

**UCOWR/NIWR  
2016 Annual Conference**

**Improving Water Supply Planning  
and Operations by Using Climate  
Science: The Florida Water and  
Climate Alliance**

June 21-23, 2016

Pensacola, Florida

# What is the FWCA?

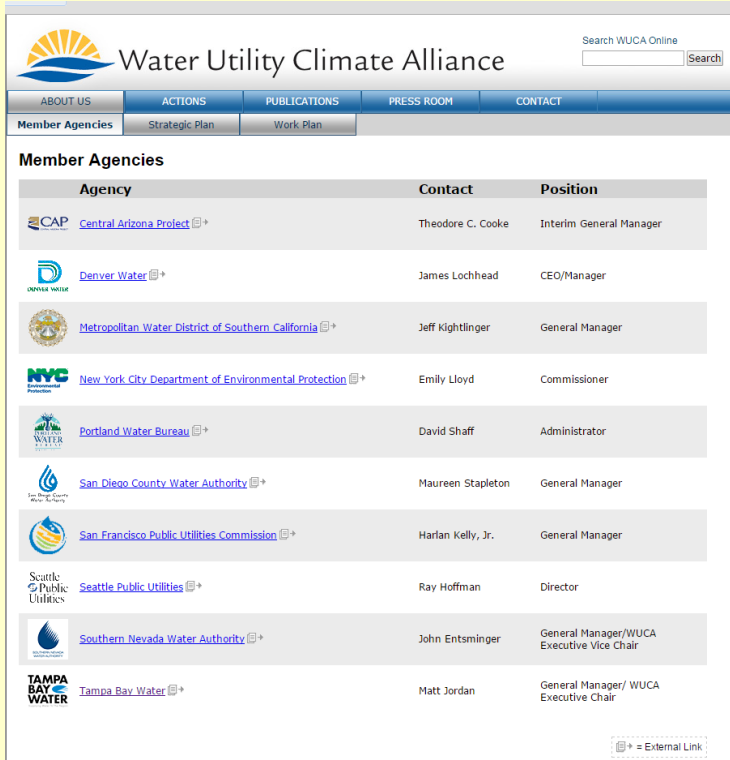


[Floridawca.org](http://Floridawca.org)











A climate learning network that convenes scientists and practitioners in iterative knowledge co-production

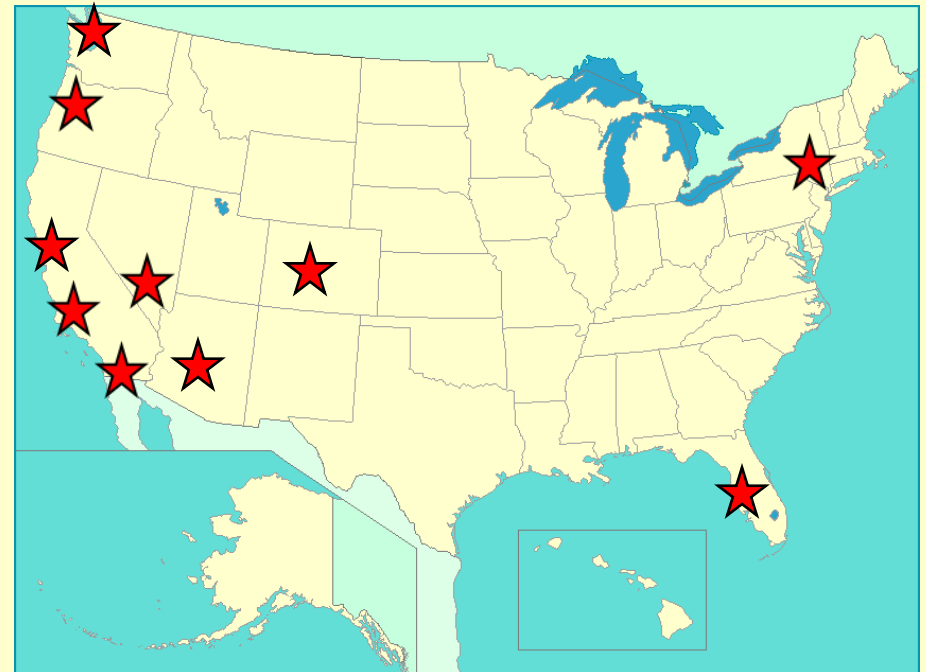
# Origination of FloridaWCA

- Tampa Bay Water was a charter member of the Water Utility Climate Alliance – 10 Major Metropolitan Water Providers



The screenshot shows the website for the Water Utility Climate Alliance. At the top, there is a search bar and navigation tabs for 'ABOUT US', 'ACTIONS', 'PUBLICATIONS', 'PRESS ROOM', and 'CONTACT'. Below the navigation is a section for 'Member Agencies' with sub-tabs for 'Strategic Plan' and 'Work Plan'. The main content is a table listing member agencies with columns for 'Agency', 'Contact', and 'Position'. Each row includes a logo, the agency name, a contact person, and their position. A legend at the bottom right indicates that a small icon next to the agency name represents an external link.

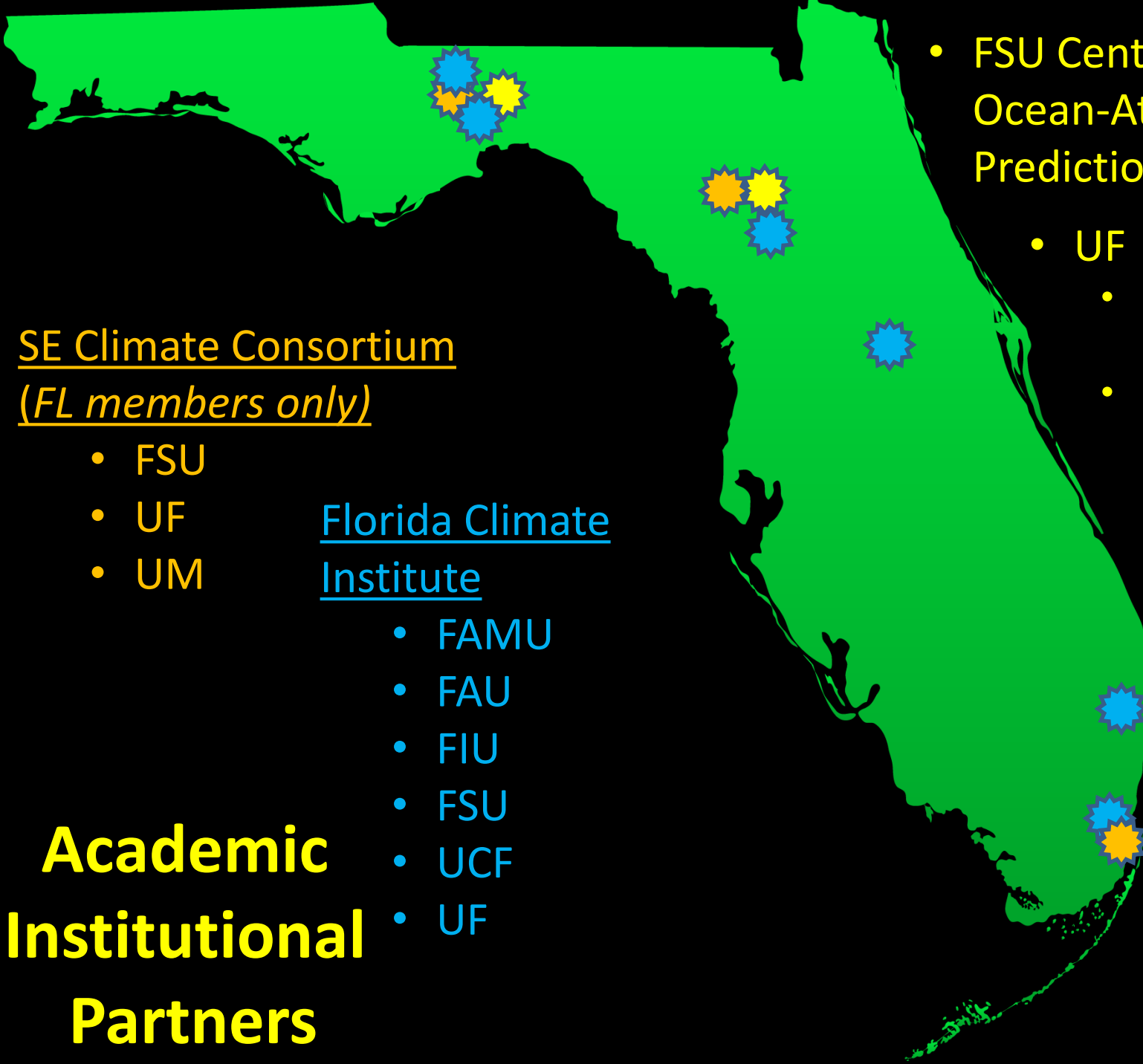
Agency	Contact	Position
 Central Arizona Project <a href="#">↗</a>	Theodore C. Cooke	Interim General Manager
 Denver Water <a href="#">↗</a>	James Lochhead	CEO/Manager
 Metropolitan Water District of Southern California <a href="#">↗</a>	Jeff Kightlinger	General Manager
 New York City Department of Environmental Protection <a href="#">↗</a>	Emily Lloyd	Commissioner
 Portland Water Bureau <a href="#">↗</a>	David Shaff	Administrator
 San Diego County Water Authority <a href="#">↗</a>	Maureen Stapleton	General Manager
 San Francisco Public Utilities Commission <a href="#">↗</a>	Harlan Kelly, Jr.	General Manager
 Seattle Public Utilities <a href="#">↗</a>	Ray Hoffman	Director
 Southern Nevada Water Authority <a href="#">↗</a>	John Entsminger	General Manager/WUCA Executive Vice Chair
 Tampa Bay Water <a href="#">↗</a>	Matt Jordan	General Manager/ WUCA Executive Chair



# Origination of FloridaWCA

- Tampa Bay Water realized the value of a Florida-Centric Stakeholder-Scientist Working Group
- Tampa Bay Water, together with the UF Water Institute initiated – Stakeholder-Scientist Working Group in 2009
- Over the next few years:
  - Identity became **Florida Water and Climate Alliance**
  - Executed 2 NOAA Sectoral Applied Research Program (SARP) Grant Projects
  - Developed a website: [www.FloridaWCA.org](http://www.FloridaWCA.org)

So Who are the Members of the  
Florida Water and Climate Alliance?



