

# Development of Public Water Supply Utility Relevant Climate Information for Improved Operations and Planning

## PROJECT AND OBJECTIVES

The impacts of climate variability and climate change on water supply reliability, and adapting to changing hydrologic conditions is becoming a particularly pressing challenge for major public water suppliers in Florida.

"..... Utilities need information they can act on." Workshop participant



Working together, public water suppliers, water resource managers, planners, climate, social and hydrologic scientists will:

- Develop a collaborative Working Group focused on understanding how climate variability/change and sea level rise may impact planning and operations of Florida's public water supply utilities.
- Identify the appropriate spatio-temporal scales, climatic indices and events that drive utilities' decisions, and evaluate the practical applicability of current climate tools at these scales through synthesis of historical data, nationally available General Circulation Model (GCM) simulations, and regionally downscaled data products.
- Identify appropriate entry points for climate data and model predictions in relevant models and decision making processes and, for at least two applications, evaluate the usefulness of these data for minimizing current and future risks associated with climate variability/climate change and sea level rise.
- Design and implement a web-based knowledge management and transfer system to support the group.

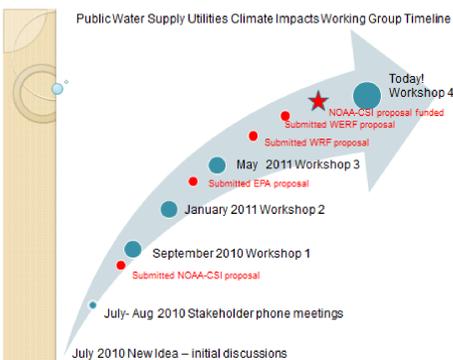
## PROCESS AND PROGRESS TO DATE

Working Group activities have included:

- ✓ Four interactive, full day workshops
- ✓ Participant initiated task groups:
  - 1) current science, 2) research agenda, 3) linkages to other relevant on-going activities, 4) outreach efforts
- ✓ Developed and submitted 6 related proposals
- ✓ Established website:  
[http://waterinstitute.ufl.edu/workshops\\_panels/PWSU-CIWG.html](http://waterinstitute.ufl.edu/workshops_panels/PWSU-CIWG.html)

Participants agree that together as a working group we can:

- ✓ Shape the development and implementation of science-based climate information for operational and longer-term planning and management decisions.
- ✓ Help stakeholders anticipate future climate conditions and improve adaptive capacity.
- ✓ Address Utilities concerns about uncertainties and risks posed by climate variability, change and sea level rise.
- ✓ Adapt to the needs that vary in intensity and urgency by utilities' location, water source, as well as environmental, social, fiscal, political and regulatory contexts.
- ✓ Refine predictions (rainfall, temperatures, extreme events and sea level rise) at space, time and event scales relevant to operations (3-12 months), permitting (20 years) and capital planning (20-50 years).
- ✓ Apply climate information in utilities planning processes.



"It was valuable to listen to different viewpoints and issues... in how utilities will have to deal with climate change." Workshop participant

## PARTNERS

The UF Water Institute, Southeast Climate Consortium, Florida Climate Institute and the UF IFAS Center for Public Issues Education are partnering with six major public water supply utilities, and three Water Management Districts to form a "Public Water Utilities Climate Impacts Working Group" focused on increasing the relevance and usability of climate change and variability data and tools to the specific needs of public water supply utilities in Florida.

### Public water supply utilities:

- Gainesville Regional Utilities
- Miami-Dade Water and Sewer Department
- Orlando Utilities Commission
- Palm Beach County Water Utilities
- Peace River Manasota Regional Water Supply Authority
- Tampa Bay Water

### Water Management Districts:

- Saint Johns River WMD
- South Florida WMD
- Southwest Florida WMD

### Academic Community:

- UF Water Institute
- Southeast Climate Consortium
- Florida Climate Institute
- UF/IFAS Center for Public Issues Education



## PLANNED PRODUCTS/IMPACTS

- 1) **Actively engaged community** of stakeholders sharing expertise, experience, learning.
- 2) **Enhanced regional relevance** and adaptability of climate/sea level rise data and tools to the specific needs of water suppliers in Florida.
- 3) **Jointly defined products** including relevant information, data, tools and models. Examples might include:
  - GCM downscaled forecasts
  - Rainfall predictions
  - Sea Level Rise probabilities
  - Industry relevant retrospective and future climate scenarios
- 4) **Increased use of climate science** by public water supply utilities in Florida

"One size does not fit all..... we need different solutions for different parts of the state." Workshop participant

## NEXT STEPS FOR THE NOAA PROJECT

### Utility relevant retrospective simulations and future climate predictions

- ENSO and variability of the Atlantic warm pool in the summer are two important climate variations that would be relevant to utilities. What other variations and variables would participants be interested in?

Florida: November, 2009 Monthly Departure from Normal Precipitation  
Valid at: 12/1/2009 1200 UTC - Created 12/1/09 23:46 UTC



### Applications of climate information in utilities planning processes

- What are some SPECIFIC utilities and/or water management applications, i.e. planning processes, models and decisions support systems that could be used to exercise the utility relevant historical analyses, retrospective simulations and future climate predictions?

"I hope we can get some focus on the effects that climate change will have at a local scale." Workshop participant

"I would suggest to get the technical process grounded but somewhere in there you need some policy discussion or you'll have a nice plan on a shelf...." Workshop participant

"The ultimate focus needs to be on a product utilities can use and rely on, not simply an academic/scientific exercise" Workshop participant

### Next step/actions:

- An Executive Planning Committee including representatives from all stakeholder groups was formed at the PWSU-CIWG October, 2011 workshop.
- Collaborative planning meeting scheduled for Executive Planning Committee and interest groups will be convened around specific outputs.
- Another PWSU-CIWG workshop to be scheduled for the January, 2012

### Knowledge management (KM) system

- What is the group's understanding of (KM) as a framework for data sharing, dissemination, collaboration? What kinds of data could be/should be shared, and In what form to make them most effective/useful to group?

### Building the working group

- Employ an iterative participatory framework based on theoretical foundations in education, collaborative learning and systems thinking. Inform best practices for stakeholder engagement in development and use of climate science outputs.

