



WATER REUSE WEEK



Water Reuse Week



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Governing Board Meeting
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sfwmd.gov



WHAT IS RECLAIMED WATER AND WATER REUSE?

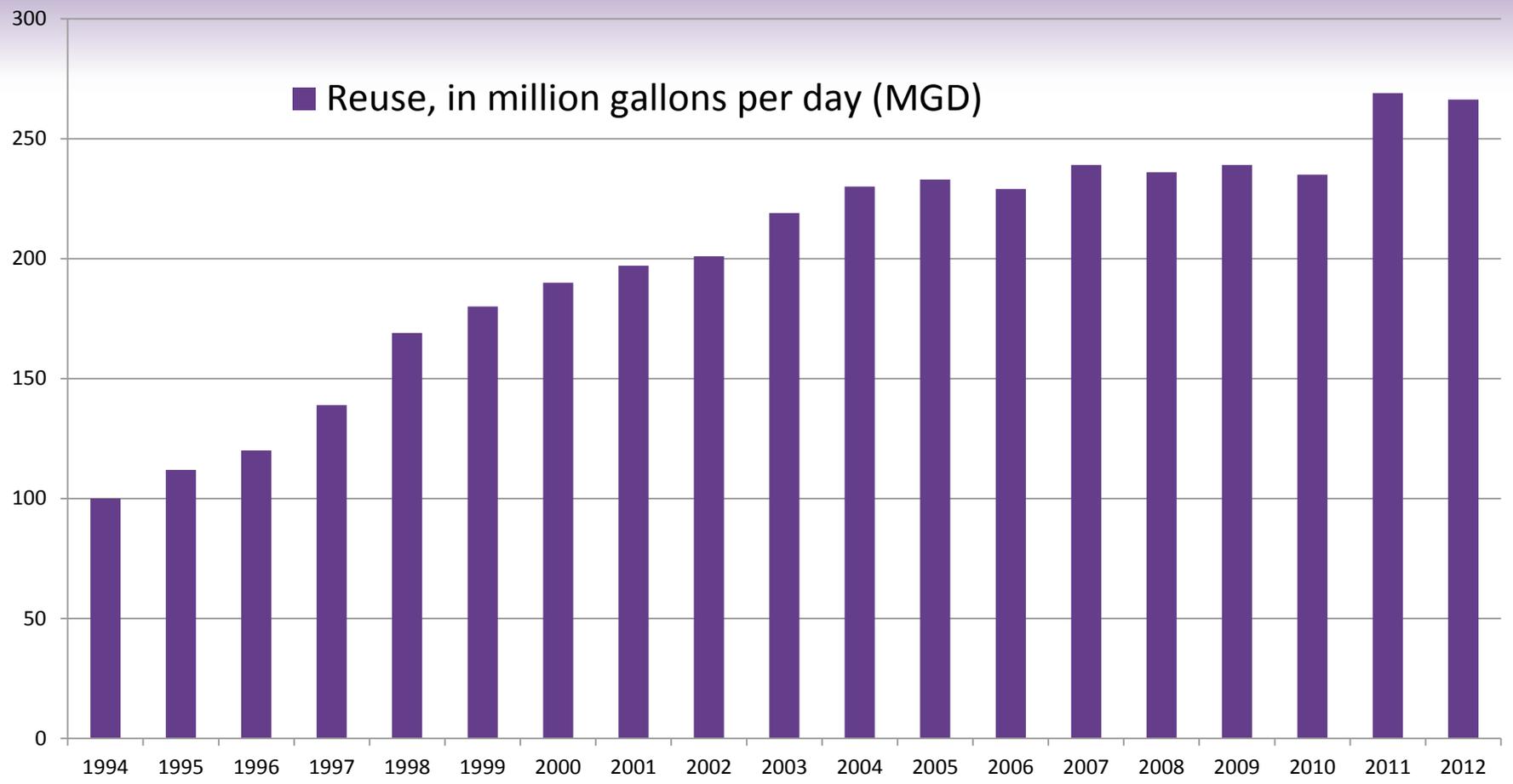


- **Water used more than once**
- **Treatment levels to match uses**
 - **Irrigation of residences, golf courses, parks, schools, etc.**
 - **Groundwater recharge**
 - **Industrial use**
 - **Environmental enhancement**
 - **Saltwater barrier**

