

Palm Beach County Water Utilities 2012 Update



SFWMD

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Utility Overview



- Florida's 3rd largest water/wastewater /reclaimed water utility
- Serving 500,000 customers
- 1,200 square mile service area
- 5 water treatment plants - 104 mgd
- 2 wastewater treatment plants – 59.5 mgd
- 17.5 mgd average reuse
- Total Assets of \$1.5 billion
- Bulk Water to 7 communities in PBC
- Paradigm shift: No longer growth driven utility



Utility Issues & Challenges

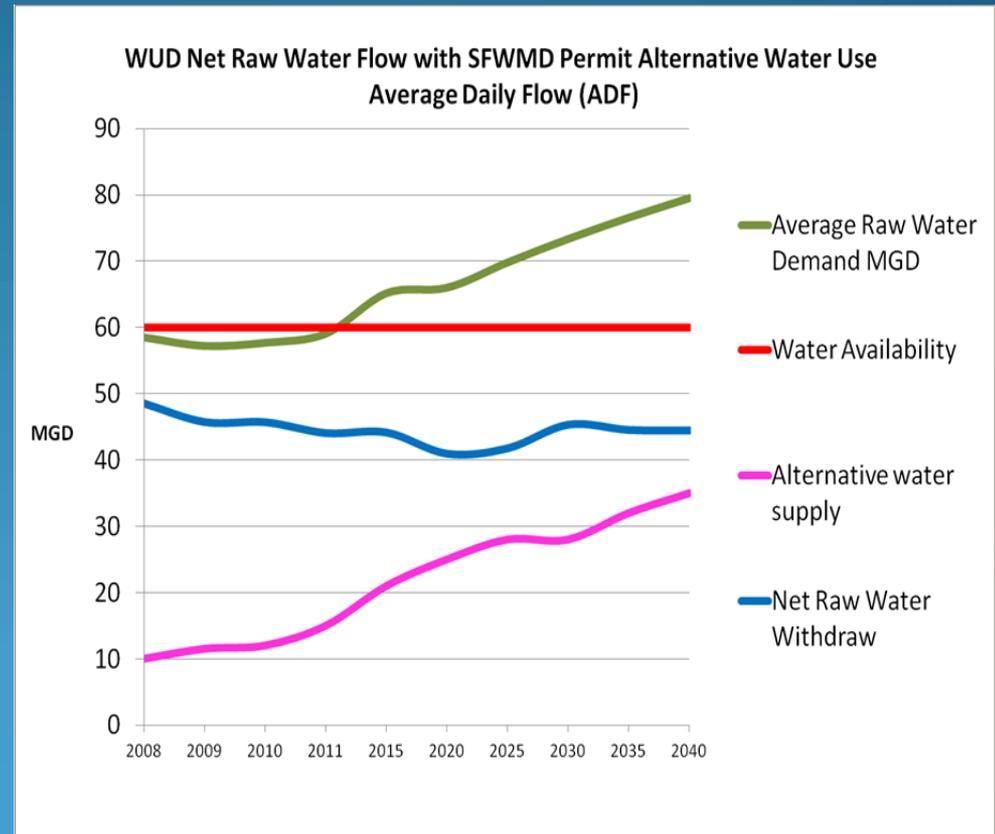
- **Raw Water Demands**
- **Population/Growth**
 - Water Supply, Revenue
- **Conservation/Reuse**
- **Regulations**
 - NNC, Water Availability Rule ,Emerging Contaminants
- **Technology [Cost/Benefit]**
- **Climate Change**





RAW WATER FLOW DEMANDS

In spite of disappointing economic forecasts and increased regulatory pressure to move toward AWS, WUD has achieved sustainable total water management of those resources entrusted to it...





