



Lower West Coast Water Supply Plan Water Source Options

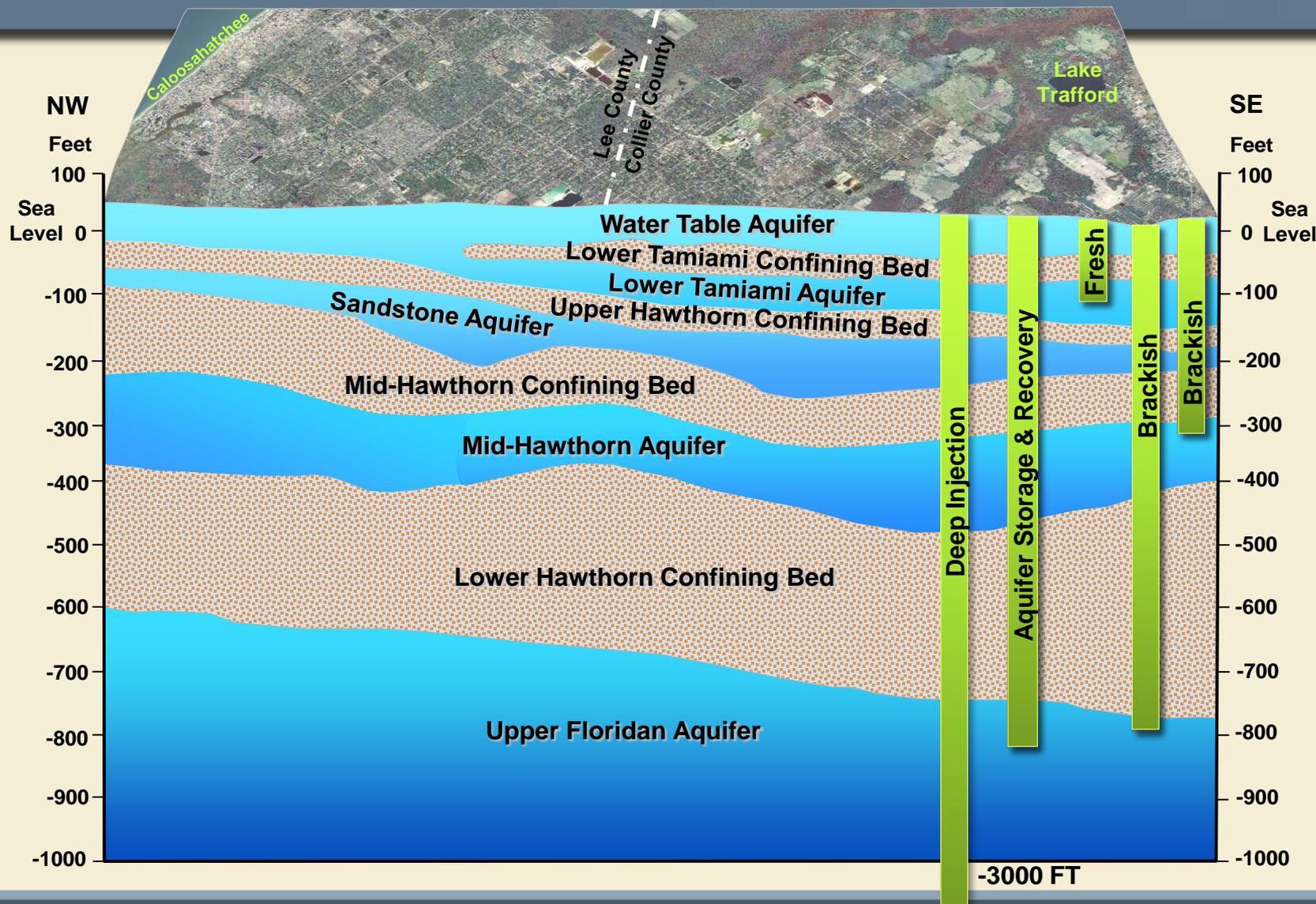
**Mark Elsner, P.E., Administrator
Water Supply Development Section**

**LWC Plan Update – WRAC Issues Workshop # 4
SFWMD Big Cypress Basin Facility, Naples, FL
SFWMD Regional Service Center, Ft. Myers, FL
April 4, 2012**

