

*2012 Lower East Coast
Water Supply Plan Update
WORKSHOP #3
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Water Reuse

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What is Reclaimed Water?

- **Wastewater that has received at least secondary treatment and basic disinfection**
 - Reused after flowing out of a domestic wastewater treatment facility
- **“Reuse” means the deliberate application of reclaimed water, in compliance with DEP and SFWMD rules, for a beneficial purpose**
 - Criteria used to classify projects as “reuse” or “effluent disposal” are contained in Rule 62-610.810, F.A.C.



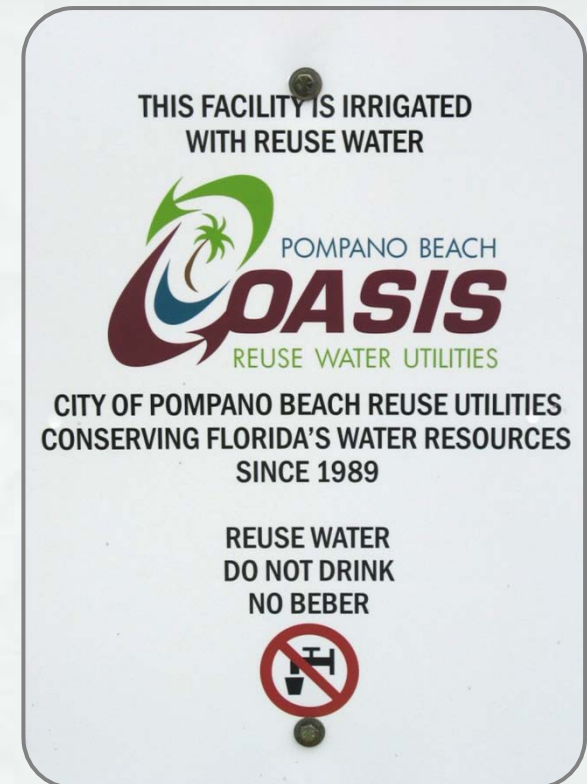
Types of Water Reuse



- **Slow-rate land application**
(e.g., irrigation)
- **Rapid-rate land application**
(e.g., rapid infiltration basins)
- **Industrial applications**
(e.g., cooling water)
- **Ground water recharge**
(e.g., recharge wells)
- **Indirect potable reuse**
(officially none in the State)
- **Wetlands creation, restoration and enhancement**
- **Other uses such as toilet flushing, fire protection, construction dust control, aesthetic purposes and recreational uses**

Reclaimed Water – Its Role in the LEC Water Supply Plan

- Reduces reliance on regional water resources
- Conserves resources and is an environmentally sound alternative to traditional disposal methods, such as ocean outfall or deep well injection
- Potential credits or offsets could result in increased water availability

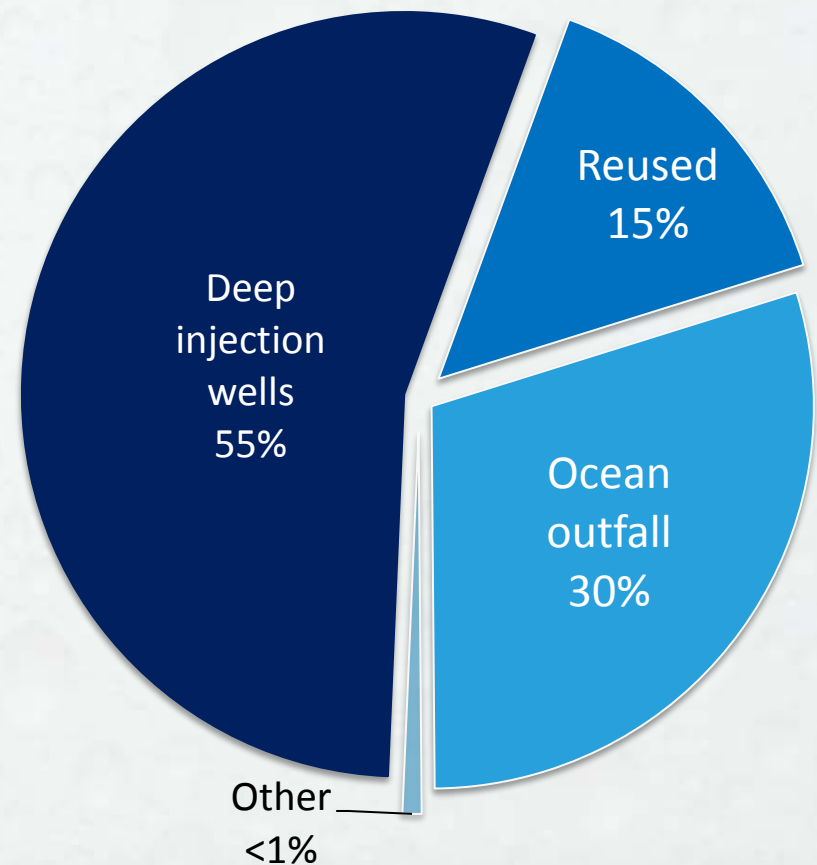


Current State of Reuse in the LEC Planning Area

In the LEC 2011:

