

Water Resource Management

Our Greatest and Most Important
Resource



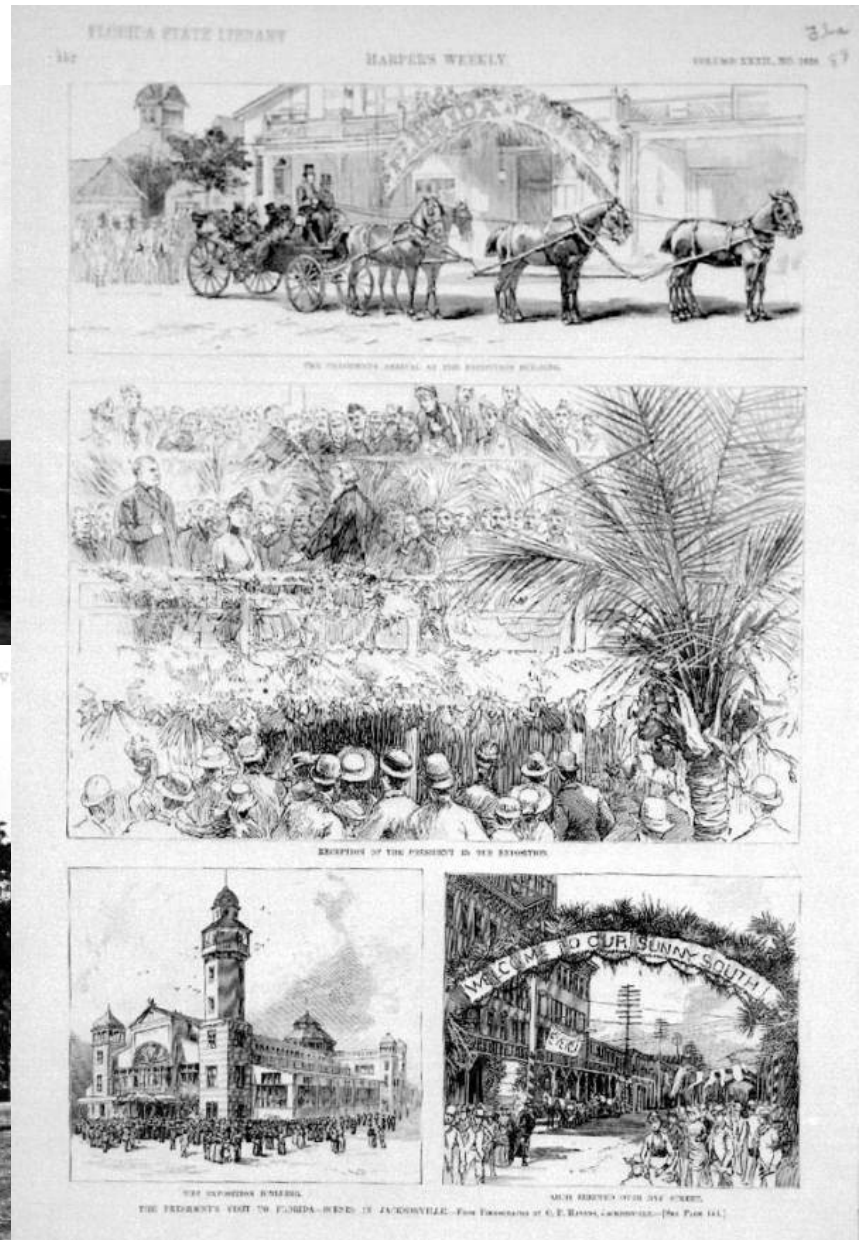
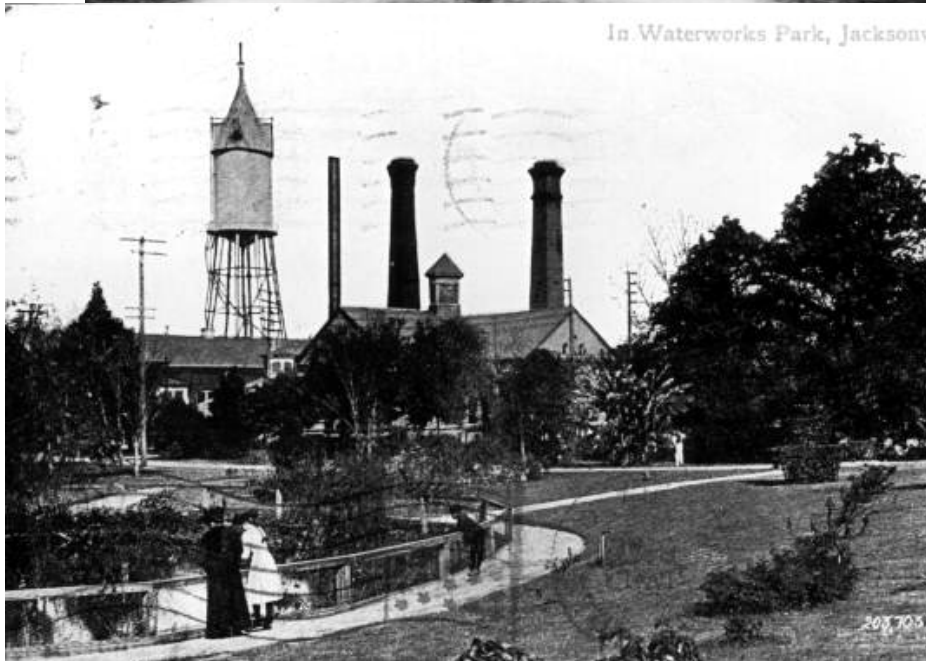
Water Resource Management Strategic Discussion