Water Source Options



LWC General Hydrogeologic Cross Section



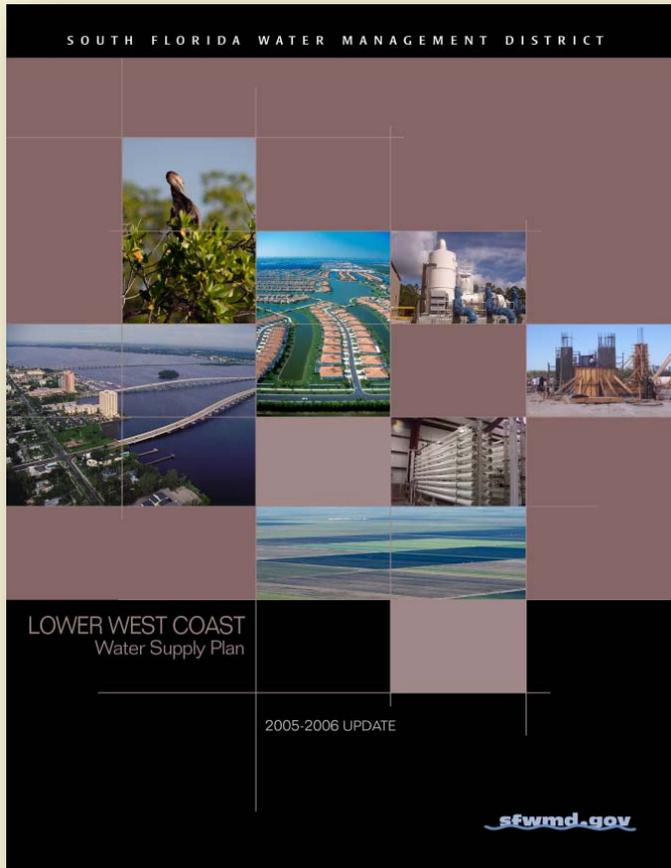
2006 Lower West Coast Water Supply Plan

Plan Conclusion

The needs of the region can continue to be met with **appropriate management and diversification** of water supply sources through 2025

■ *LWC Region Progress*

- 41% of water treatment capacity is reverse osmosis using brackish water sources
- 91% of wastewater is reused



Public Water Supply – 2006 LWCWSP for 2025

■ Public Water Supply

- Continued use of **fresh water aquifers**
- In many areas, especially coastal areas fresh water aquifer withdrawals maximized
 - ▶ Additional water on a case-by-case basis
- Increased use of **Floridan aquifer**
- Look for opportunities for increased efficiency through water **conservation**
- Increase fresh water availability through **Aquifer Storage & Recovery** where appropriate



Landscape Irrigation – 2006 LWCWSP for 2025

■ Landscape Irrigation

- Continued use of **fresh water aquifers**
- In many areas, especially coastal areas fresh water aquifers withdrawals maximized
 - ▶ Additional water on a case-by-case basis
- Increased use of **reclaimed water**, especially in areas where fresh water aquifers are maximized
- Look for opportunities for increased efficiency through water **conservation**



Agricultural Irrigation – 2006 LWCWSP for 2025

■ Agricultural Irrigation

■ Continued use of surface water and fresh water aquifers

- ▶ Increases in storage via CERP project and other options should enhance surface water availability
- ▶ Look for opportunities for increased efficiency through water conservation and Best Management Practices (BMPs) Program

■ Stormwater retention/tailwater recovery where possible



Natural Resources – 2006 LWCWSP for 2025

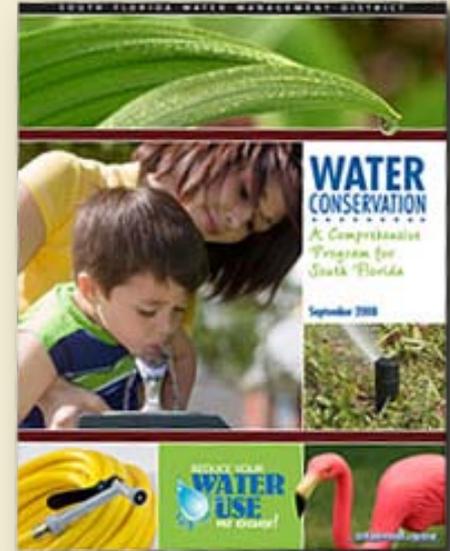
■ Natural Resources

- **Implementation of surface water storage projects will improve water resource management**
 - ▶ CERP Caloosahatchee River West Basin Reservoir Project
- **Established Minimum Flows and Levels to protect resources from significant harm**