- Wastewater ~590 MGD
- Reused ~89 MGD
- Disposed ~500 MGD

Wastewater Disposal



Source: FDEP, 2011

Water Reuse in the LEC

Reclaimed water is used primarily for irrigation...

- 19,934 residences
- 58 golf courses
- 47 parks
- 13 schools

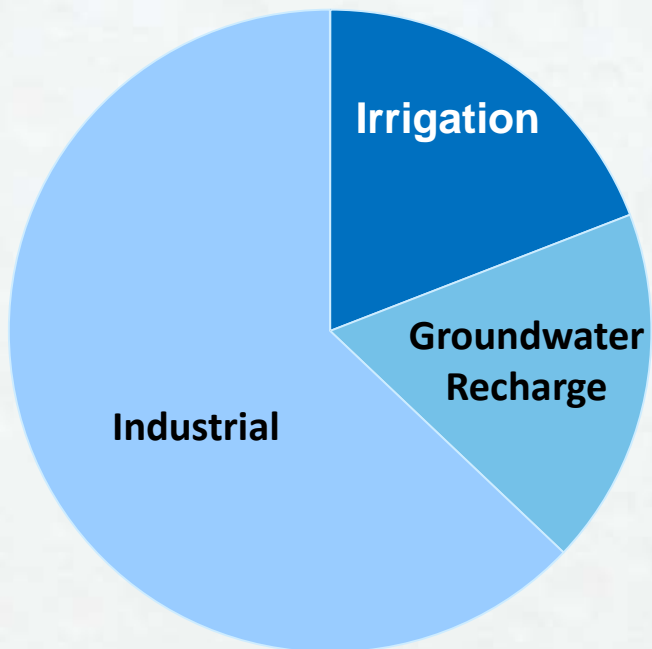


But is also used for other applications...

- Cooling water (FPL)
- Wetland hydration
- Processes at WWTPs

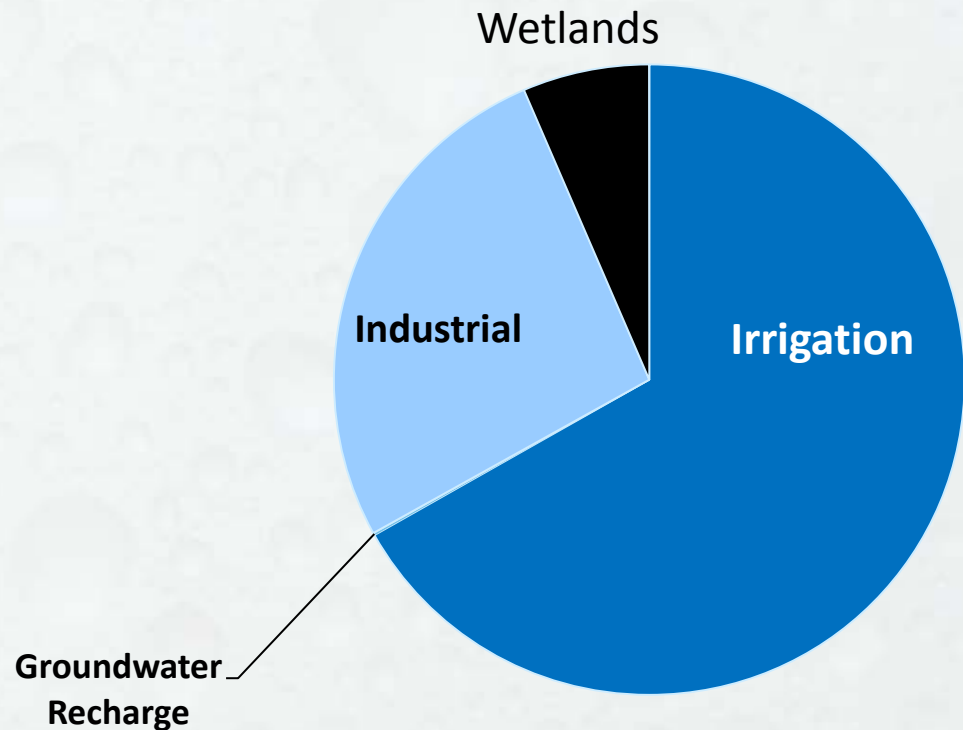
How is Water Reused in the LEC?