- Water System Overview
- Managing & Sustaining the Resource
- Alternative Water Supply

Water Works Park Late 1800's

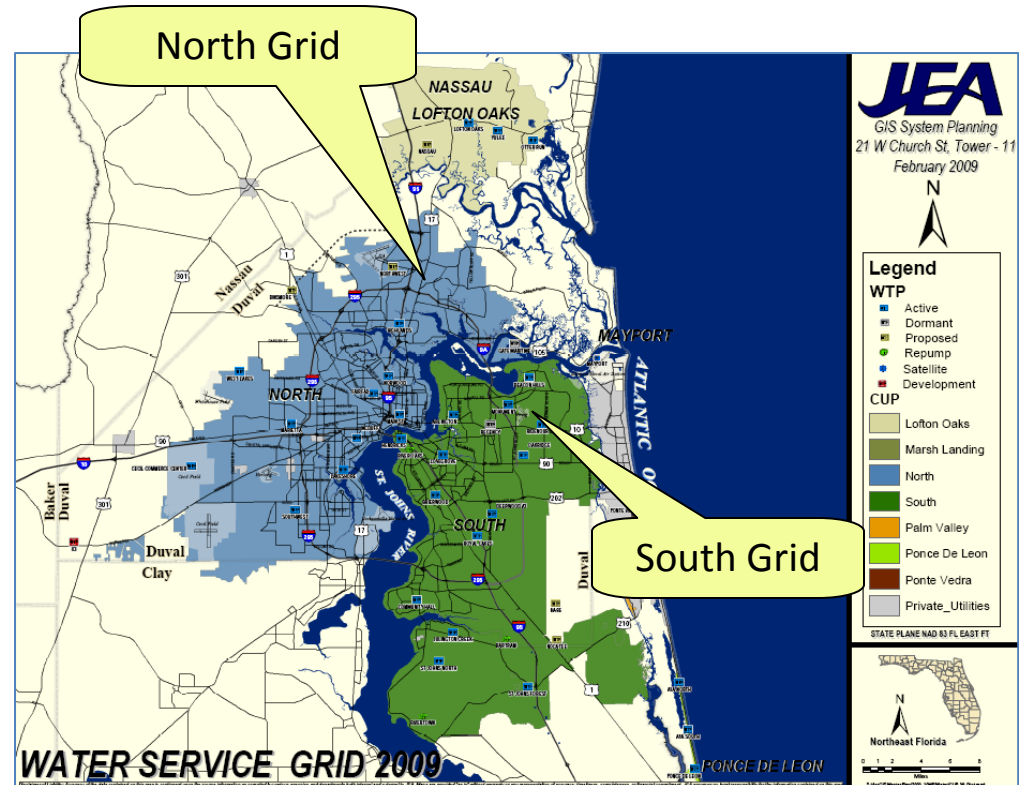


In Waterworks Park, Jacksonville