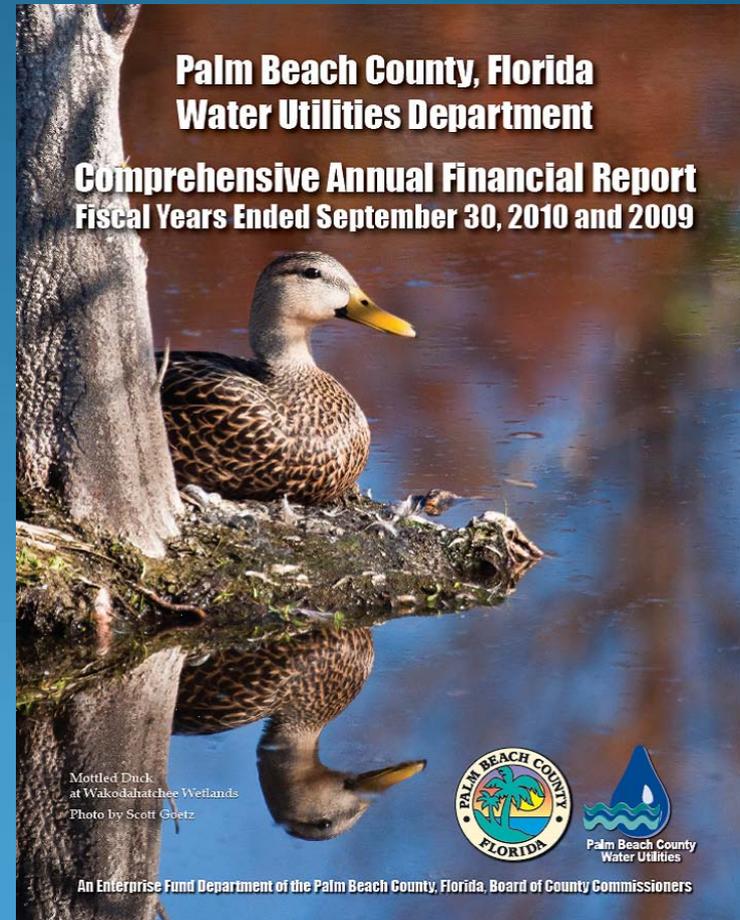
Population and Consumption

Year	BEBR	PBCWUD Service Area	RAW Total	Finished Total	GPCPD
2010	1,320,134	458,839	57.7	52.6	115
2011	1,325,743	461,432	59.1	54.1	115
2015	1,394,300	508,974	65.2	59.7	115
2020	1,482,900	515,412	66.0	60.4	115
2025	1,568,500	545,164	69.8	63.9	115
2030	1,648,000	572,795	73.4	58.5	115
2035	1,720,000	597,820	76.6	70.1	115
2040	1,786,000	620,760	79.5	72.8	115



REVENUE

- Develop sufficient revenue for long-term financial stability amid declining population & water restrictions
- Maintain affordable customer rates
- Achieve positive net income
- Build cash reserves