Conservation

- **Public Water Supply**
 - Year-round rule savings
 - Utility specific projects
 - Conservation potential
 - ▶ Use Conserve Florida EZ Guide
- **Case studies**
 - ▶ Cost of Conservation vs other sources
 - ▶ Utility highlights



LWCWSP Selected Per Capitas

Plan/Base Year Used	1994 Plan (1990)	2000 Plan (1995)	2006 Plan (2000)	2011 Plan (2005)
Collier	227	197	185	176
Marco Island	517	522	470	428
Naples	348	350	321	260
Cape Coral	171	117	135	101
Lehigh	92	59	101	113
Ft. Myers	143	148	140	133
Island Water	541	458	493	377
Lee County	135	116	118	121
LWC Planning Area	194	167	176	151

Conservation (continued)

Golf Courses

- **Inventory courses and irrigated acreages**
 - Existing conservation measures
 - Efficient Irrigation Systems
 - weather stations
 - rain sensors
 - Irrigation controllers
 - salt tolerant turf (when applicable)



Agriculture

- **Enrollment in BMP Program & implementation**



Reclaimed Water

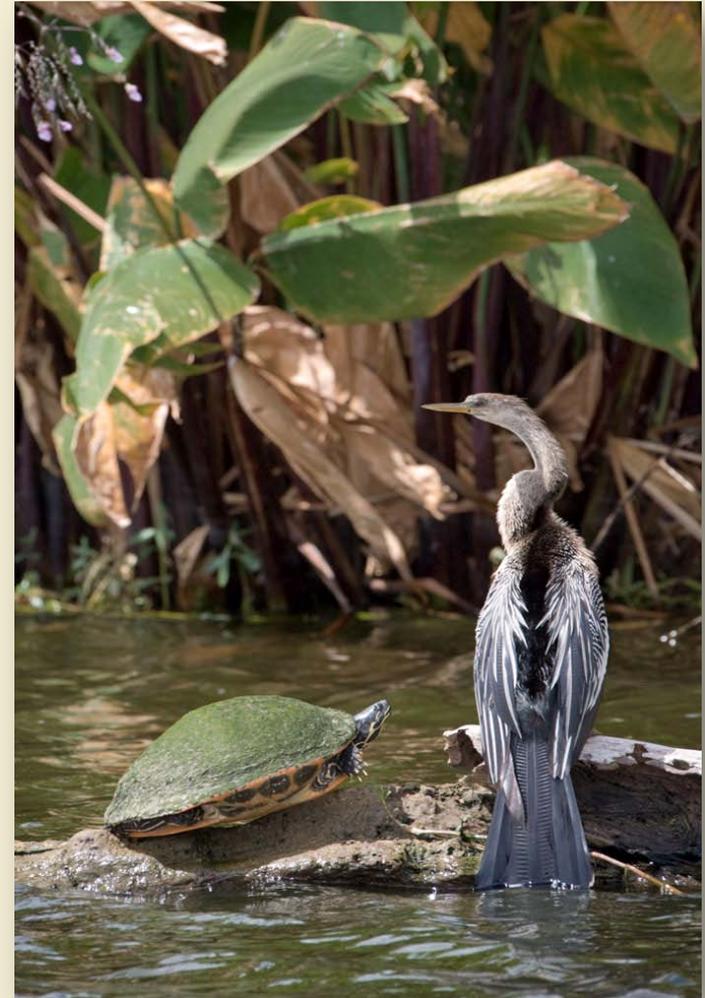
Partner with wastewater utilities to:

- **Estimate potential reclaimed water availability in 2030**
- **Identify current flows, uses and location of facilities**
- **Identify future flows, uses and projects**
- **Efficiency**



Surface Water

- **Big Cypress Basin**
 - Surface water storage through canal system
 - Estimated 850 acre-feet of additional surface water storage in canal system since 2000
- **Cape Coral**
- **East County Water Control District**