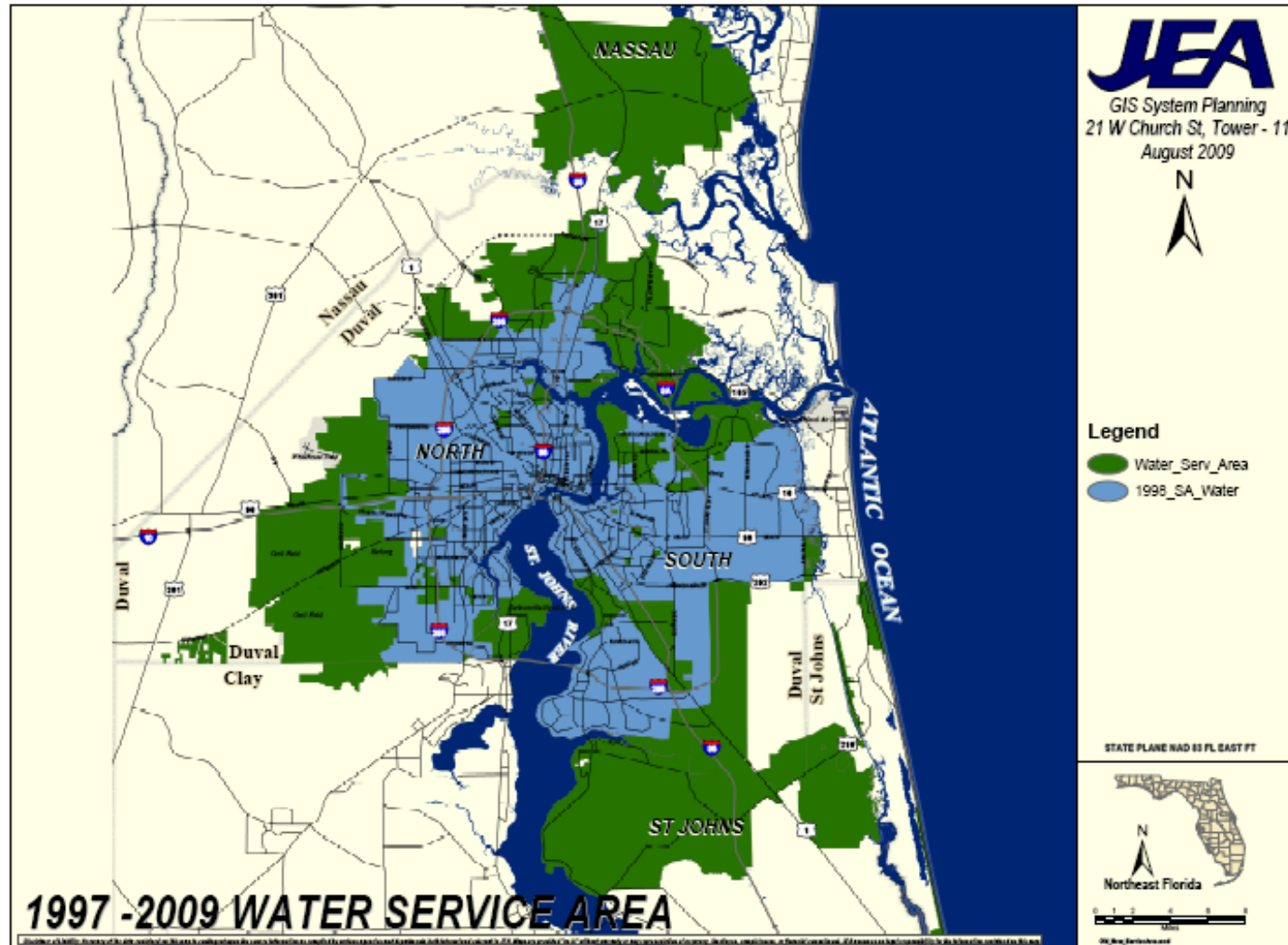


System Overview - Water

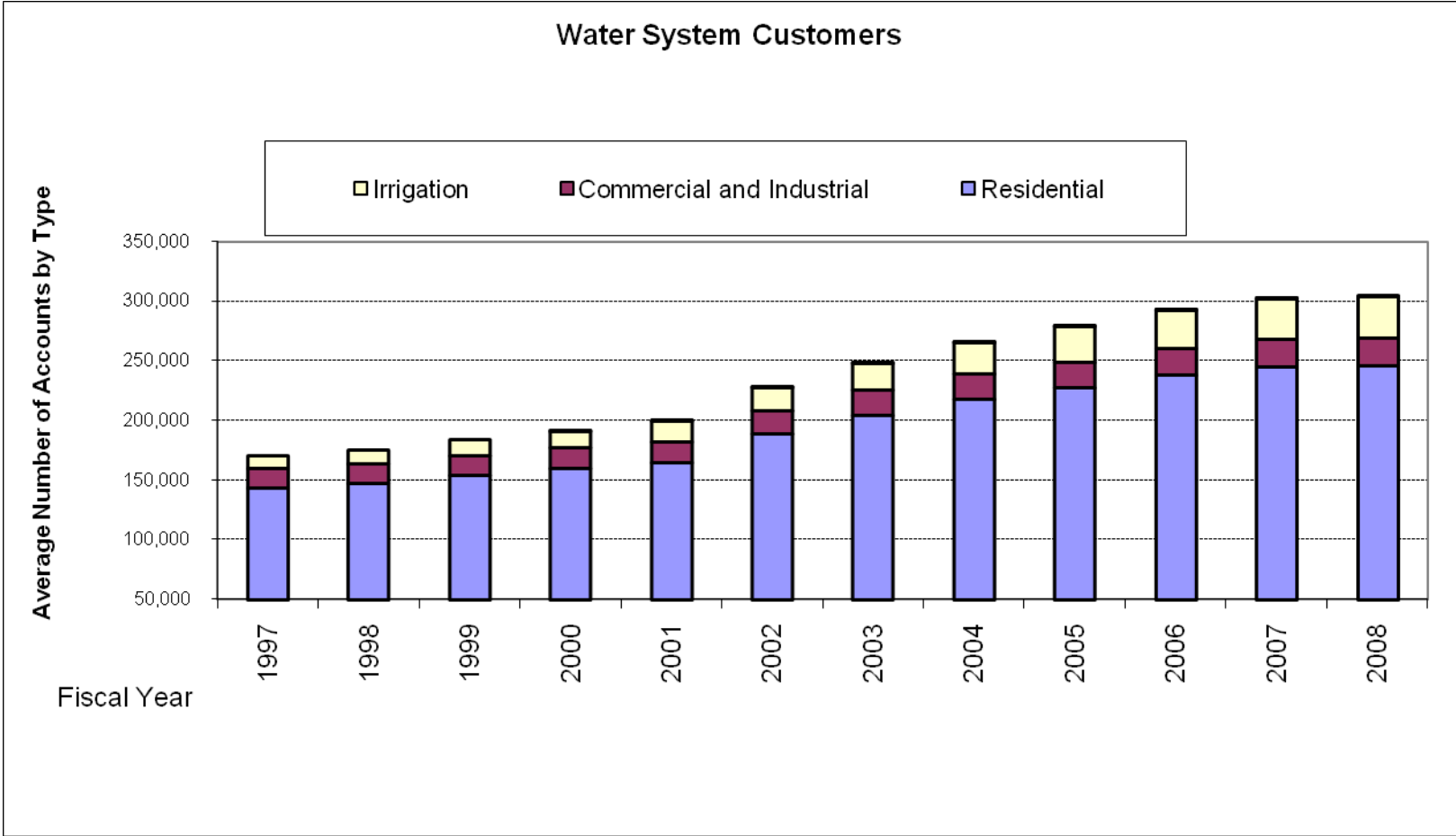
- ▶ 100% groundwater supply
- ▶ >300,000 Customers
- ▶ 35 Water Treatment Plants
- ▶ 138 Active Wells
