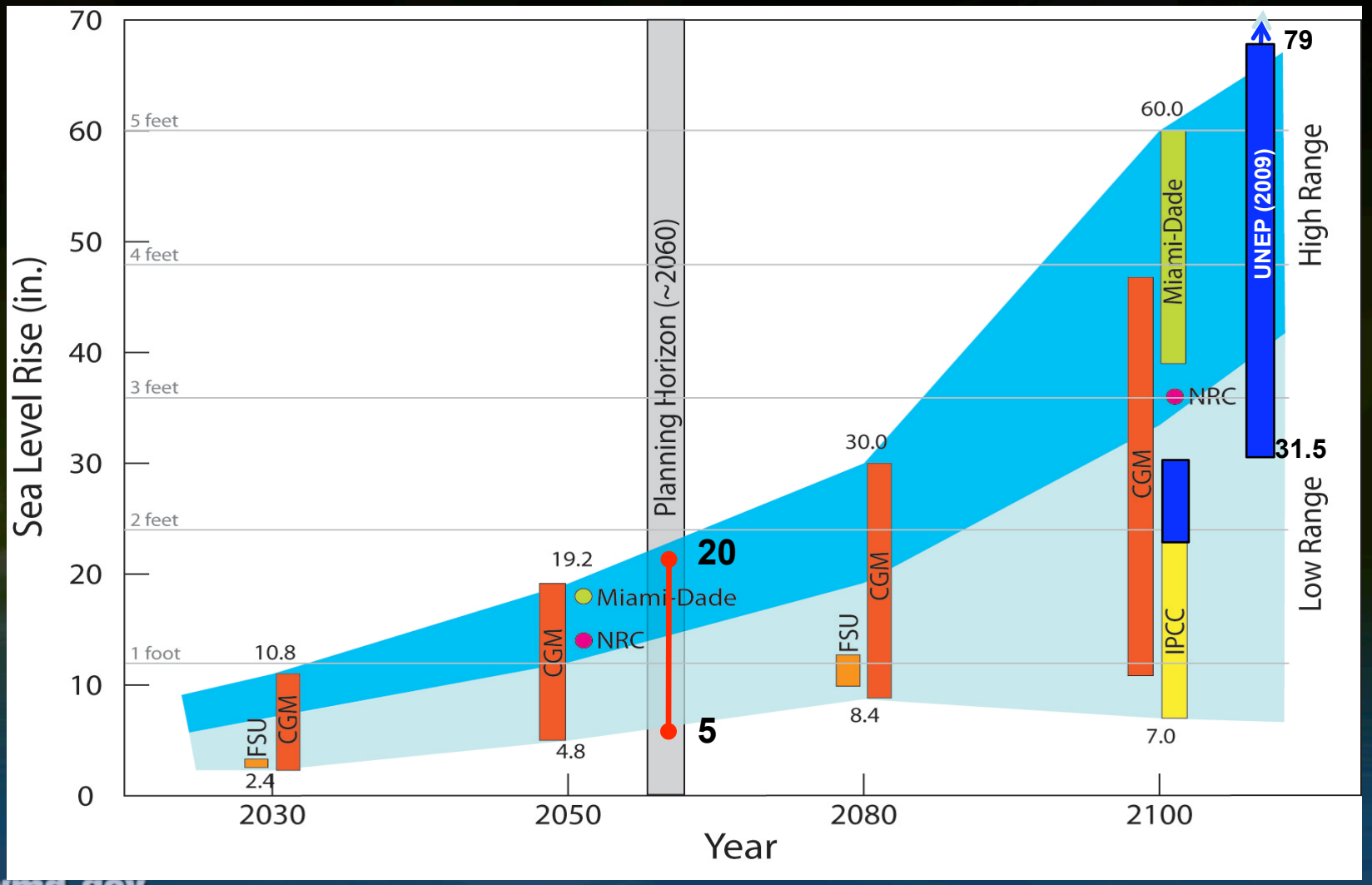
Sources of Sea Level Rise



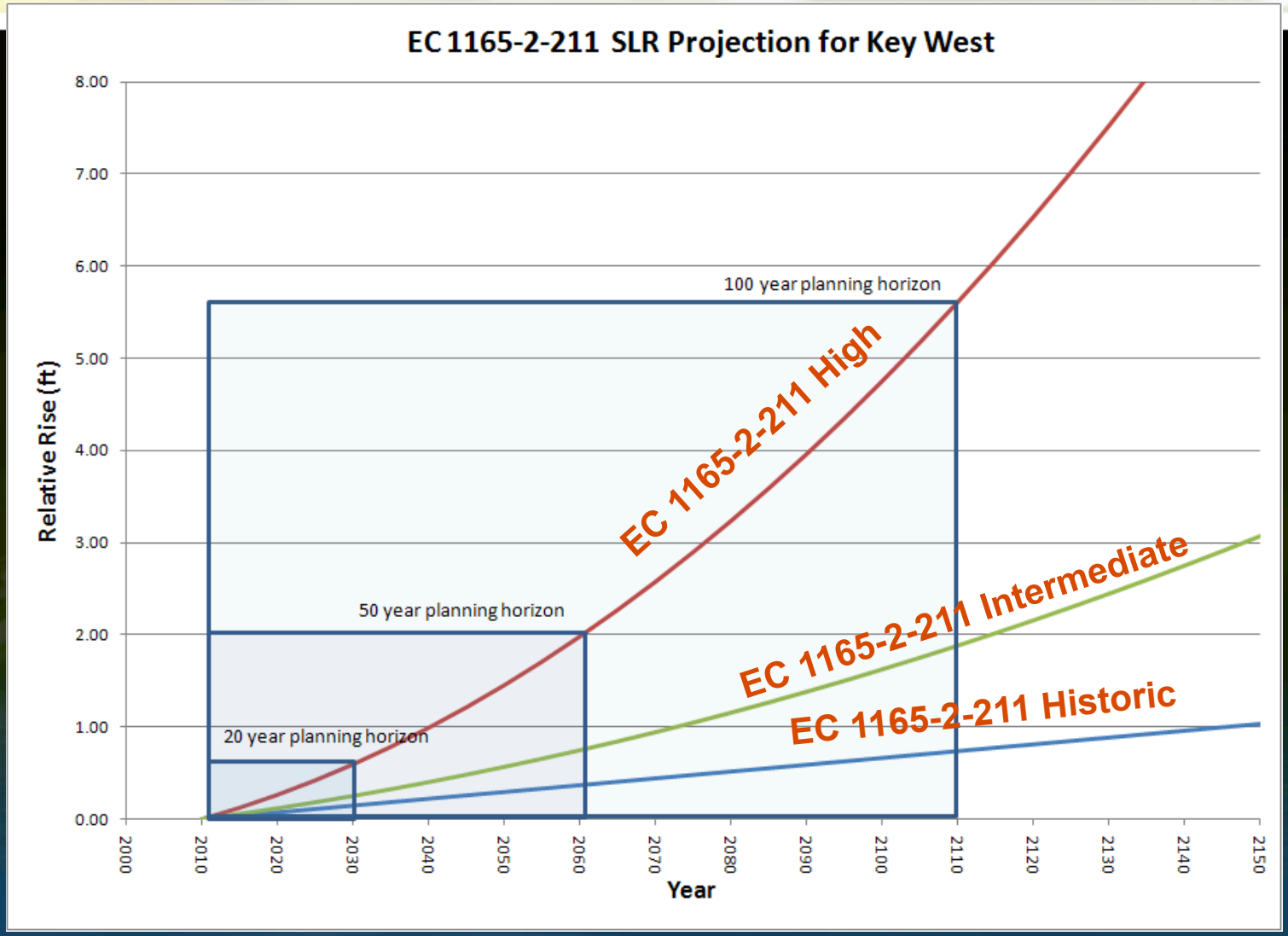
Rising Seas – already a reality