Floridan Aquifer

- Review previous LWC Water Supply Plans & analysis
- Review current water use permits
- Review water quality data
- 41% of water treatment capacity is reverse osmosis using brackish water sources

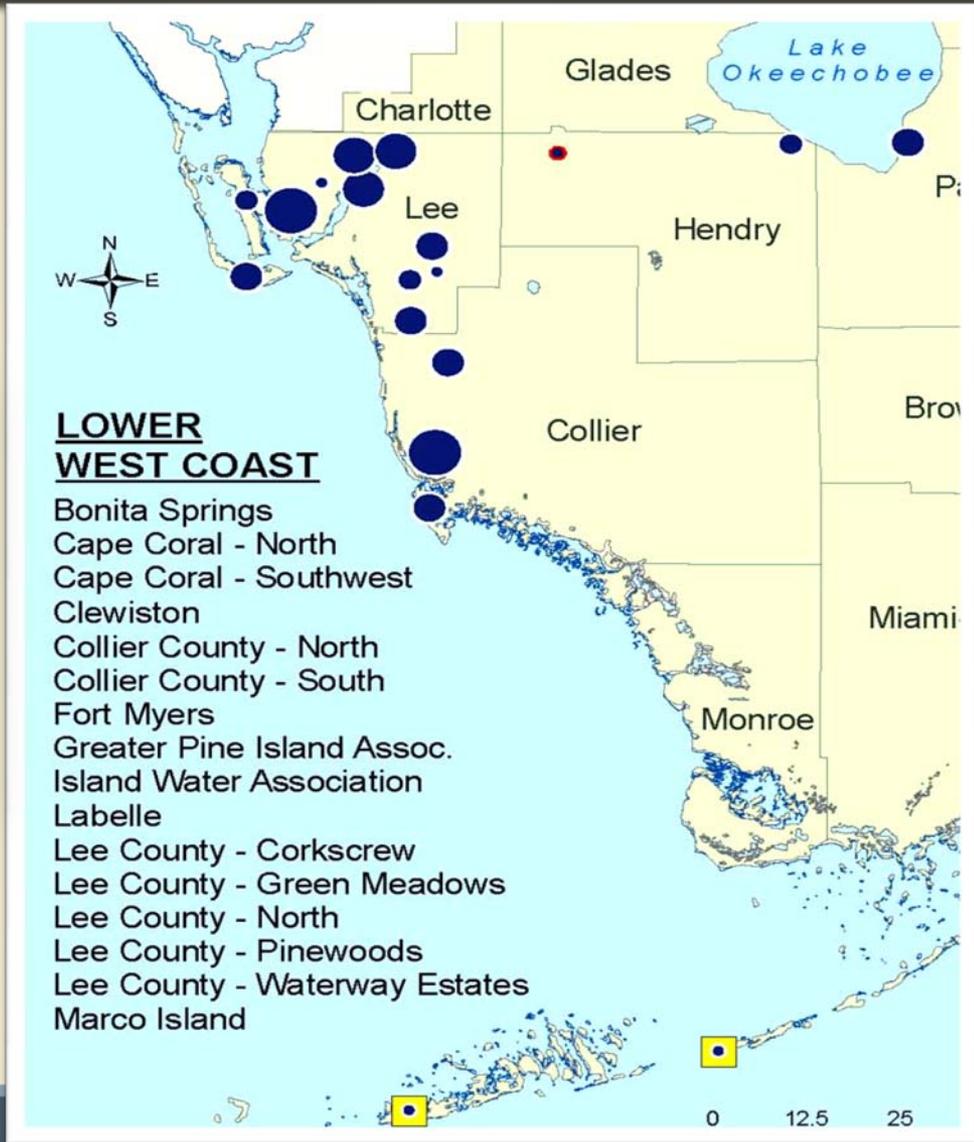