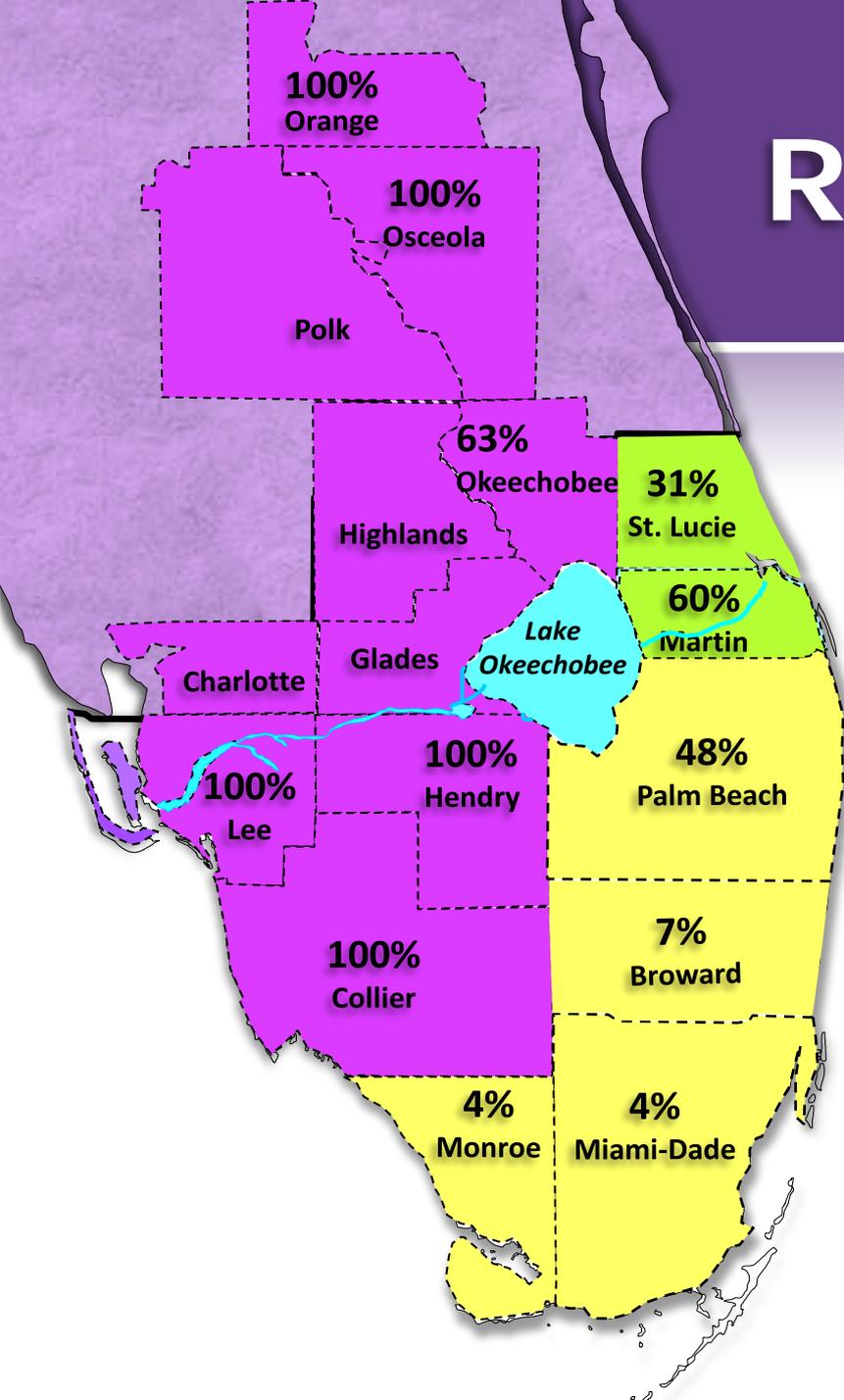




SFWMD'S REUSE HISTORY



REUSE BY REGION



- Reuse successes
- Waiting lists, greater efficiency
- Regionalization occurring
- Distribution extensions under way
- Palm Beach County has made significant headway
- Ocean outfall legislation



SFWMD INVESTMENT IN WATER REUSE

Water Reuse Week

FY97 – FY14:

- 257 water reuse projects funded
- \$99.4 M in approved funding
- \$576 M total phase construction cost
- 137 MGD of capacity created





EFFLUENT DISPOSAL

Water Reuse Week

2012 in the SFWMD:

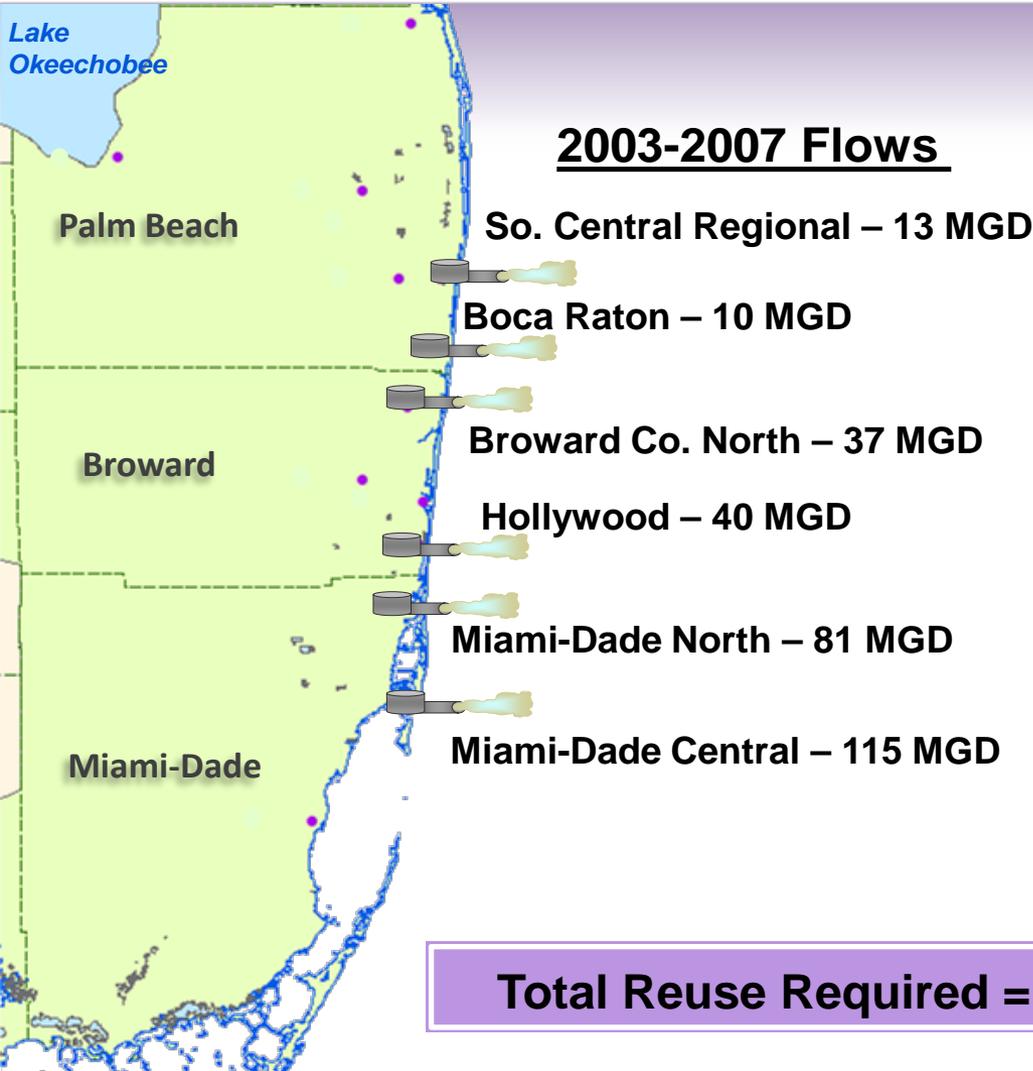
- **266 MGD Reused**

- **600 MGD Disposed**
 - **Ocean discharge**
 - **Deep well injection**





OCEAN OUTFALL LEGISLATION



■ 2008 legislation requires utilities with ocean outfalls to reuse 60 percent of discharge by 2025

■ Required water reuse by County:

■ Palm Beach: 14 MGD

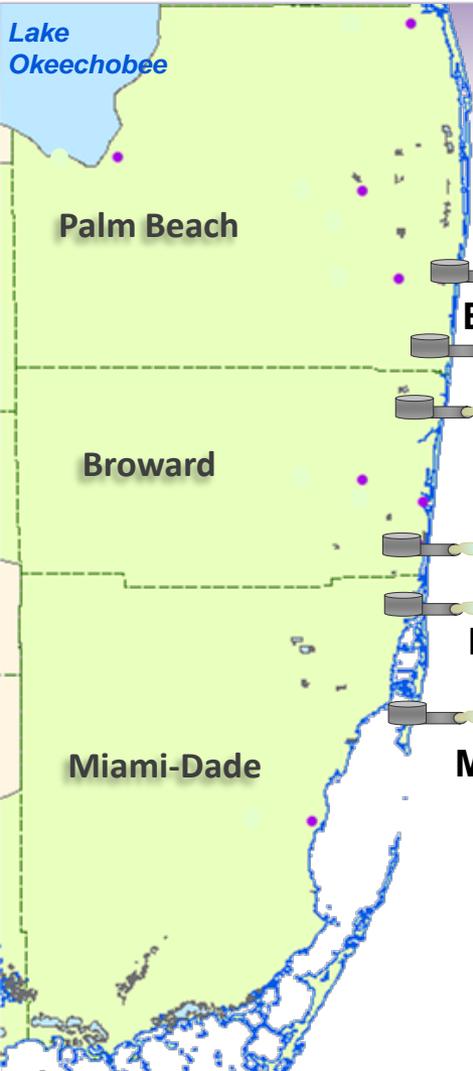
■ Broward: 44 MGD

■ Miami-Dade: 117 MGD

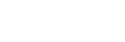
Total Reuse Required = 175 MGD



UPDATE - OCEAN OUTFALLS



So. Central Regional



Boca Raton

Broward Co. North

Hollywood

Miami-Dade North

Miami-Dade Central

Increase irrigation

Recharge Floridan Aquifer

FPL cooling water
Recharge Floridan Aquifer



2014 LEGISLATION

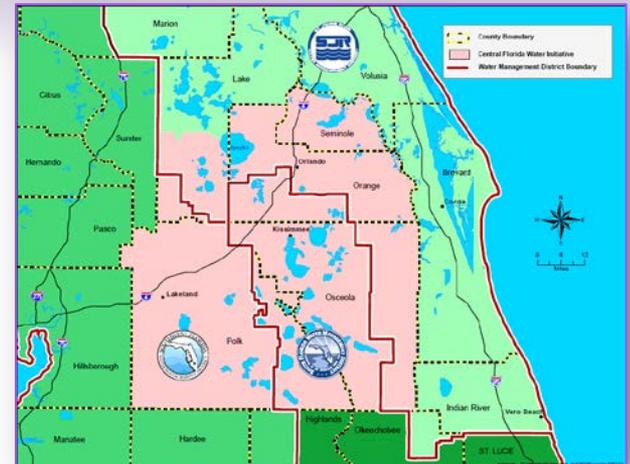
- **Reclaimed Water (SB536/HB601)**
 - **Conduct a study on the expansion of the beneficial use of reclaimed water, stormwater, and excess surface water**
 - **FDEP in coordination with the water management districts and stakeholders**
 - **Due December 1, 2015**





