

2012 Lower West Coast Water Supply Plan Update



Mark Elsner, PE

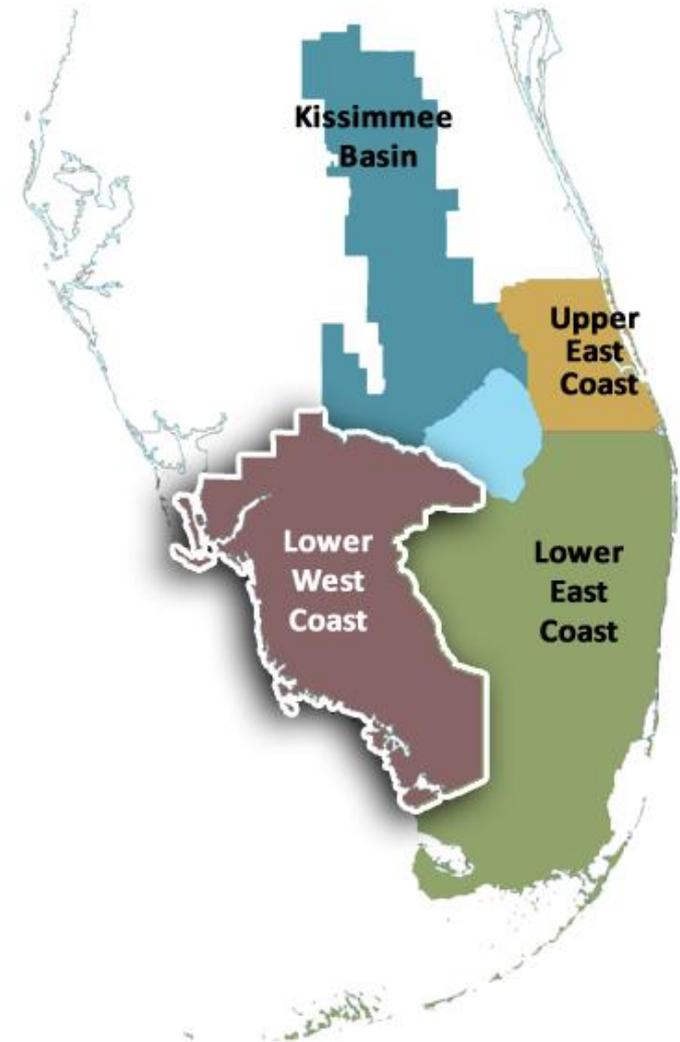
Section Administrator, Water Supply Development Section

Water Resources Advisory Commission

September 6, 2012

Water Supply Plan Requirements

- 20 year Planning Period
- 1-in-10 Level of Certainty
- Water Resource Development
- Water Supply Development
 - Linkage to Local Governments
- Minimum Flows and Levels (MFLs)
 - Recovery and Prevention Strategies



Lower West Coast (LWC) Planning Area

Includes:

- All of Lee County, most of Collier County, and portions of Glades, Hendry, Charlotte and mainland Monroe counties
- Major drainage basins
 - *Caloosahatchee, Estero, and Collier*

Population:

- 2010 992,486
 - 2030 1,502,701 (projected)
- 51% Population Increase*

Major agricultural industry

Significant environmental features

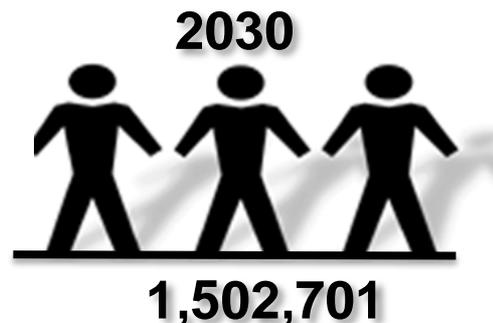
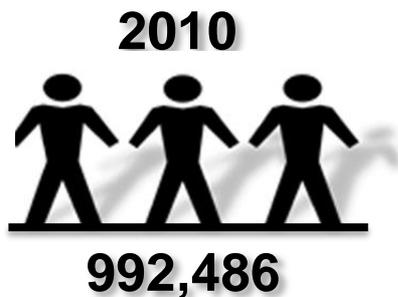