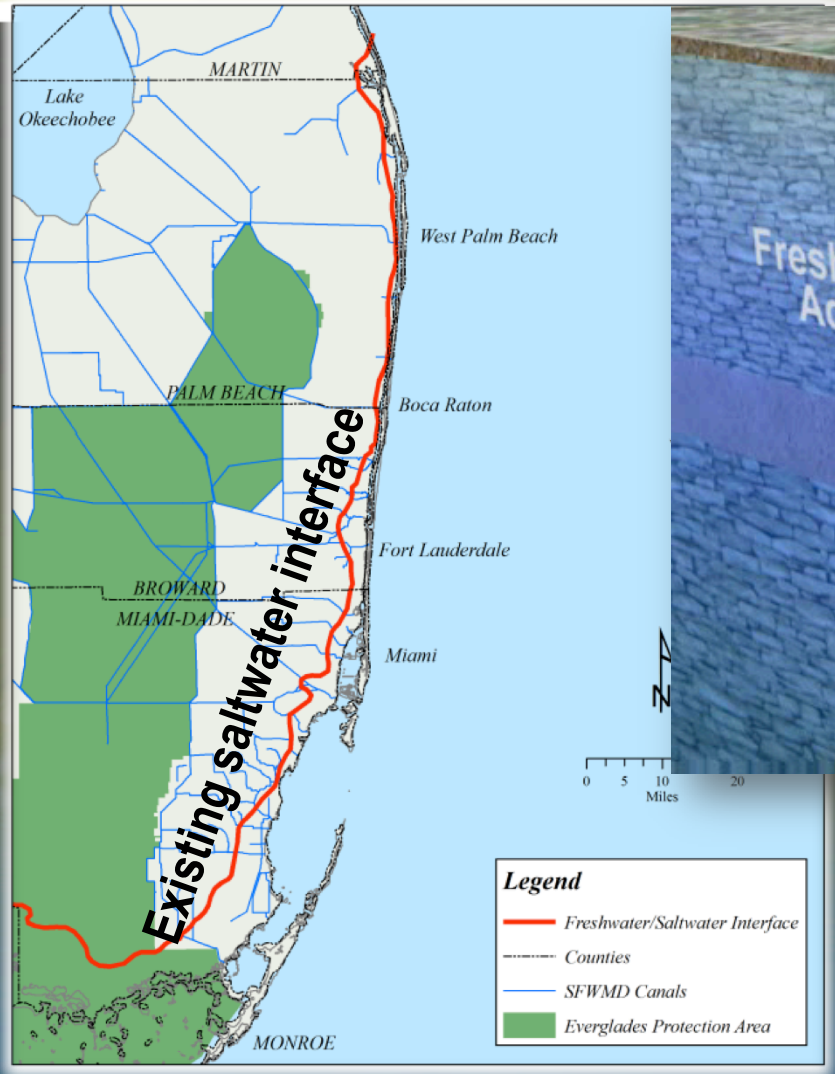
Future Projections: Considerable Spread

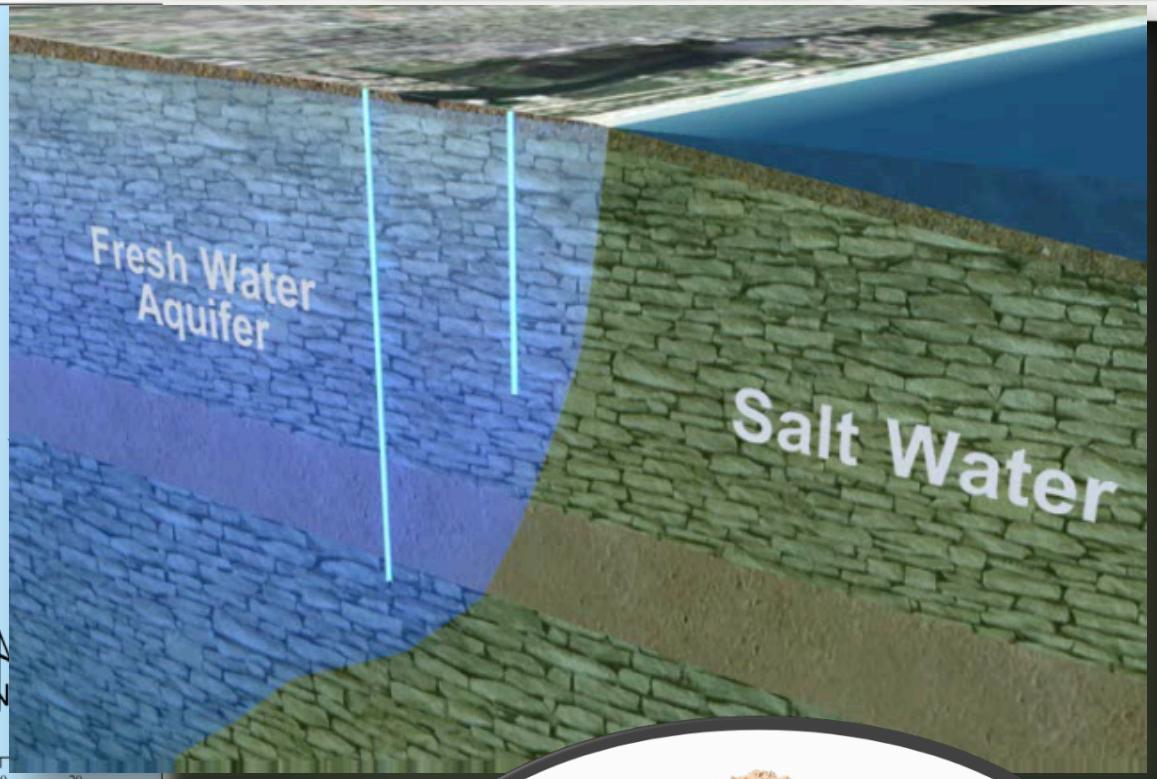


U. S. Army Corps of Engineers' Engineering