**Broward, Miami-Dade,
Monroe Counties**



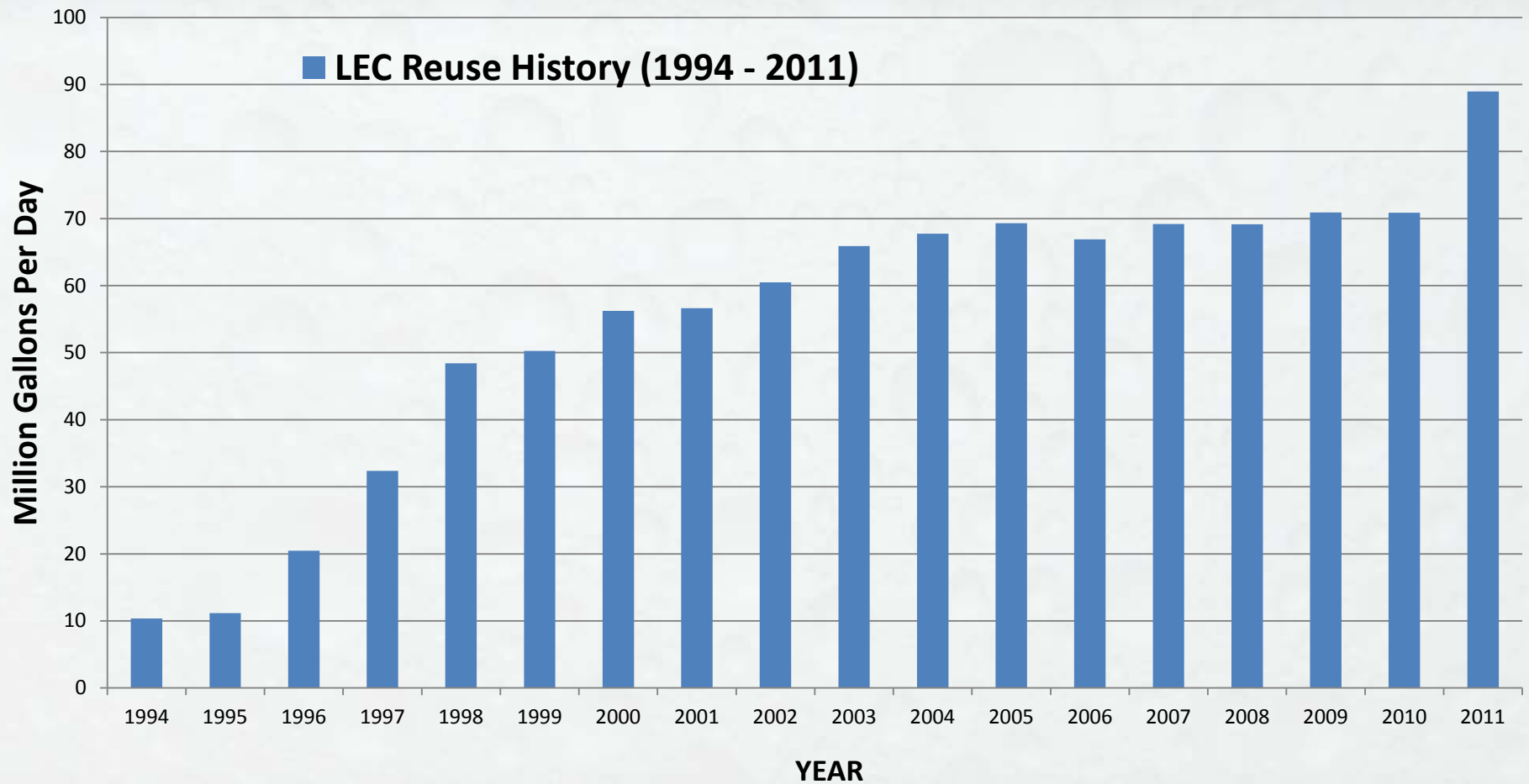
6% Reuse (27 MGD)

Palm Beach County



54% Reuse (62 MGD)

LEC Reuse History (1994-2011)



Sources: FDEP Reuse Inventories, 1994 - 2011

Loxahatchee River District

- Reused an average of 8.2 MGD in 2011
- Primarily for irrigation
(14 golf courses, 14 parks, 3 schools, and over 4,400 residences)
- Uses concentrate from the Town of Jupiter for supplementation of reclaimed water
- Reuses treated wastewater to protect the Loxahatchee River and eliminate harmful discharges