- ▶ 2 Major Grids (with 1 River Crossing interconnection)
- ▶ Water Utility Founded 1881
- ▶ JEA Acquired Utility in 1997

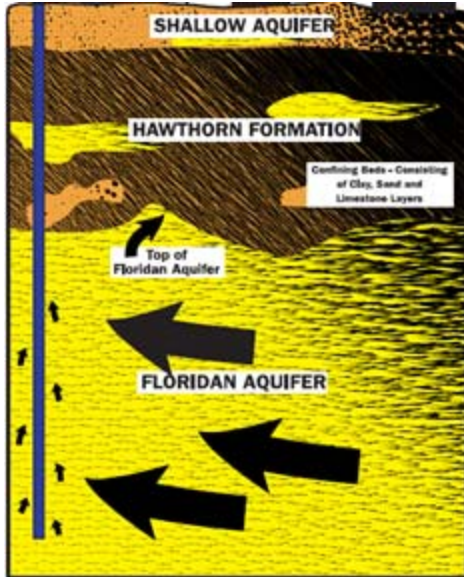
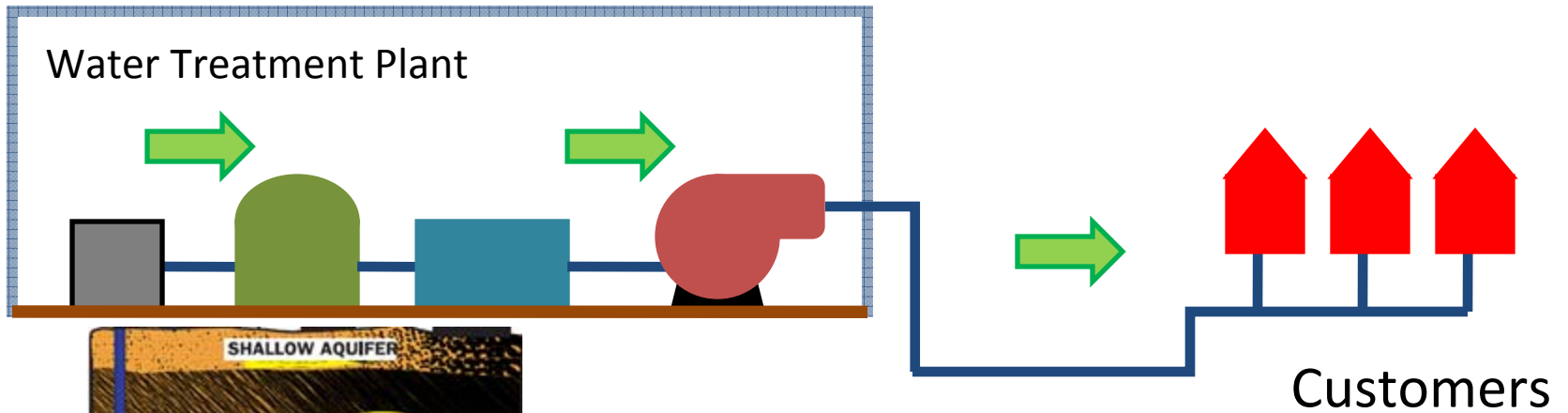