2012 Plan Update Process

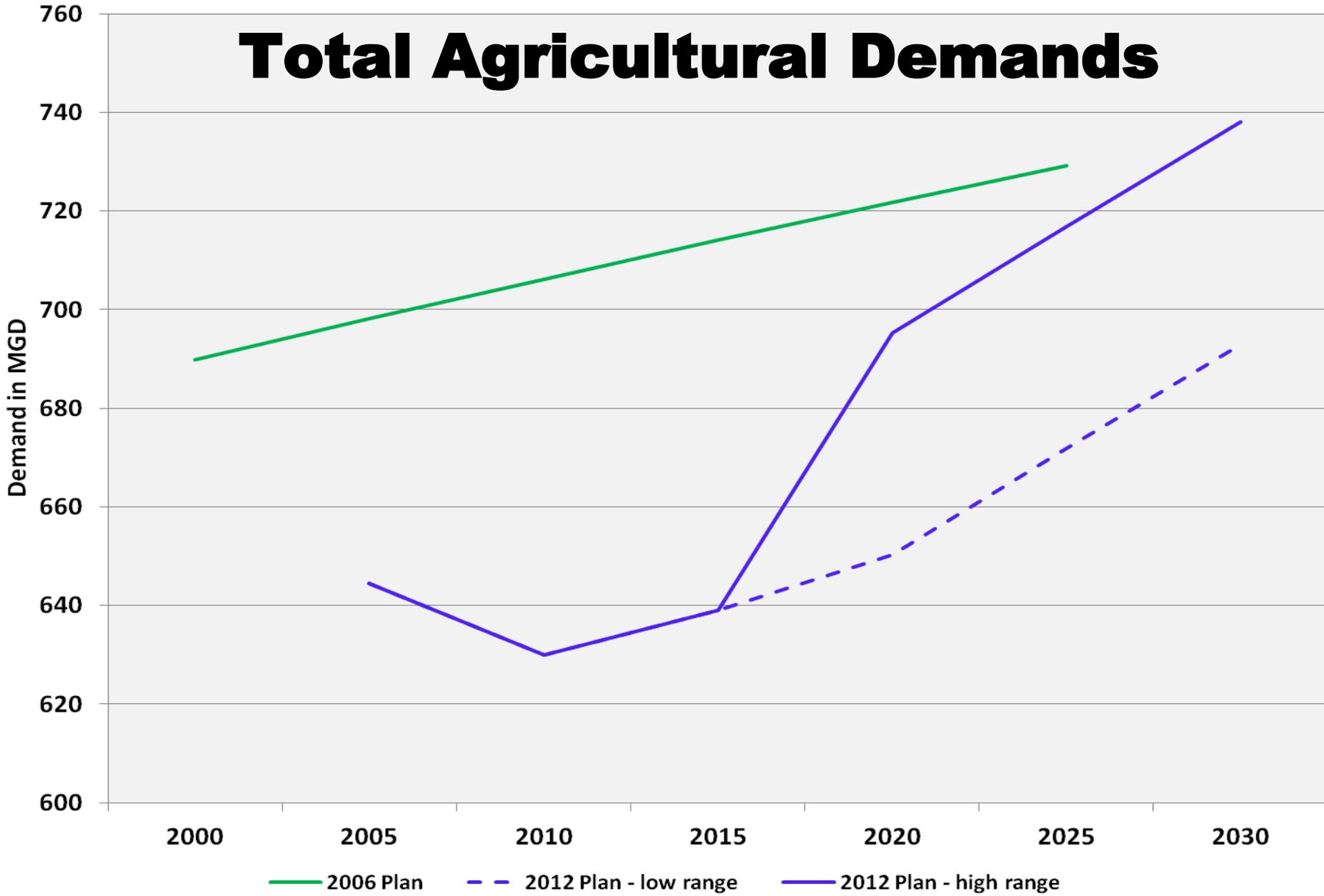
- Water Resources Advisory Commission
 - Serves as overall forum
- Five public workshops held to date
- Meetings held with stakeholders, local governments & utilities
- Presentations to local governments
- Draft LWC documents distributed
 - Discussed at WRAC issues workshop on August 28
 - Receiving written comments through September 28

LWC Population

County Area	2010 Population	2030 Projected Population	Percentage Increase
Lee	606,949	957,100	58%
Collier	341,565	471,999	38%
Hendry <i>(Portion in LWC Planning Area)</i>	37,493	51,023	36%
Glades <i>(Portion in LWC Planning Area)</i>	6,413	8,413	31%
Charlotte <i>(Portion in LWC Planning Area)</i>	66	14,166	21,464%
LWC Total	992,486	1,502,701	51%



