

**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?

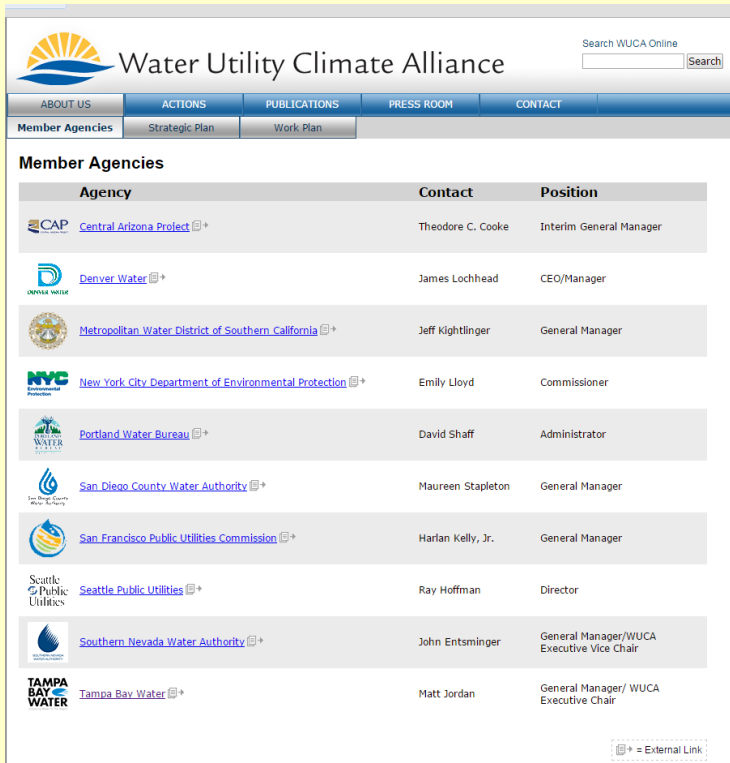


Floridawca.org

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

Origination of FloridaWCA

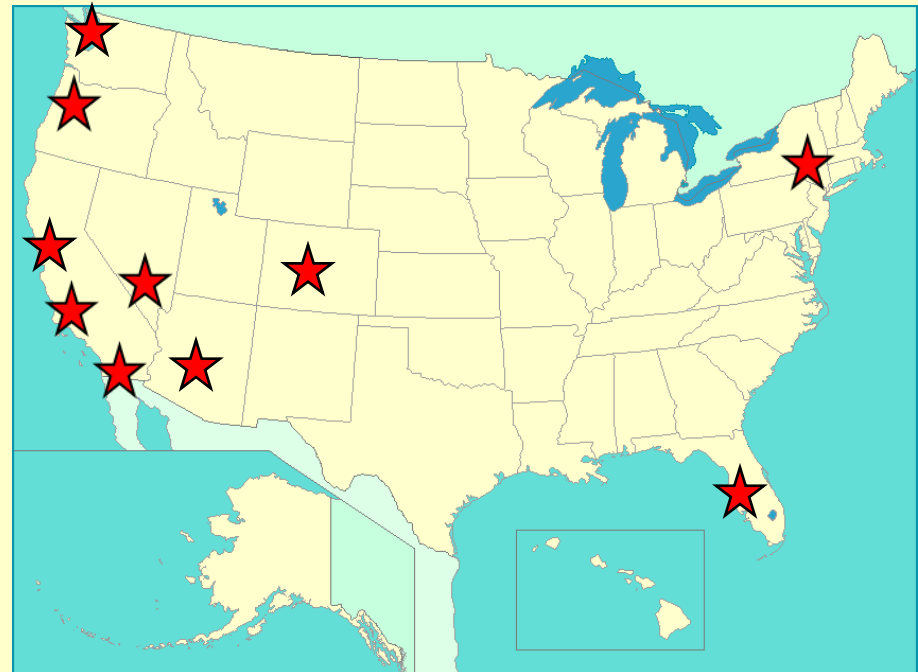
- Tampa Bay Water was a charter member of the Water Utility Climate Alliance – 10 Major Metropolitan Water Providers



The screenshot shows the Water Utility Climate Alliance website. At the top is the logo and a search bar. Below are navigation tabs for 'ABOUT US', 'ACTIONS', 'PUBLICATIONS', 'PRESS ROOM', and 'CONTACT'. A secondary set of tabs includes 'Member Agencies', 'Strategic Plan', and 'Work Plan'. The 'Member Agencies' section contains a table with the following data:

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

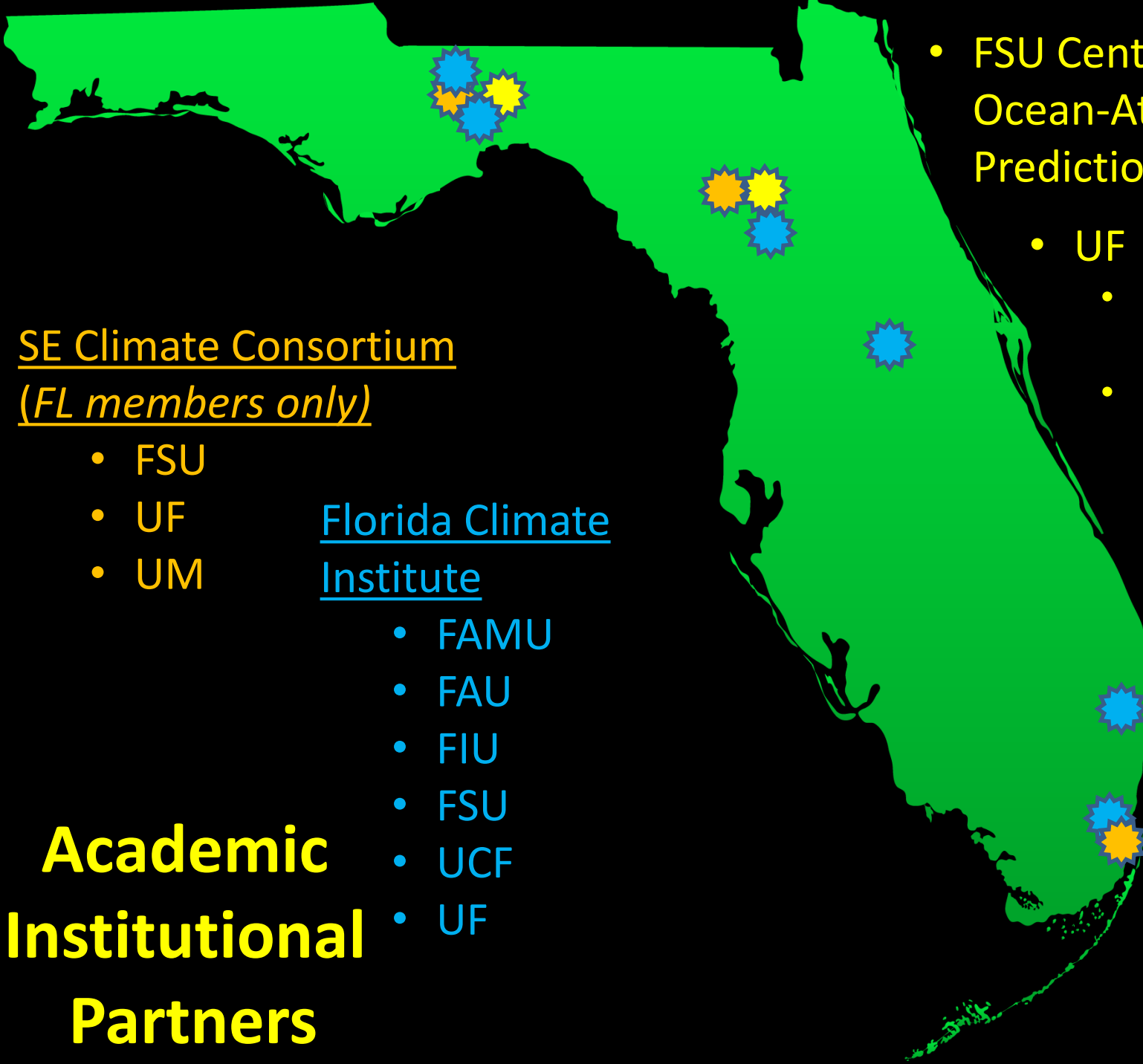
At the bottom right, there is a legend: ⓘ + = External Link.