JEA Water Service Area 1997-2009



Number of Water Customers Increased by Over 40% During this Period





Distribution
and
Transmission



Wellfields

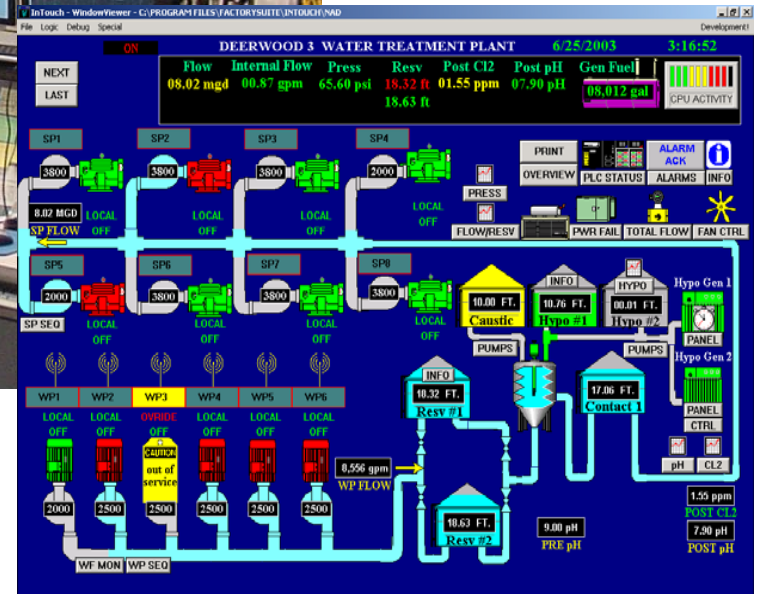
JEA Water Systems –
100% Groundwater

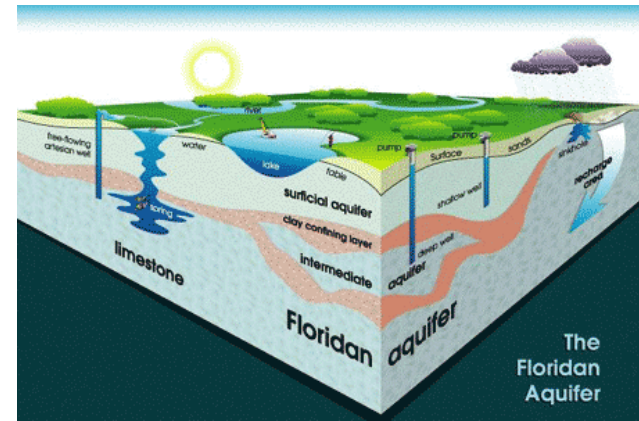
Community Hall Water Treatment Plant



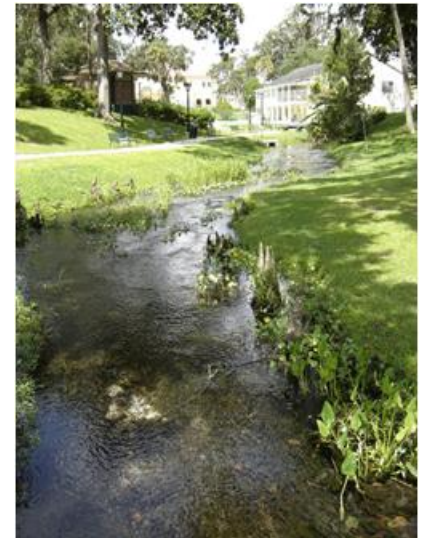
**Water Treatment Plants Consist of Wells,
Treatment, and High Service Pumps**