Total Agricultural Demands

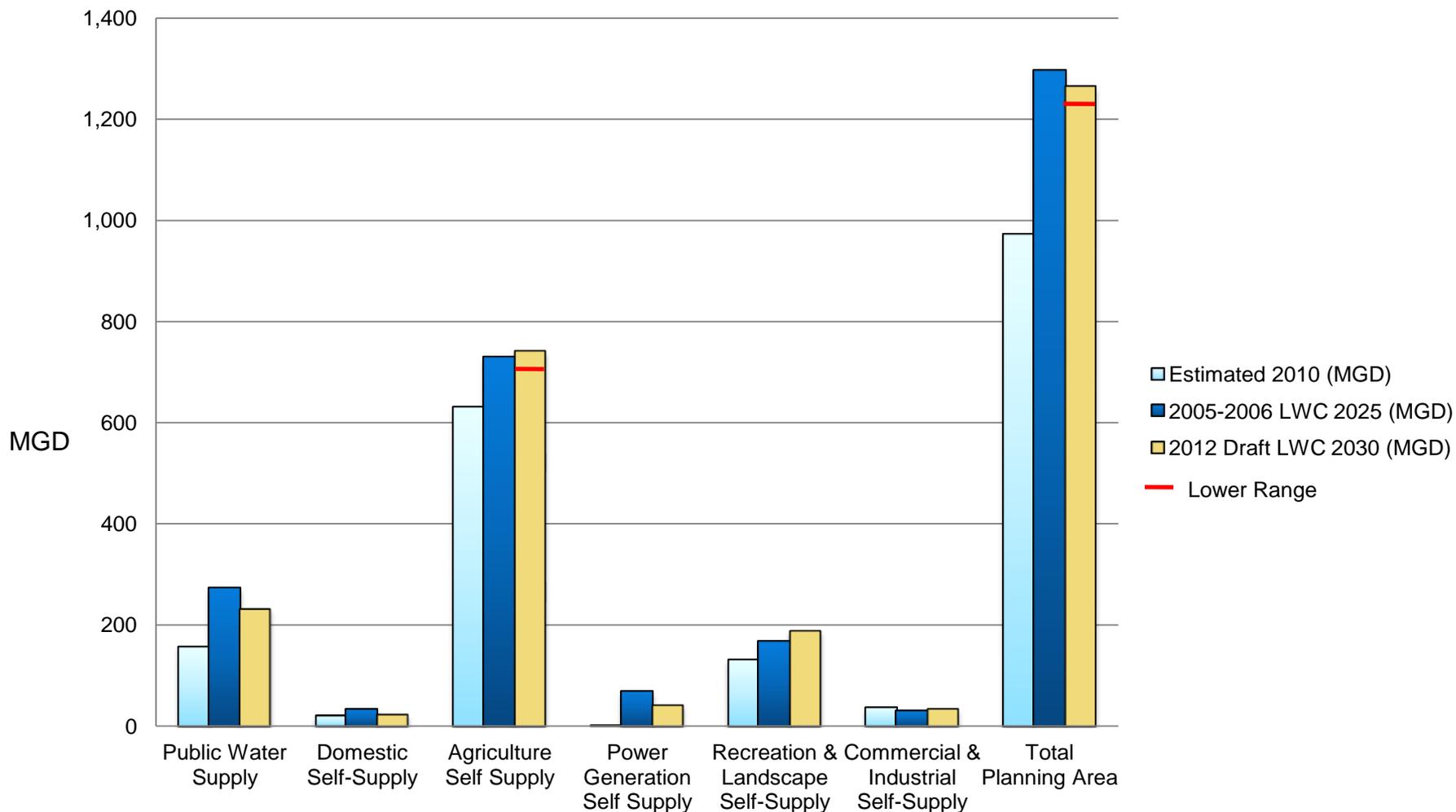


Water Supply Gross Demand Projections

Category	Estimated 2010 (MGD)	2006 LWC 2025 (projected MGD)	2012 Draft LWC 2030 (projected MGD)
Public Water Supply	156	272	232
Domestic Self-Supply	19	31	24
Agriculture Self-Supply	630	729	696-741
Recreation/Landscape Self-Supply	130	167 ^a	189
Power Generation Self-Supply	1	67	42
Commercial & Industrial Self-Supply	35	29	35
Total Planning Area	971	1,295	1,218-1,263