- FSU Center for Ocean-Atmospheric Prediction Studies

- UF
  - Water Institute
  - IFAS Center for Public Issues Education

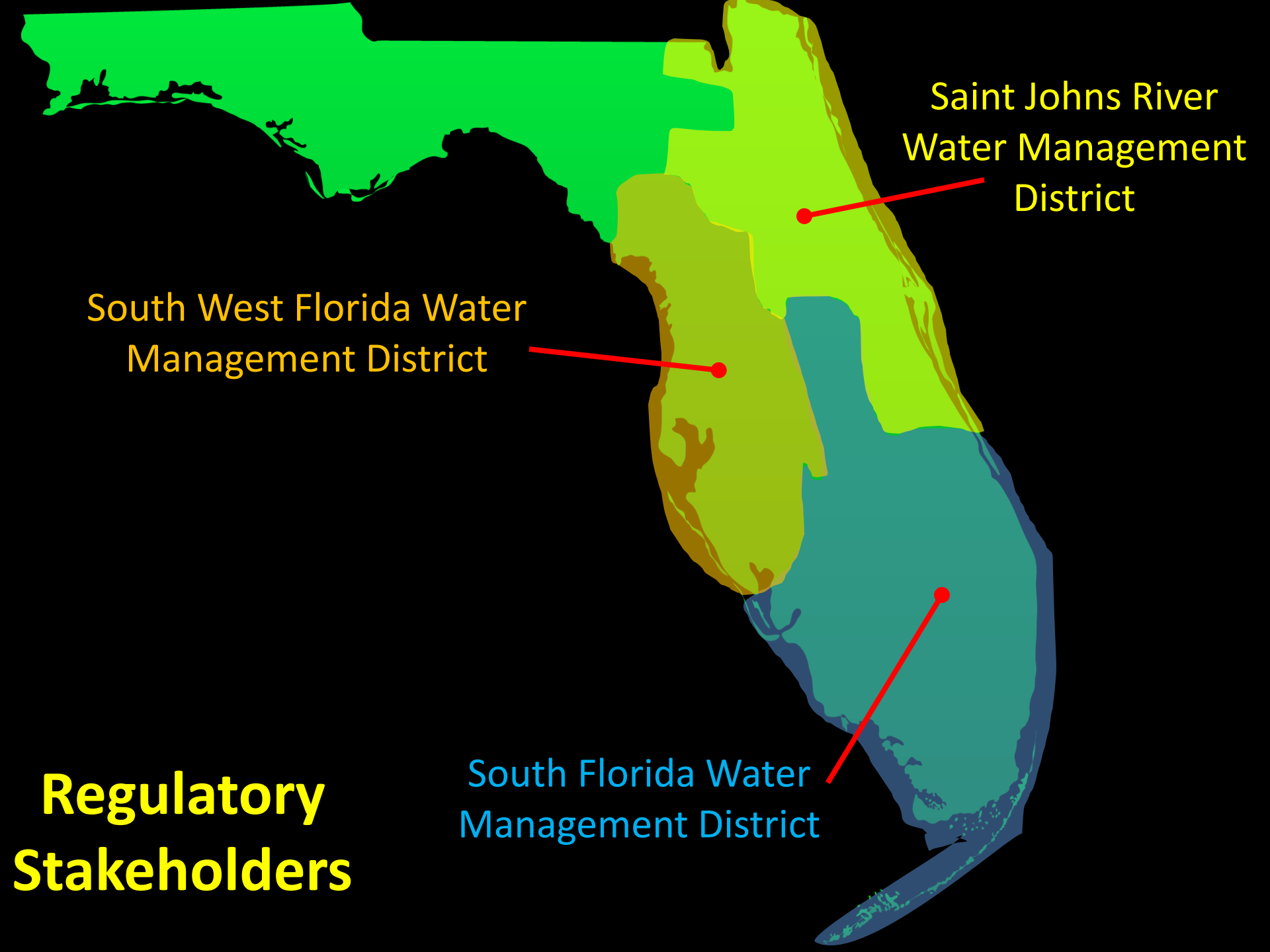
SE Climate Consortium  
*(FL members only)*

- FSU
- UF
- UM

Florida Climate Institute

- FAMU
- FAU
- FIU
- FSU
- UCF
- UF

**Academic Institutional Partners**



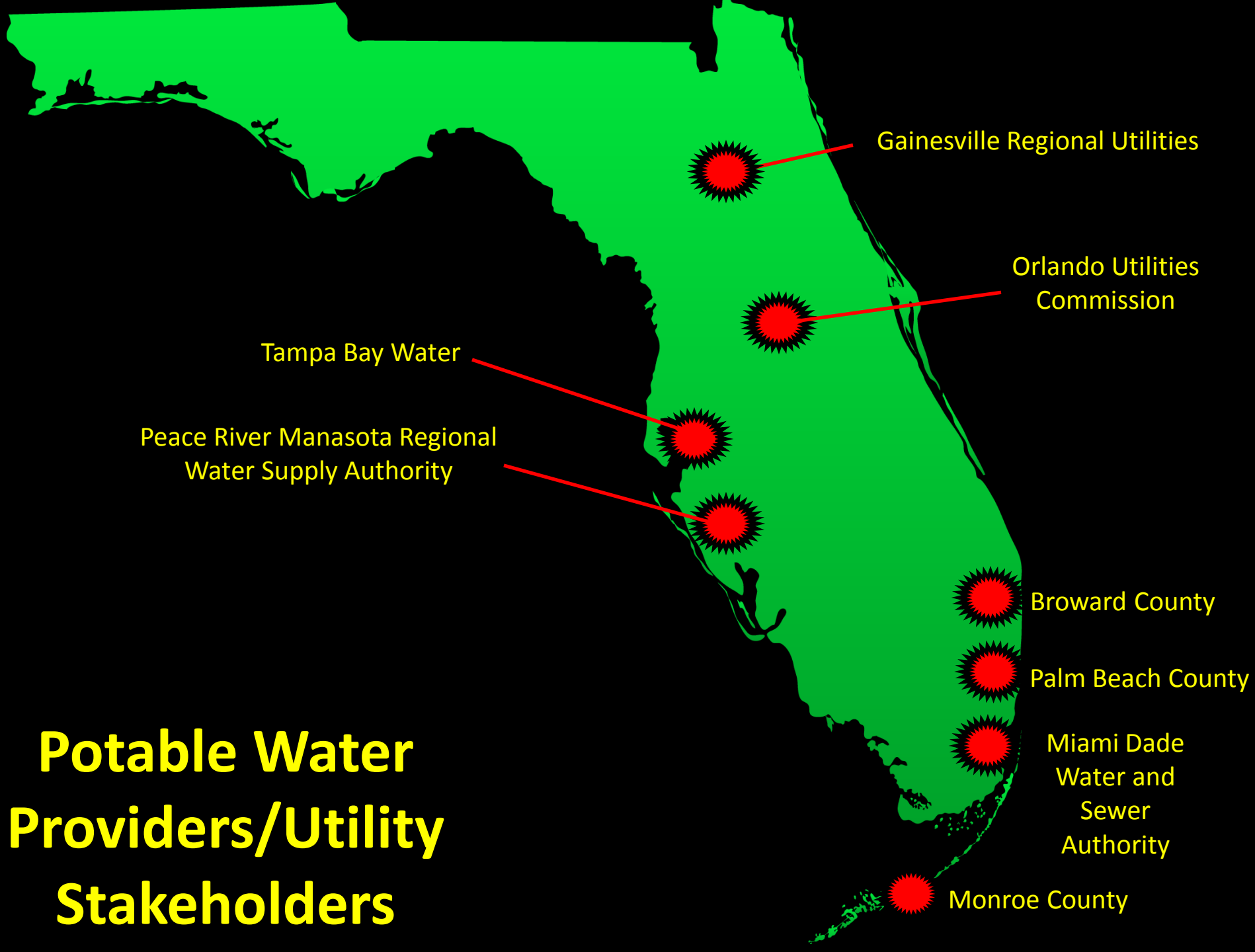
Saint Johns River  
Water Management  
District