Circular (EC 1165-2-211) Released July 2009



Rising Seas: Water Supply Impacts
Saltwater Intrusion





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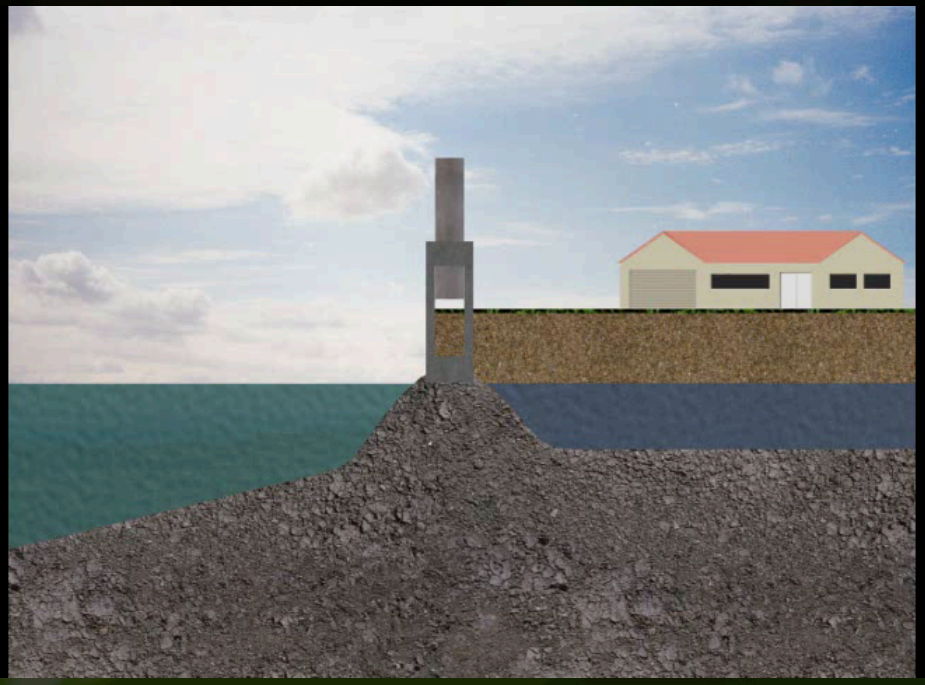
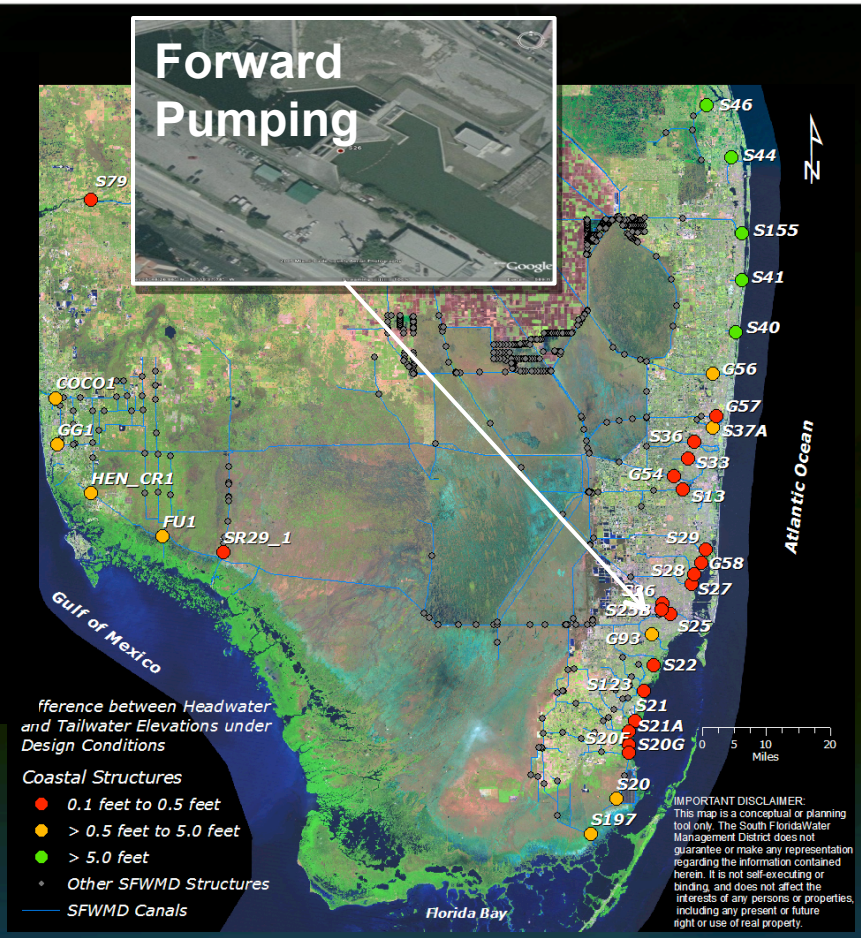
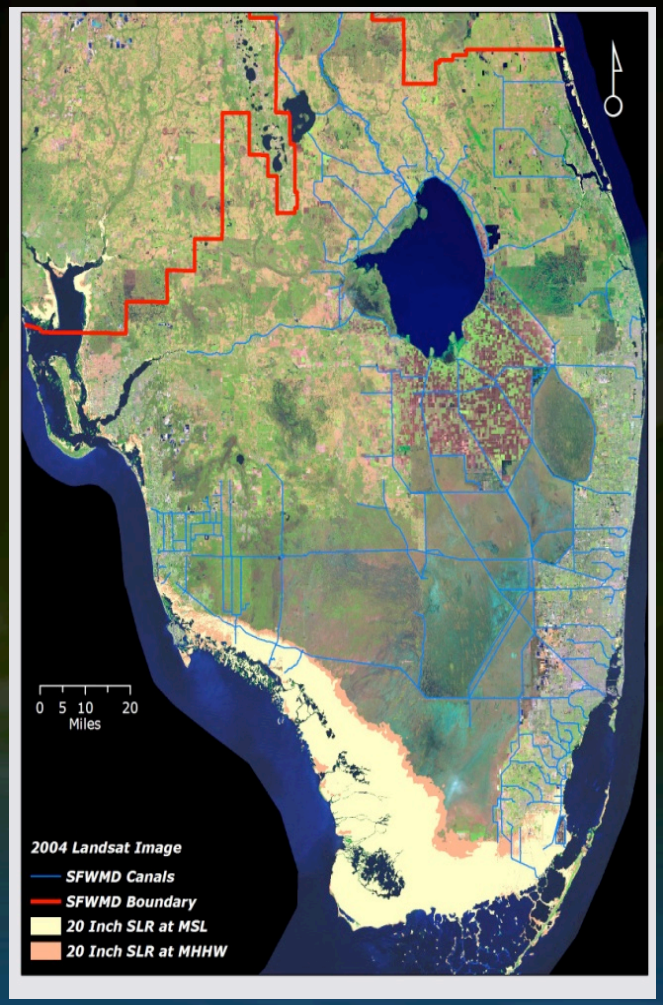
Rising Seas: Flood Control Concerns