Palm Beach County Water Utilities

- Southern Regional facility reused an average of 16.8 MGD in 2011 (9 golf courses, 2 parks, 1 school, and over 6,000 residences)
- Mandatory Reuse Zone established to promote reuse of water
- Successful use of reclaimed water to hydrate created wetlands
- Now sending almost 20 MGD to FPL for cooling water



Pompano Beach Utilities

- Pompano Beach diverts some wastewater from Broward County's ocean outfall pipeline and treats it to reclaimed water standards
- Reused an average of 1.5 MGD in 2011
- Primarily for irrigation
(2 golf courses, 5 parks, road medians, and over 90 residences)



Miramar Utilities

- Reused 2.3 MGD in 2011
- Primarily for irrigation
(2 parks, 2 schools, road medians,
and over 760 residences)
- By providing reclaimed water for irrigation, the City was able **to retire permits and increase their water use permit allocation**



Duck Key – Florida Keys Aqueduct Authority

- Small system (0.11 MGD capacity)
- Additional infrastructure will provide reclaimed water to residential and commercial customers
- Primarily for irrigation
- Reduces disposal of wastewater directly into shallow injection wells

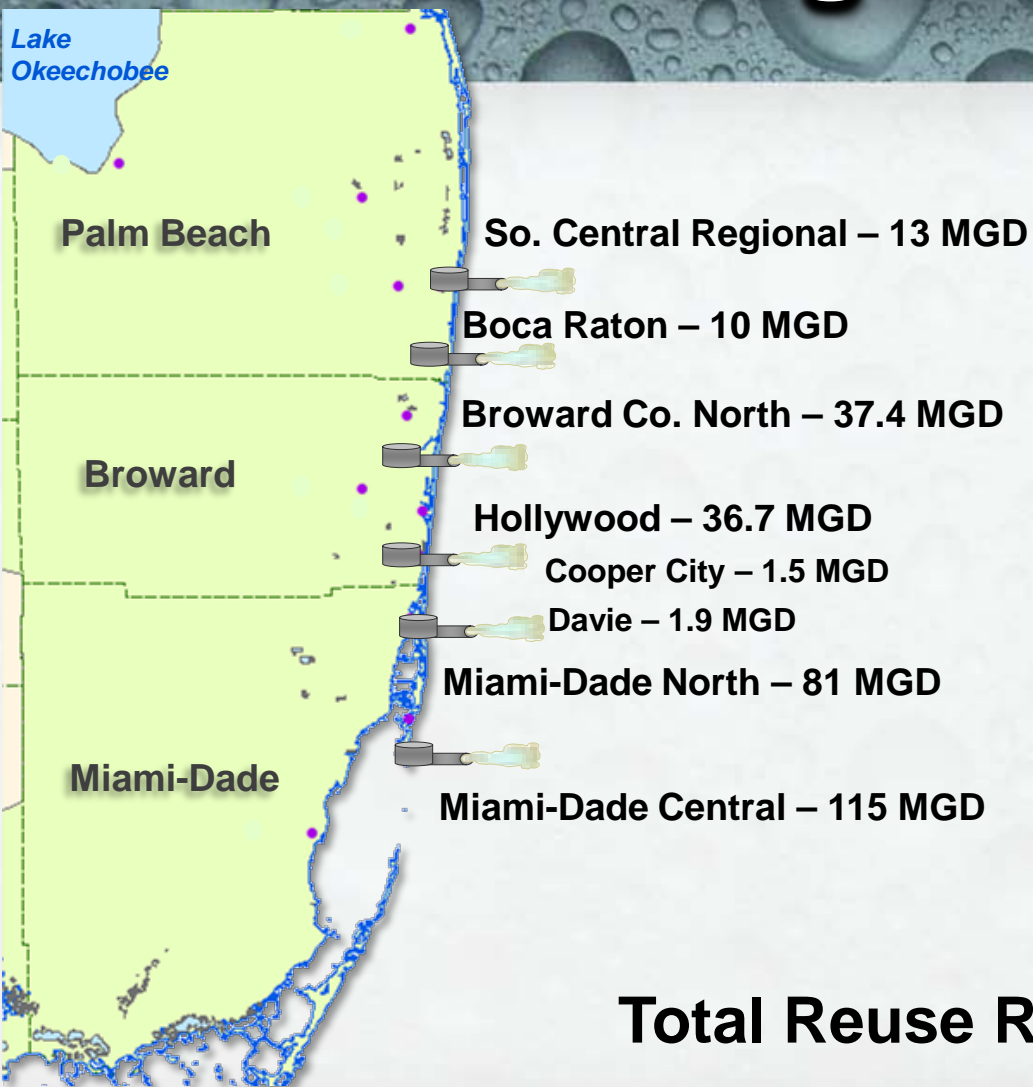


2008 Ocean Outfall Legislation



- Requires a reduction in flow/nutrients to the ocean by 2018
- Requires utilities to reuse 60 percent of discharge by 2025
- Requires utilities to submit a plan by July 2013