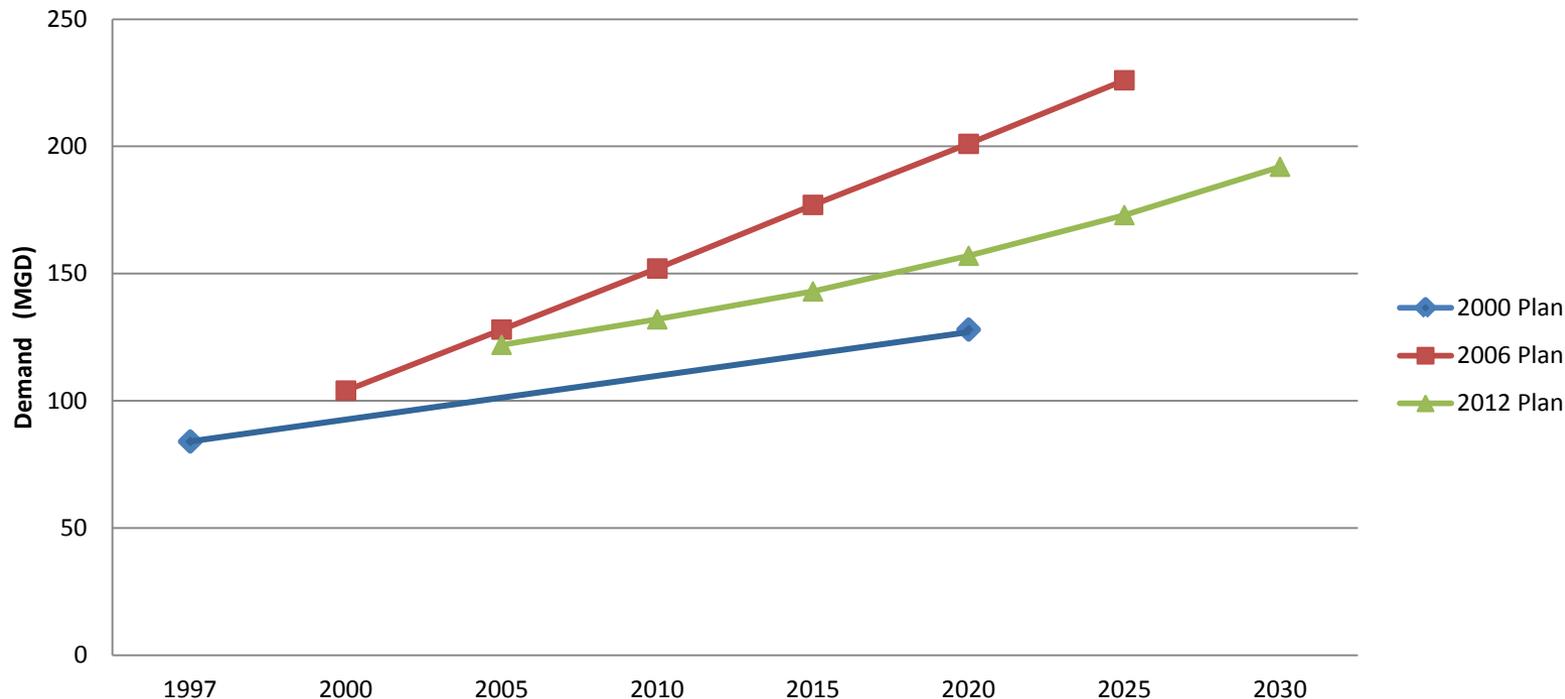
a - Adjusted

LWC Gross Demand Projections



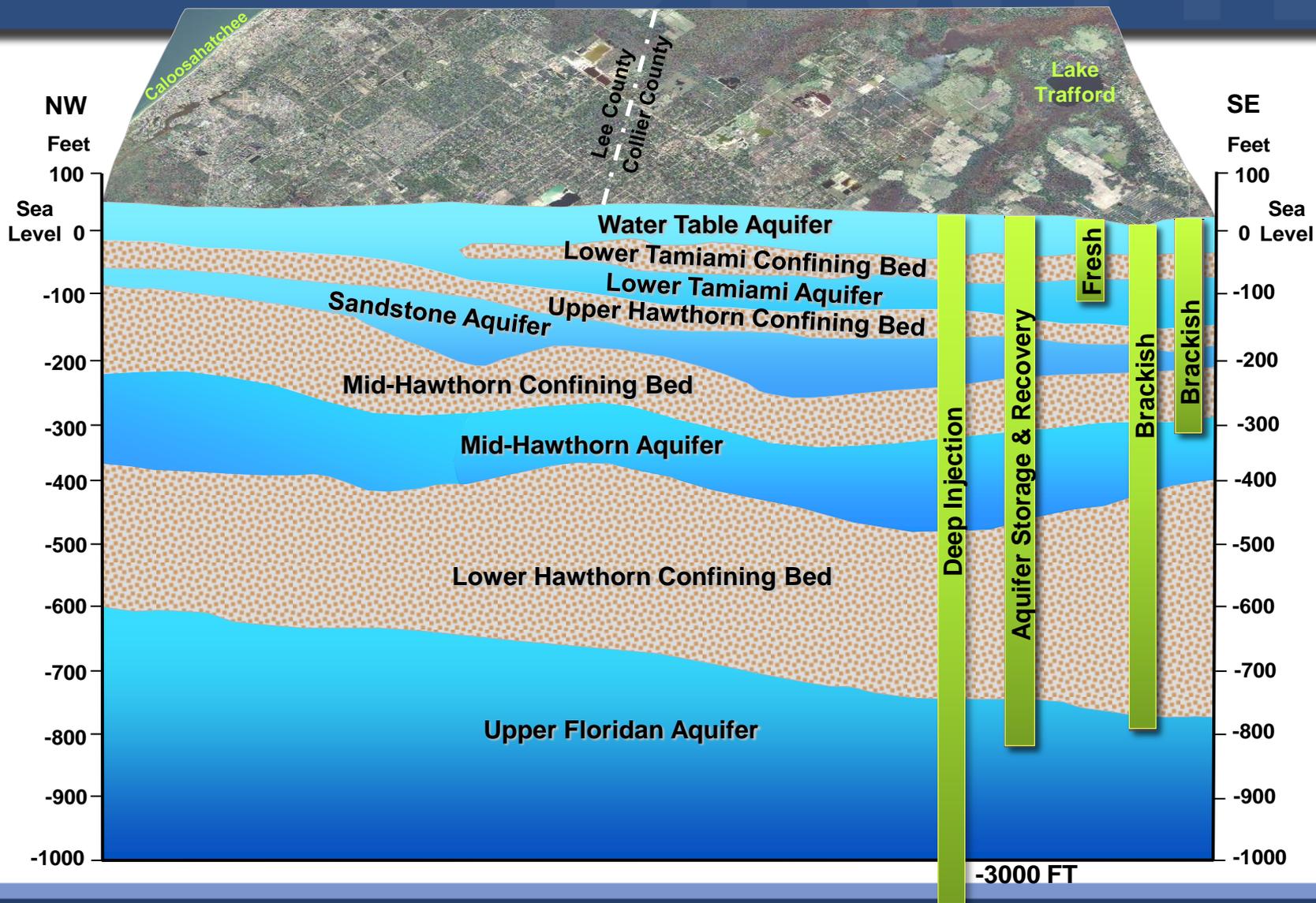
Evolution of Public Water Supply Finished Demand Projections

LWC Public Water Supply Finished Water Demand Average Conditions (MGD)



Plan Year	1997	2000	2005	2010	2015	2020	2025	2030
2000 Plan	84					128		
2006 Plan		104	128	152	177	201	226	
2012 Plan			122	132	143	157	173	192