Water/Wastewater Systems Remote Monitoring and Control



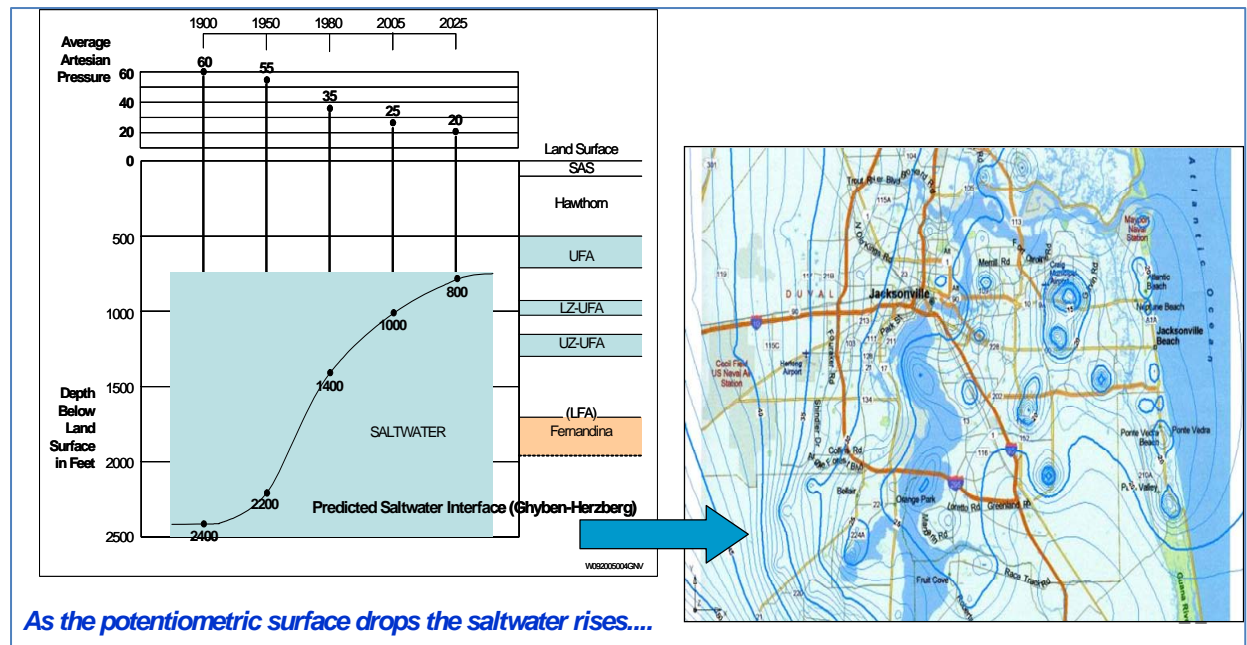


Managing and Sustaining the Resource



Implications of Growth on the South Grid

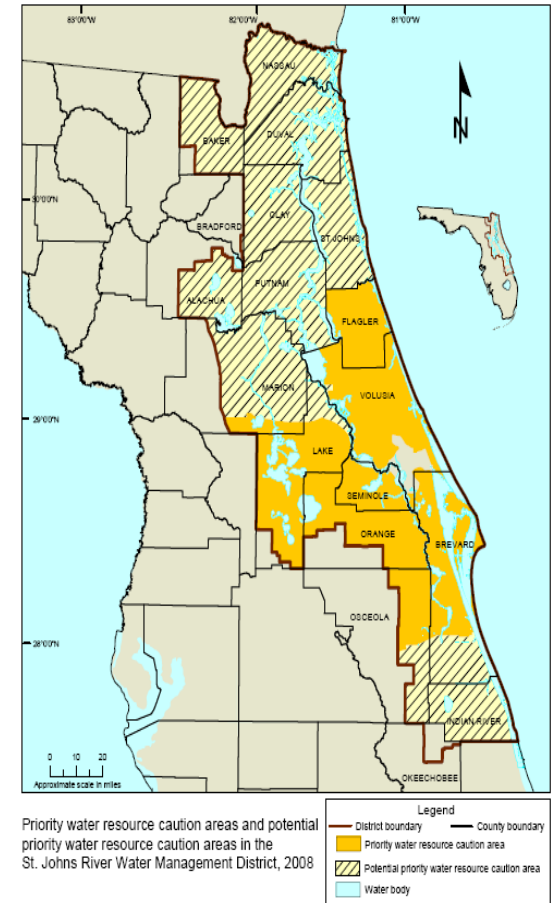
- The Floridan Aquifer – limit of sustainability reached on S. Grid
- Has been the subject of potential Priority Water Resource Caution Area in Past
- Actions taken to address:
 - Conservation
 - Optimized system control
 - Backplugging
 - Expanding Reuse
 - River Transfer



