“The Future of Alternative Water Supplies in the SWFWMD”

- 16 counties
- 10,000 sq. miles
- 98 local governments
- Population 4.7 million (2010)
Alternative Water Supply is defined by Florida Statute, 373.019, as the following:

“… salt water; brackish surface and groundwater; surface water captured predominately during wet-weather flows; sources made available through the addition of new storage capacity for surface or groundwater, water that has been reclaimed after one or more public supply, municipal, industrial, commercial, or agricultural uses; the downstream augmentation of water bodies with reclaimed water; stormwater; and any other water supply source that is designated as nontraditional for a water supply planning region in the applicable regional water supply plan”. 
Major Watersheds of the Southwest Florida Water Management District

1. Withlacoochee River
2. Springs Coast
3. Tampa Bay/Anclote River
4. Hillsborough River
5. Alafia River
6. Little Manatee River
7. Manatee River
8. Southern Coastal
9. Myakka River
10. Peace River
11. Lake Wales Ridge
Generalized X-Sections:

Northern District

Southern District
Southern District
West (SWFWMD) | (SJRWMED) East

confining unit

Ocala low-permeability zone

Avon Park high-permeability zone (fractures)

middle confining unit I (Miller, 1986)

LFA below MCU I

middle confining unit II (Miller, 1986)

LFA below MCU II

UFA

LFA below MCU I

UFA

confining unit

SWFWMD conceptualization
Strategic Plan
2014-2018
Core Areas of Responsibility:

1. **Water Supply**
2. **Natural Systems**
3. **Water Quality**
4. **Flood Protection**
Core Areas of Responsibility:

Water Supply  
Natural Systems  
Water Quality  
Flood Protection

“The Southwest Florida Water Management District (District) is responsible for managing and protecting the water resources in the 16-county west central Florida region to ensure their continued availability while maximizing the benefits to the public. Our core areas of responsibility are water supply, water quality, natural systems and flood protection.”
“This Strategic Plan provides the roadmap for meeting those challenges by identifying what needs to be accomplished, how we will get the job done, and how we will measure our success. In addition to identifying the programs at our disposal, the Plan targets the specific priorities in each of our four planning regions. The Plan will be used by staff to prioritize project funding requests and to provide guidance to our funding partners.”
Strategic Initiatives

2 of the 10 Initiatives are:

#2 Alternatives Water Supplies – Goal is “Increased Development of alternative sources of water to ensure groundwater and surface water sustainability.”

#3 Reclaimed Water – Goal is “Maximize beneficial use of reclaimed water to offset potable water supplies and restore water levels and natural systems.”
AWS Strategies

• Develop surface water capture, desalination and brackish groundwater systems
• Partner with the agricultural community
• Continue to leverage District funds
• Continue to support research into ASR viability
• Promote conjunctive use approaches
Reclaimed Water Strategies

• Increase availability by increasing storage
• Increase availability by promoting interconnects
• District funds to maximize efficient and beneficial use of reclaim
• Improve efficiency through metering and volume-based pricing
Reclaimed Water Strategies (cont.)

- Support reclaimed water research, monitoring and public education
- Provide regulatory incentives to increase beneficial use
- Increase benefits by promoting recharge and environment friendly projects
Table 3. Potential additional water availability in the District from sources in each planning region through 2030 (mgd)

<table>
<thead>
<tr>
<th>Planning Region</th>
<th>Surface Water</th>
<th>Reclaimed Water</th>
<th>Desalination</th>
<th>Fresh Groundwater</th>
<th>Water Conservation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Permitted Unused</td>
<td>Available Un-permitted</td>
<td>Benefits</td>
<td>Seawater</td>
<td>Brackish Ground-water</td>
<td>Surficial and Intermediate</td>
</tr>
<tr>
<td>Southern</td>
<td>31.0</td>
<td>173.4</td>
<td>39.4</td>
<td>40.0</td>
<td>16.2</td>
<td>17.4</td>
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<tr>
<td>Heartland</td>
<td>0.05</td>
<td>4.3</td>
<td>42.5</td>
<td>N/A</td>
<td>TBD</td>
<td>8.0</td>
</tr>
<tr>
<td>Tampa Bay</td>
<td>55.7</td>
<td>18.7</td>
<td>75.8</td>
<td>35.0</td>
<td>10.6</td>
<td>5.5</td>
</tr>
<tr>
<td>Northern</td>
<td>0.49</td>
<td>93.1</td>
<td>16.8</td>
<td>15.0</td>
<td>TBD</td>
<td>N/A</td>
</tr>
<tr>
<td>Total</td>
<td>87.2</td>
<td>289.5</td>
<td>174.5</td>
<td>90.0</td>
<td>26.8</td>
<td>30.9</td>
</tr>
</tbody>
</table>