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

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

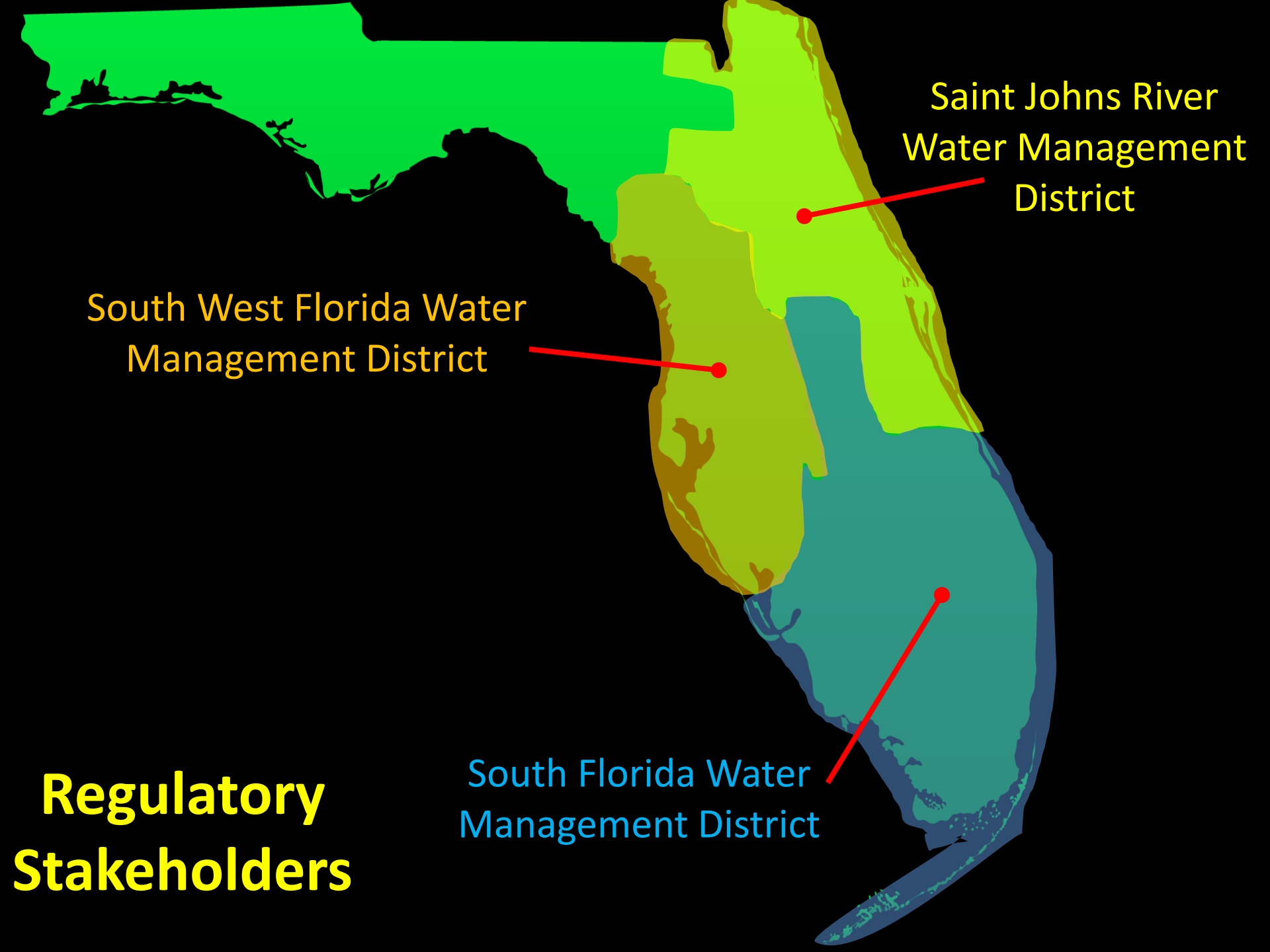
SE Climate Consortium
(FL members only)

- FSU
- UF
- UM

Florida Climate Institute

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

**Academic
Institutional
Partners**



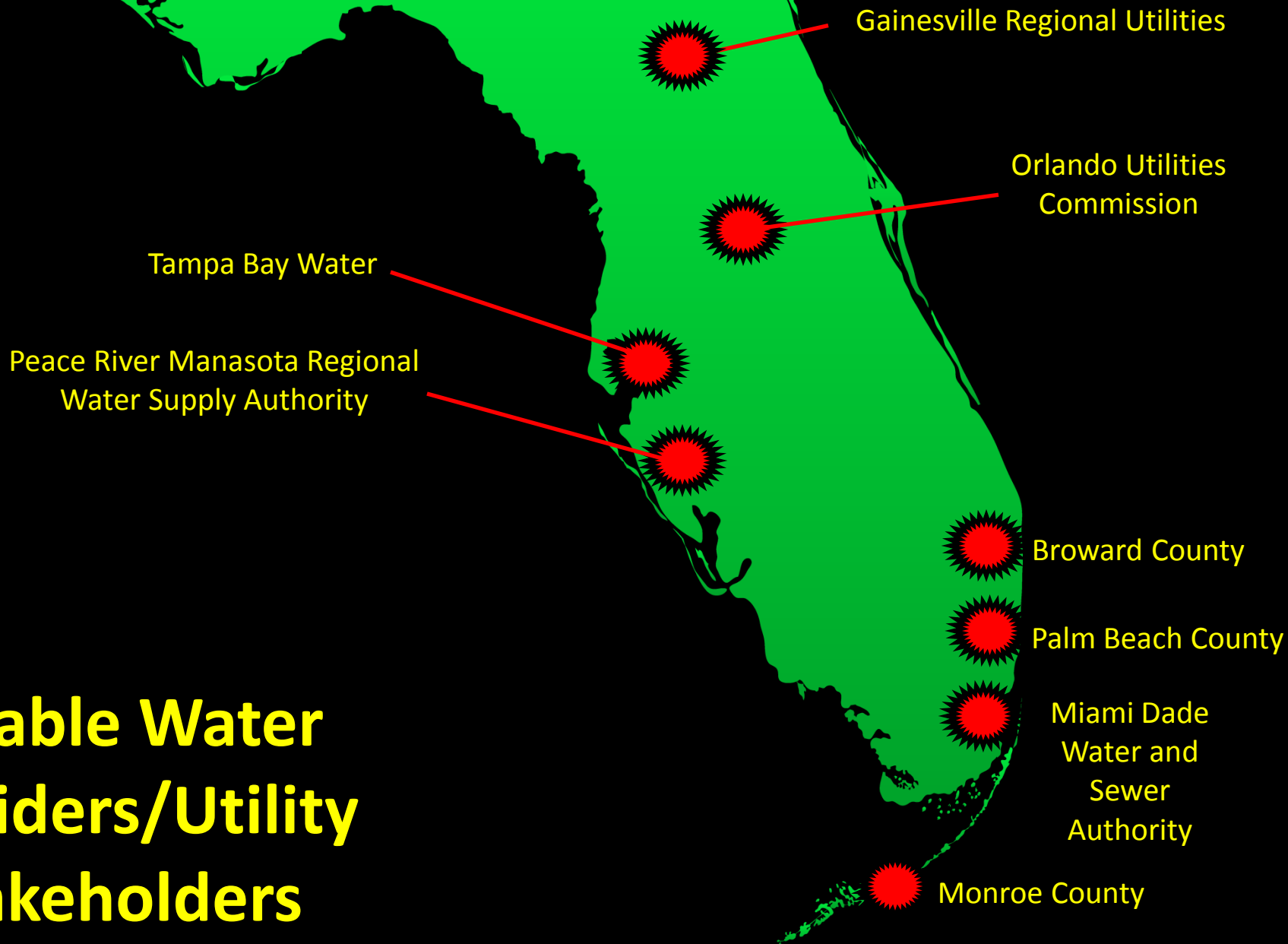
Saint Johns River
Water Management
District

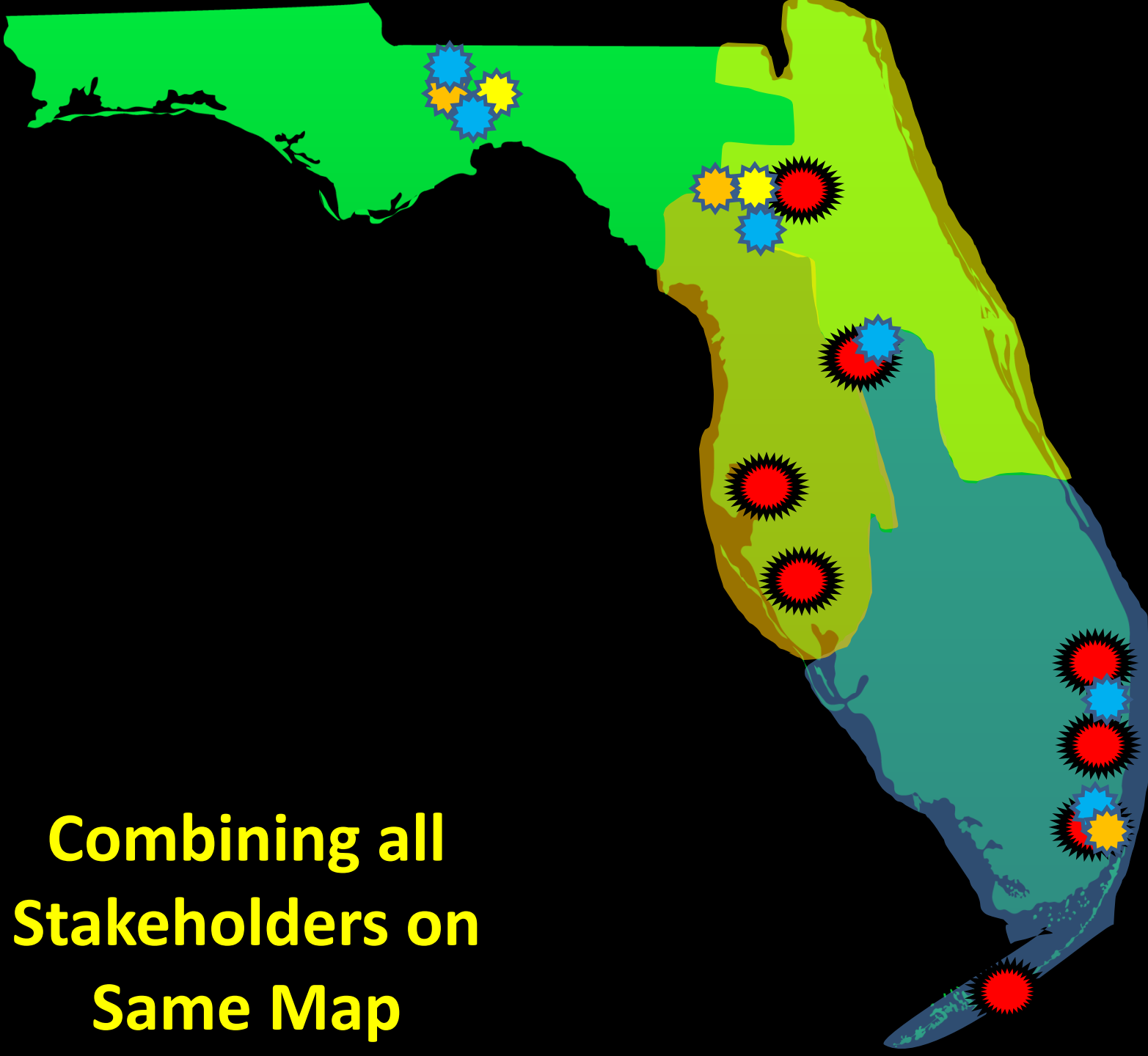
South West Florida Water
Management District