LWC 2012

Potable Water Desalination Plants

Desalination Facilities by MGD

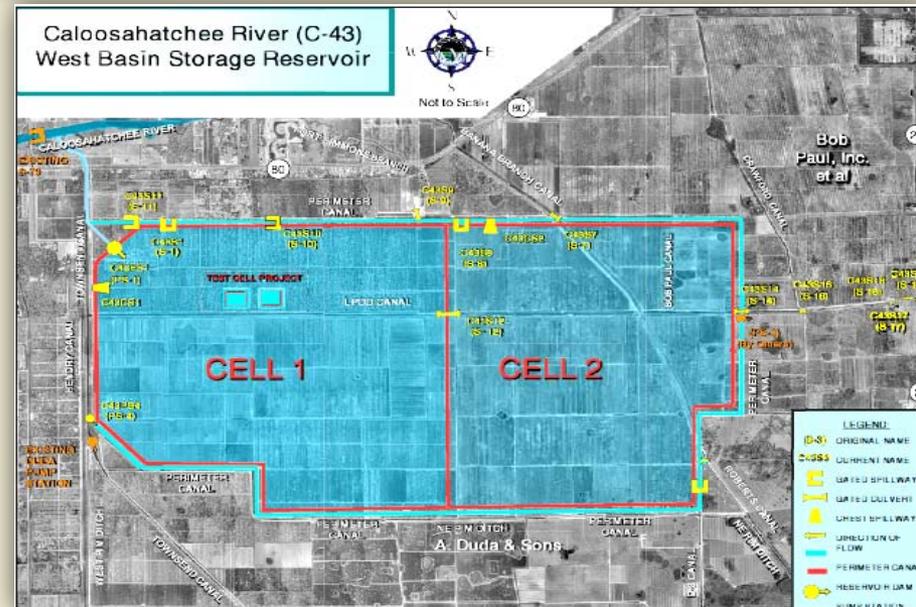
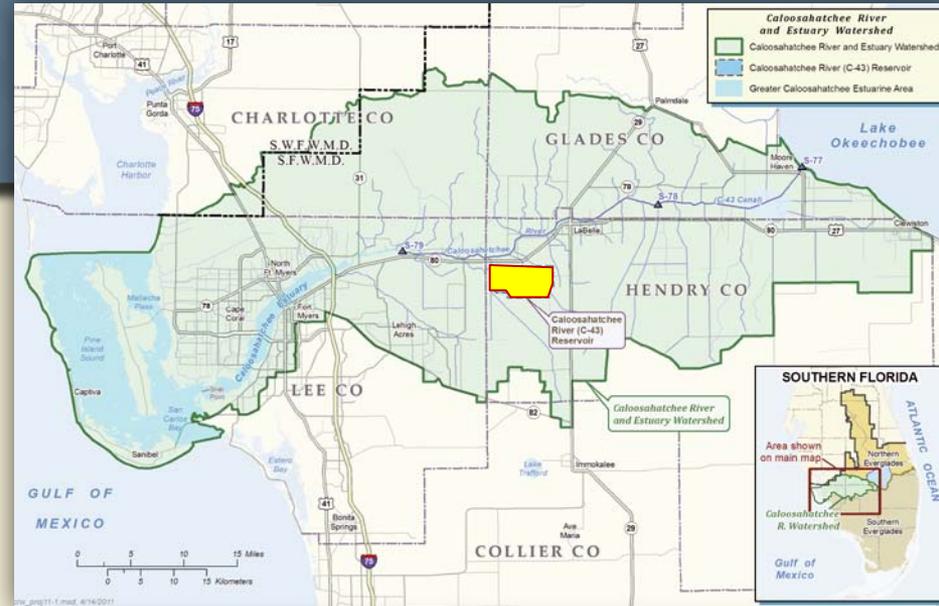
- 0 - 2
- 2 - 5
- 5 - 10
- 10 - 15
- 15 - 25
- Under Construction
- Seawater