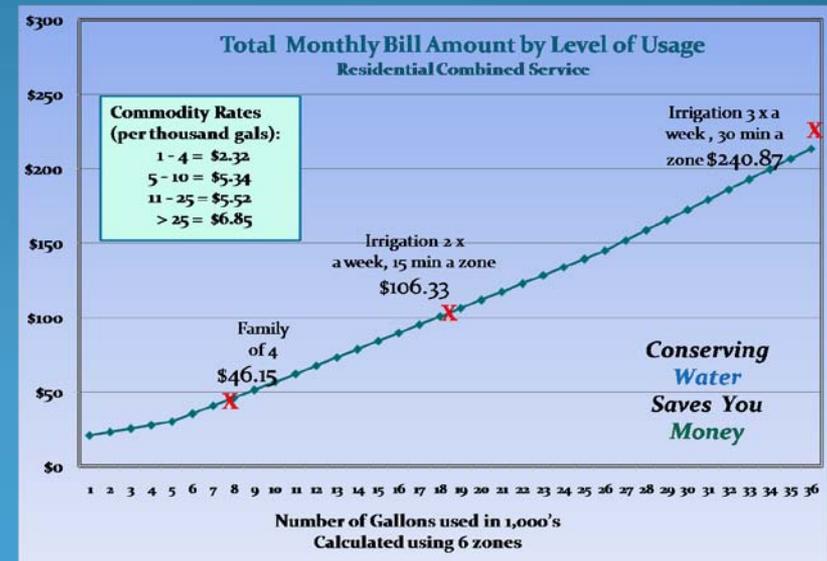


REVENUE



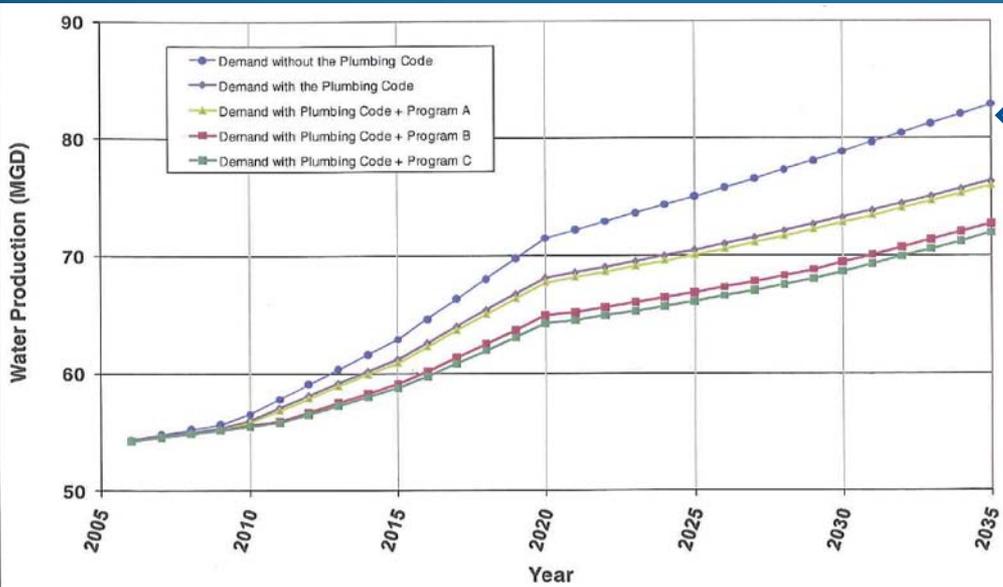
- Added new revenue sources (bulk water, revenue grants, etc.)
- Stabilized personnel costs

- Established strong conservation rate structure
- Tied rate structure to Utility CPI (75%)
- Prioritized O&M; CIP





CONSERVATION



Projected Demand Savings of 6.9 MGD by 2035; Current WUD Conservation Program With National Plumbing Code Changes



Current WUD Conservation Program

- AMR System Leak Detection
- Toilet Leak Detection
- Public Information Program
- Rain Sensors on New Development
- Irrigation Systems
- Conservation Tiered Rate Structure
- Biofilm Management-Chlorine/System Flush

National Plumbing Code

- Toilet – 1.6 Gal/Flush
- Urinals – 1.0 Gal/Flush
- Showerhead – 2.5 GPM (80 psi)
- Resident Faucets – 2.2 GPM (60 psi)
- Public Faucets – 0.5 GPM (60 psi)
- Dishwashing – 1.6 GPM (60 psi)

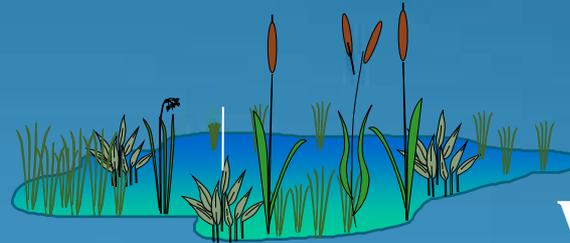


Reuse

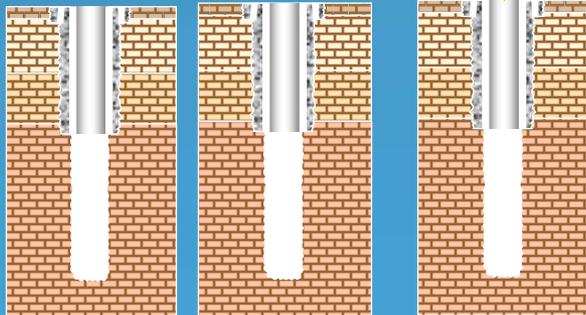
SRWRF
35 (22.5) MGD



Reuse
22 (13.0) MGD



Wetlands
5 (1.5) MGD



Deep Injection Wells
34.5 (8.0) MGD



CONSERVATION AND REUSE

5.2 BILLION gallons in 2011

- Service to 8 golf courses and 22 communities
- Average daily demand = 14 million gallons
- Maximum daily demand = 22 million gallons
 - 100% Reuse
- Minimum daily demand = 4 million gallons
- MRWSA = 20 square miles (1 sq mi in 1995)