South West Florida Water  
Management District

South Florida Water  
Management District

**Regulatory  
Stakeholders**

# Potable Water Providers/Utility Stakeholders



Gainesville Regional Utilities

Orlando Utilities  
Commission

Tampa Bay Water

Peace River Manasota Regional  
Water Supply Authority

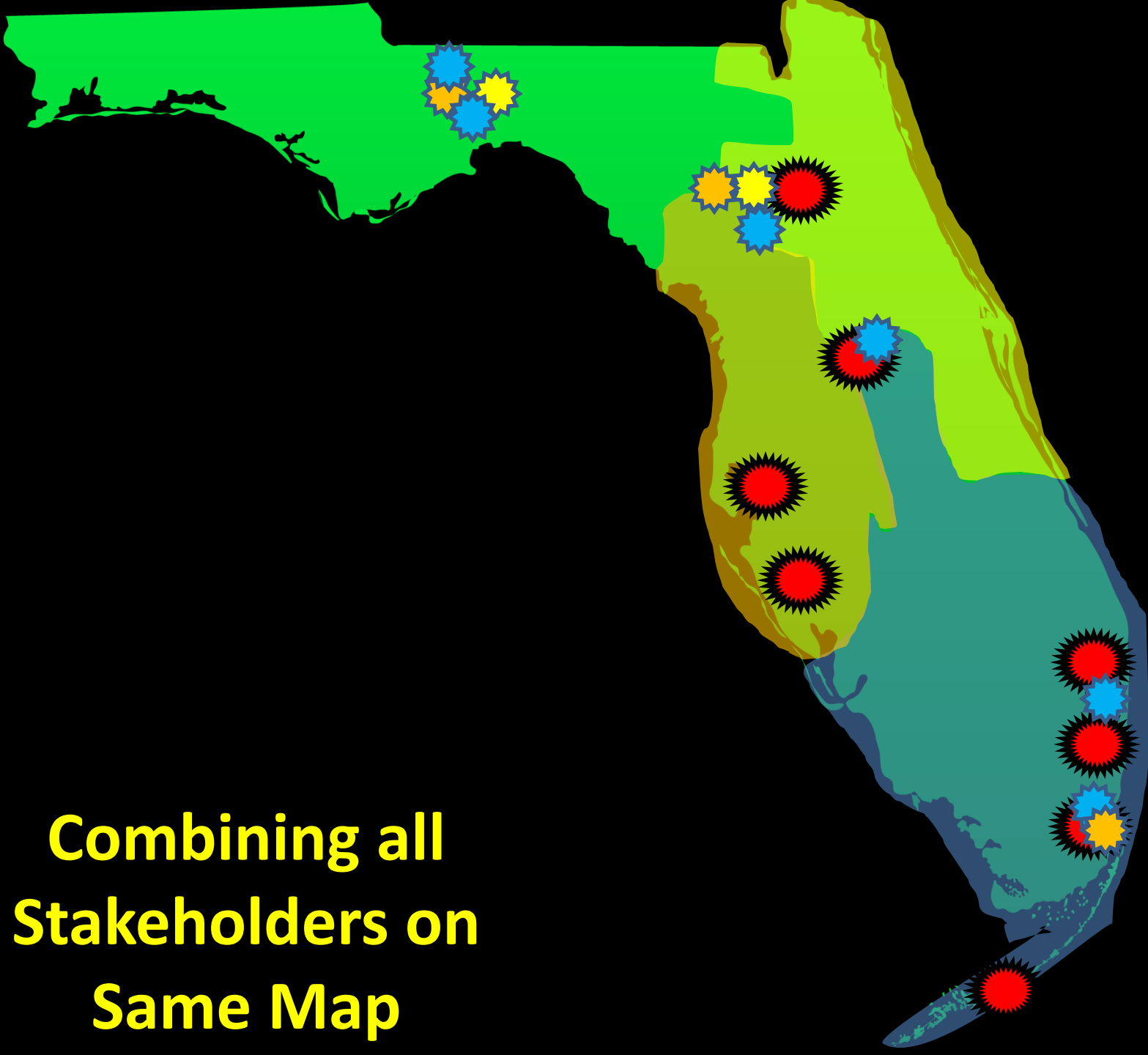
Broward County

Palm Beach County

Miami Dade  
Water and  
Sewer  
Authority

Monroe County





**Combining all  
Stakeholders on  
Same Map**

# FloridaWCA

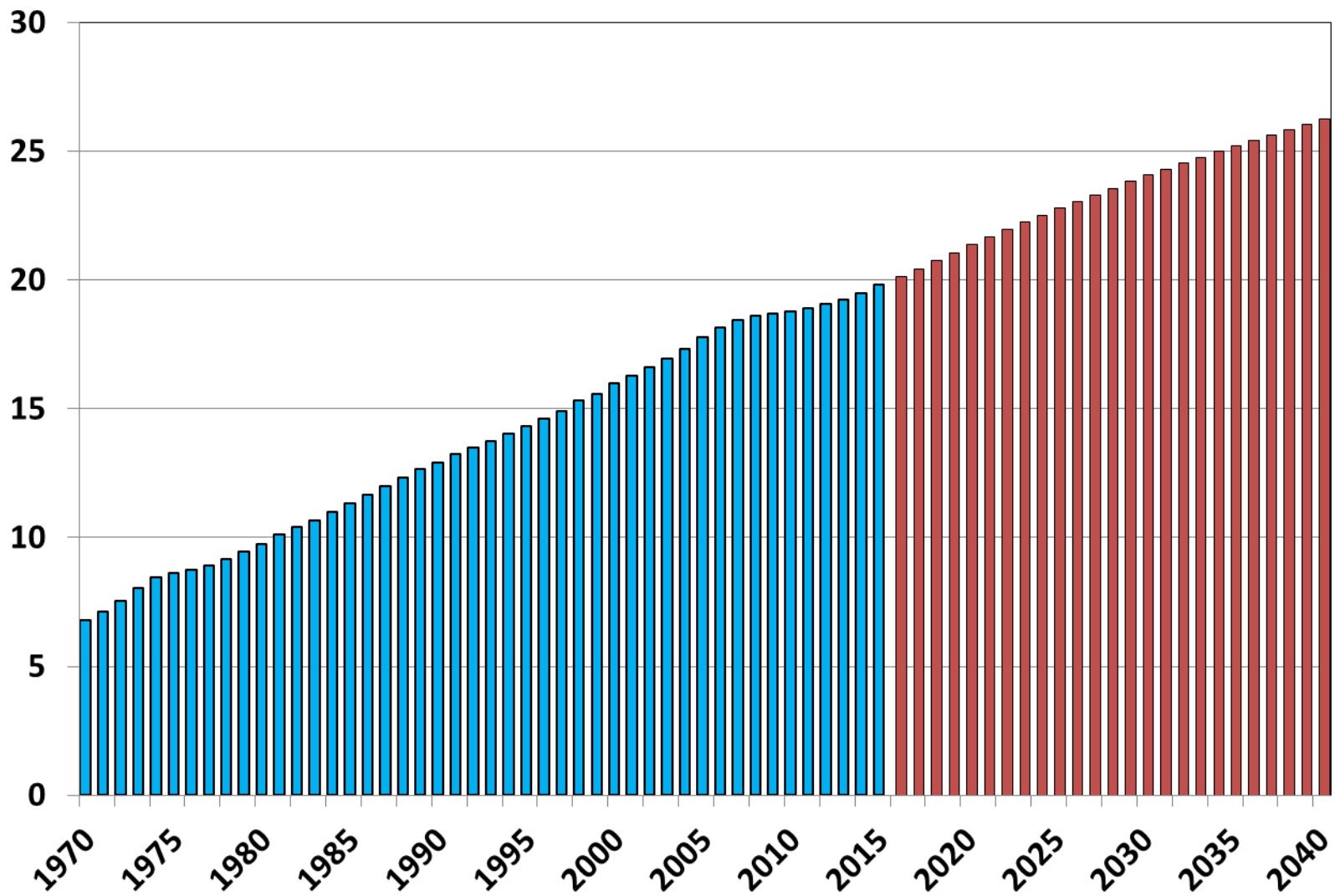
“IF EVERYONE’S THINKING  
ALIKE, THEN SOMEONE  
ISN’T THINKING.”

— GEORGE S. PATTON

- Diversity Makes the FloridaWCA Unique
- Most Industry/Professional Associations or Affiliations are composited based on commonalities
- This working group was intentionally developed with a target blend of regulators, practitioners, climate researchers & social scientists
- Goal: Work products should be relevant, applicable and can be translated/communicated effectively

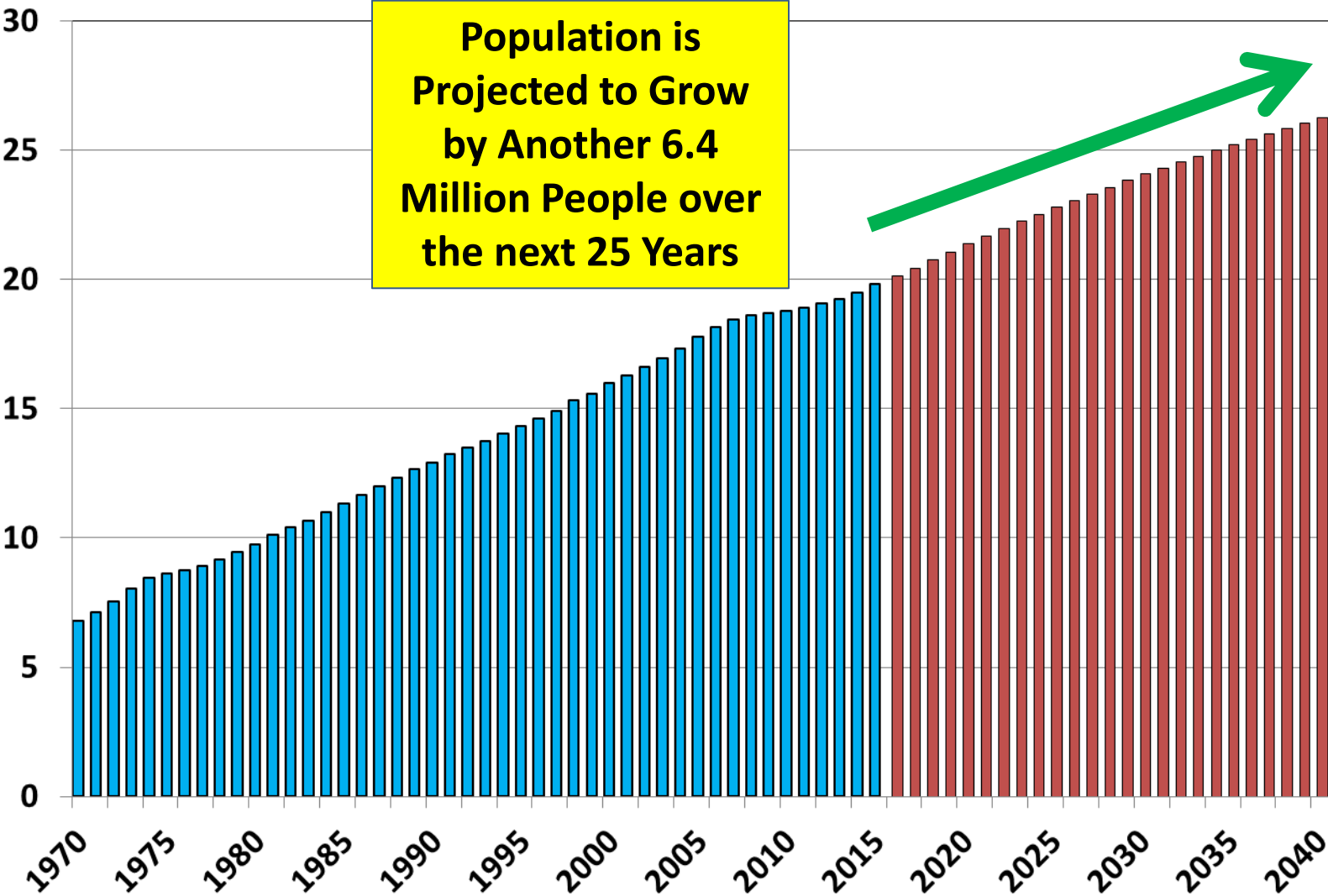
One of the Catalysts Here in Florida  
Creating Opportunities for Enlightened  
Discussion on Water Resources is  
Population Growth

