

**American Water Resources Association
2011 SUMMER SPECIALTY CONFERENCE
Integrated Water Resources Management:
The Emperor's New Clothes or Indispensable Process?
June 27 - 29, 2011
Snowbird, UT**

Tuesday, June 28

8:30 AM – 10:00 AM

SESSION 8: Utility Water Management I

Challenges of Balancing Competing Uses: Protecting a Major Public Drinking Water Supply in Tampa, Florida - Robert McConnell, Tampa Bay Water, Clearwater, FL (co-author: Douglas Robison)

Coordination of water resource development, management and protection can be extremely challenging even when the value of integrated resources management is recognized. Diverse sources of drinking water including groundwater, river withdrawals and desalination have been developed in the Tampa Bay, Florida region to meet ecological protection goals in conjunction with drinking water needs. Efforts to protect the new surface water sources have identified some major challenges with balancing competing uses, and highlight some legal and institutional barriers to an integrated resource management approach. Tampa Bay Water is a regional water supply authority that provides about 168 million gallons a day to meet drinking water demand for 2.5 million people. To reduce impacts to lakes and wetlands associated with over-pumping of groundwater, approximately \$1 billion has been invested by the public to develop a large interconnected system including desalination and surface water supplies such as the Alafia River. Extensive monitoring programs have been established to ensure ecological resource goals are met including restoration in some areas. Despite use as a major public water supply, the Alafia River is managed by the State of Florida for protection of fish and wildlife, and recreational use only. In order to minimize the potential for future contamination, Tampa Bay Water petitioned the state to increase the level of protection. Florida law requires the consideration of benefits and impacts when changing a state-designated use classification- this is important due to potentially conflicting uses for industrial and municipal wastewater disposal, stormwater, fish and wildlife, recreational use and drinking water. This reclassification effort included a multi-year iterative process with stakeholder input and extensive technical and economic analyses to evaluate stakeholder concerns. Proposed boundaries for protection were developed to provide meaningful protection while balancing the needs of other uses- primarily domestic wastewater utilities and phosphate mining upstream in the watershed. This presentation will include an overview of the Alafia River project and highlight some key findings related to integrated water resource management: inconsistent federal and state regulatory requirements, economic issues, and the importance of managing water quality in conjunction with quantity.

BJWSA's Intergrated Water Resources Planning - Next Steps - Dean Moss, Beaufort Jasper Water and Sewer Authority, Beaufort, SC (co-author: Chris Petry)

Background: The Beaufort Jasper Water and Sewer Authority (BJWSA) completed an Integrated Water Resource Plan (IWRP) in 2009. In 2010, using its Strategic Planning process, BJWSA began converting the IWRP into an action plan. Outline: 1. Water Resource Evolution 1965 Because of saltwater intrusion into the upper Floridian aquifer the Savannah River was developed as the primary source of water for the region. 1986 BJWSA began providing reclaimed water as an alternative irrigation water source, 15 golf courses one sod farm. 1999 480 acre Great Swamp wetland all weather project 2009 reclaimed water for residential irrigation. 2. BJWSA's Master Plan - completed in 2005. A plan was developed to ensure that adequate water and wastewater infrastructure would be present as the community grew. 3. BJWSA's IWRP - completed in 2009. With a Master Plan in place to deliver water to our current and future customers, BJWSA developed a plan to ensure that we would have adequate water supplies. a. Current status The Savannah River is an increasingly political resource and, is more limited than was previously thought. The Floridian Aquifer is undergoing continual salt water intrusion. Reclaimed water is an available but under utilized resource. Customer demand, for irrigation, exploded during drought period from 1998 to 2008. An unsustainable trend. b. The Plan - The IWRP was developed using "scenario planning". Demand management was a given in all supply scenarios. 4. BJWSA's IWRP action plan - With the Master Plan and the IWRP complete, BJWSA began to sort through all of the competing ideas to begin working on the important ones. A team made up of members of the Board of Directors and Managers from every department

conducted a workshop to select the most important initiatives: a. Source Water Protection b. Demand Management c. Reclaimed Water Use d. Retro-Sewering

Future Supply versus Existing Infrastructure: Moving Beyond IWRP to Achieve True Reliability - Alyson Watson, RMC Water and Environment, San Francisco, CA (co-author: Tracy Hemmeter)

The uncertain impacts of climate change, an increasingly stringent regulatory environment, and an ever growing population threaten the ability of existing supplies to keep pace with current and future demands. Meanwhile, the infrastructure we rely upon to store, treat, and deliver water supplies each and every day continues to require rehabilitation and replacement as time progresses. While integrated water resources planning (IWRP) provides an excellent framework for optimizing water resources, water suppliers must continually balance the need to invest in the development of new supplies; expansion of distribution, treatment, and storage capacity; and implementation of infrastructure rehabilitation and replacement projects. One shortcoming of traditional IWRP programs is a failure to incorporate basic infrastructure needs, when this neglected infrastructure will serve as the basis for storing, treating, and distributing existing and new IWRP supplies. The Water Utility Enterprise (WUE) of the Santa Clara Valley Water District (District) has developed a Long-Term Planning Framework (Framework) which establishes a systematic, risk-based approach to prioritizing resource, supply, and infrastructure programs for investment. The Framework itself is not a plan or study, but rather a process that builds upon existing and planned studies to facilitate fiscally responsible long-term planning. The Framework moves beyond traditional integrated water resources planning, allowing the District to achieve reliability of both infrastructure and supply by prioritizing needed water resource and infrastructure investments through a balanced, risk-based approach. This paper describes the Framework process developed to prioritize resource, capacity, and infrastructure projects, including the specific investment prioritization rules. The benefits of implementing a tailored Planning Framework that integrates IWRP and infrastructure planning for fiscally responsible long-term planning will be presented.

Industrial Reuse of Reclaimed Water from a 22.5 MGD Wastewater Treatment Plant - Steve Sorrell, Emerald Coast Utilities Authority, Pensacola, FL (co-author: Timothy M. Haag)

The Emerald Coast Utilities Authority (ECUA) provides water and wastewater utility service to approximately 250,000 residents in the greater Pensacola, Florida area. The ECUA recently replaced its principle wastewater treatment facility, the Main Street Wastewater Treatment Plant (MSWWTP), with a new 22.5 MGD advanced wastewater treatment (AWT) facility, in response to damages to the MSWWTP from Hurricane Ivan in 2004. The older facility was situated in the coastal floodplain, approximately 300 yards from Pensacola Bay. As part of the replacement process, the ECUA entered into partnerships with two local industrial interests to establish reuse programs for the reclaimed water from the new Central Water Reclamation Facility (CWRF), which came on-line in September 2010. The reuse programs: (1) establish the CWRF as a zero-discharge facility; (2) improve area surface water quality through the removal of a surface water discharge; and (3) safeguard the Sand-and-Gravel Aquifer, which is the region's sole source of drinking water, through the reduction of groundwater withdrawal by one of the industrial partners. The location of the CWRF away from the coastal floodplain also removes the chances of the loss of wastewater services for the majority of ECUA wastewater customers caused by storm surge flooding, as had occurred following Hurricane Ivan. The reuse of the reclaimed water by the two industrial partners, a power plant and a paper mill, provides economic benefits to accrue to both of their operations in addition to the advances in the water resources management. The \$316 million replacement project was successful because the ECUA was able to develop a consensus on building a replacement water reclamation facility, and pull together a viable, albeit complex, engineering and financing plan to complete the project on time and under budget.