LWC General Hydrogeologic Cross Section

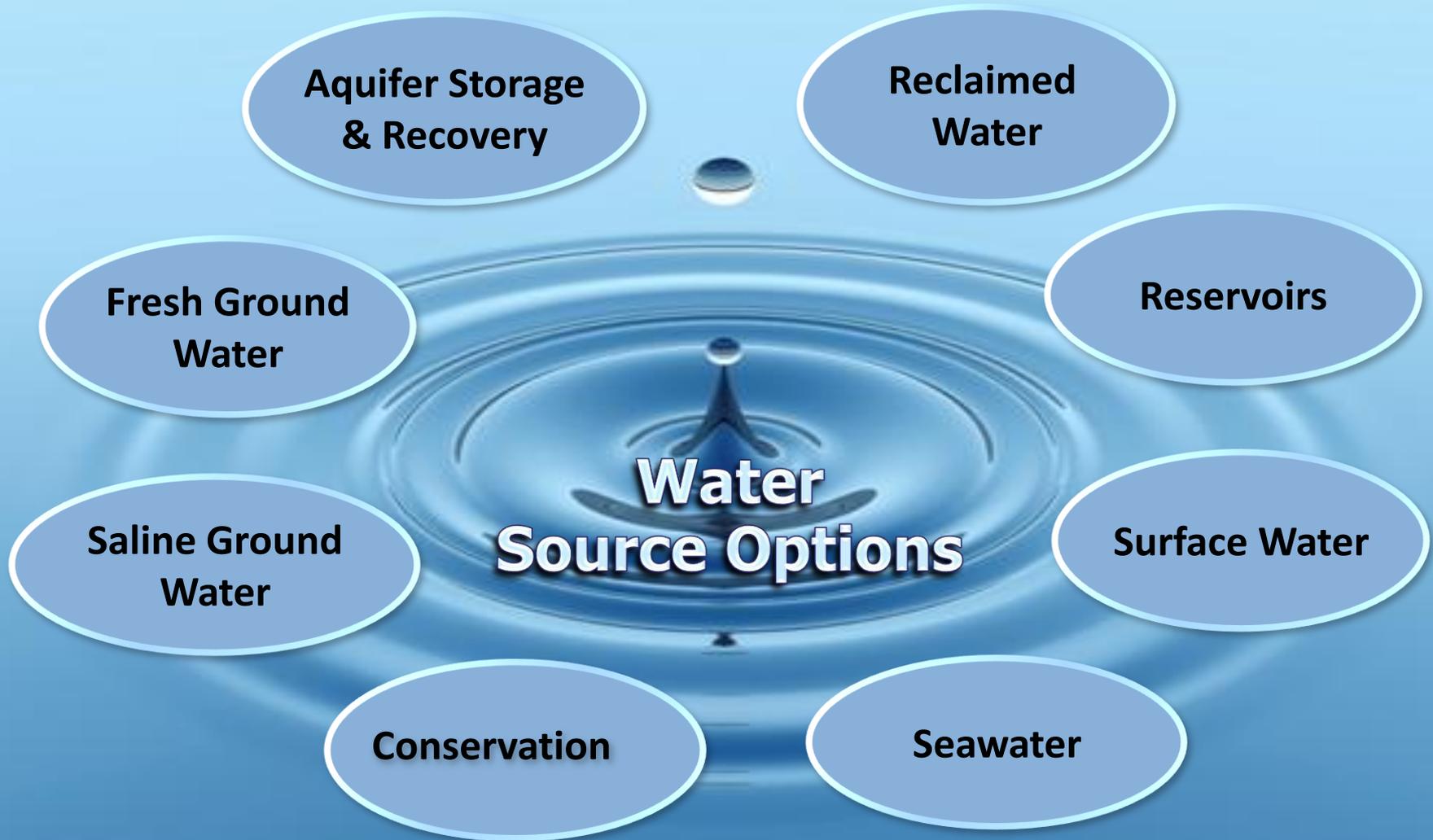


Water Supply Issues

- **In many areas, especially coastal areas, increases in withdrawals from fresh water aquifers limited**
 - *Wetlands*
 - *Salt water intrusion*
 - *Aquifer protection*
- **Surface water availability (storage) limited**
 - *Lake Okeechobee Service Area (LORS 2008)*
 - *LOSA Restricted Allocation Rules*
- **Fresh water discharges affecting health of coastal resources**
 - *Salinity fluctuations*
 - *Stormwater discharges from the Caloosahatchee River, sometimes coupled with Lake Okeechobee releases*



Water Source Options



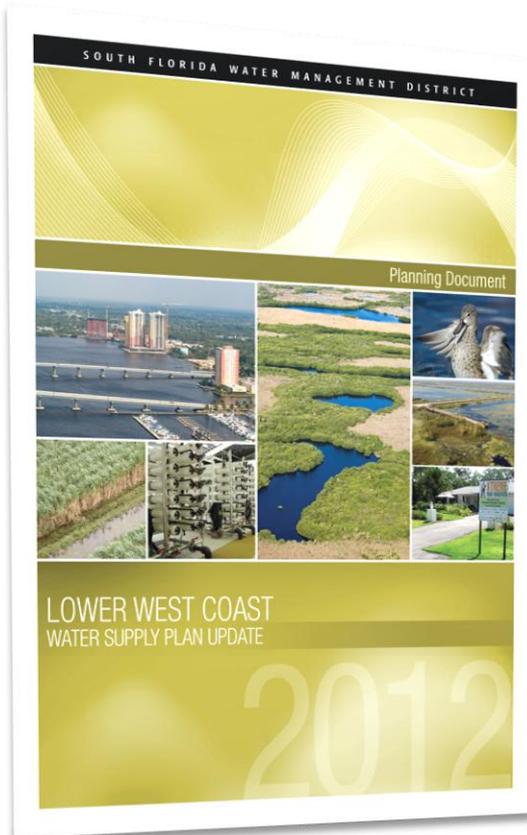
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Plan Conclusion

The future water demands of the region can continue to be met through the 2030 planning horizon with appropriate management and continued diversification of water supply sources

Completion:

- C-43 Reservoir
- Utility Projects
- Repairs to Herbert Hoover Dike
- Site-specific refinement of groundwater availability



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



LWC Public Water Supply Planned Projects - FY 2012 - 2030

No. of Multi-Phased Projects	Water Type	MGD
11	Brackish	70
6	Fresh	9
11	Reclaimed	35
5	Surface/Supplemental	19
2	Fresh/Supplemental	6
35	Total	139



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

- Continued use of **surface water and fresh water aquifers**
 - ▶ Increases in **storage** via CERP project and repairs to the Lake Okeechobee Herbert Hoover dike
 - ▶ Look for opportunities for increased efficiency through water **conservation** and Best Management Practices (BMPs) Program
- Stormwater **retention**/tailwater recovery where possible