# State of Florida Population in Millions



Source: Bureau of Economic and Business Research, UF

# State of Florida Population in Millions



Source: Bureau of Economic and Business Research, UF

# State Water Supply Challenges

6.4 Million New People

@

90 gpd/capita for domestic use

= 576 Mgal/day

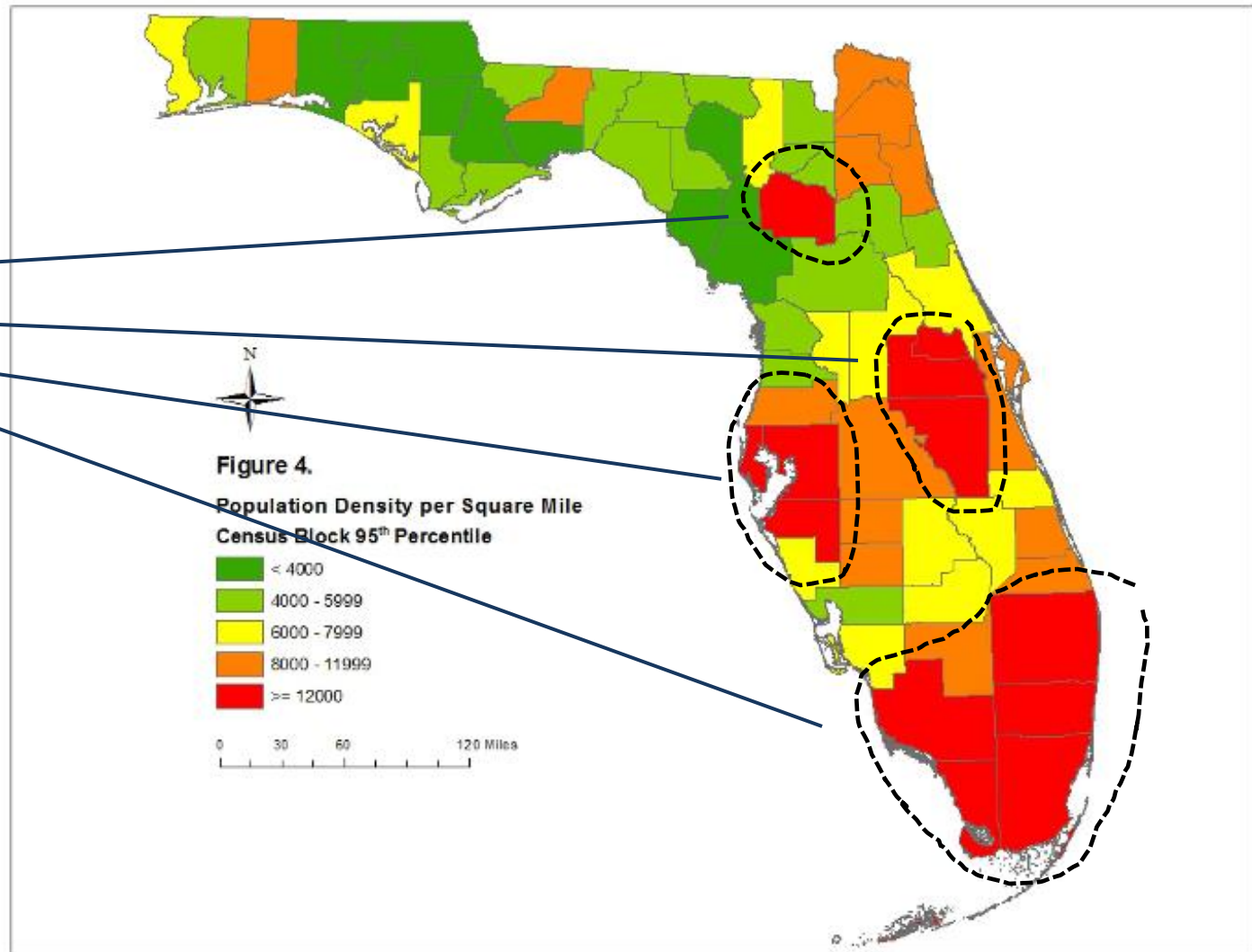
of “new” water needed

over the next 25 years

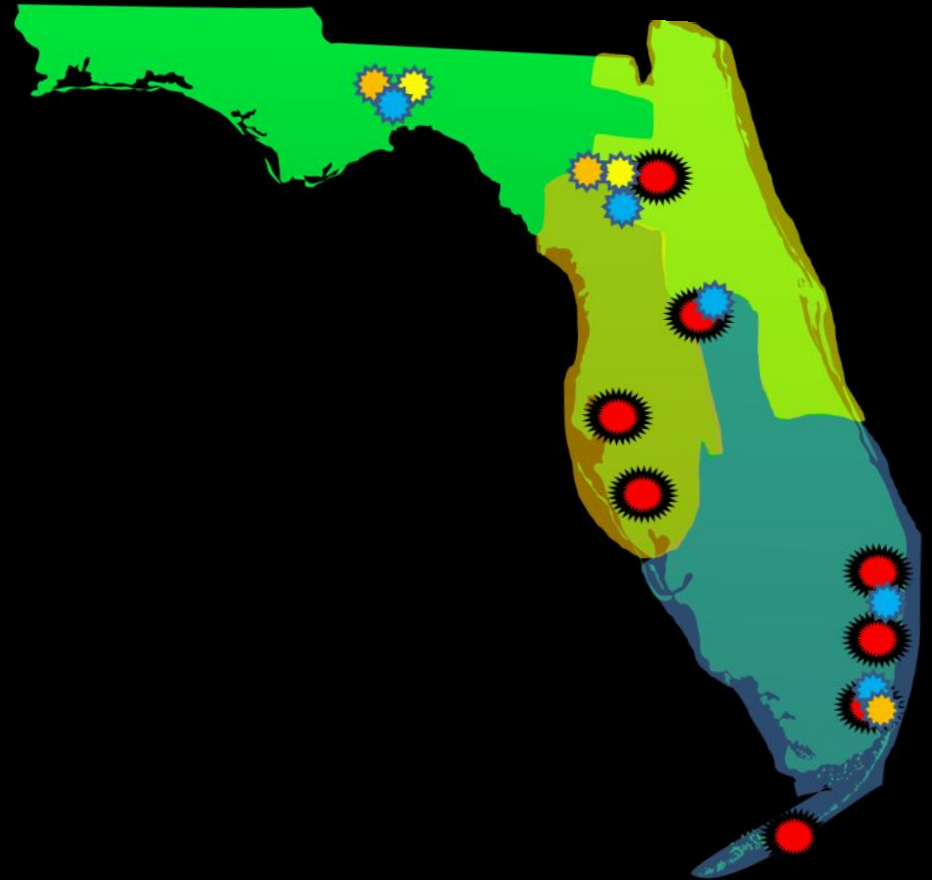
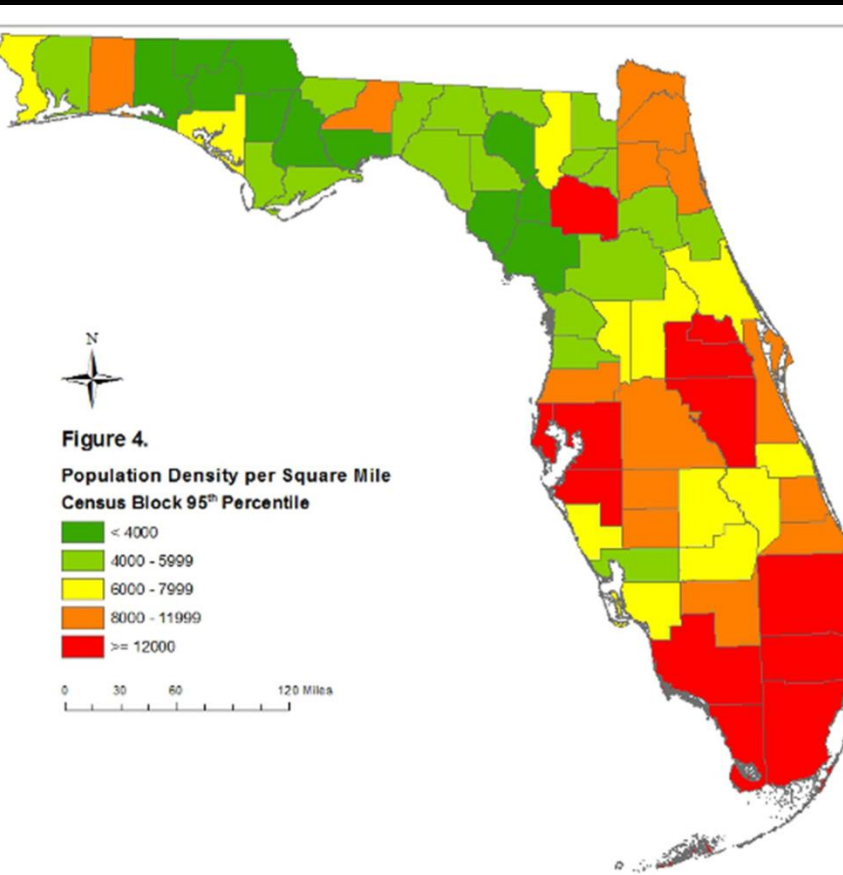
(this is roughly 1,800 acre\*<sup>3</sup>ft/day)