FPL West County Energy Center



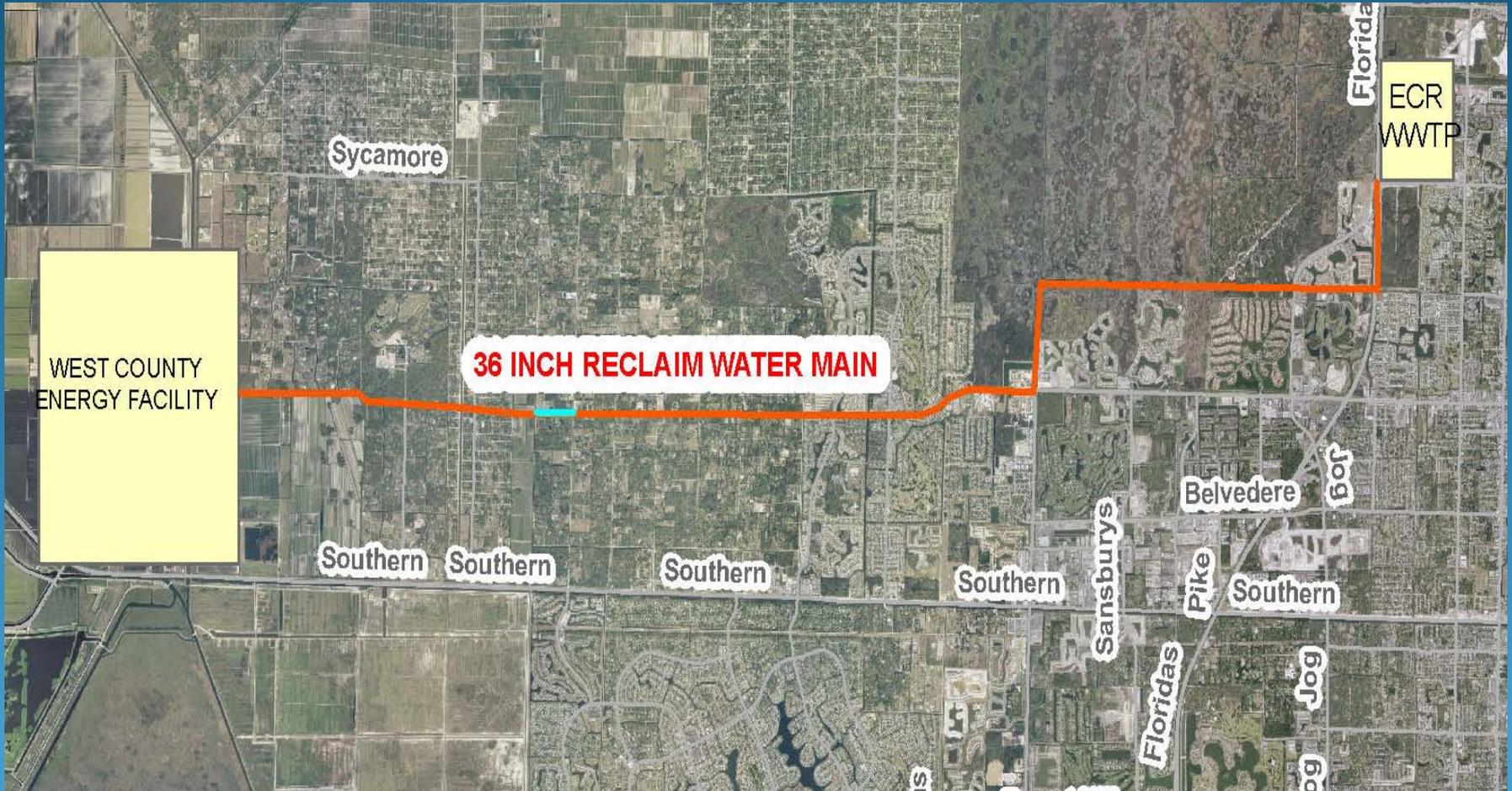
- Three new natural gas combined-cycle power units
- Units 1 & 2 online 2009
- Unit 3 online 2011
- Total facility capacity of 3,800 megawatts
- Cooling water source is major issue for FPL
- ADF 17mgd





Environmental Stewardship

FPL Project – reclaiming our resources while providing new source of funding for Utility





Regulations

Numeric Nutrient Criteria (NNC)

- Technology
- Cost
- Green House Gas



LIMITS OF TECHNOLOGY FOR NITROGEN AND PHOSPHORUS

Level	Treatment	Total Nitrogen	Total Phosphorus
1	Conventional Activated Sludge	20 mg/L	2 mg/L
2	3 Stage BNR	8 mg/L	1 mg/L
3	5 Stage BNR + Filtration	4-8 mg/L	0.1-0.3 mg/L
4	5 Stage BNR + Denite Filtration	3 mg/L	0.1 mg/L
5*	5 Stage BNR + Denite Filtration + MF/RO	< 2 mg/L	< 0.02 mg/L

