Water Resource Management

Our Greatest and Most Important Resource
Water Resource Management
Strategic Discussion

• Water System Overview
• Managing & Sustaining the Resource
• Alternative Water Supply
Water Works Park
Late 1800’s
System Overview - Water

- 100% groundwater supply
- >300,000 Customers
- 35 Water Treatment Plants
- 138 Active Wells
- 2 Major Grids (with 1 River Crossing interconnection)
- Water Utility Founded 1881
- JEA Acquired Utility in 1997
JEA Water Service Area 1997-2009
Number of Water Customers Increased by Over 40% During this Period

Water System Customers

Average Number of Accounts by Type

Fiscal Year

Irrigation | Commercial and Industrial | Residential
Wellfields

JE A Water Systems – 100% Groundwater
Community Hall Water Treatment Plant

Water Treatment Plants Consist of Wells, Treatment, and High Service Pumps
Water/Wastewater Systems
Remote Monitoring and Control
Managing and Sustaining the Resource
Implications of Growth on the South Grid

- The Floridan Aquifer – limit of sustainability reached on S. Grid
- Has been the subject of potential Priority Water Resource Caution Area in Past
- Actions taken to address:
  - Conservation
  - Optimized system control
  - Backplugging
  - Expanding Reuse
  - River Transfer

As the potentiometric surface drops the saltwater rises....
Assessing Adequacy of the Supply

– SJRWMD conducted a water supply assessment (WSA) in 2008
– Identified areas not sustainable due to unacceptable impacts to natural systems or to groundwater
– 2008 Draft WSA identified NE Florida as a potential Priority Water Resource Caution Area (PWRCA)
– Designation as PWRCA = cap on additional aquifer withdrawals – implementation of AWS sooner rather than later
Action Taken by JEA and Other Utilities

- Formed Northeast Florida Utilities Coordinating Group (11 public utilities)

- Purpose of NFUCG:
  - Sustaining the natural systems and groundwater sources and providing cost effective public water supply alternatives
  - Hired technical consultants to assist in the review of the groundwater model, inputs and assumptions to ensure accuracy and integrity of results
  - Collaborative evaluation and input to the Water Supply Planning Process
Total Water Management Plan (TWMP)

- 2008 TWMP
  - Focus on entire JEA service area
  - Alternative Water Supplies Evaluated
  - Peer Reviewed
  - Living Document
TWMP Key Recommendations:

1. Aggressive Reclaimed Water (in particular, potable water offsets)
2. North to South Grid Transfer
3. Conservation

**Potable Offset Reclaimed Water:**
Reclaimed water that offsets future JEA potable water demands

**Challenges:**

- Limited regulatory enforcement for customer connection
- Capital cost of reclaimed water projects
TWMP Key Recommendations:

1. Aggressive Reclaimed Water (in particular, potable water offsets)
2. North to South Grid Transfer
3. Conservation
TWMP Key Recommendations:

1. Aggressive Reclaimed Water (in particular, potable water offsets)
2. North to South Grid Transfer
3. Conservation

Conservation:

1. Tiered Rates
2. Irrigation Rule/Ordinance
3. Combined Messaging
4. JEA Programs
5. The economy
Meeting (and controlling) Future Demand

$1B since 1997?
Alternative Water Supplies Compared to Current Supply

<table>
<thead>
<tr>
<th>Water Supply for 10 MGD Capacity</th>
<th>Capital Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Aquifer Water (Treatment)</td>
<td>$ 28 M</td>
</tr>
<tr>
<td>Reclaimed Water - Current (Treatment, Pumps/Pipes)</td>
<td>$ 50 M</td>
</tr>
<tr>
<td>Desalination - Brackish Groundwater (Treatment)</td>
<td>$ 56 M</td>
</tr>
<tr>
<td>Reclaimed Water - Increased (Treatment, Pumps/Pipes)</td>
<td>$ 70 M</td>
</tr>
<tr>
<td>Desalination - St Johns River (Treatment)</td>
<td>$ 109 M</td>
</tr>
<tr>
<td>Aquifer Recharge (Treatment, Injection Wells)</td>
<td>$ 143 M</td>
</tr>
<tr>
<td>Desalination - Sea Water (Treatment)</td>
<td>$ 182 M</td>
</tr>
<tr>
<td>Other (Intermediate Wells, etc.)</td>
<td>?</td>
</tr>
</tbody>
</table>

Conservation:
1. No Capital Construction Cost
2. Lost Revenues Requires Rate Adjustment
Summary

• Focus on sustainability
• Conservation is and will remain the most affordable, and the best first option.
• JEA has a strategy, and will continue to assess other alternative water supply options.