# Population Density for Florida

The Red denotes counties with an aggregate density greater than 12,000 people per square mile



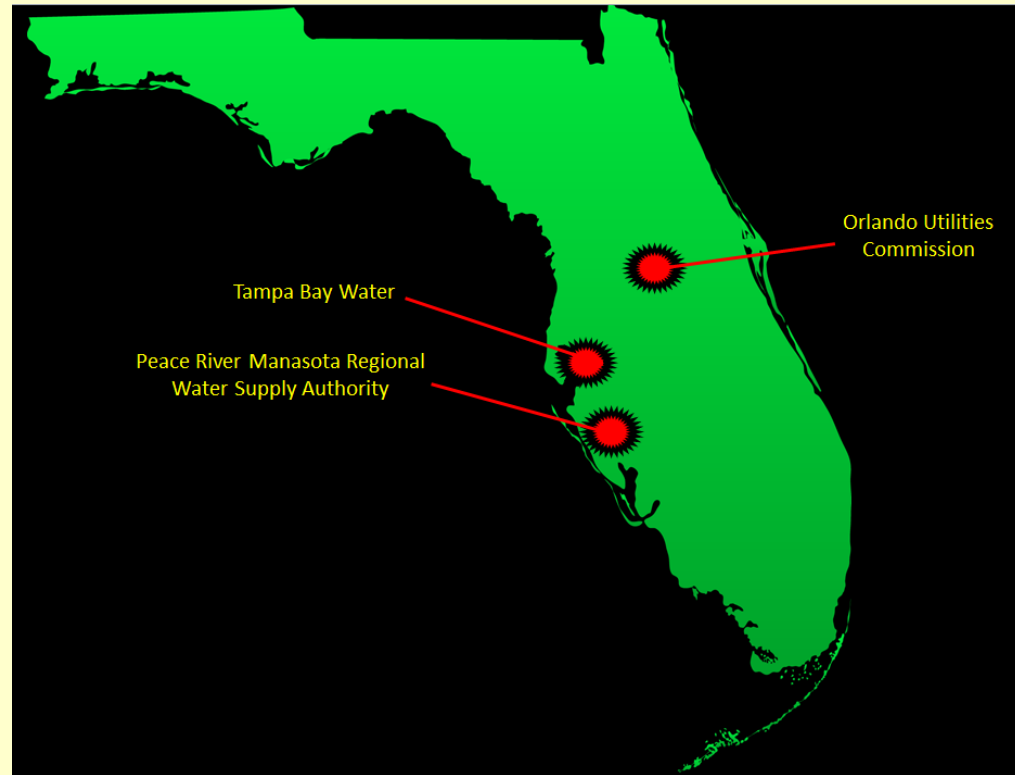
# Comparing Florida Water and Climate Stakeholder Coverage to Population Density





# Let's Focus on How Three Florida WCA Members Currently Meet Demands and How this Could Change

- Tampa Bay Water
- Peace River Manasota Regional Water Supply Authority
- Orlando Utilities Commission (OUC)