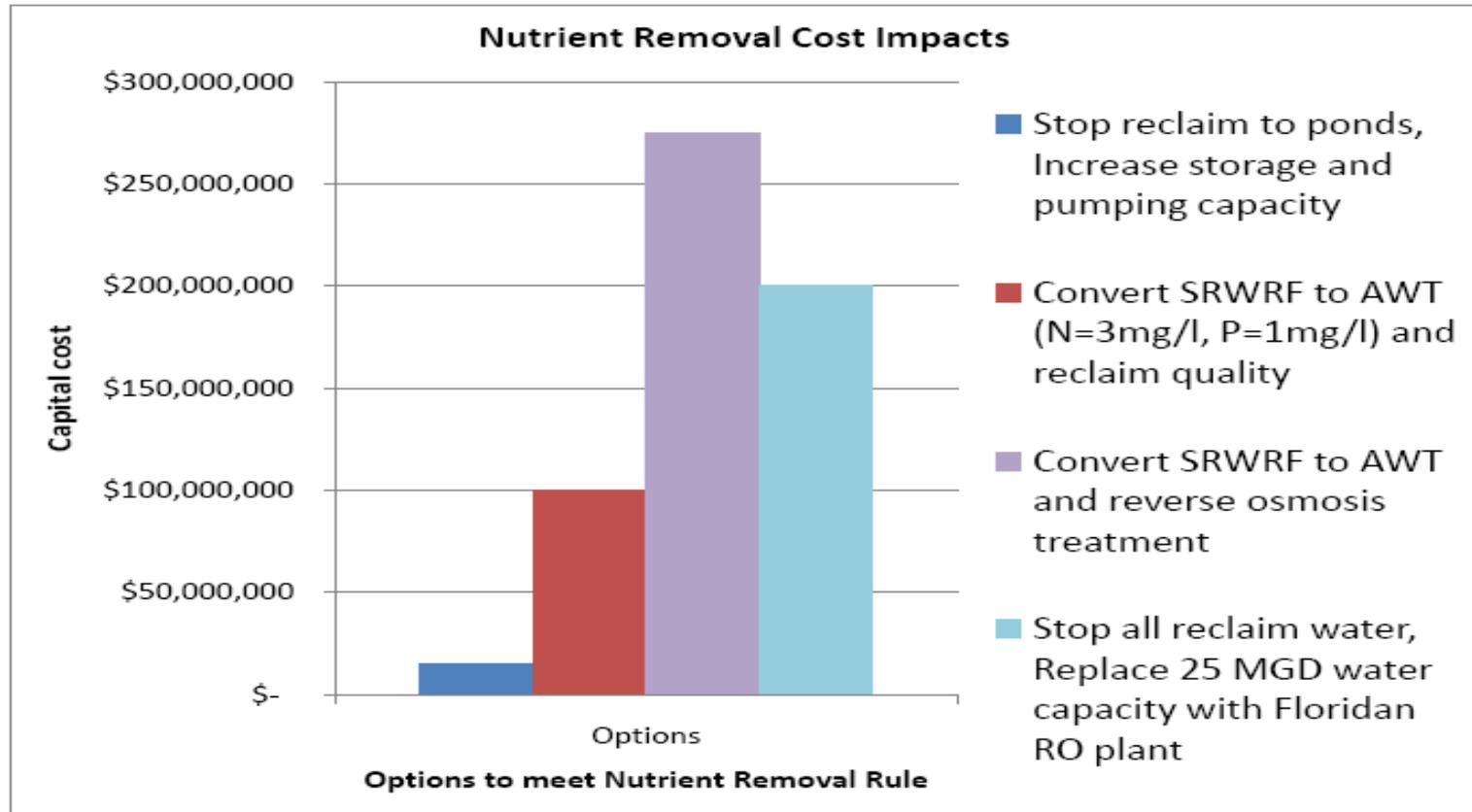
* MF/RO for half the flow

Reference: WERF NUTR1R06n 2011: Striking The Balance Between Nutrient Removal In Wastewater Treatment And Sustainability 2011