South Florida Water
Management District

**Regulatory
Stakeholders**

Potable Water Providers/Utility Stakeholders





**Combining all
Stakeholders on
Same Map**

FloridaWCA

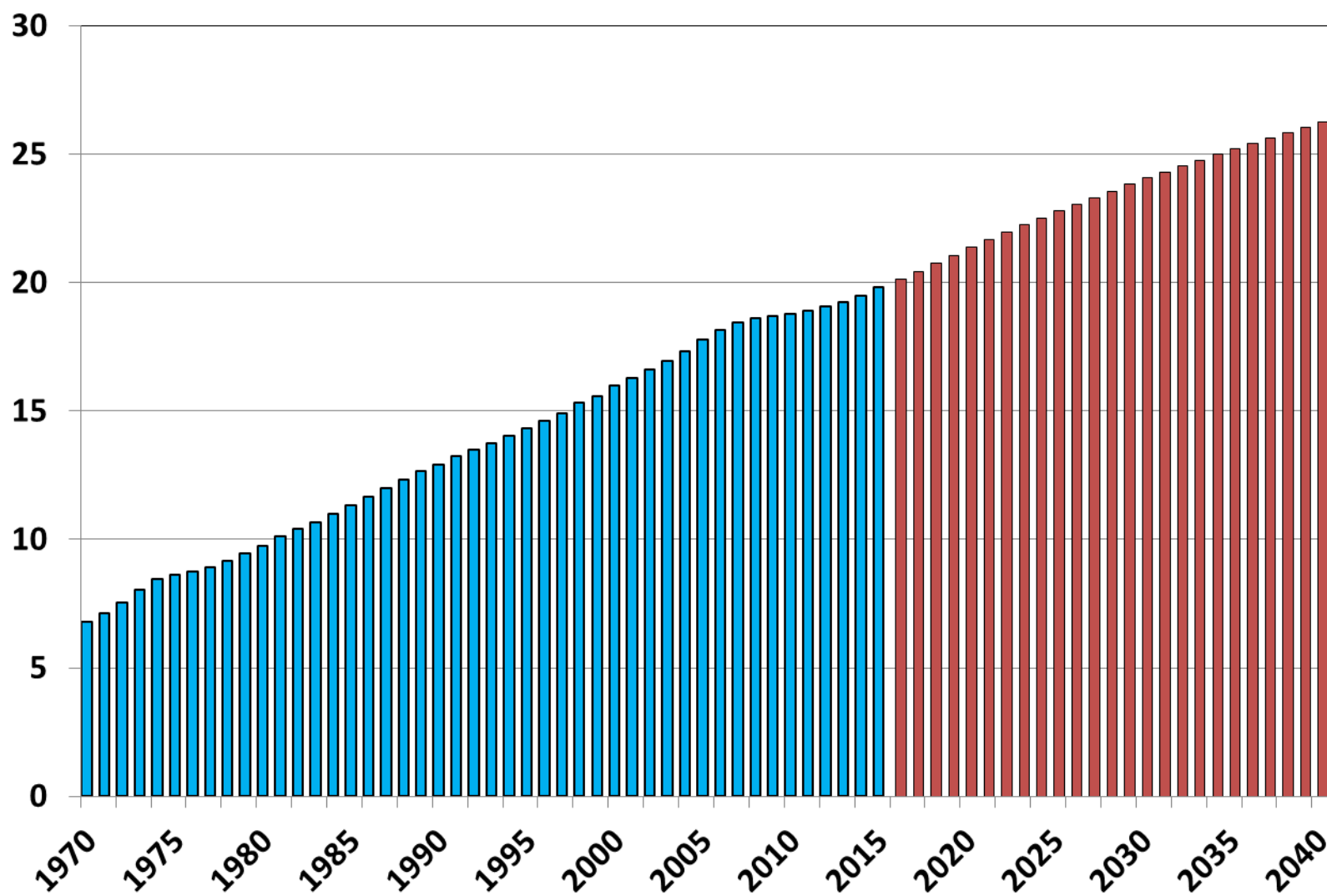
**“IF EVERYONE’S THINKING
ALIKE, THEN SOMEONE
ISN’T THINKING.”**

— 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

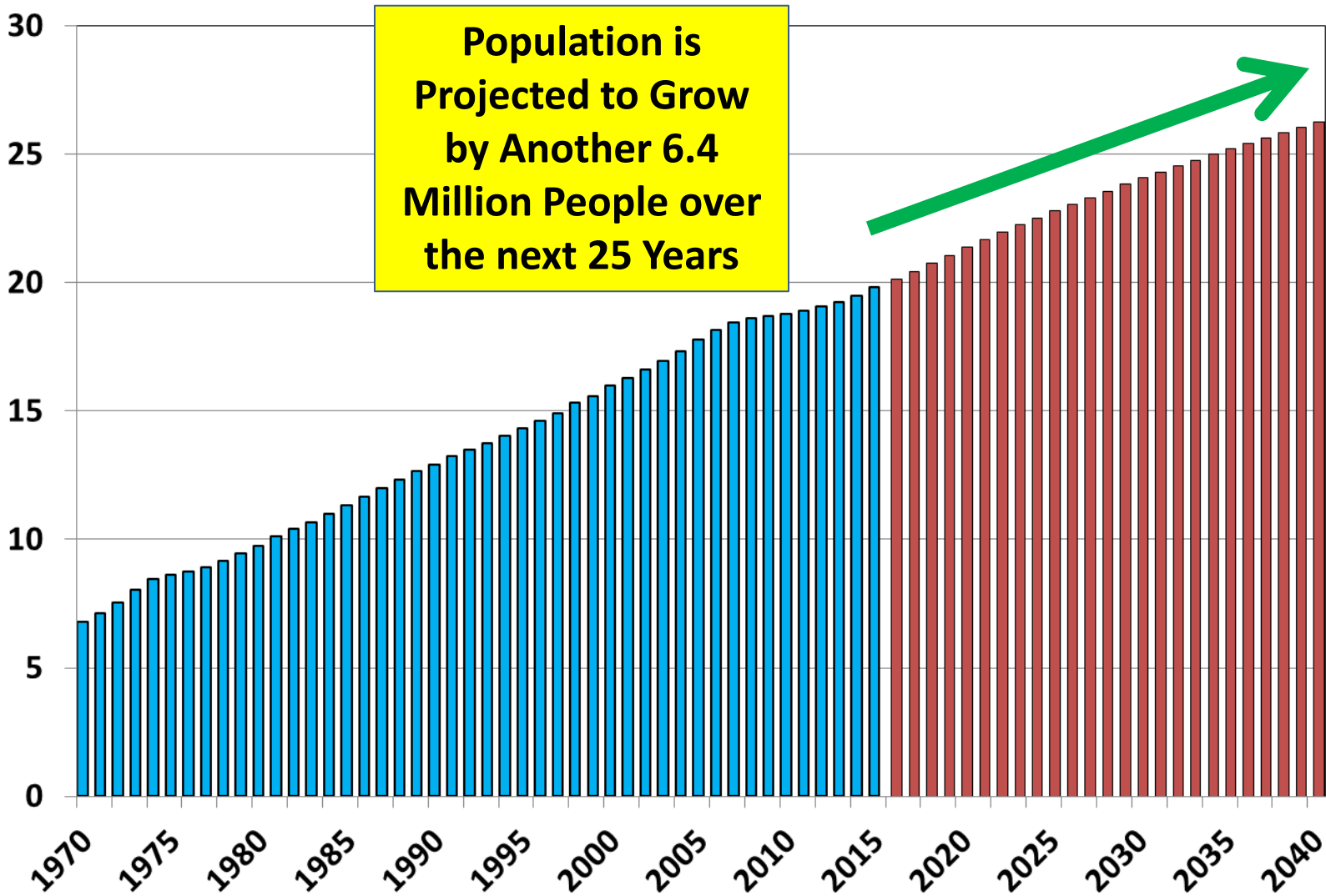
One of the Catalysts Here in Florida
Creating Opportunities for Enlightened
Discussion on Water Resources is
Population Growth