2008 Ocean Outfall Legislation (cont.)

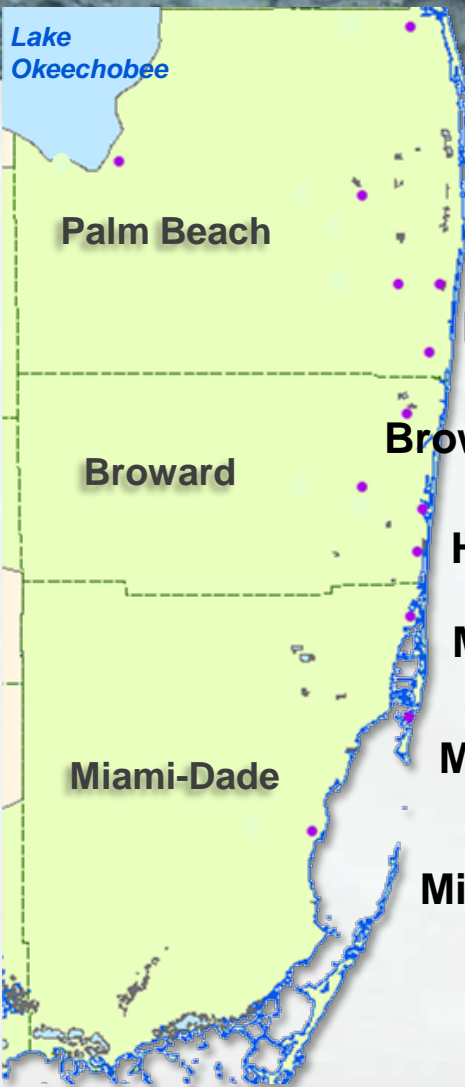


REQUIRED WATER REUSE BY 2025

- Palm Beach: 14 MGD
- Broward: 47 MGD
- Miami-Dade: 117 MGD

Total Reuse Required = 178 MGD

2008 Ocean Outfall Legislation (cont.)



Current plans to meet the 60% reuse requirement

So. Central Regional - increased irrigation

Boca Raton - increased irrigation

Broward Co. North – increased irrigation in N. Broward and S. Palm Beach

Hollywood – recharge of the Upper Floridan aquifer

Miami-Dade North

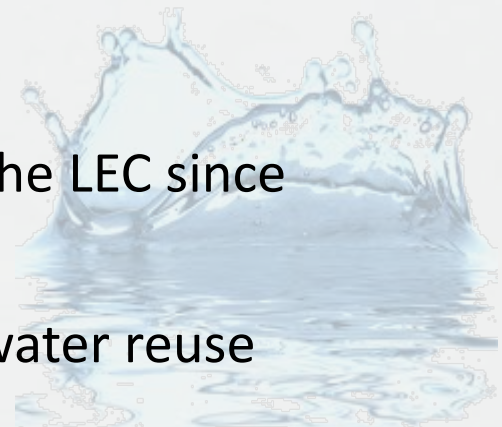
Miami-Dade Central

Miami-Dade South

**recharge of the Upper Floridan aquifer
and FPL cooling water**

Issues and Incentives for Water Reuse

- Daily, seasonal and annual fluctuations in supply and demand
- Means to optimize use of reclaimed water
 - increased storage, supplementation, and/or interconnects
- Coordination between utilities, end users, and SFWMD
- Potential Credits/Offsets for water reuse
- Mandatory Reuse Zones as an option
- Alternative Water Supply Funding
 - over \$37 million in funding for 101 projects in the LEC since 1997
- Numeric Nutrient Criteria – unknown impact on water reuse



Future of Reclaimed Water in the LEC

- Reclaimed water is expected to continue as an integral part of the water resources in the Lower East Coast Planning Region
- “Mature” water reuse systems will continue to optimize the use of reclaimed water
- Growing water reuse systems will focus on reducing disposal through ocean outfalls and deep-well injection, while maximizing the use of reclaimed water



COMING UP