Provided by Patrick Davis, P.E.; Hazen & Sawyer

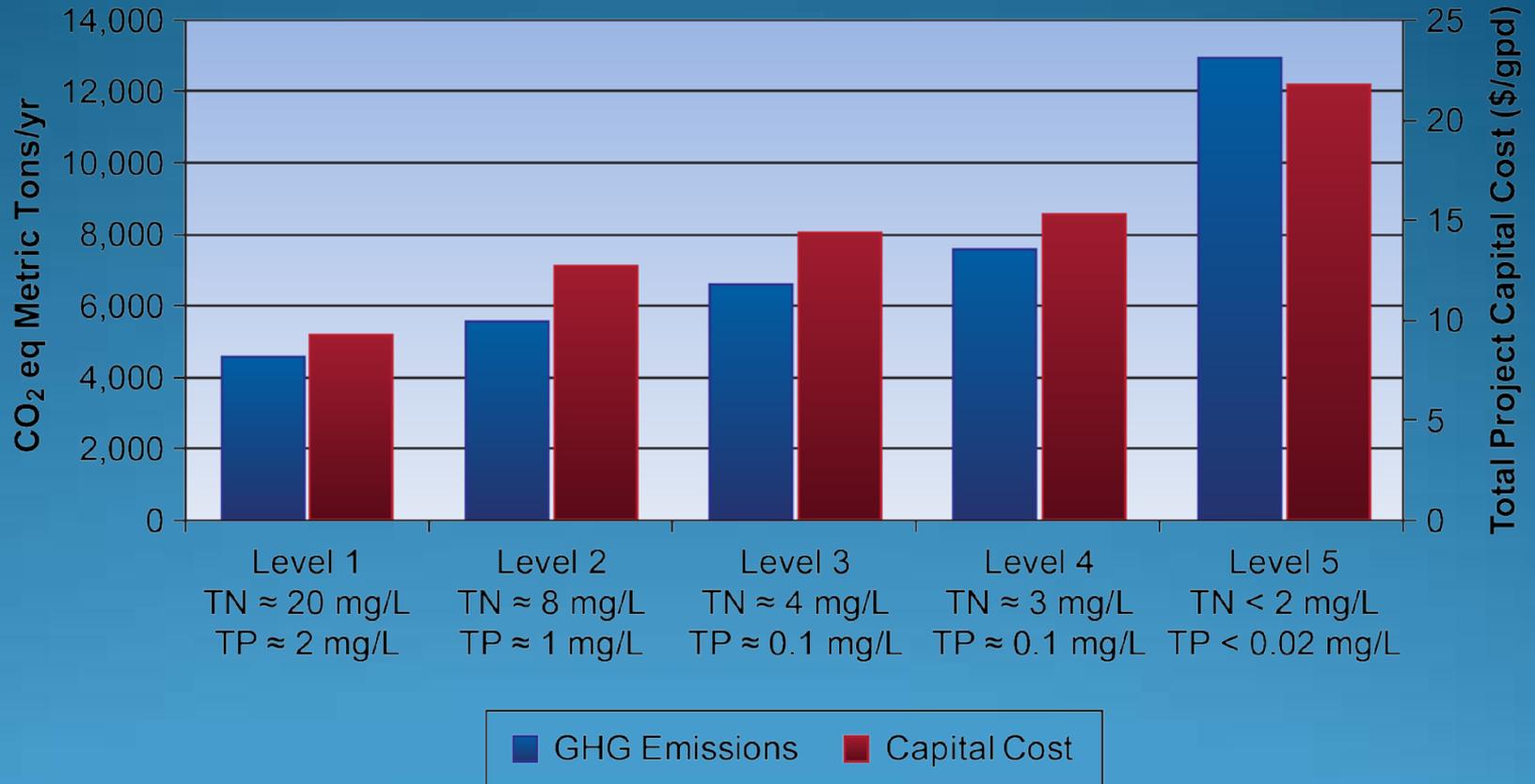


NNC Impacts





GHG EMISSIONS & CAPITAL COST



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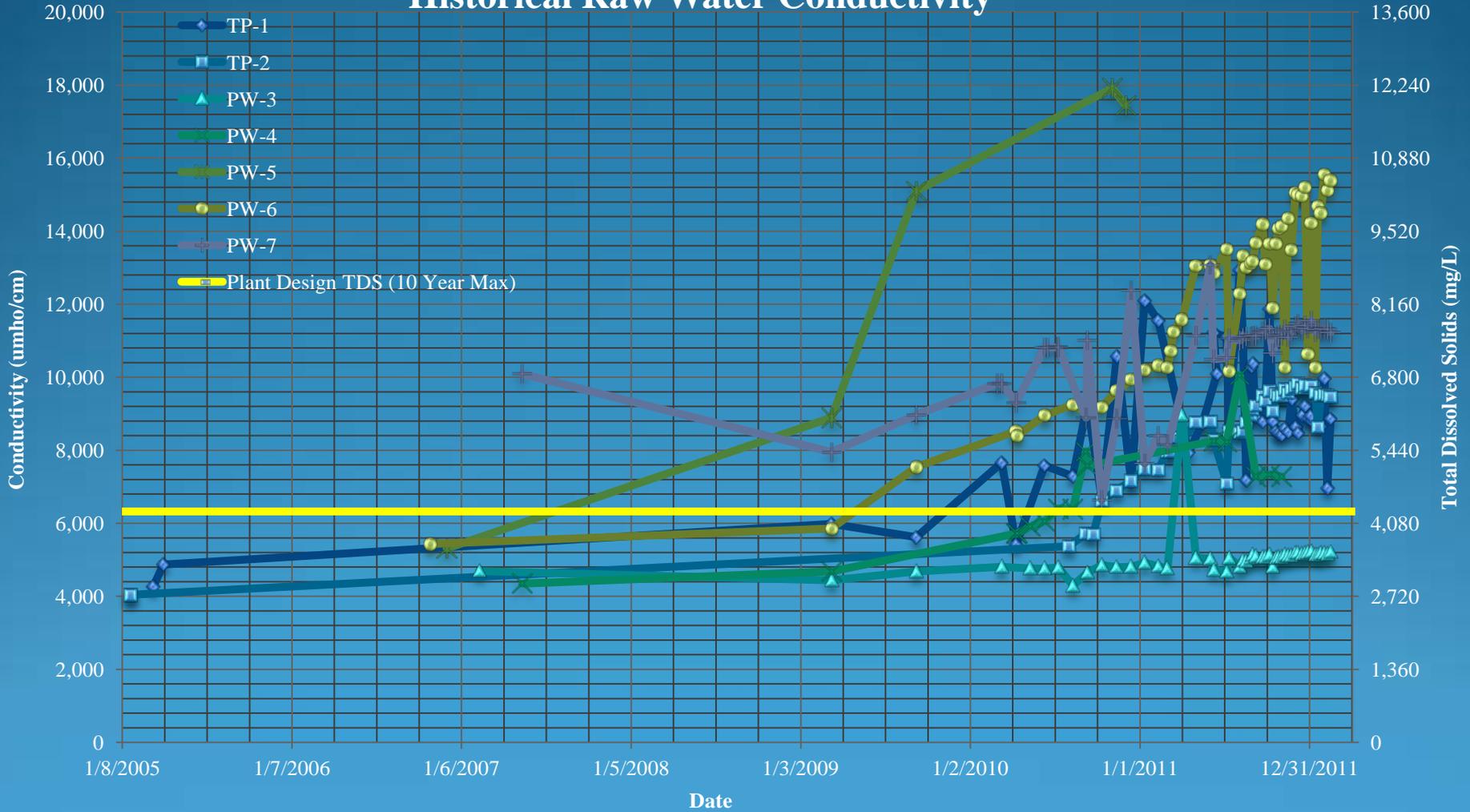