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

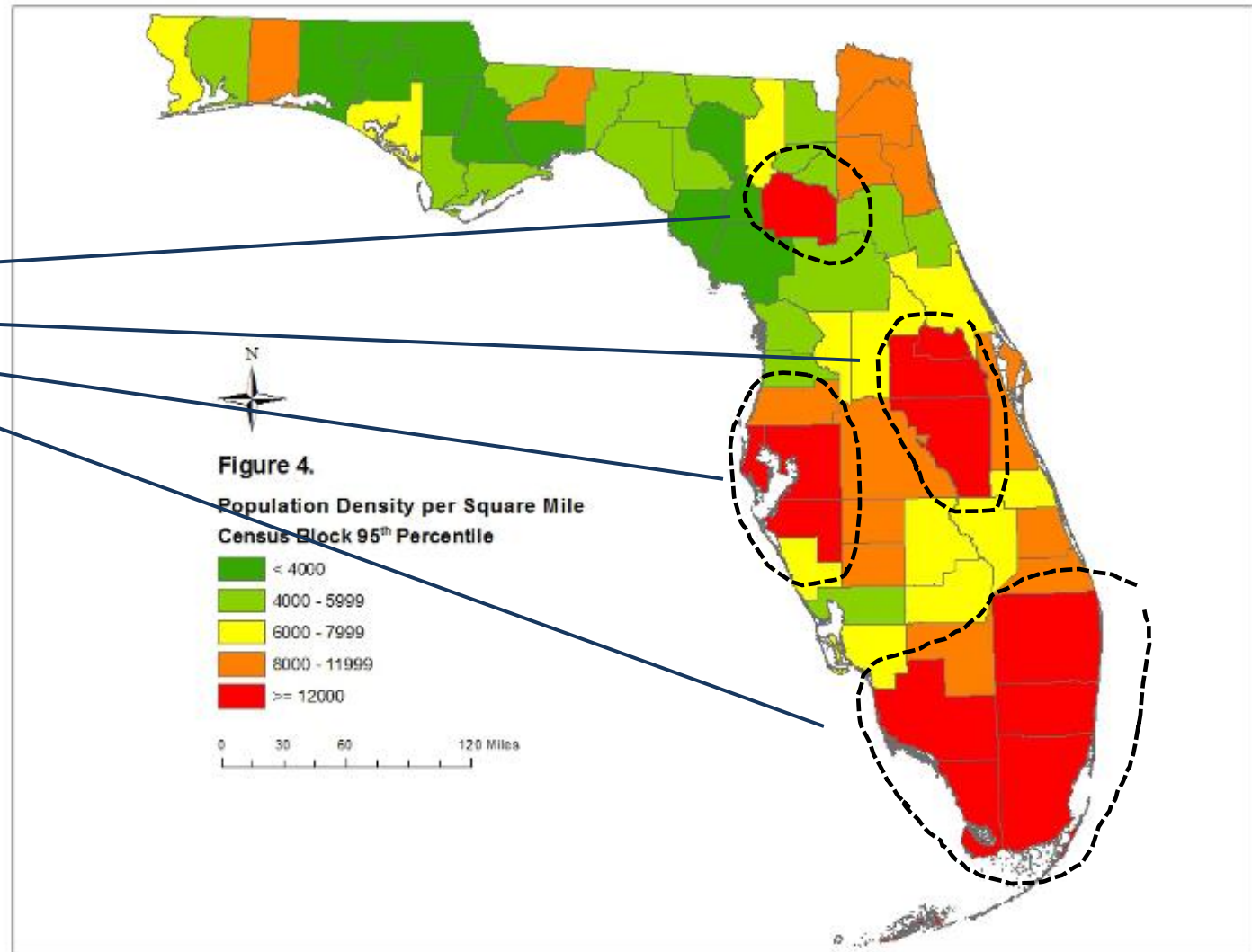
of “new” water needed

over the next 25 years

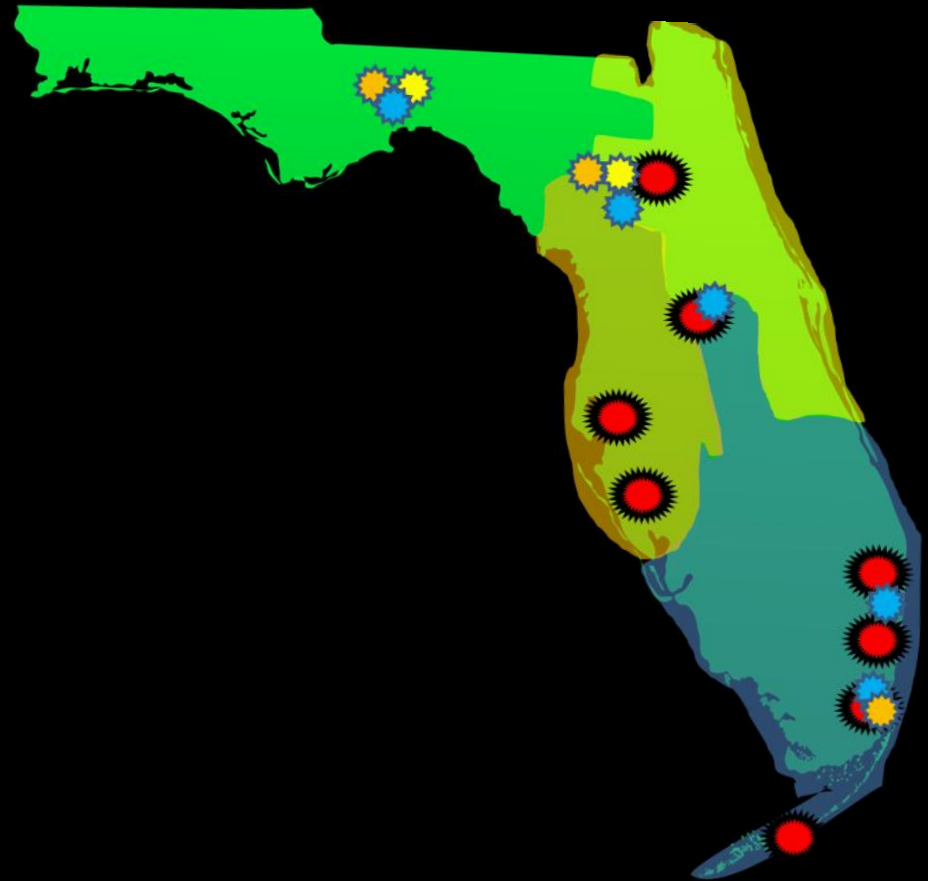
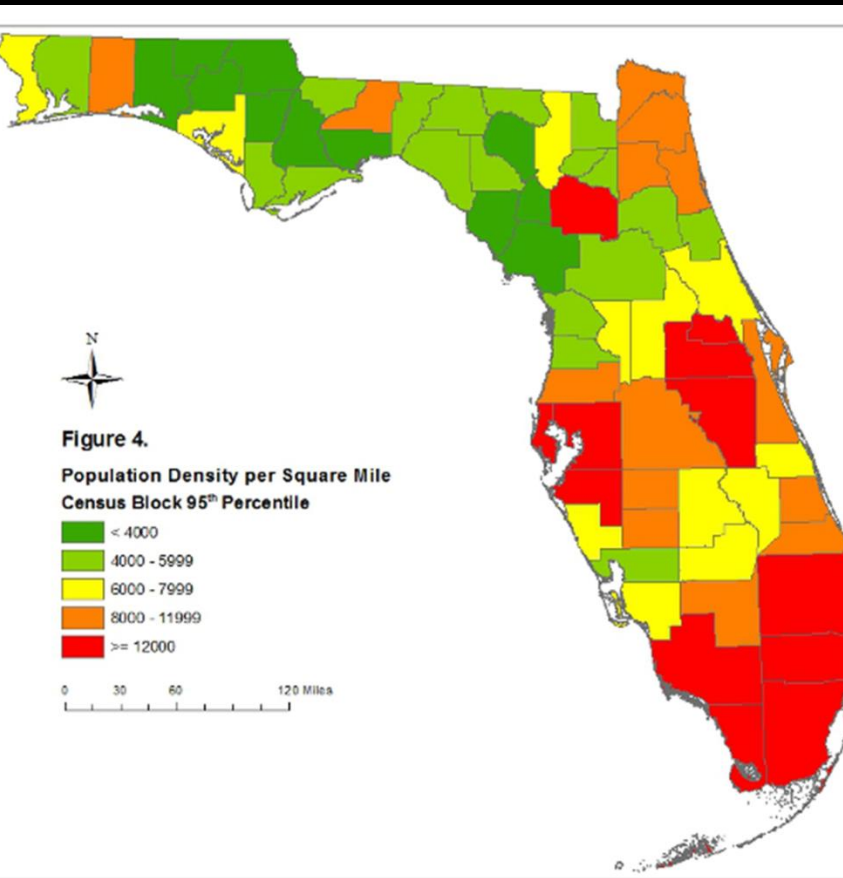
(this is roughly 1,800 acre*³ft/day)