Natural Resources

- Implementation of **surface water storage projects** will improve water resource management
 - ▶ CERP Caloosahatchee River (C-43) West Basin Reservoir Project
- Established **Minimum Flows and Levels** to protect resources from significant harm
- Regulatory mechanisms protect water resources from harm



Caloosahatchee MFL Recovery Strategy

CERP Caloosahatchee River West Basin Storage Reservoir

- Completed:
 - Land acquisition
 - Test cells construction
 - Removal of 7,100 acres citrus
 - Federal Project Implementation Report (PIR)
 - Project design
 - Federal and State Permitting
- Awaiting congressional authorization



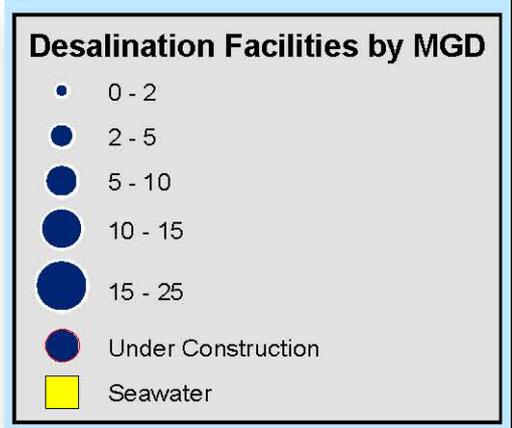
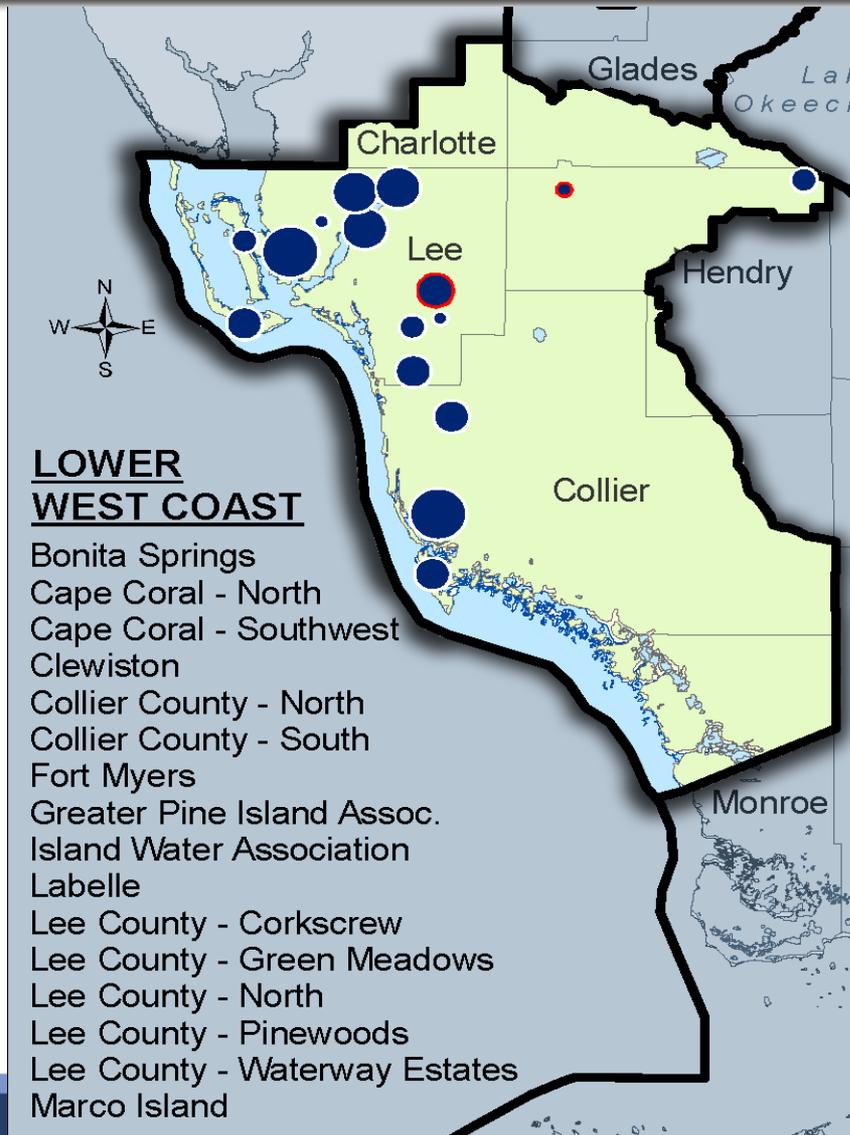
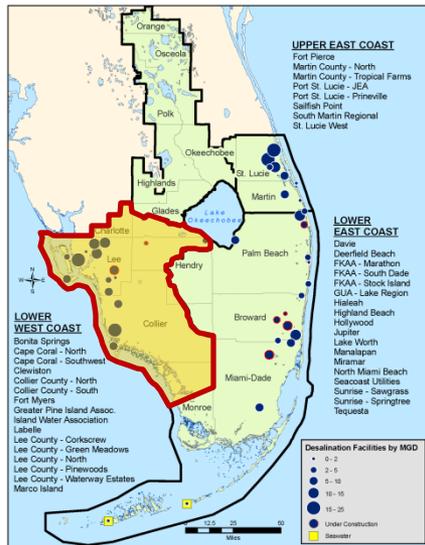
Other Planned Improvements

- Caloosahatchee Watershed Protection Plan
- Caloosahatchee Water Quality Treatment and Testing Project (BOMA Site Interim Project)
- Dispersed Water Management
- Local projects
 - Mirror Lakes Halfway Pond restoration
 - Spanish Creek/Four Corners
- Lake Hicpochee