WATER AVAILABILITY RULE

- **Surficial Aquifer – Wells**
- **Floridan Aquifer**
- **Chloride Issues**



Chloride

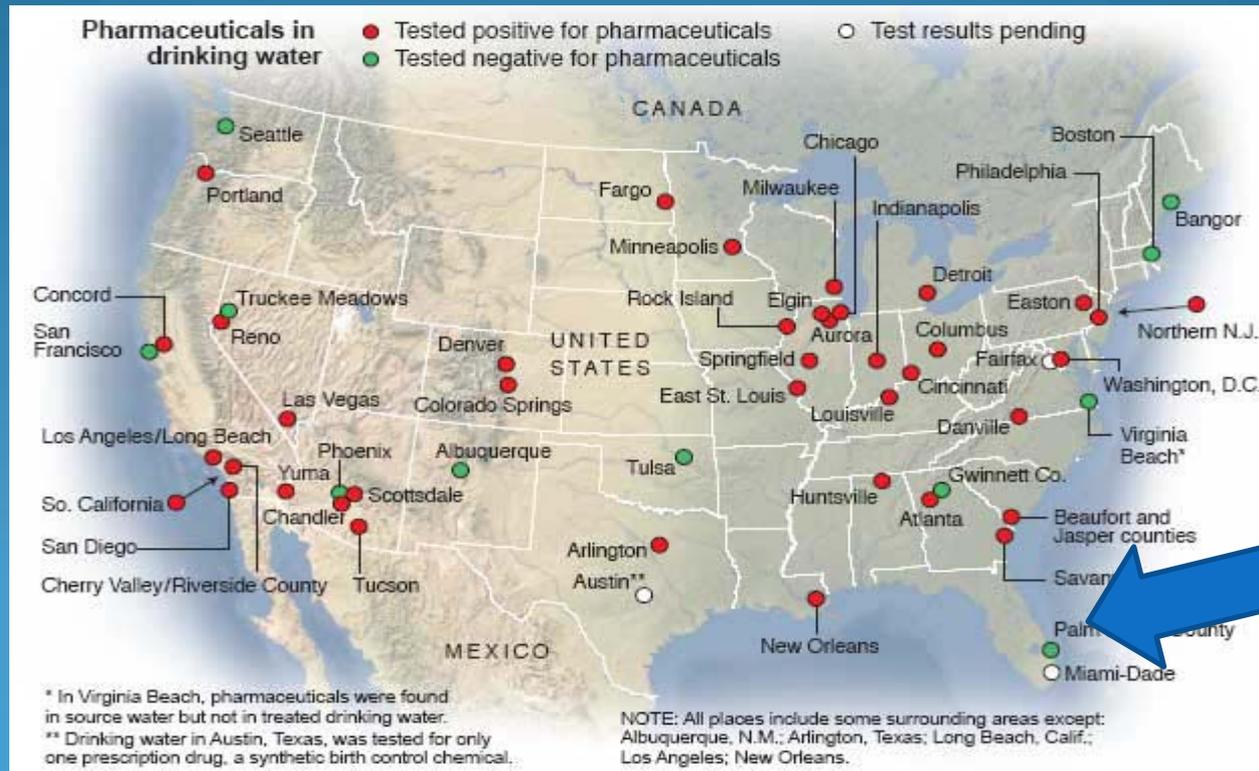
Lake Region Wells Historical Raw Water Conductivity