Population Density for Florida

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

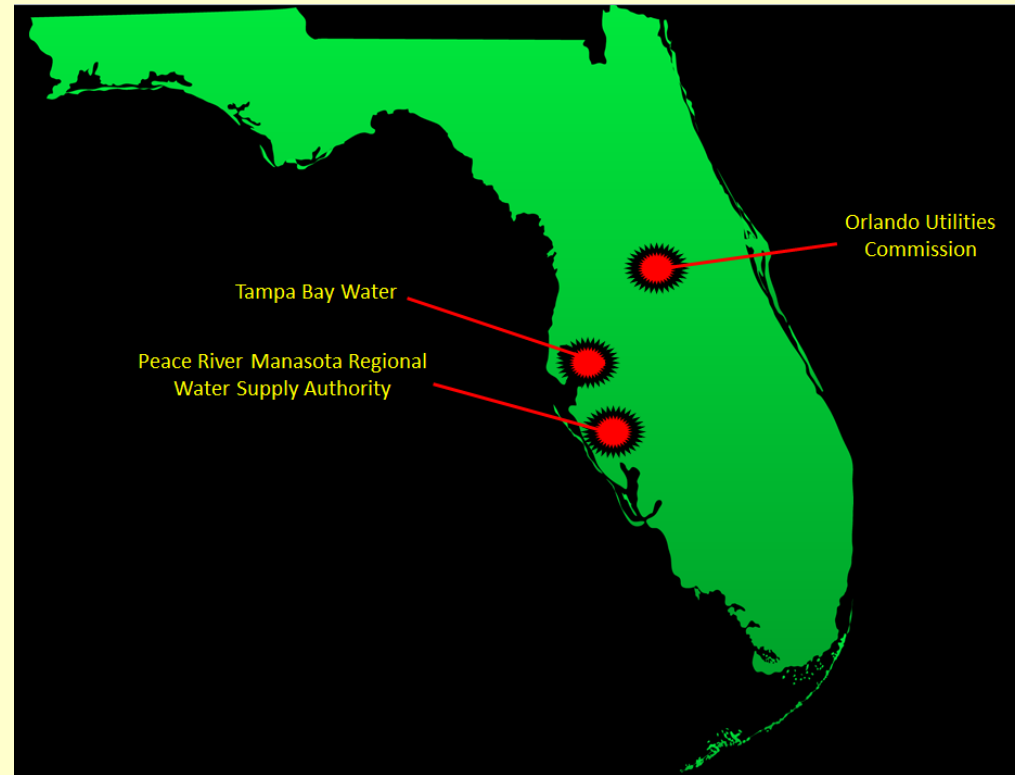


Comparing Florida Water and Climate Stakeholder Coverage to Population Density



Let's Focus on How Three FloridaWCA Members Currently Meet Demands and How this Could Change