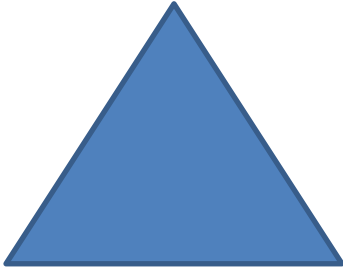
# **Tampa Bay Water**

# Tampa Bay Water – Balanced, Diversified Water Supply Portfolio – 265 MGD

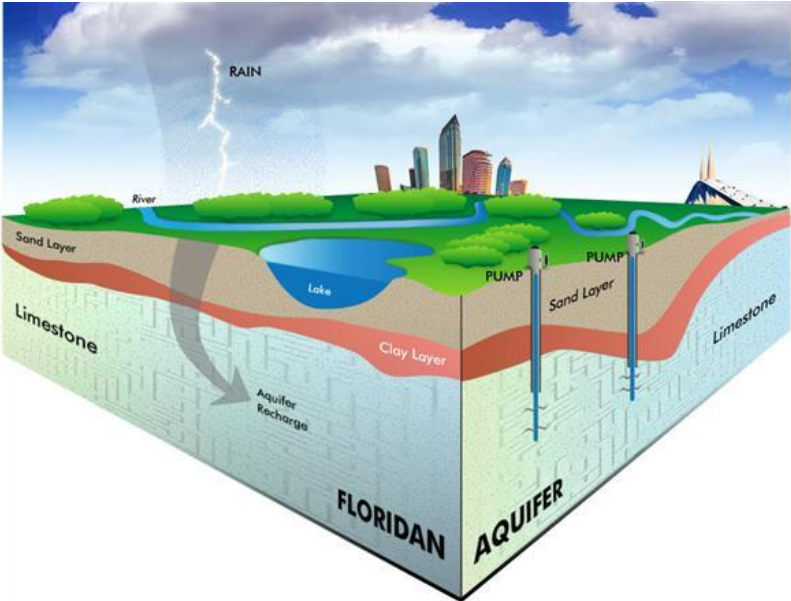


**25 MGD  
Seawater  
Desalination**

**120 MGD Ground Water**

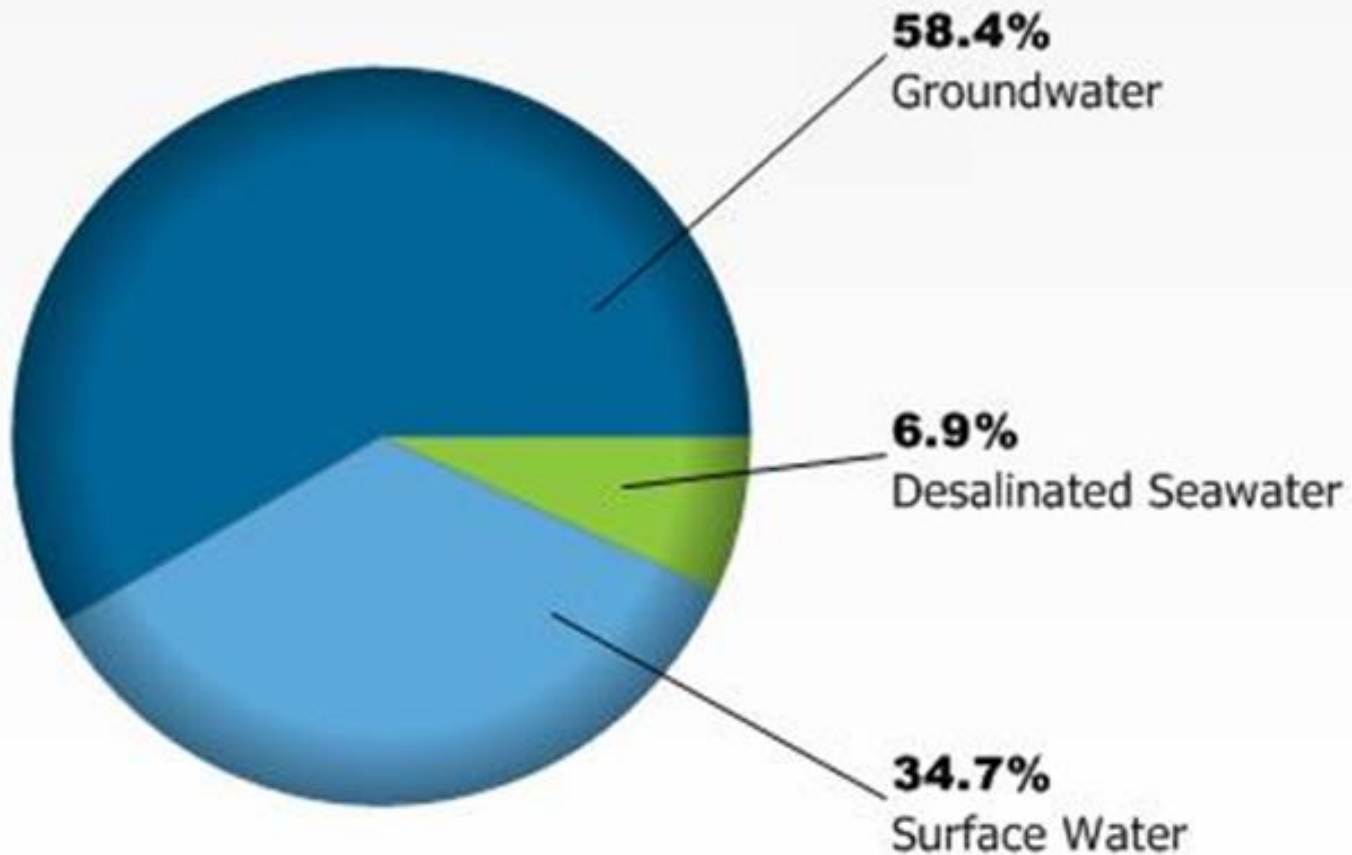


**120 MGD Surface Water**



# With a Diversified Portfolio, One Challenge is Source Optimization

**May 2016**



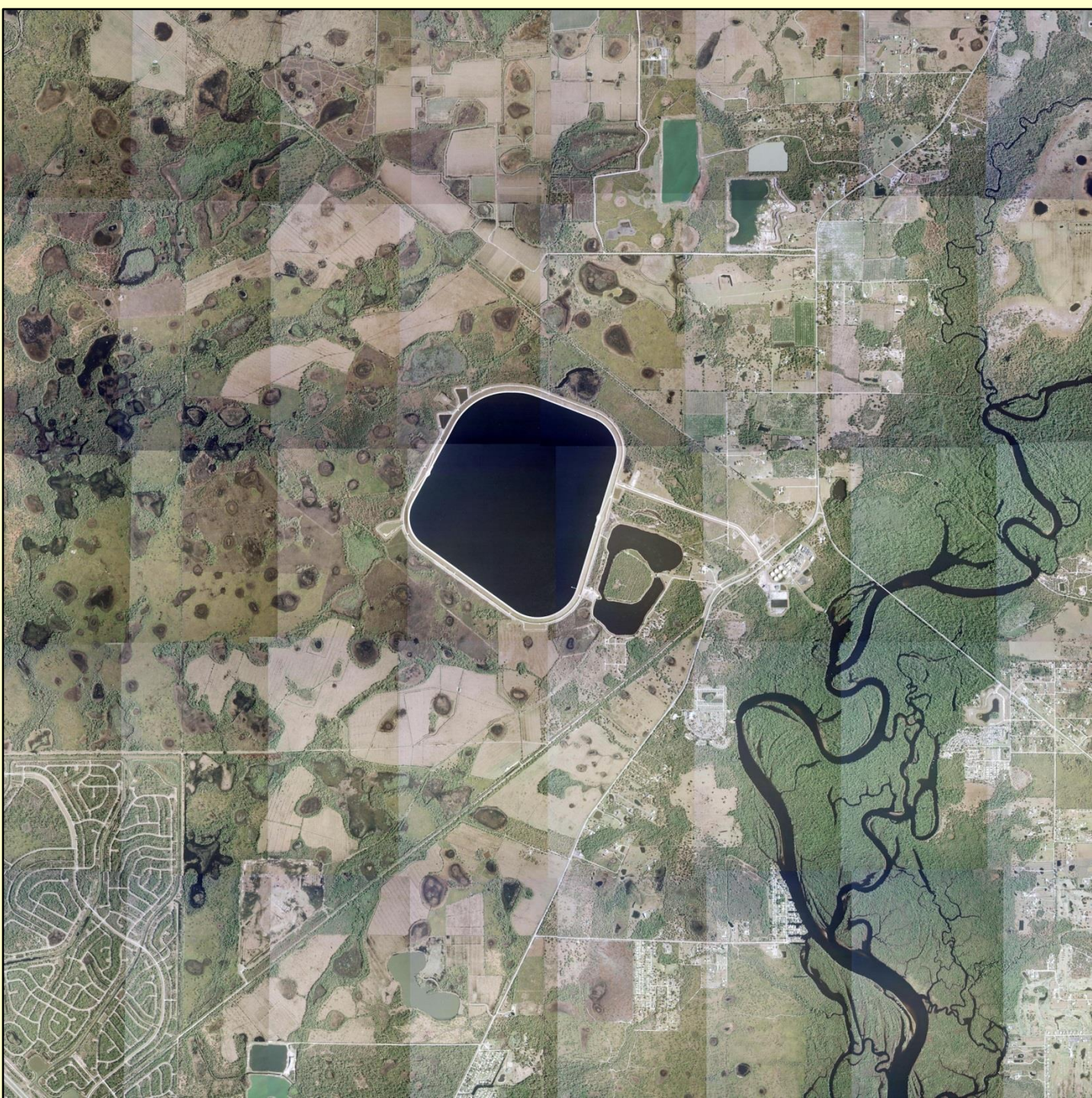
# Tampa Bay Water

- Currently @ 65% of capacity 175/265 MGD
- Adequate Water Supply through 2028
- Science is Heavily Integrated into Utility's Planning and Resource Management to Optimize Costs, Reduce Uncertainty and Risk
- Heavy User of Climate Projection Products
- They are an Innovator/Developer of Decision Tools using a Variety of Science-Based Inputs

**Peace River Manasota  
Regional Water Supply Authority**



# The Peace River Facility





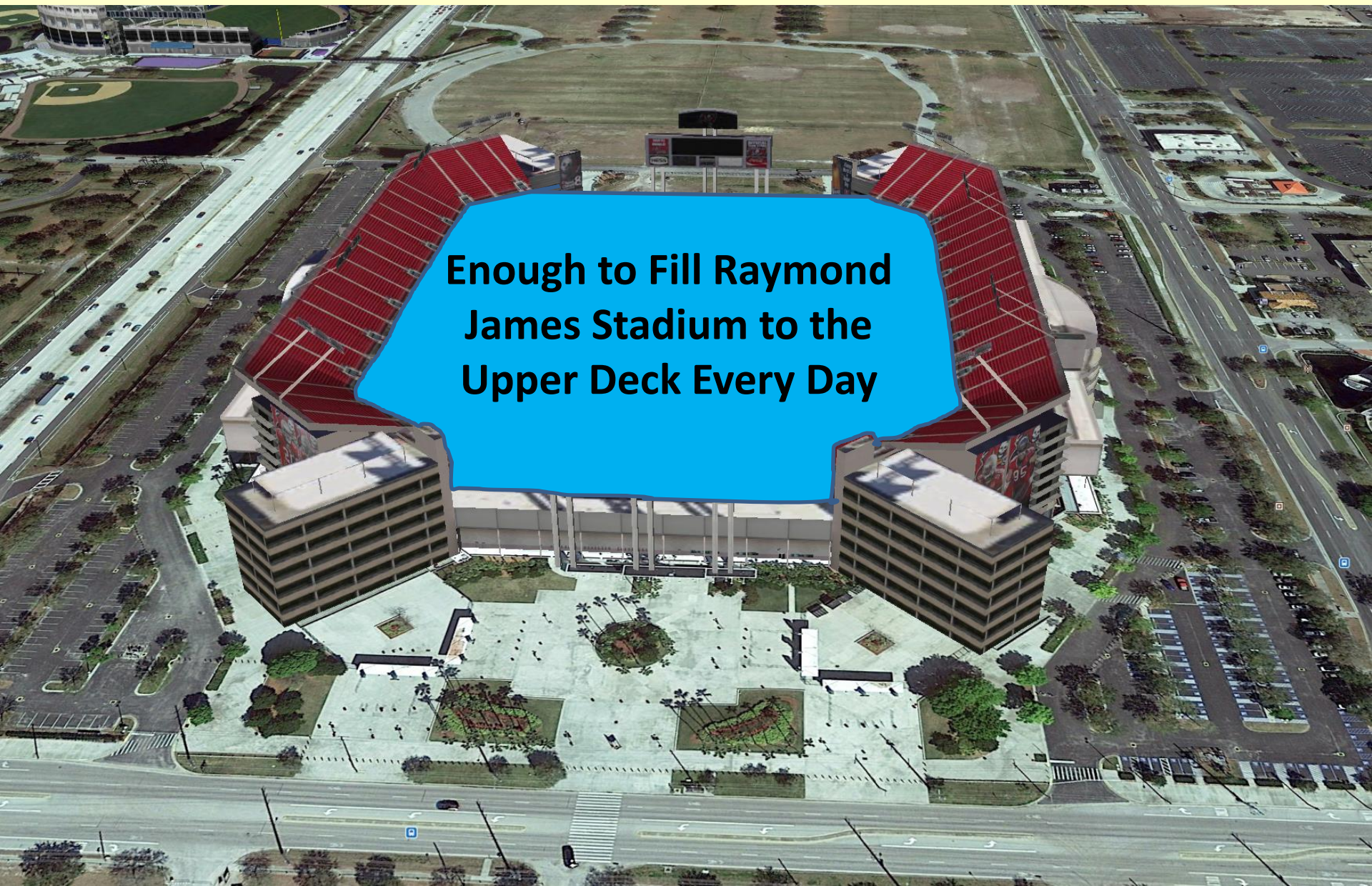


**51 MGD  
Treatment  
Capacity**

# 120 MGD River Intake Pump Station



# How Much is 120 MGD?

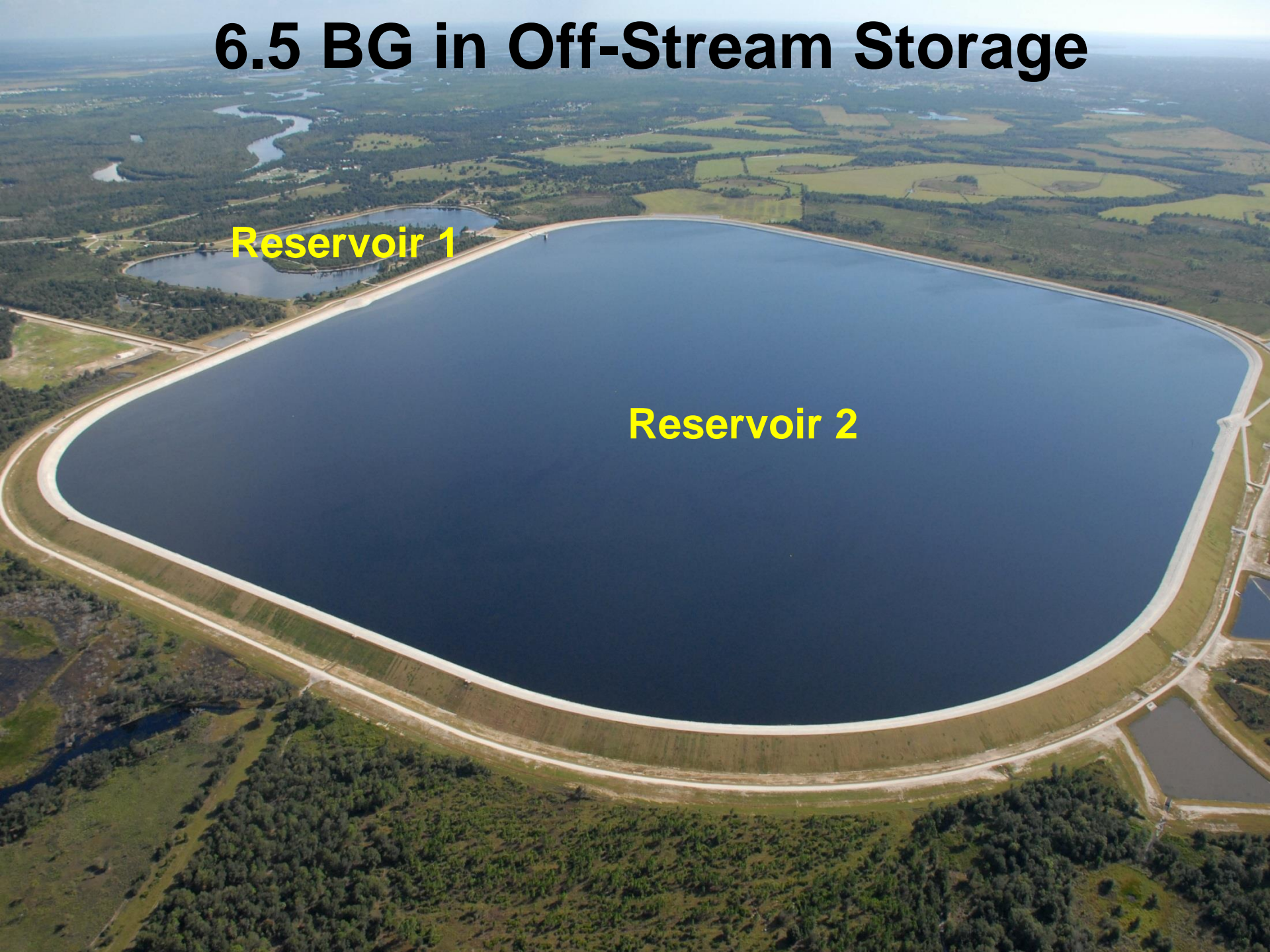
An aerial photograph of Raymond James Stadium in Tampa, Florida. The stadium's distinctive red, curved roof is prominent. A large, irregularly shaped blue area is overlaid on the upper deck of the stadium, representing a pool of water. The surrounding area includes parking lots, roads, and other stadium facilities.