Emerging Contaminates

- 2008 study showed **NO** pharmaceuticals in drinking water





Technology

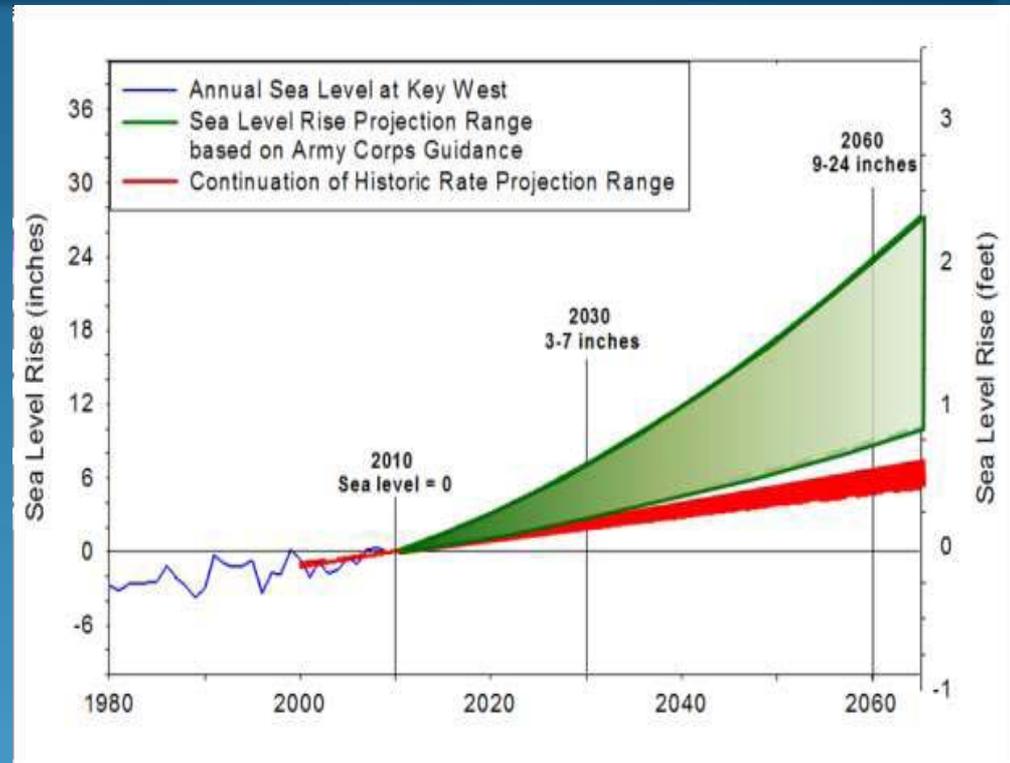
- Water Treatment
- Wastewater Treatment
- Energy Recovery
- Energy Conservation
- Asset Management Best Practices
- Computerized Maintenance Management System (CMMS)





CLIMATE CHANGE

- Develop strategies to respond to climate change impacts
- Participate in SE FL Regional Climate Change Compact
- Work on federal and state climate policies





Climate Change Areas Of Study

- **Temperature Impacts**
- **Rainfall Impacts**
- **Storms/Hurricanes Sea Level Rise**



WET WEATHER & FLOODING

- **Vulnerability of existing infrastructure**
- **Frequency & magnitude of extreme events**
- **Appropriate level of redundancy and safety factors**



QUESTIONS

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