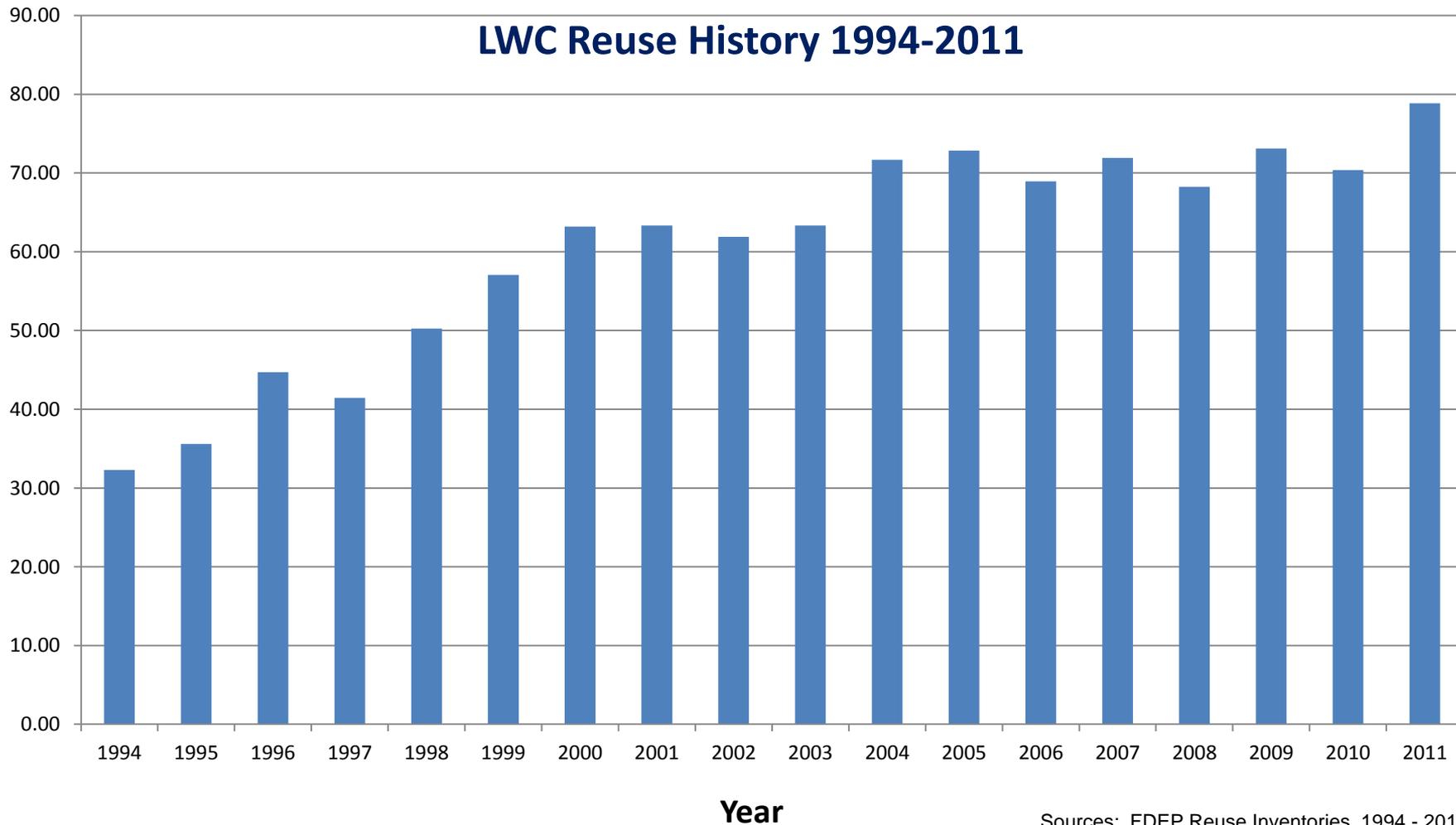


LWC 2012

Potable Water Desalination Plants



LWC Reuse History (1994-2011)