WATER REUSE IN THE CFWI

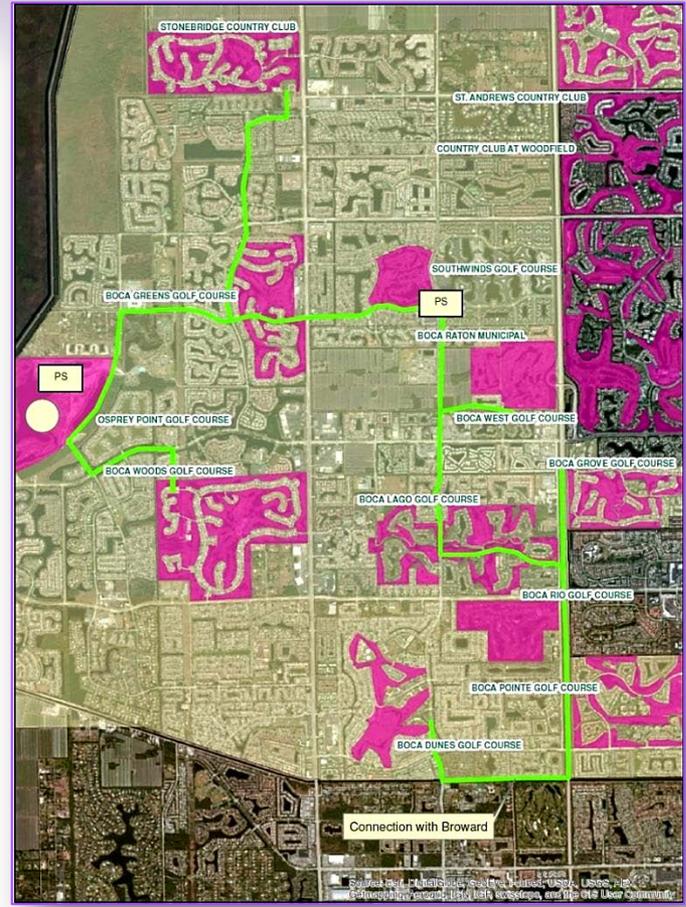
- **Central Florida Water Initiative (CFWI)**
 - **Water reuse is an integral part of the water resources in the region**
 - **A Reclaimed Water Sub-Team has been formed to help address long-term water resources issues**
 - **Irrigation to reduce well pumpage**
 - **Rapid infiltration basins for aquifer recharge**





BROWARD-PALM BEACH COUNTY COOPERATION

- **Broward County**
 - Required to reuse water per the Ocean Outfall Program
 - Limited demand for reuse in the area
- **Palm Beach County**
 - Significant demand for reuse in south county
 - Currently unable to service that area
- **Joint project to maximize reuse**





WATERREUSE ASSOCIATION

- An international, nonprofit organization whose mission is to advance the beneficial and efficient uses of high-quality, locally produced, sustainable water sources for the betterment of society and the environment through advocacy, education and outreach, research, and membership
- A local presence in the organization
 - Melissa Meeker – Executive Director
 - Blake Guillory – Board of Directors
 - Randy Brown (Pompano Beach) – Treasurer, Potable Reuse Committee
 - Mark Elsner – Secretary/Treasurer (WaterReuse Florida)



WATERREUSE RESEARCH FOUNDATION

- An educational, non-profit foundation that focuses on conducting peer-reviewed research required to advance the science of water reuse, recycling, reclamation, and desalination
- Some of their key research:
 - Nutrient marker study (Florida based)
 - Potable Reuse Initiative
 - Public perception and acceptance of direct potable reuse





INNOVATIVE PROJECTS INTERNATIONAL

Singapore - NeWater

- High population, limited land
- First facility completed in 2000
- Membrane technology and UV disinfection
- Reclaimed water is used to supplement their water supply reservoir





INNOVATIVE PROJECTS

INTERNATIONAL

Australia

- Spurred by catastrophic drought
- Western Corridor Recycled Water Project (Brisbane)
 - Purified wastewater augments a drinking water reservoir
- Groundwater Replenishment Scheme (Perth)
 - Purified wastewater recharges drinking water aquifer

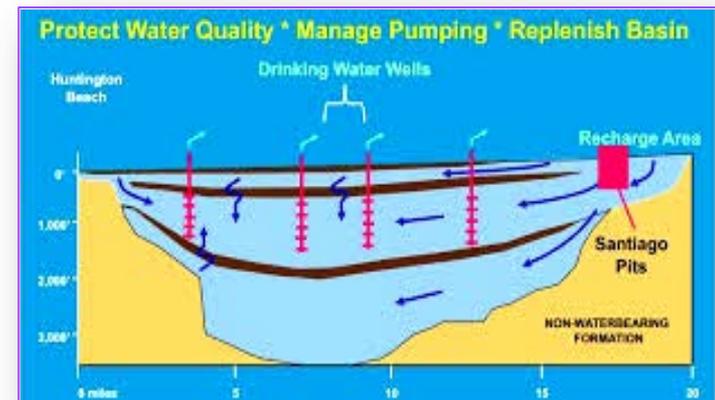




INNOVATIVE PROJECTS UNITED STATES

California – Orange Co.