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



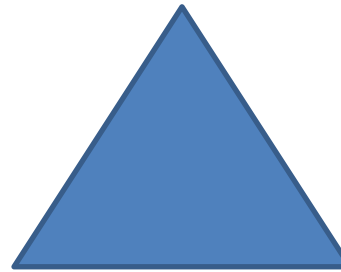
Tampa Bay Water

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

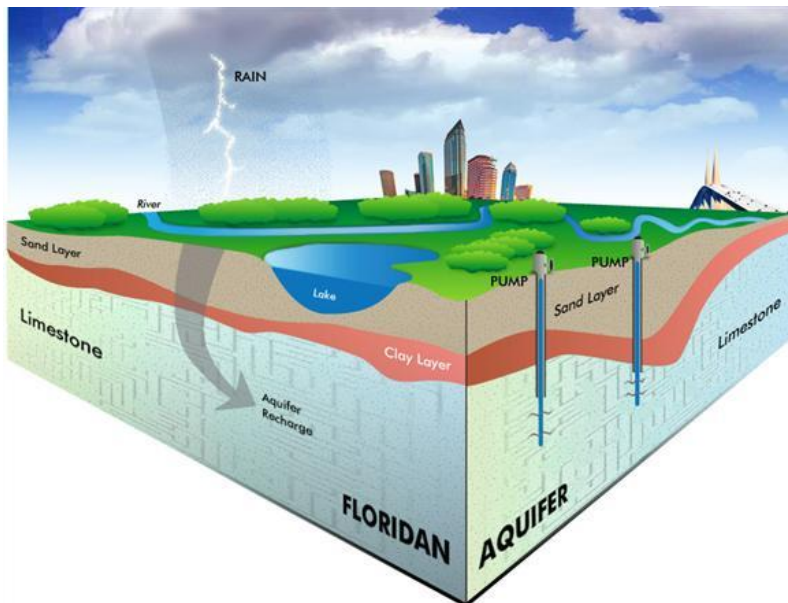


**25 MGD
Seawater
Desalination**

120 MGD Ground Water

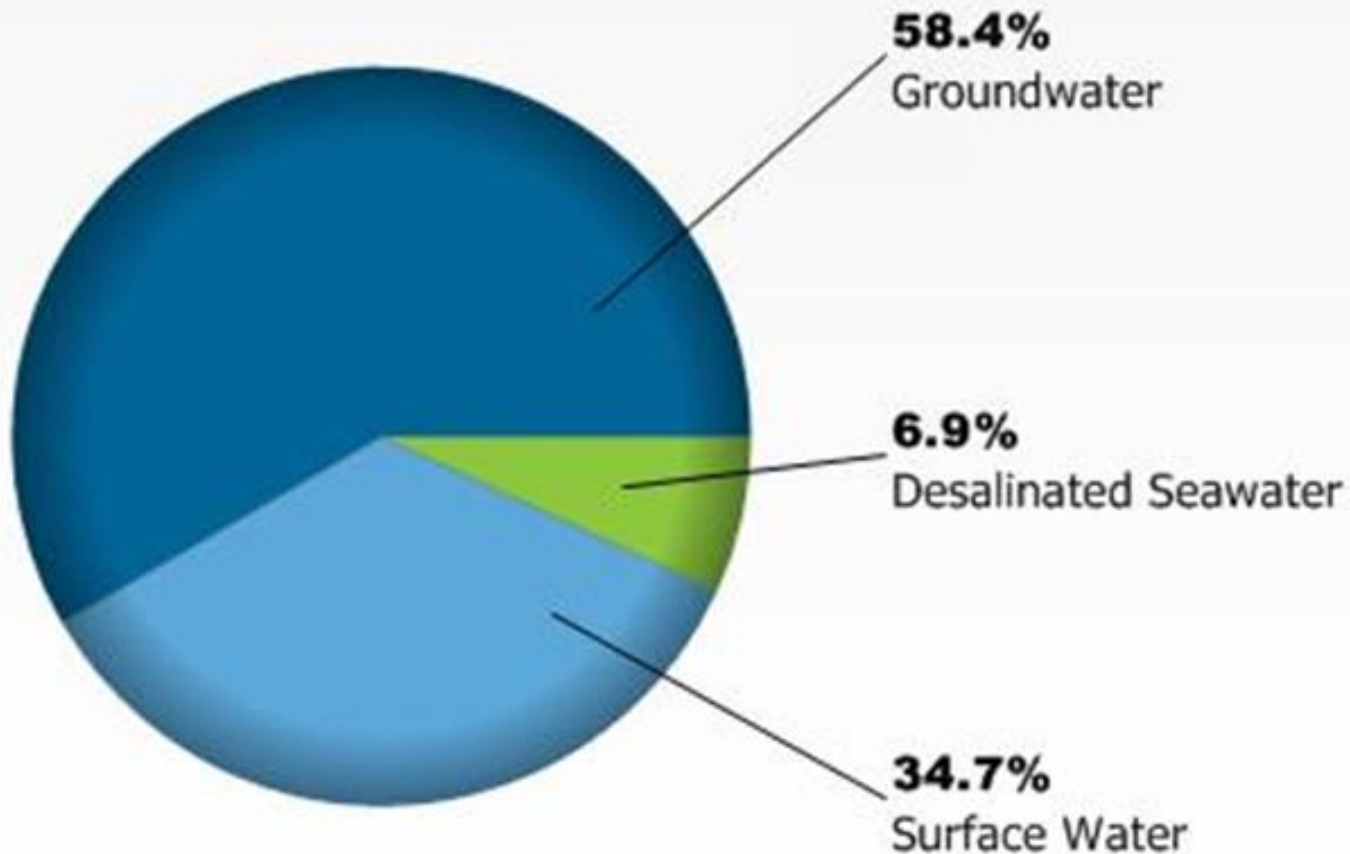


120 MGD Surface Water



With a Diversified Portfolio, One Challenge is Source Optimization

May 2016



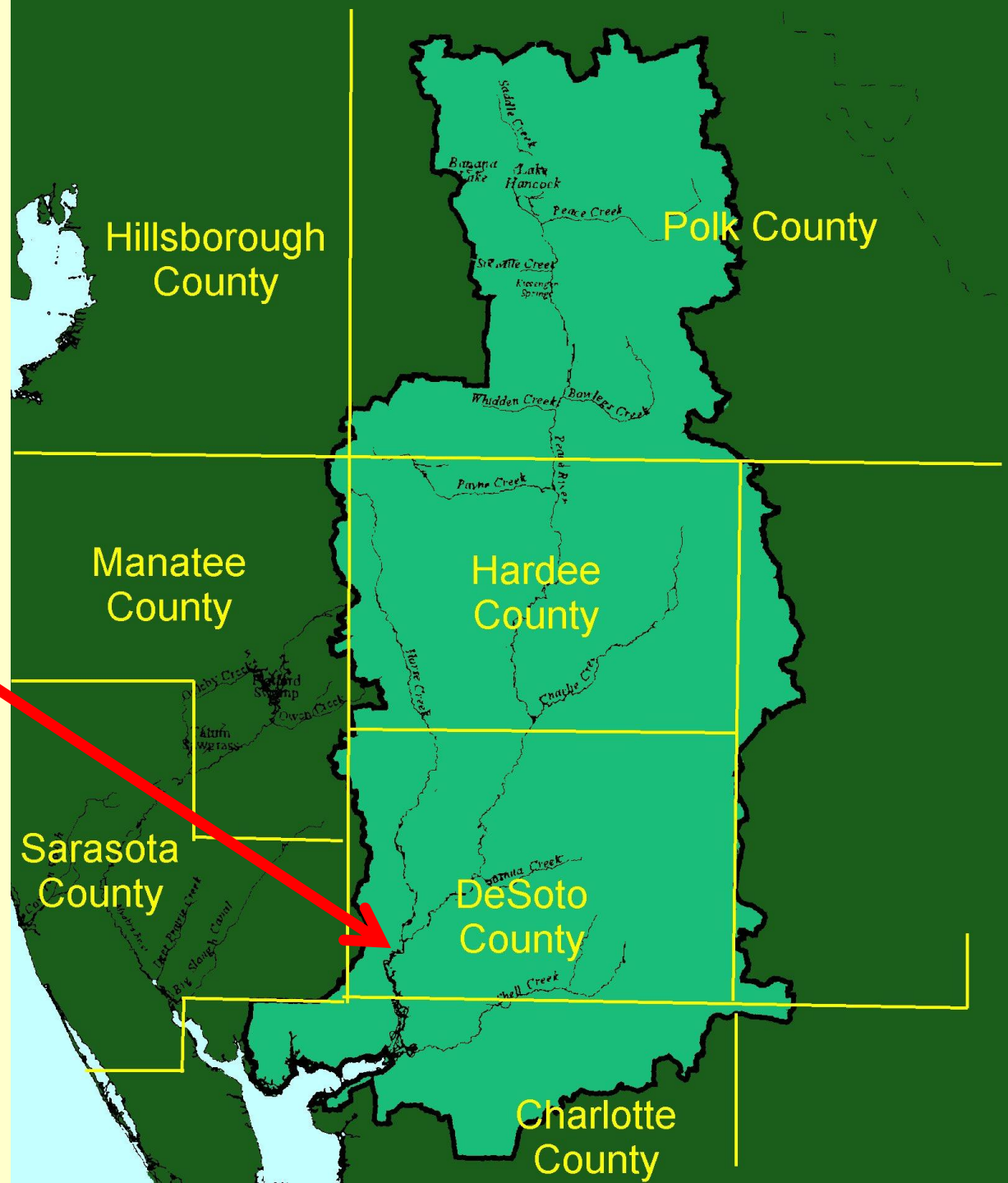
Tampa Bay Water

- 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**

Drainage Basin & the Peace River Facility

- Location of Peace River Facility



The Peace River Facility



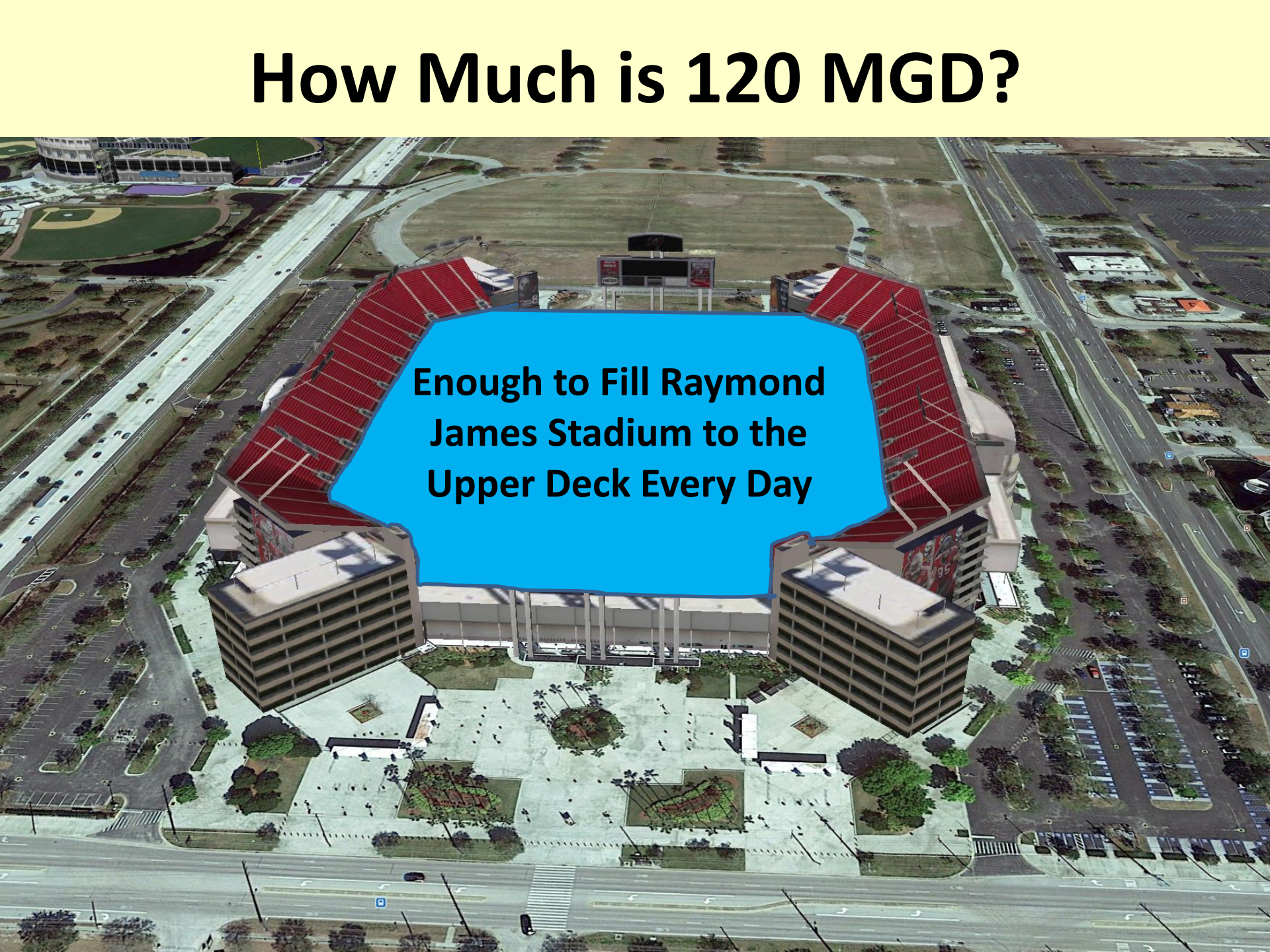


**51 MGD
Treatment
Capacity**

120 MGD River Intake Pump Station



How Much is 120 MGD?