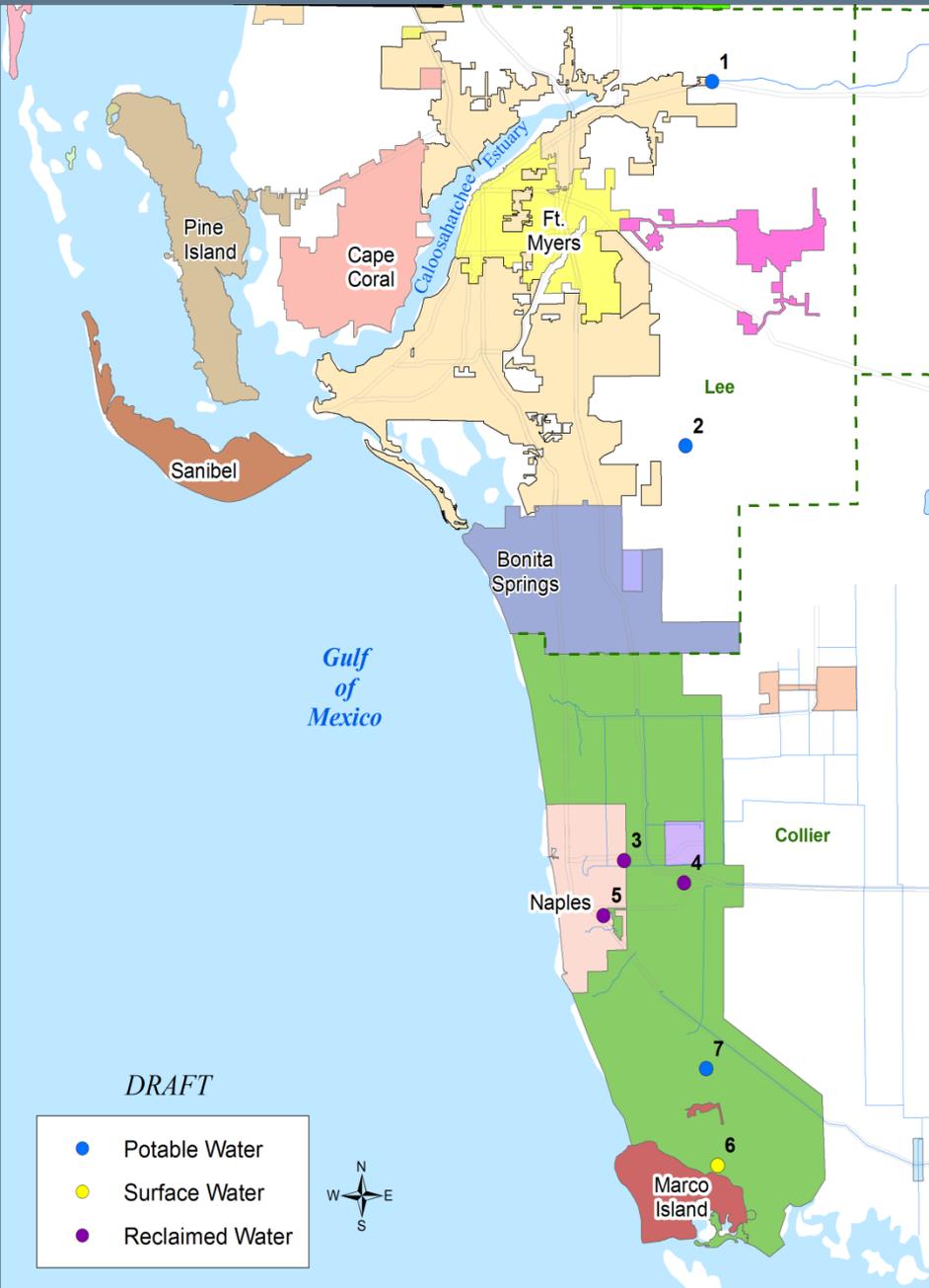
Reservoirs

CERP Caloosahatchee River (C-43) West Basin Storage Reservoir

- 170,000 acre-feet storage
- Capture and store stormwater runoff from the C-43 Basin and Lake Okeechobee
- Submitted to Congress
 - ▶ April 2011



LWC Utility Aquifer Storage & Recovery Systems



1. Lee Co. – Olga

2. Lee Co. – Corkscrew

3. Club Pelican Bay*

4. Collier Co. – Livingston Rd.*

5. Naples*

6. Marco Lakes

7. Collier Co. – Manatee Rd.

* Under construction/operational testing

Marco Island System

- The largest in SFWMD
- 7 wells, 9 MGD capacity, since 1997
- Arsenic not a problem
- 1.7 billion gallons currently stored
- Treated surface water, pumped to ~750' below land surface



Funding

Alternative Water Supply Funding Program

- **FY97-FY12 Lower West Coast**
 - 158 projects funded
 - \$73 M allocated
 - 161 MGD of new water capacity

