Water Supply Planning Challenges in Florida

Water Quality Panel
APA Webinar
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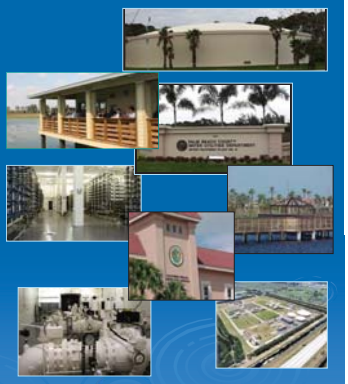
Utility Background

- Florida's 3rd largest water and wastewater utility
- Over 500,000 residents served
- 598 employees
- $115 million annual operating budget
- $1.6 billion in assets
- Recognized as an industry leader in water and wastewater

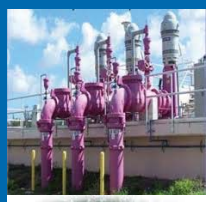
Major Facilities

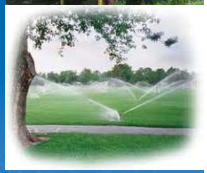
- 5 Water Treatment Plants with total capacity of 113 mgd
- Over 100 surficial wells, 8 Floridan wells (with 3 additional under construction or planned)
- 4 Wastewater Treatment Plants with total capacity of 59 mgd
- Reclaimed Water Production Facilities with total capacity of 47 mgd
- 5 mgd Wetland Treatment capacity (Green Cay and Wakodahatchee Wetlands)



Regulatory Background

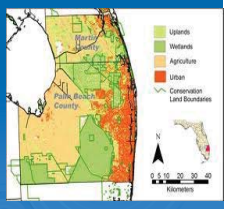
- Consumptive Use Permit for 87 mgd issued in 2003
- Substantial commitment to Alternative Water Supply development
  - Provide positive net benefit to regional system
  - Projects include ASR, treatment wetlands, RO and reclaimed water
  - Continued exploration of regional projects and collaborations
- Well established water conservation program
  - Tiered inclining block rate
  - Aggressive customer outreach
  - Local ordinance adopting SFWMD year-round irrigation restriction regulations
- Impacts of Economic Downturn and Conservation Program





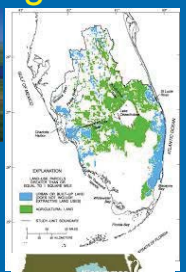
Regulatory and Planning Requirements

- Consumptive Use Permits Must Meet Regulatory Requirements – Part II of Chapter 373, F.S.
  - Reasonable and beneficial use
  - No impact to existing legal users
  - Public interest
- Impact of MFLs and the Lower East Coast RAA
- Conservation Requirements and Water Restrictions
- Capital Projects for additional capacity and AWS included in Regional Water Supply Plans
  - 20-year planning horizon/updated in 5-year intervals
  - Local Governments required to adopt Water Supply Facilities Work Plans and associated regulations/comprehensive plan elements
  - Current PBC Work Plan has 10-year planning horizon



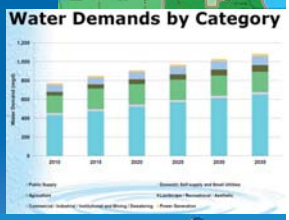
South Florida Challenges

- South Florida is Different!
  - Flood Control Dependent
  - Marked wet and dry seasons
  - Not enough storage
  - Quality, Quantity, Timing and Distribution
  - Reuse mainly irrigation based
- Competition for Resources
  - Agriculture, Ecosystem, Public Water Supply
  - Impact of CERP and C&SF Project
- Ocean Outfall Legislation
  - LEC Local Governments required to curtail utilization of outfall pipes for wastewater disposal
  - Lack of cost efficient disposal and reuse options



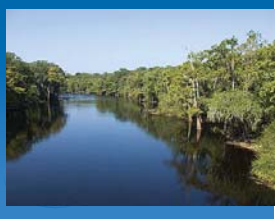
Central Florida Water Initiative

- Encompassed by three WMDs
- Near term water supply concerns
  - Sustainable groundwater use – 850 mgd
  - Current use – 800 mgd
  - 2035 needs – 1083 mgd
- Close coordination on water supply strategy and alternative source development needed
  - Work Groups Established
  - Regional Water Supply Plan under development
  - Solutions Forthcoming