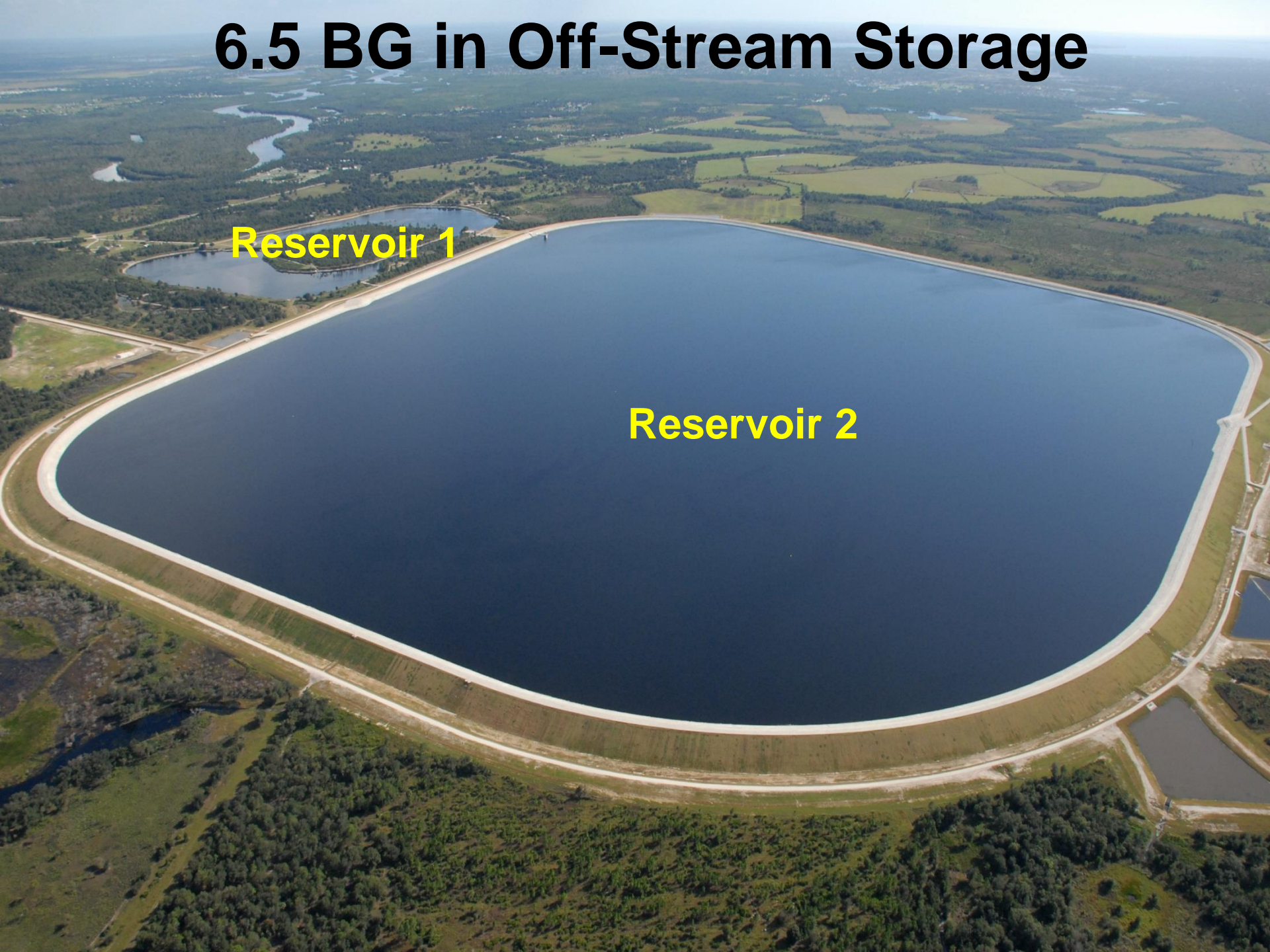
An aerial photograph of Raymond James Stadium in Tampa, Florida. The stadium's distinctive red, ribbed roof is the central focus. A large, irregular blue area is superimposed on the upper portion of the roof, representing a volume of water. The stadium is surrounded by parking lots, roads, and other urban infrastructure. In the background, a large, open field is visible.

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

6.5 BG in Off-Stream Storage

Reservoir 1

Reservoir 2

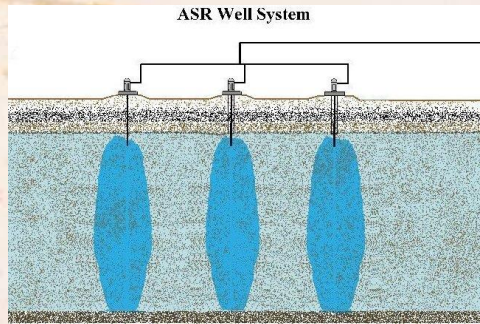


6 BG in Underground Storage

21 Aquifer Storage and Recovery Wells



ASR Well System



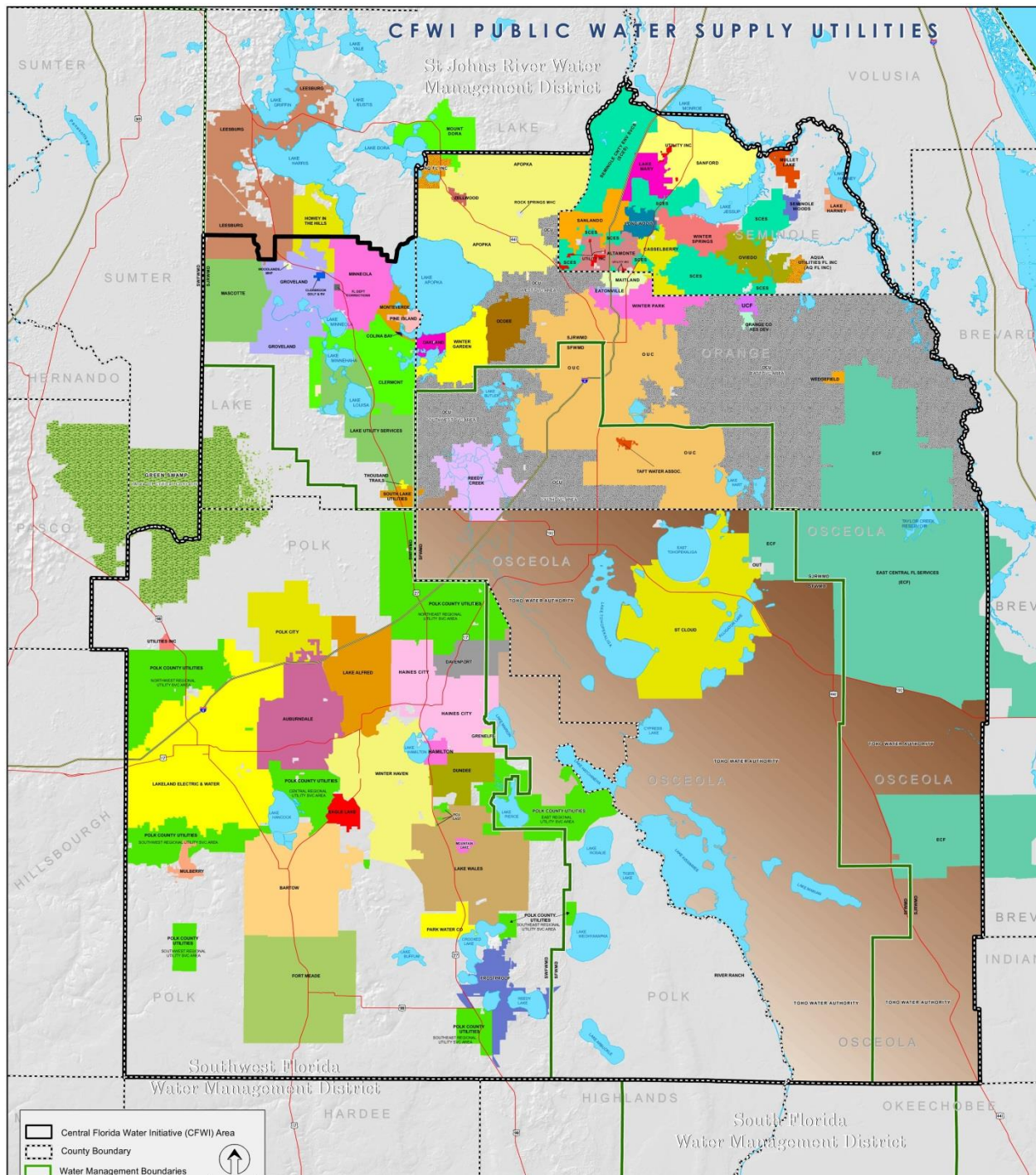
Peace River Manasota Regional Water Supply Authority