SJRWMD Water Supply Assessment and Planning Process

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



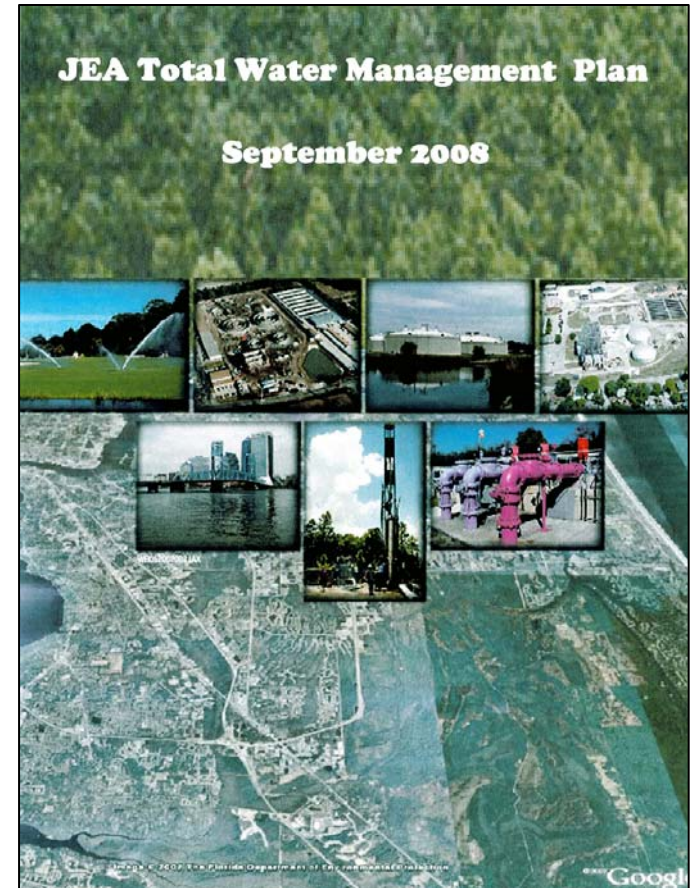
Action Taken by JEA and Other Utilities

- 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)