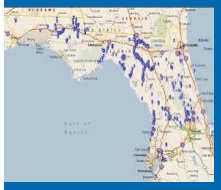


North Florida Regional Water Supply Partnership

- Includes stakeholders in NE Florida
  - Utilities, local governments
  - Agriculture
  - Environmental stakeholders
  - SRWMD and SJRWMD
  - State of Georgia
- "Ensure sustainable water supplies and protection of groundwater dependent natural systems"
  - Interagency agreements
  - Development of Groundwater Model
  - Development of North Florida Regional Water Supply Plan
  - Prevention and Recovery Strategies for Minimum Flows and Levels



Springs



- Florida has more springs than any other state
- Impacts to the Springs and Springsheds
  - Lower flows due to climatic factors, drought and groundwater withdrawals
  - Increased nutrient impacts due to land use within a springshed
- Legislative Efforts
  - Appropriations / Project Funding
  - SB 1576 (2014)
- Regulatory Efforts
  - MFL Development
  - Local Government Land Use Regulations
  - Agricultural BMPs

Reclaimed Water and Reuse

- Reclaimed Water Policy Work Group
  - Large group of state agency, local government and environmental stakeholders
  - Three year process beginning in 2009
  - Goal to optimize the reuse of reclaimed wastewater
  - Identified need to better coordinate water supply planning and CUP permitting
  - Final Report May 2012 (largely implemented)
- SB 536 (2014) Reuse Study
  - DEP led study in coordination with stakeholders
  - Expansion of use of reclaimed water, stormwater and excess surface water
  - Feasibility, benefit and expense of construction of regional projects
  - Report Due to Governor and Legislature by December 2015
- "Grow the Water Pie"
  - Different needs in different areas of the state
  - Local knowledge and input makes a difference

Future Challenges

- Continued Population Growth
  - 800 People per Day (US Census Bureau)
  - Increased competition between self suppliers, PWS and the environment
- Climate Change
  - Chassahowitzka and Homosassa River MFLs
  - Impacts to South Florida
- Implementation of Amendment 1
  - What will be funded?
  - Transfer of resources from other areas?
- Planning and Coordination is Important!

Questions?

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Dividing the Water Pie: How Local Governments in Florida Receive their Fair Share

American Planning Association
Water Quantity Webinar
January 23, 2015

Florida League of Cities - Background

- Created in 1922 to serve the needs of Florida's cities and promote local self-government. The League was founded on the belief that local self-government is the keystone of American democracy.
- 410 cities, towns and villages comprise the membership.
- Governed by a Board of Directors comprised of elected municipal officials.
- Article VIII, Florida's Constitution establishes municipal government creation, powers
- Only level of government a person chooses among governments
- No legal difference between city, town or village; each one chooses own name

Legal Framework

- Florida Water Resources Act of 1972, Chapter 373, Florida Statutes – legislation which brought all waters of the state under regulatory control
  - Established 5 water management districts
  - WMDs required to implement regulatory programs for:
    - Well Construction
    - Consumptive Use Permitting
    - Management & Storage of Surface Water
- Statewide authority vested in the Florida Department of Environmental Protection (DEP) in 1976, granting supervisory authority over the 5 WMDs

- Periodically, the 5 WMDs must evaluate whether adequate water supplies exist to meet the needs of their areas. The Regional Water Supply plan is a cooperative effort between WMDs, local governments, and other stakeholders in the area (i.e. Ag, large land owners, etc.)
- Local governments that fall within an area subject to a Regional Water Supply Plan are required to amend their comprehensive plan to adopt a water supply plan covering no less than a 10 year period. The comprehensive plan addresses water supply sources and facilities (i.e. utilities) necessary to meet existing and projected water use needs.

Water Supply Planning

- What challenges do local governments face in planning for future water uses?
- In order to meet water supply and water facilities planning requirements, local government comprehensive plans must address the following:

1. Coordinate appropriate aspects of their comprehensive plan with the appropriate water management district's regional water supply plan. [Section 163.3177(4)(a), Florida Statutes.]

2. Revise the Potable Water Sub-Element to adopt a water supply facilities work plan covering at least a 10-year planning period to meet existing and projected demand. The work plan should address those water supply facilities for which the local government has responsibility and include the facilities needed to develop alternative water supplies. The work plan should also identify conservation and reuse measures to meet future needs. [Section 163.3177(6)(c), Florida Statutes.]

3. Revise the Conservation Element to assess current and projected water needs and sources for at least a 10-year planning period. The analysis must consider the existing levels of water conservation, use, and protection and the applicable policies of the water management district, and the district's approved regional water supply plan. In the absence of an approved regional water supply plan, the analysis must consider the district's approved water management plan. [Section 163.3177(6)(d)3, Florida Statutes.]