- **Groundwater Replenishment System**
 - **Wastewater was previously discharged to the Pacific Ocean**
 - **Reclaimed water is injected into the aquifer to be recovered a distance away by drinking water wells**





INNOVATIVE PROJECTS UNITED STATES



California – Los Angeles

- **West Basin Municipal Water District**
 - The facility produces five different qualities of "designer" or custom-made recycled water that meet the unique needs of their municipal, commercial and industrial customers
 - Reclaimed water is also injected into the aquifer as a salt-water intrusion barrier



INNOVATIVE PROJECTS

UNITED STATES

California – San Diego

- **San Diego Potable Reuse Project**
 - **Reclaimed water will be piped 22 miles to the San Vicente Reservoir where it will augment drinking water supplies**





INNOVATIVE PROJECTS

UNITED STATES

Texas

■ Big Spring

- Small system in west Texas
- Reclaimed water to recharge the reservoir at the drinking water treatment facility



■ Wichita Falls

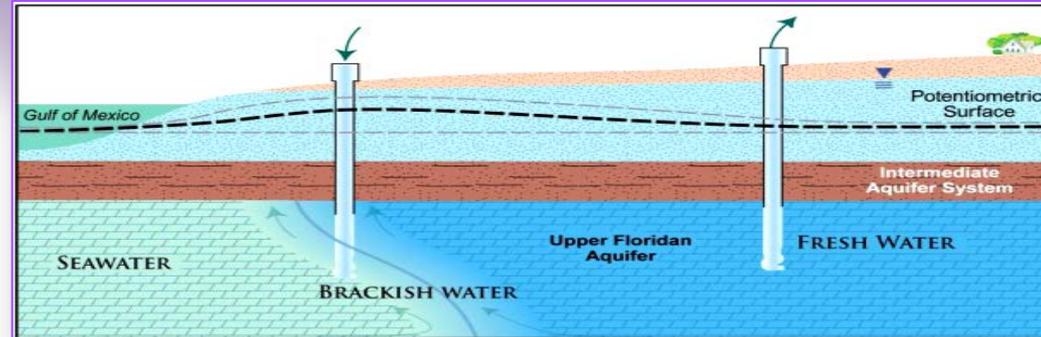
- Driven by drought
- Recently built a 13 mile emergency pipeline to connect their wastewater treatment facility to their water treatment facility
- Approximately 40 to 50 percent of their drinking water will come from highly treated wastewater





INNOVATIVE PROJECTS UNITED STATES

Florida



■ Hillsborough County SHARP Project

- South Hillsborough Area Recharge Project (SHARP)
- Reduce discharge of treated wastewater to Tampa Bay
- Use the reclaimed water to recharge the aquifer
- Reduce saltwater intrusion
- Obtain credit for increased pumping of inland wells



URBAN WATER REUSE

Florida

- **Tampa's STAR Project**
 - **Situated in a highly-developed area**
 - **Challenges included directional boring under water bodies**
 - **Perhaps a good role model for water reuse in highly developed areas of southeast Florida**





CLOSER TO HOME...

Palm Beach County Water Utilities Department

- Reclaimed water delivered to a diversified range of customers
 - Wakodahatchee and Green Cay Wetlands (western Delray and Boynton Beach)
 - Irrigation water to 13,000 residences, golf courses, parks, and schools
 - FPL West County Energy Center





IN SUMMARY

Currently: District-wide

- More than 260 million gallons per day of reclaimed water is reused in our District
- Irrigation water to more than 127,000 residences
- 199 golf courses, 269 parks, 74 schools, wetlands, power plants, etc.
- This is water that would have otherwise been supplied by traditional, and often limited sources of water



IN SUMMARY

Future

- Increase in reclaimed water with increasing population
- Disposal ↓ Reuse ↑
- Potable reuse?
- Aquifer recharge, salt-water barriers
- Necessity is the mother of reclamation





GOVERNING BOARD RESOLUTION



The Governing Board of the South Florida Water Management District hereby supports designating **May 18-24, 2014 as **WATER REUSE WEEK** in Florida and encourages all local governments and utilities to endorse and implement water reuse programs and all citizens and businesses to help protect our precious water resources by practicing water conservation, use water more than once and to use reclaimed water in an efficient and effective manner.**

Use it Again, South Florida!

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