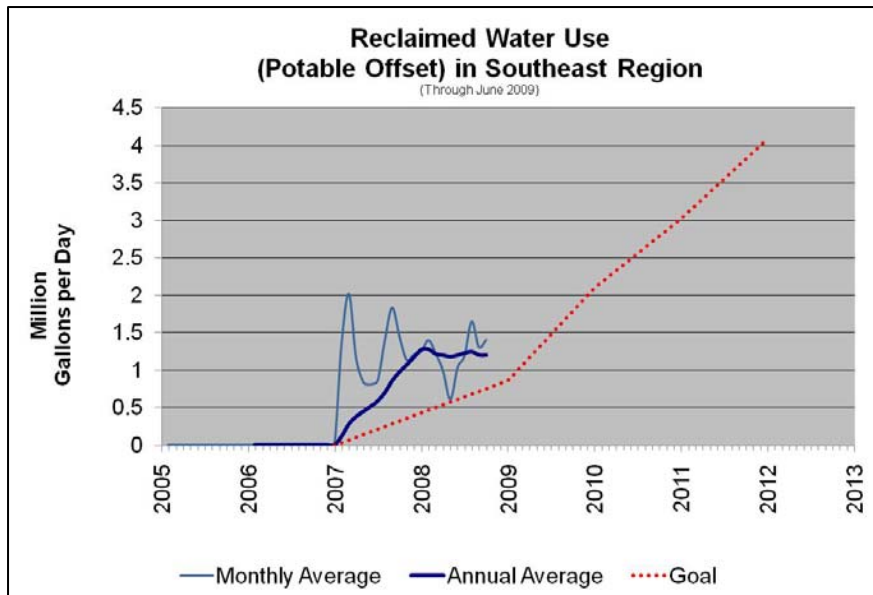
–2008 TWMP

- 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

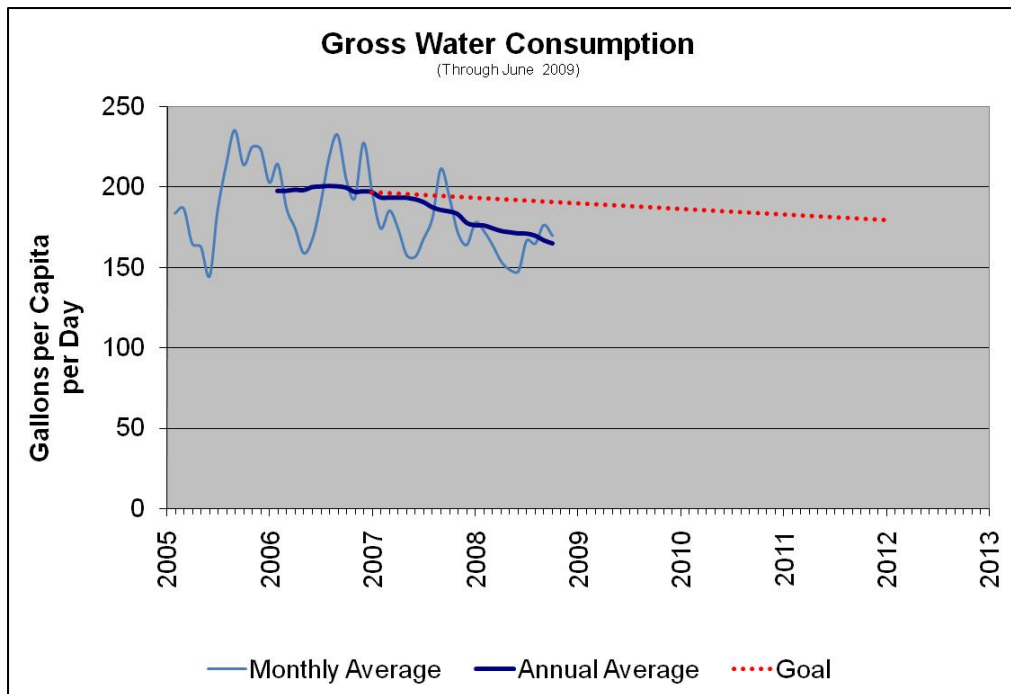
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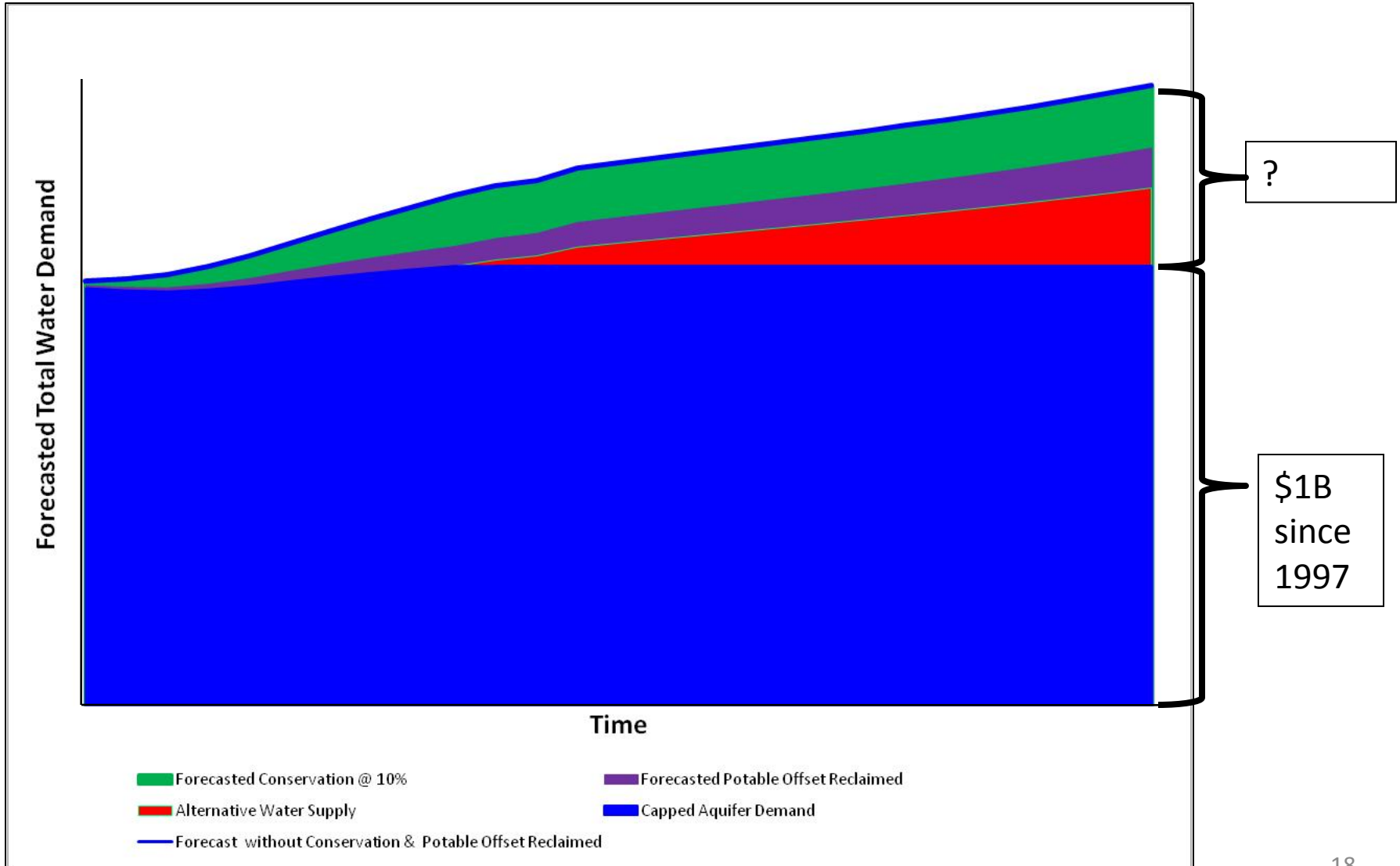
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Conservation:

1. Tiered Rates
2. Irrigation Rule/
Ordinance
3. Combined Messaging
4. JEA Programs
5. The economy

Meeting (and controlling) Future Demand



Alternative Water Supplies Compared to Current Supply

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



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.