- 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

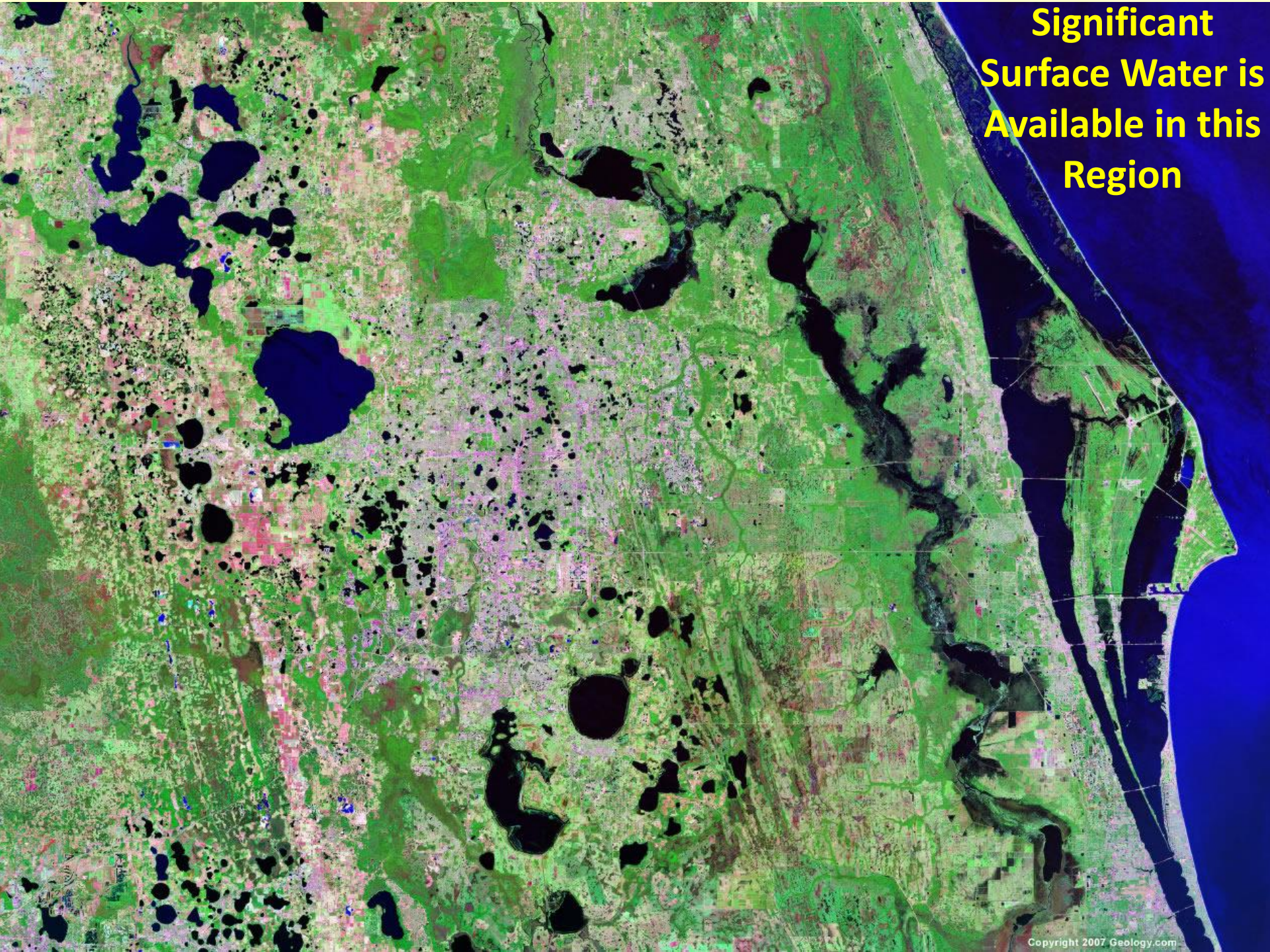
- Currently Exclusively Groundwater Supply
- However, Water Managers Say Groundwater Allocations in this Area Nearly Exhausted
- So Leaders from the 3 Water Management Districts are working together on the Central Florida Water Initiative
- Includes Collaborative Planning and Cost Sharing Cooperation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



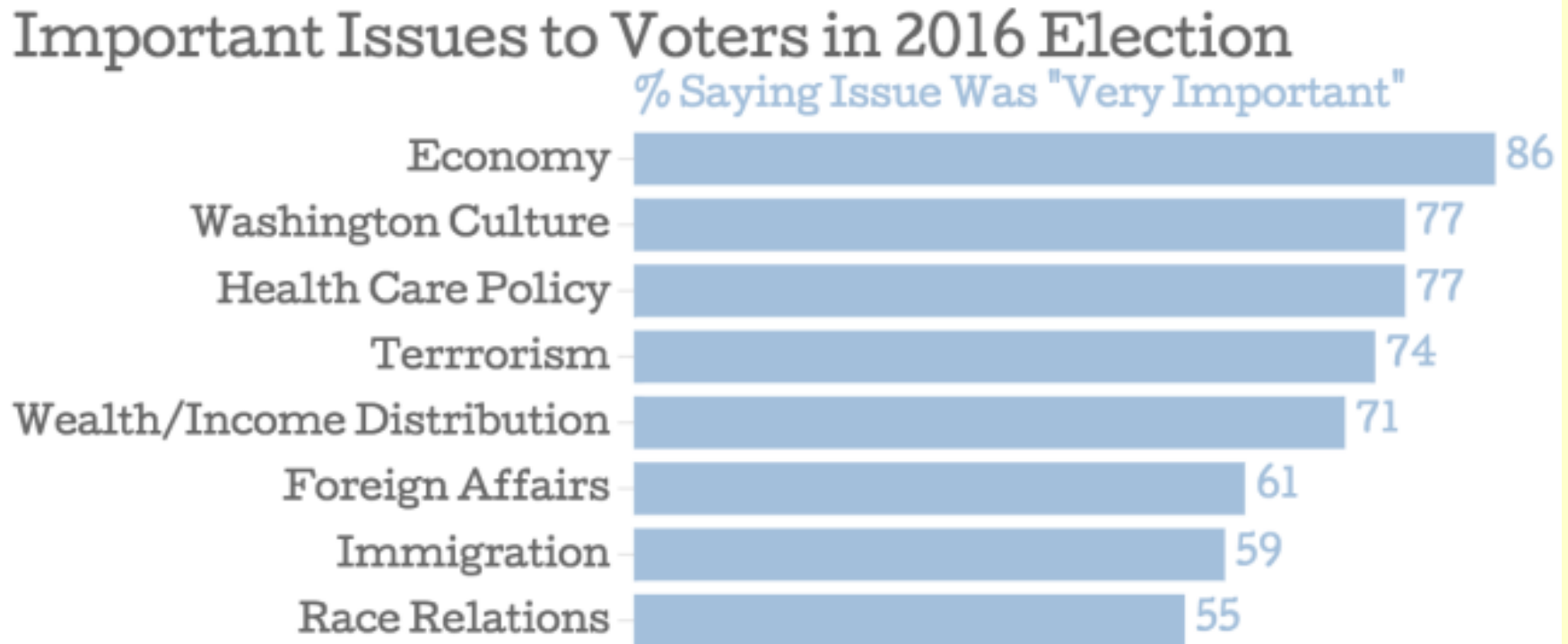
**As a Society
we are easily
distracted**



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

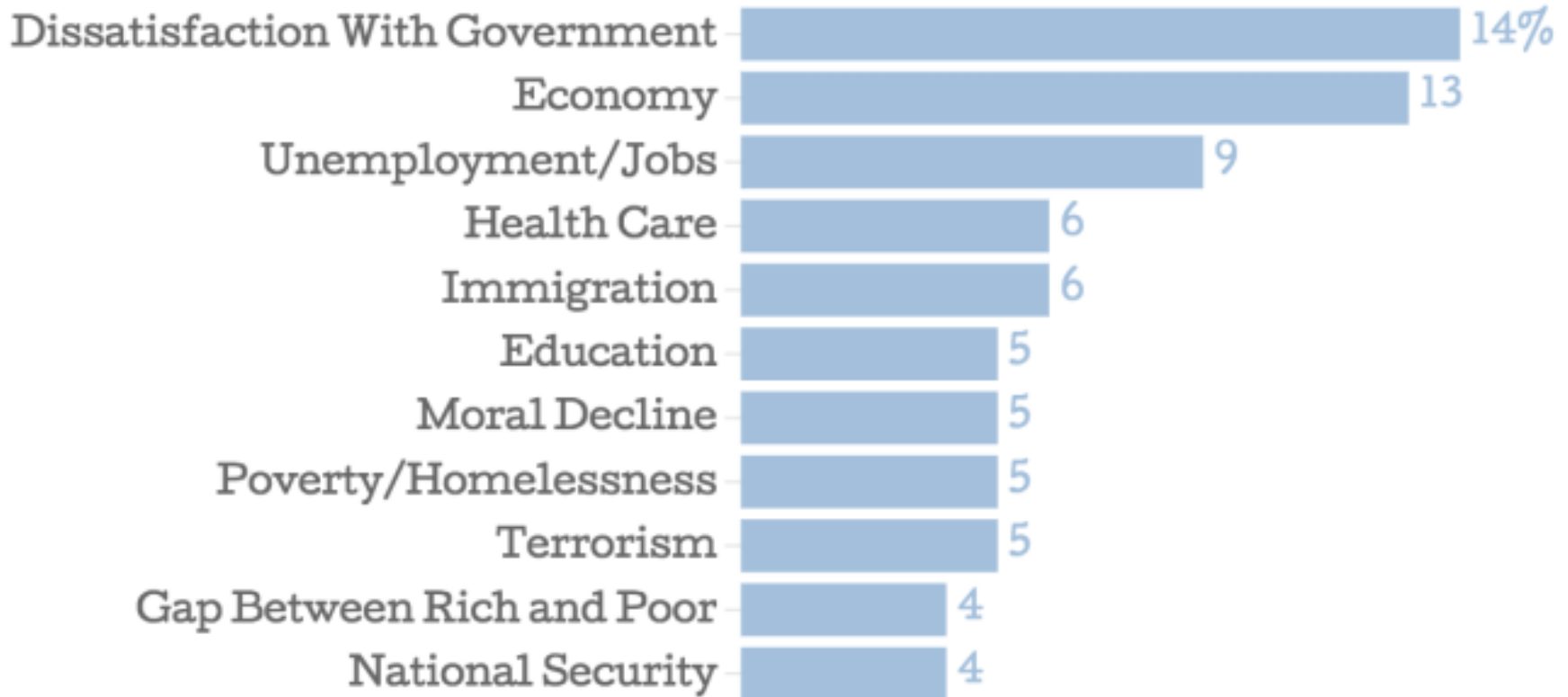
It is Difficult for our Leaders to Engage in Climate Change Concerns when it is not an Important Issue to the Electorate



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