Enough to Fill Raymond  
James Stadium to the  
Upper Deck Every Day

# 6.5 BG in Off-Stream Storage

Reservoir 1

Reservoir 2

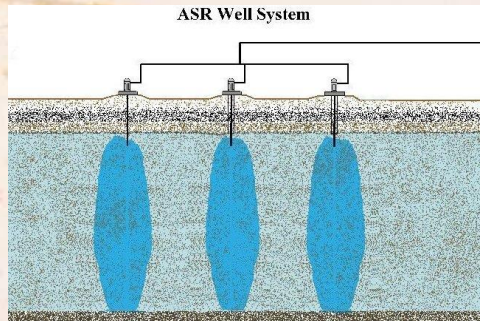


# 6 BG in Underground Storage

21 Aquifer Storage and Recovery Wells



ASR Well System



# Peace River Manasota Regional Water Supply Authority

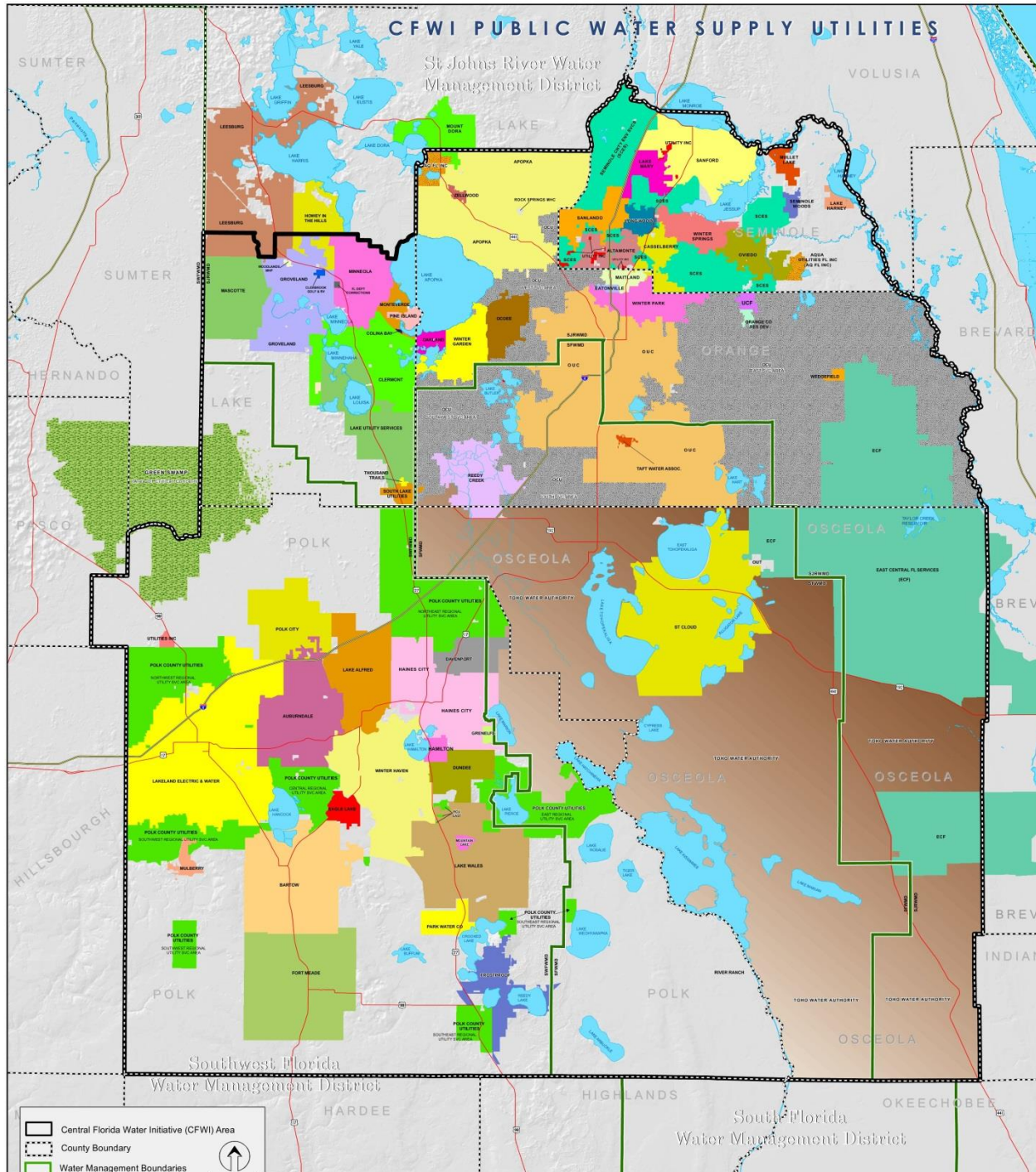
- Currently @ 80% of capacity and considering new supply projects
- No Supply Diversification – Fully Dependent on Surface Water
- Exposure to FloridaWCA has been instrumental for development of:
  - ASR Management Decision Tools, and
  - Long Term Reliability Modeling for Climate and Sea Level Rise Adaptive Management Strategies

# **Orlando Utilities Commission**

# OUC

- Currently Exclusively Groundwater Supply
- However, Water Managers Say Groundwater Allocations in this Area Nearly Exhausted
- So Leaders from the 3 Water Management Districts are working together on the Central Florida Water Initiative
- Includes Collaborative Planning and Cost Sharing Cooperation between 96 Utilities in a 5 County Area

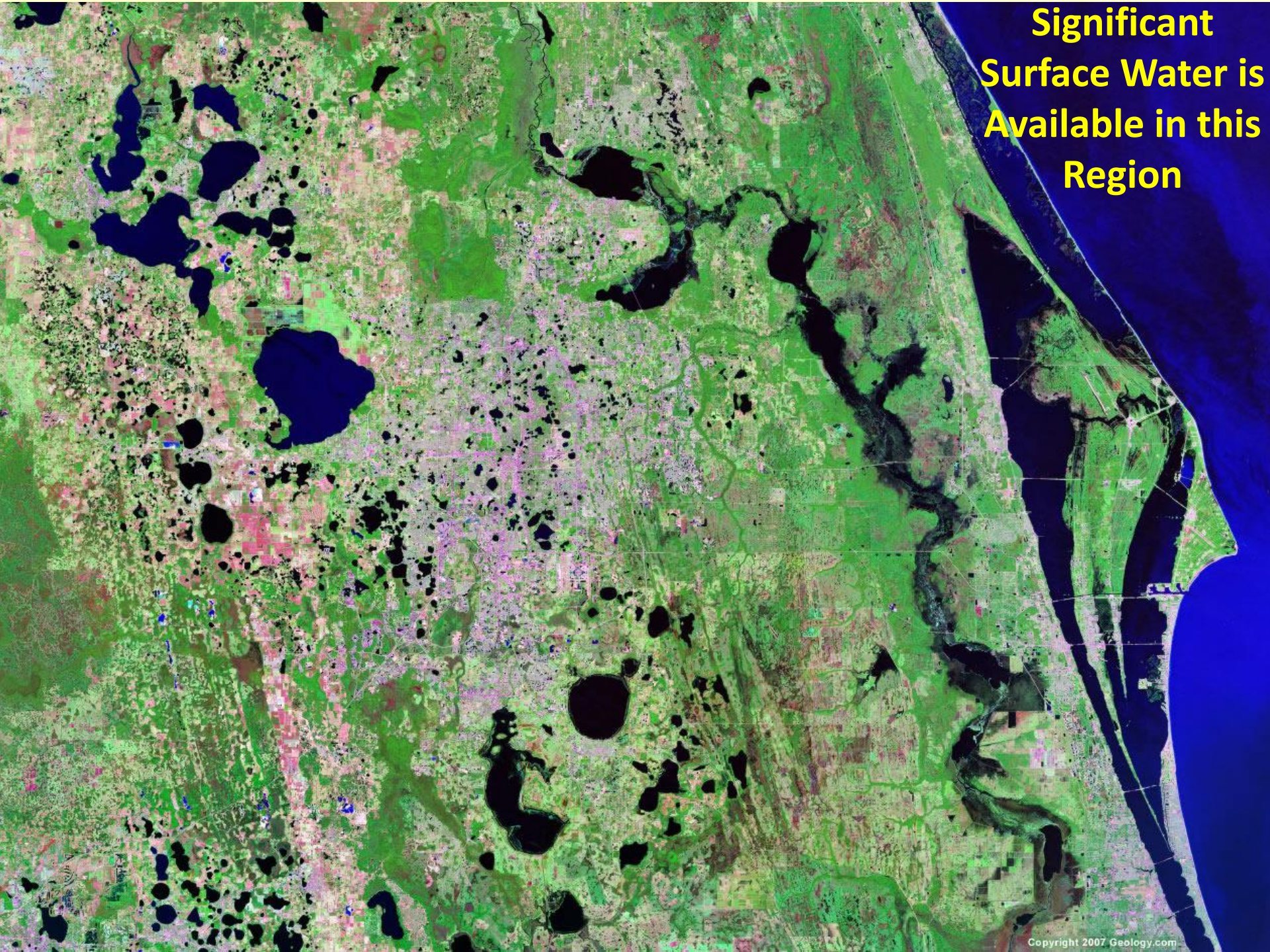






- The Goal is to Promote Alternative Water Supplies to Preserve the Region's Hydrologic Natural Resources (*such as Rock Springs located at Kelly Park in Apopka*)