4. Revise the Capital Improvements Element to identify capital improvements projects to be implemented in the first 5 years of the work plan for which the local government is responsible, including both publicly and privately funded water supply projects necessary to achieve and maintain adopted level of service standards; and adopt a five-year schedule of capital improvements to include those projects as either funded or unfunded, and if unfunded, assigned a level of priority for funding. [163.3177(3)(a)4, Florida Statutes.]

5. During the Evaluation and Appraisal review, determine if comprehensive plan amendments are necessary to reflect statutory changes related to water supply and facilities planning since the last update to the comprehensive plan. If necessary, transmit the amendments to incorporate the statutory changes as appropriate. [Section 163.3191(1) and (2), Florida Statutes.]

6. Revise the Intergovernmental Coordination Element to adopt principles and guidelines to be used to coordinate the comprehensive plan with the regional water supply authority (if applicable) and with the applicable regional water supply plan. [163.3177(6)(h)1, Florida Statutes.]

Increasing Water Quantity

- Local Governments have made numerous investments in increasing water quantity and expanding alternative water supplies
  - Reclaimed water facilities
  - Desalination
  - Aquifer Storage and Recovery
  - Constituent Education

Water Reuse ("Reclaimed Water")

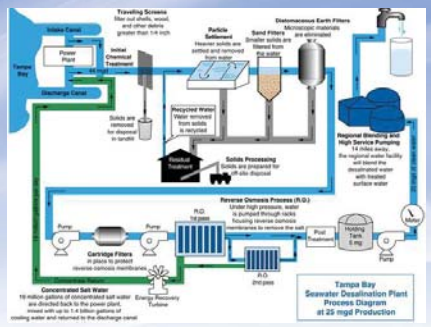
- When reclaimed water is used, it eases the demand on traditional, often limited, sources of water. By recycling or reusing water, communities can still grow while minimizing or even reducing their impact on the water resources around them.
- Water reuse involves using highly treated domestic wastewater for a new purpose. Reclaimed water systems are continually monitored to ensure the health and welfare of the public and the environment are protected.
- Using reclaimed water also reduces discharges to surface waters, recharges ground water and postpones costly capital investments in the development of new, more costly water sources and supplies.

City of Port Orange Reclaimed Water Facility

This plant capacity is 12 million gallons per day. Reclaimed water is highly treated wastewater that can be used for irrigation or discharged back into the Halifax River.

Desalination

- Desalination removes dissolved salts in water to make it fit for human consumption, as well as irrigation, industrial use and other purposes. Reverse osmosis and electrodialysis are the most commonly used technologies in Florida for treating saline water. Sources of saline water include brackish groundwater from the Floridan aquifer system and seawater from the ocean.
- The cost of seawater desalination is still significantly higher than traditional treatments for brackish groundwater and had been considered too expensive for widespread use in Florida. However, costs have come down as the technology has become more efficient.



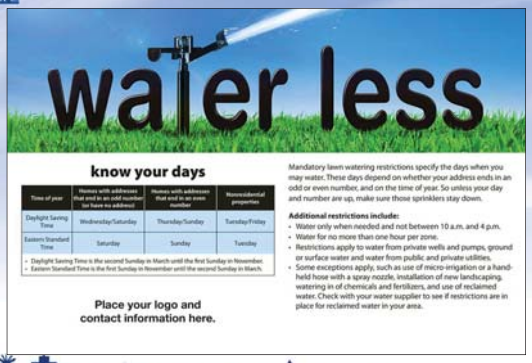
Tampa Bay Seawater Desalination Plant

The Tampa Bay Seawater Desalination facility is a drought-proof, alternative water supply that provides up to 25 million gallons per day of drinking water to the region.

Aquifer Storage & Recharge

- Mainly a WMD function
- Aquifer Storage and Recovery (ASR) facilities have been used in Florida and throughout the United States for about 30 years. ASR facilities inject and recover treated and untreated groundwater, partially treated surface water and reclaimed wastewater. ASR technology can store more water than a typical aboveground reservoir. An ASR system also can provide large volumes of water over longer periods of time, increasing water supplies during seasonal and multi-year droughts.

Water Conservation



Relevant Statistics

- Roughly 215 municipal water utilities in State of Florida
- Approximately 185 wastewater utilities in State of Florida
- 18 million (and growing) population
- Must meet water needs of the 3rd largest state in the union

Questions?

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