1The Northern Planning Region is the only region where groundwater from the Upper Floridan aquifer will be available in quantities sufficient to meet the 2030 demand. Therefore, the 88.7 mgd of groundwater has been set equal to the projected 2030 demand for the planning region. However, it is anticipated that the District’s efforts to aggressively promote and develop reclaimed water and conservation will significantly reduce the amount of groundwater needed to meet the projected demand.
Reclaimed Water Projects

- Southern Region: 24
- Heartland Region: 17
- Tampa Bay Region: 49
- Northern Region: 10
Other Water Projects
AWS

• Aquifer Recharge
• Aquifer Storage and Recovery
• Brackish Water Desal
• Regional Transmission Systems
• Seawater Desal
• Surface Water/Stormwater
<table>
<thead>
<tr>
<th>Project</th>
<th>Cooperator</th>
<th>Project Name</th>
<th>Rank</th>
<th>FY2015 Proposed District Funding</th>
<th>Total District Future Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>N487</td>
<td>Sumter Co</td>
<td>WMP - Jumper Creek Watershed Mgmt Plan</td>
<td>1A</td>
<td>178,769</td>
<td>106,554</td>
</tr>
<tr>
<td>P704</td>
<td>Hernando Co</td>
<td>SW IMP - Water Quality - Wooki Wachee Rogers Park LID</td>
<td>1A</td>
<td>137,500</td>
<td>0</td>
</tr>
<tr>
<td>N590</td>
<td>Williston</td>
<td>WMP - City of Williston Watershed Mgmt Plan</td>
<td>H</td>
<td>175,009</td>
<td>87,491</td>
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<tr>
<td>N596</td>
<td>Marion Co</td>
<td>Reclaimed Water - Oak Run to JB Ranch Reclaimed Water Main</td>
<td>H</td>
<td>150,000</td>
<td>575,000</td>
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<tr>
<td>N611</td>
<td>Brooksville</td>
<td>SW IMP - Flood Protection - Southway Villas BMP Alternatives Analysis</td>
<td>H</td>
<td>35,000</td>
<td>0</td>
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<tr>
<td>N620</td>
<td>Citrus Co</td>
<td>Conservation – Rain Sensor Replacement Rebate Program</td>
<td>H</td>
<td>3,133</td>
<td>0</td>
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<tr>
<td>N624</td>
<td>Hernando Co</td>
<td>WMP - Spring Hill Lakes Watershed Mgmt Plan BMP Alternatives Analysis</td>
<td>H</td>
<td>100,000</td>
<td>0</td>
</tr>
<tr>
<td>N633</td>
<td>Hernando Co</td>
<td>WMP - Bystre Lake Watershed Mgmt Plan BMP Alternatives Analysis</td>
<td>H</td>
<td>100,000</td>
<td>0</td>
</tr>
<tr>
<td>N634</td>
<td>Citrus Co</td>
<td>Conservation – Citrus County Toilet Rebate Program</td>
<td>H</td>
<td>6,466</td>
<td>0</td>
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<tr>
<td>N639</td>
<td>Marion Co</td>
<td>Conservation – Marion County Utilities Toilet Rebate Program</td>
<td>H</td>
<td>32,500</td>
<td>0</td>
</tr>
<tr>
<td>N640</td>
<td>WRWSA</td>
<td>Conservation – WRWSA Regional Landscape and Irrigation Evaluation Program</td>
<td>H</td>
<td>39,750</td>
<td>0</td>
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<tr>
<td>WC02</td>
<td>Citrus Co</td>
<td>Reclaimed Water - Sugarmill Woods Advanced Wastewater and Reuse Project</td>
<td>H</td>
<td>0</td>
<td>2,000,000</td>
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<tr>
<td>WR02</td>
<td>Marion Co</td>
<td>SW IMP - Water Quality - Rainbow River NW 119 Ave Stormwater Retrofit</td>
<td>H</td>
<td>27,000</td>
<td>0</td>
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<tr>
<td>WR03</td>
<td>Marion Co</td>
<td>SW IMP - Water Quality - Rainbow River NW Hwy 225 Stormwater Retrofit</td>
<td>H</td>
<td>91,000</td>
<td>0</td>
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<tr>
<td>N609</td>
<td>Marion Co</td>
<td>WMP Update - Withlacoochee River Watershed</td>
<td>M</td>
<td>50,000</td>
<td>0</td>
</tr>
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</table>