**Significant  
Surface Water is  
Available in this  
Region**



# OUC

- The CFWI is Still in its Infancy
- But is Projected to Lead to \$2 Billion in New Water Supply over the next 20 Years
- Cost Sharing Algorithms and the Formation of Sub-Regional Collectives are currently being explored
- But the days of Cheap, Abundant Groundwater in Central Florida are Numbered



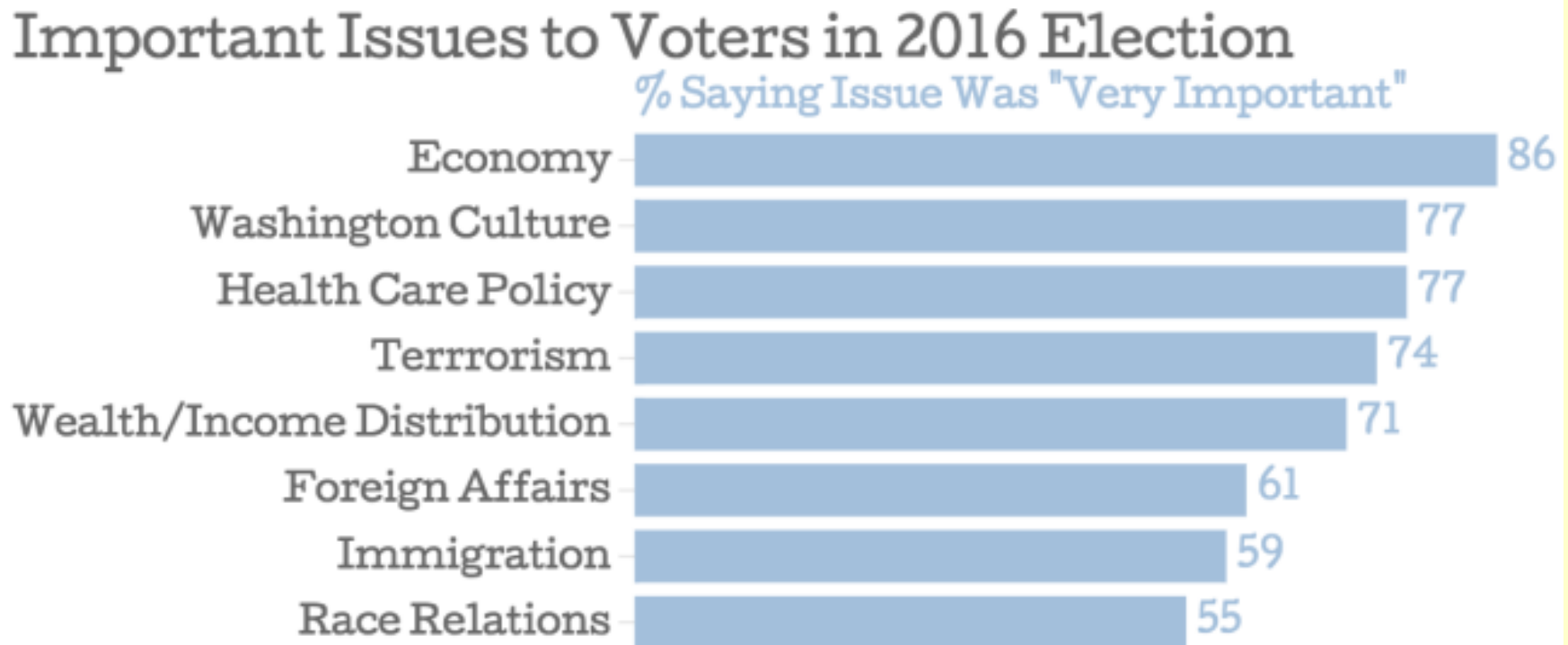
**As a Society  
we are easily  
distracted**



# FloridaWCA

- Challenges: Participants are Fulltime Professionals – there is an Opportunity Cost for Active Involvement
- Meetings previously had 25 – 30 in attendance, down to 15
- Some Members have fulfilled their Goals or Lost Interest over time
- Core of the Group Recognizes Unique Intrinsic Value of Network
- Opportunities for this Group to Provide Value will Ebb & Flow:
  - Floods and Droughts
  - State/Federal Political changes
  - Sea Level Rise and Climate Change Concepts are Growing in the Public Consciousness
  - Major events (storms, drought or flooding) can serve as Tipping Points

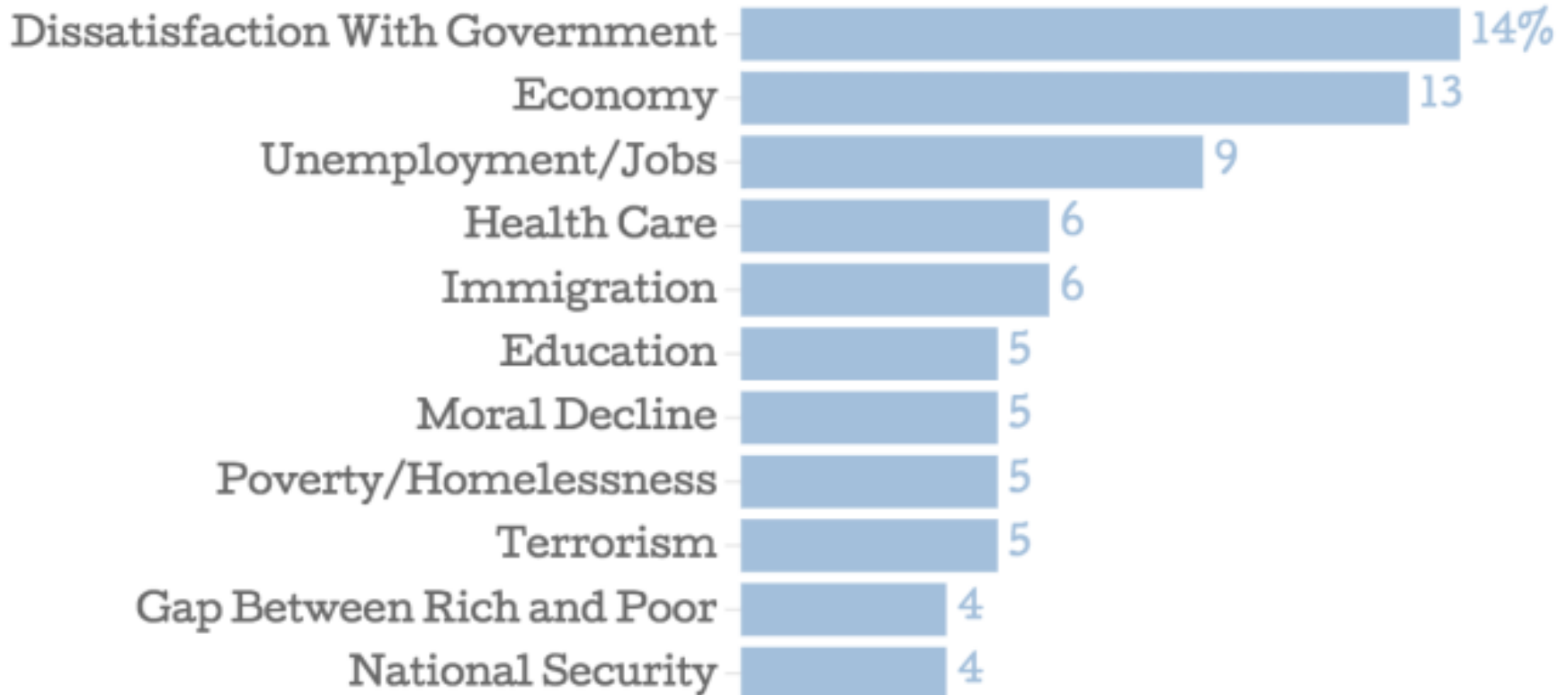
# It is Difficult for our Leaders to Engage in Climate Change Concerns when it is not an Important Issue to the Electorate



# Biggest Problems Facing our Country?

## What is the Country's Most Important Problem?

Poll From June 2-7, 2015





# Final Thoughts (1 of 2)

- FloridaWCA Governance:
  - Entity is a loose assembly of People and Organizations
  - No formal agreements, bylaws, structure, funding mechanisms or voting rules
  - The NOAA Grants were directed to Academic partners, FloridaWCA has never received nor dispersed any funding
  - Direction and Decisions by Consensus
  - Leadership/Committee roles voluntary
- This works because we own no assets, have no employees, receive no funding directly or make dispersals
- This Arrangement May Not Work for Others

# Final Thoughts (2 of 2)

- Currently 3 Full-Day Workshops per Year
  - Guest Speakers Invited for Information Transfer
  - Exercises Aimed at Improving Communication
  - Some must travel 3 - 4 hours, so we generally meet in a central location: Orlando
- Funding (*remember the entity has no liquidity*):
  - Speakers & Participants Provide for Own Travel Costs
  - Can be Limiting for Graduate Students
  - Administrative and Website Maintenance Costs by UF staff offset by small grants from participants
  - Participants provide meeting space & refreshments

*the end*