- Small water level difference across coastal structures during high tides and local storms
- Flooding during high tide and storm surge

Rising Seas: Southern Everglades Restoration



- Relocation and possible reduction of mangrove forests
- Forced migration of wading birds north
- Potential peat collapse, coastal erosion, and redistribution of sediments
- Salinity intrusion into freshwater marshes can: discharge toxic hydrogen sulfide, cause coastal fish kills, and increase habitat loss

Conclusions

- History is not sufficient to make predictions.
- Sea Level Rise is more certain but significant uncertainties exist in projections.
- Current Climate Change projections:
  - 5 to 20 inches of sea levels by 2060. Need regional information and coordination with other agencies
  - Increase in temperature up to 7º F and Evapotranspiration up to 15%
  - Change in rainfall up to ±20 percent
  - Changes in the strength and frequency of tropical storms and hurricanes. Exact extent is uncertain

Preliminary Recommendations

TASK	FY10 FY11 FY12 FY13 FY14
Continue to analyze historical trends & uncertainties of regional climate projections	
Jointly with other agencies develop modeling tools, and agree on planning parameters	
Understand vulnerabilities	
Develop & implement Type I adaptation strategies	
Develop & implement Type II adaptation strategies	

Local Government Climate Change Initiatives

- Primarily focus on greenhouse gas reduction and green initiatives
  - 16 cities have task forces/committees
  - 57 cities and 2 counties part of “Cool Mayors” program
  - 3 counties (Monroe, Orange and St. Lucie)
- Only 2 counties are looking at water resources – Broward and Miami-Dade

State and Federal Climate Change Initiatives

- 5 federal and national and 3 international initiatives
- Department of Environmental Protection – Initiated process to look at water resource impacts from climate change

Questions!


Recent cabinet meeting of the island nation, Maldives
Dr. Ibrahim Didi
Minister of Fisheries and Agriculture