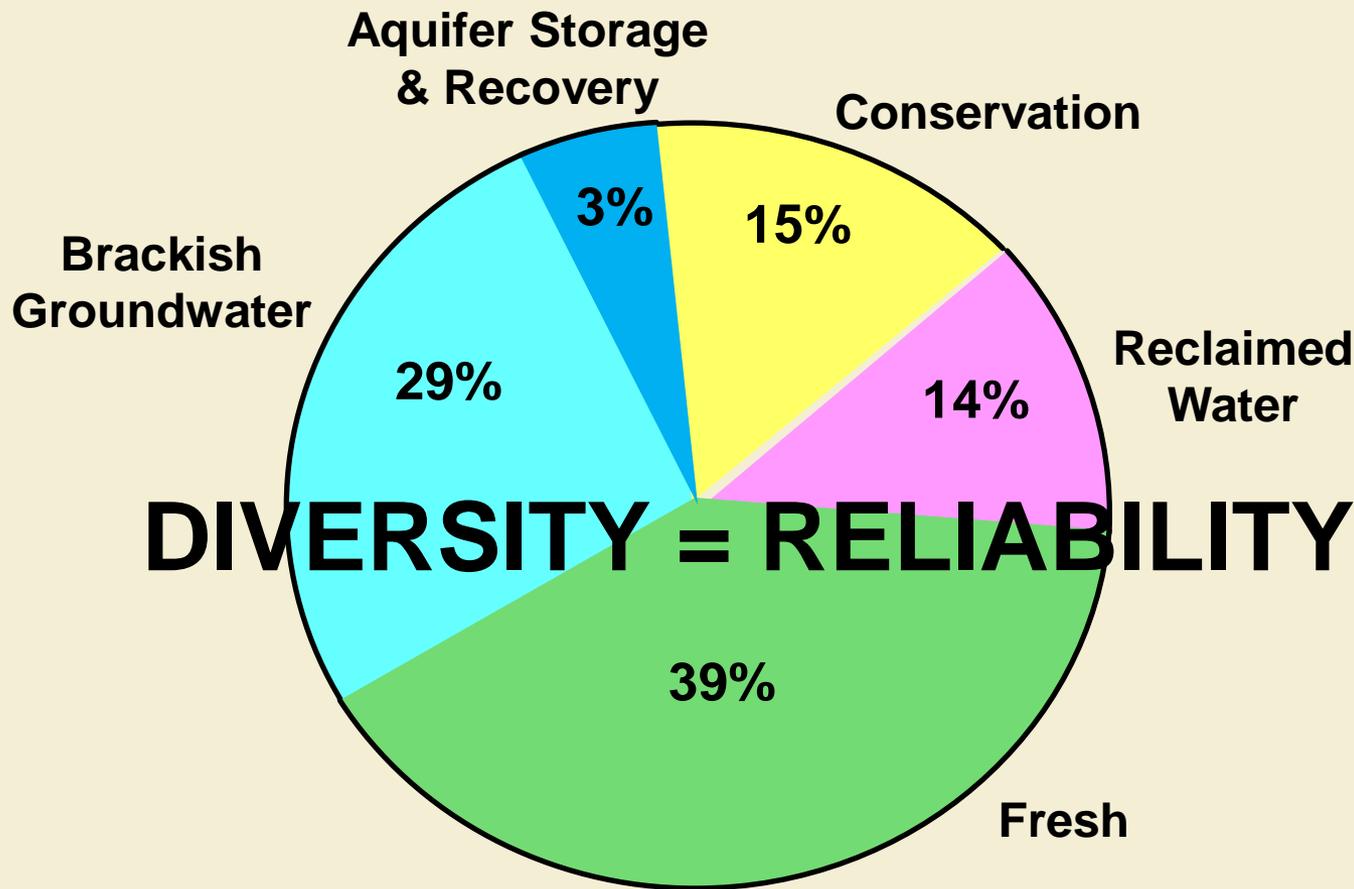


Water Savings Incentive Program (WaterSIP)

- **Water Savings Hardware or technology**
- **FY03-FY12 Lower West Coast**
 - 26 LWC projects funded
 - \$780,000 allocated
 - 364 MGY estimated water savings



Integrated Water Supply Portfolio Example



Questions

**Lower West Coast Water Supply Plan
Water Source Options**

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