# Development of Public Water Supply Utility Relevant Climate Information for Improved Operations and Planning: Implementing a collaborative working group process in Florida UF Water Institute

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**CONTEXT AND PROBLEM** 

**'..... Utilities need information** 

they can act on." Workshop participant

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. The Florida

utilities face: a push toward the use of alternative water supplies

- environmental, social, fiscal and regulatory challenges.
- implementing both short and long range solutions complicated by risks and uncertainties.



The UF Water Institute, the Florida Climate Institute and the UF IFAS Center for Public Issues Education are partnering 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.

As a first step, stakeholders from six major public water supply utilities, three Water Management Districts and academic partners came together In a workshop on September 22, 2010 to explore:

Will "working together" help improve climate information, data and tools for public water suppliers ?

Is the state-of-the-art-climate science and technology useful to the Public Water Supply Utilities in Florida?

"We have active research communities, but in isolation of each other...Even though the issues are specific, we need to get our respective research communities talking with each other" Workshop participant



**Annual Mean Temperature** 

Credit: Annually averaged near surface air temperature 1961-1990, www.globalwarmingart.co





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## **OBJECTIVES AND PROCESS**

Develop a "Working Group" of public water suppliers, water resource managers, climate, hydrologic and social scientists focused on Florida's public water supply utilities as users of climate science. Ensure user relevance of data, tools and information on climate variability and change through collaborative learning. The working group process will employ an iterative and participatory framework (Figure 1) based on theoretical foundations of experiential learning <sup>a</sup>, soft systems <sup>b</sup>, organizational learning <sup>d</sup>, and participatory evaluation <sup>c</sup>, that will:

- foster a shared learning and knowledge management platform
- employ a deliberate set of workshops, activities and collaborative planning
- create and integrate new knowledge
- engage all stakeholders in formative evaluation
- Research and document the "working group process" to inform the process and the best practices for stakeholder engagement in development and use of climate science outputs.





**OUTCOMES** 

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

Table 1: Key needs expressed by Public Water Supply Utilities during the initial workshop, September 22, 2010.

FRUGRESS	Variability in rainfall,	Probabilities of sea level rise	Access to science and technology	Information and communication	roducis
	temperature, extreme events			for decision-making and policy	
Working to understand	<ul> <li>Historical records</li> </ul>	<ul> <li>Degree and timing of impact of</li> </ul>	• Reliable predictive tools, predictions	<ul> <li>Water Supply Development funding</li> </ul>	Proposals, literature reviews,
water supply utility needs	<ul> <li>Accurate predictions</li> </ul>	sea level rise on well fields	and uncertainty analysis	Policies/regulations suited to each	documents, analyses, and
<ul> <li>climate tools already</li> </ul>	Projections at 3mo, 6 mo, 1 year.	Projections of sea level rise over	Strengths/limitations of current	region	other related materials will be
available and being used	<ul> <li>Climate related Socioeconomic</li> </ul>	time with probabilities	climate models	Regulations to <u>fully</u> achieve benefits	available through a web-based
current efforts	and demographic projections		<ul> <li>Realistic science based scenarios at</li> </ul>	of conjunctive use	knowledge management
			10, 20, 30 + years	<ul> <li>Continued dialogue</li> </ul>	system.

### **PRELIMINARY FINDINGS AND NEXT STEPS**

1) Utilities are interested in addressing uncertainties and risks posed by climate variability, change and sea level rise.

2) Needs vary in intensity and urgency by utilities' location, water source, as well as environmental, social, fiscal, political and regulatory contexts.

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

3) Predictions (rainfall, temperatures, extreme events and sea level rise) are needed at space, time and event scales relevant to operations (3-12 months), permitting (20 years) and capital planning (20-50 years).

"I hope we can get some

climate change will have at

a local scale." Workshop participant

focus on the effects that



4) A working group could help shape the development and implementation of science-based climate information for operational and longer-term planning and management decisions confronting utilities ,water resource managers and policy makers. It could also help stakeholders anticipate future climate conditions and improve adaptive capacity. The group should:

- focus on substance
- produce tangible and useful outputs
- identify issues of particular relevance to the utilities
- encourage participation and collaboration
- ensure a transparent process

#### **References:**

<sup>a</sup> Checkland, P. (1981), Systems thinking, systems practice, John Wiley & Sons, Chichester. <sup>b</sup> Kolb, D. A. (1984), *Experiential learning: Experience as the source of learning and development*, Prentice Hall, Englewood Cliffs, NJ <sup>c</sup> Royse, D., B. A. Thyer, and D. K. Padgett (2010), *Program evaluation: An introduction*, Brooks/Cole Pub Co <sup>d</sup> Senge, P. (1990), *The fifth discipline*, Doubleday Currency, New York, NY.

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