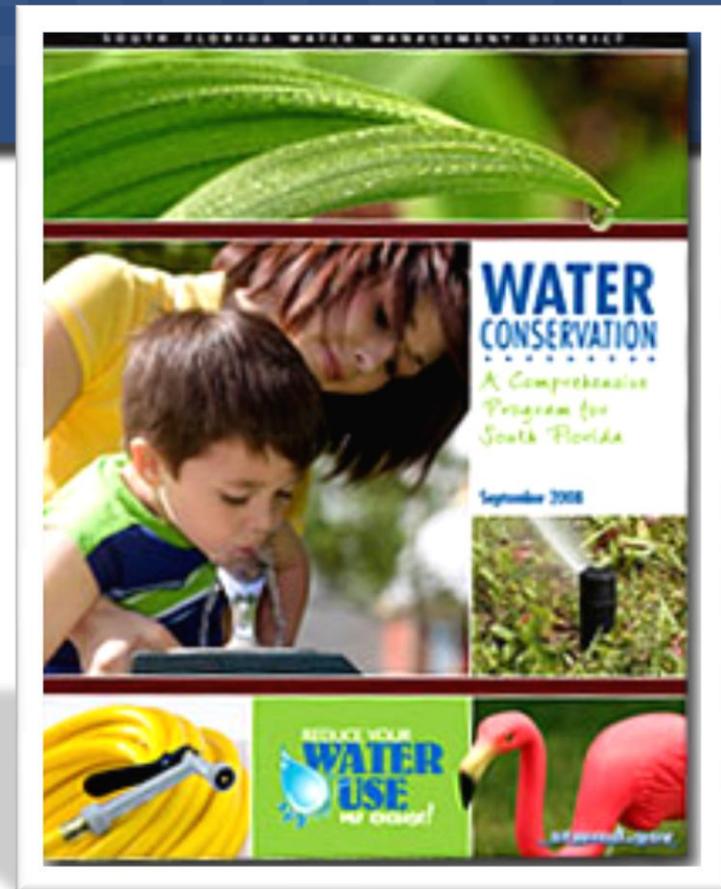


Sources: FDEP Reuse Inventories, 1994 - 2011

Conservation

- Year-round rule savings
- All water sources should be used efficiently by all users
- Reduces impact on water resources

The cheapest gallon of water is the gallon we don't use



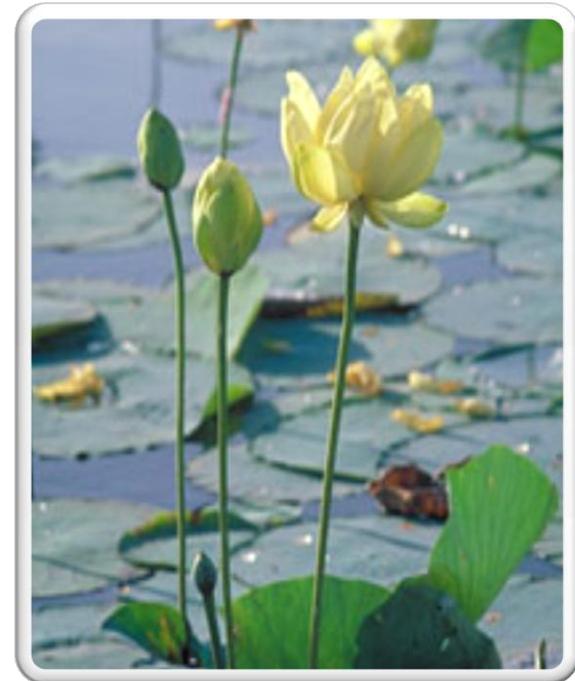
Plan/Base Year Used	1994 Plan (1990)	2000 Plan (1995)	2006 Plan (2000)	2012 Plan (2005)
LWC Planning Area Per Capita - PWS	194	167	176	151

Future Direction

- Improve understanding of fresh groundwater sources
- Continue aquifer monitoring program
- Construct CERP Caloosahatchee River (C-43) West Basin Storage Reservoir
 - Project -specific Water Reservation rule should be completed and adopted
- Promote local storage projects
- Encourage and promote water reuse and conservation measures
- Identify the impact of sea level rise on utility wellfields at risk of saltwater intrusion

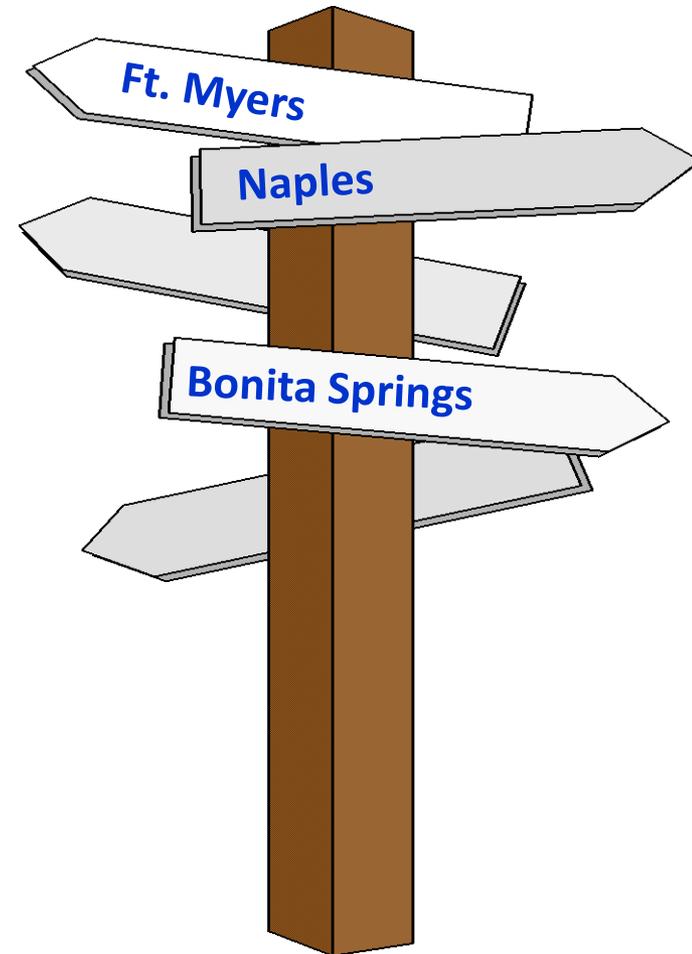
Future Direction cont.

- Coordinate with local governments and utilities on water supply related elements
- Complete Lower West Coast Floridan Aquifer System Model
- Continue to promote a water conservation ethic



What's Next?

- Draft Plan to Governing Board
September 12
- Receiving written comments through
September 28
- Presentations to local governments
September – October
- WRAC Issues Workshop
(if necessary in October)
- Final Plan to WRAC
November 8
- Final Plan to Governing Board
November 15



Questions?



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Section Administrator,
Water Supply Development Section
Water Resources Advisory Commission
September 6, 2012

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