Northern Region Total: $1,126,127 $2,769,045
<table>
<thead>
<tr>
<th>Project</th>
<th>Cooperator</th>
<th>Project Name</th>
<th>Rank</th>
<th>FY2015 Proposed District Funding</th>
<th>Total District Future Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>N536</td>
<td>Auburndale</td>
<td>City of Auburndale - Auburndale Polytechnic Reclaimed Water Storage and Transmission Project</td>
<td>1A</td>
<td>1,000,000</td>
<td>0</td>
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<tr>
<td>N554</td>
<td>Highlands Co</td>
<td>Study - Lake Jackson Watershed Hydrology Investigation</td>
<td>1A</td>
<td>73,912</td>
<td>183,338</td>
</tr>
<tr>
<td>N440</td>
<td>Eagle Lake</td>
<td>SW IMP - Flood Protection - Eagle Lake Bingham Street Stormwater Retrofit</td>
<td>H</td>
<td>60,000</td>
<td>0</td>
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<tr>
<td>N613</td>
<td>Polk Co Util</td>
<td>Conservation – Polk County Landscape and Irrigation Evaluation Program</td>
<td>H</td>
<td>22,085</td>
<td>0</td>
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<tr>
<td>N637</td>
<td>Highlands Co Soil/Wtr Conserv Dist</td>
<td>SW IMP - Water Quality - Lake McCoy BMPs</td>
<td>H</td>
<td>82,500</td>
<td>0</td>
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<tr>
<td>W799</td>
<td>Winter Haven</td>
<td>SW IMP - Water Quality - Winter Haven Ridge LID BMPs</td>
<td>H</td>
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<tr>
<td>N240</td>
<td>Lake Wales</td>
<td>SW IMP - Water Quality - Lake Wales (REDI)</td>
<td>L</td>
<td>315,937</td>
<td>0</td>
</tr>
</tbody>
</table>

Heartland Region Total: $1,614,434 $183,338
Project Snapshots

- Lower Floridan Aquifer Exploratory Program in Polk County (P280)
- Clearwater Groundwater Replenishment Feasibility Study (N179)
- Polk County NWRUSA ASR (N024)
Polk County
Lower Floridan Aquifer
Exploratory Drilling Program

• July 2009, Polk County Comprehensive Water Supply Plan identified deficits
• Lower Floridan aquifer potential source?
• Water quality and yield?
• Action plan = drill at 6 exploration sites...currently have 3 sites budgeted
Clearwater Groundwater Replenishment Feasibility Study

- **Study**: Water level improvements from directly recharging 1 mgd of reclaimed water into a brackish water zone of the UFA
- **Goal**: Study water levels improvements and evaluate the potential for additional withdrawals from wellfields
- **Indirect Potable Reuse**
Polk County NWRUSA ASR

• Increase the reuse storage capacity by 200 MG
• Est. 2 – 5 mgd available during critical periods of the dry season
• Alt. to 80 MG storage reservoir
• ASR cost ($5.4M) < 80 MG reservoir ($6.3M)
Project Location
Deep Saline Zone Targeted for Storage Eliminates Competing Groundwater Use

- **Phase I** – Exploratory Well
- **Phase II** – Complete ASR well and construct MWs
In Conclusion.....

- Regionalization
- Efficiency
- Recharge effects & benefits
- Lower Floridan aquifer quantification & use
- Desal and brackish water use
- ASR

“If you build it...they will come.”
Questions?