South Florida Water Management District

Current and Projected Potable Water Desalination and System Capacity

District-Wide Desalination (Million Gallons per Day, MGD)			
	Desalination Capacity	**Finished Water Use**	**Desalination (Percent of Finished Water Use)**
2008*Actual	235	1,100	20
2025 Projected**	540	1,500	35

*Includes plants started in 2008 that will be completed before 2012.
**Based on the 2006 / 2007 regional water supply plan updates.

Desalination is the treatment of brackish water that contains total dissolved solids (TDS) in excess of 1000 milligrams per liter. The treatment method used in desalination is reverse osmosis (RO). The Floridan and the Lower Hawthorn aquifers are common groundwater sources of high TDS. The use of seawater is limited.

Key Successes in Desalination

Kissimmee Basin *(Portions of Orange, Osceola, Polk, Highlands, Glades, and Okeechobee counties)*

- The Upper Floridan Aquifer contains fresh water and it is the main source of water in that basin; no brackish sources are currently used.

Lower West Coast (LWC) *(Lee, Collier, and portions of Hendry, Glades, and Charlotte counties)*

- Currently, the LWC has 95 MGD of desalinated water resources, which comprises 74% of its total finished water supply. This region is the District leader in brackish water desalination by volume.
- Seawater desalination is under consideration in Lee County.

Upper East Coast (UEC) *(Martin, St. Lucie, and portions of Okeechobee counties)*

- Currently, the UEC has 70 MGD of desalinated water resources, which could potentially supply 100% of its total finished water supply. Desalination is expected to continue to grow in this region.
- A seawater desalination plant co-located with a power plant is under investigation by St. Lucie County.

Lower East Coast (LEC) *(Palm Beach, Broward, Miami-Dade, Monroe, and portions of Hendry counties)*

- Currently, the LEC has 70 MGD of desalinated water resources, which comprises 8% of its total finished water supply. This region has the highest growth in desalination since 2003.
- Palm Beach County completed the Lake Regional 10 MGD desalination plant in March 2008.
- The LEC has two peaking seawater desalination facilities and it is considering future seawater plants.

Key Opportunities and Challenges to Increase Desalination

Desalination challenges affecting all regions

- Capital cost is high, RO treatment is energy intensive, and energy cost is increasing.
- Concentrate disposal is a limiting environmental issue.
- Permitting may restrict use of the Floridan Aquifer in order to avoid overuse and water quality issues.
- Resources can be an issue due to limited certified well drilling contractors, causing high bids.

Kissimmee Region

- Lower Floridan is brackish in some areas and concentrate disposal will be a challenge.

Lower West Coast

- Desire for increased use of traditional fresh groundwater sources.
- Brackish Floridan / Lower Hawthorn groundwater and seawater projected to meet future demands.

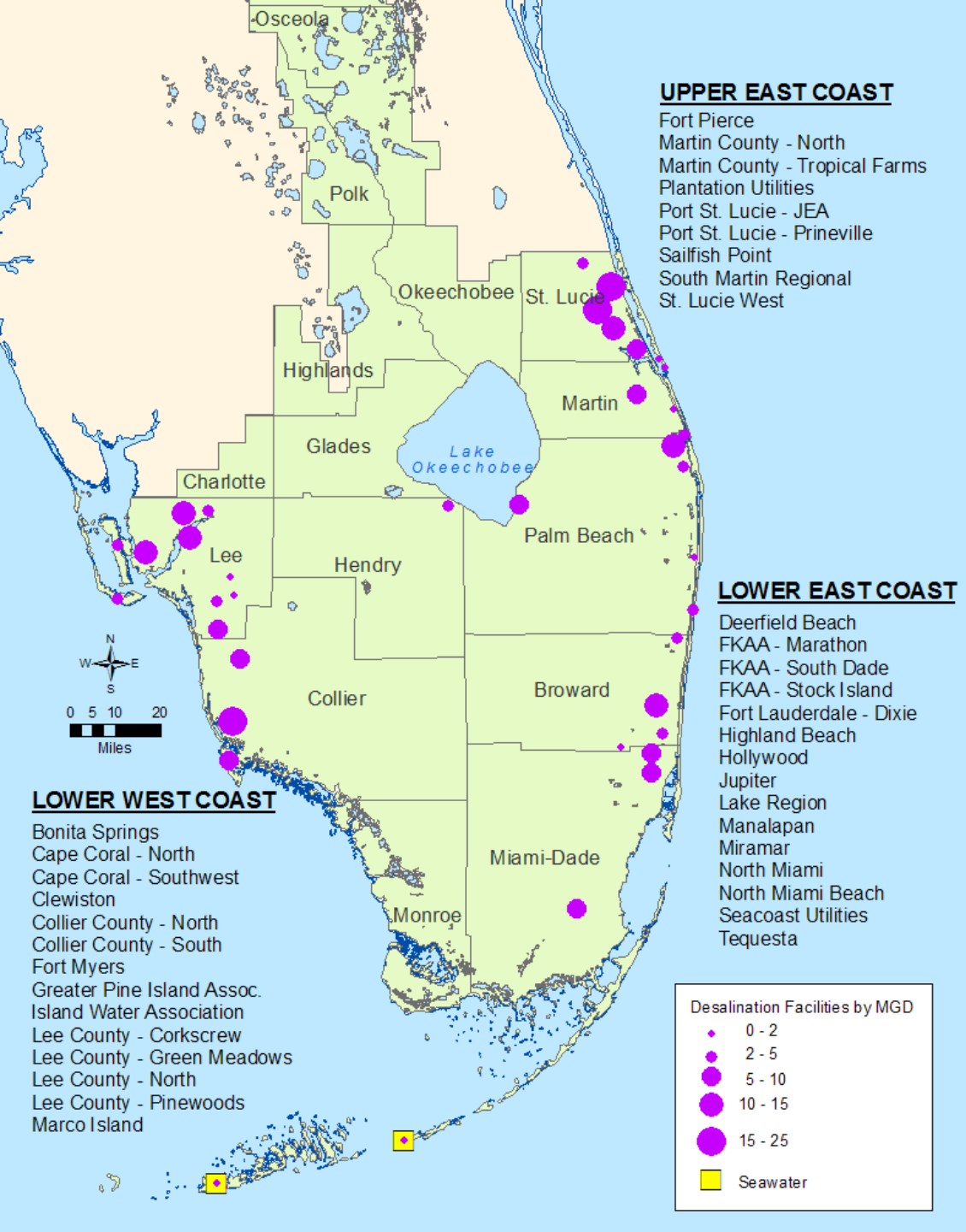
Upper East Coast

- Brackish groundwater desalination projected to meet future needs.

Lower East Coast

- Highest projected demand to be met by desalination.
- District's 2006 co-located seawater desalination study identified two desirable sites in Broward and Miami-Dade counties.

2008 Potable Water Desalination Plants in the South Florida Water Management District



UPPER EAST COAST

Fort Pierce
Martin County - North
Martin County - Tropical Farms
Plantation Utilities
Port St. Lucie - JEA
Port St. Lucie - Prineville
Sailfish Point
South Martin Regional
St. Lucie West

LOWER EAST COAST

Deerfield Beach
FKAA - Marathon
FKAA - South Dade
FKAA - Stock Island
Fort Lauderdale - Dixie
Highland Beach
Hollywood
Jupiter
Lake Region
Manalapan
Miramar
North Miami
North Miami Beach
Seacoast Utilities
Tequesta

LOWER WEST COAST

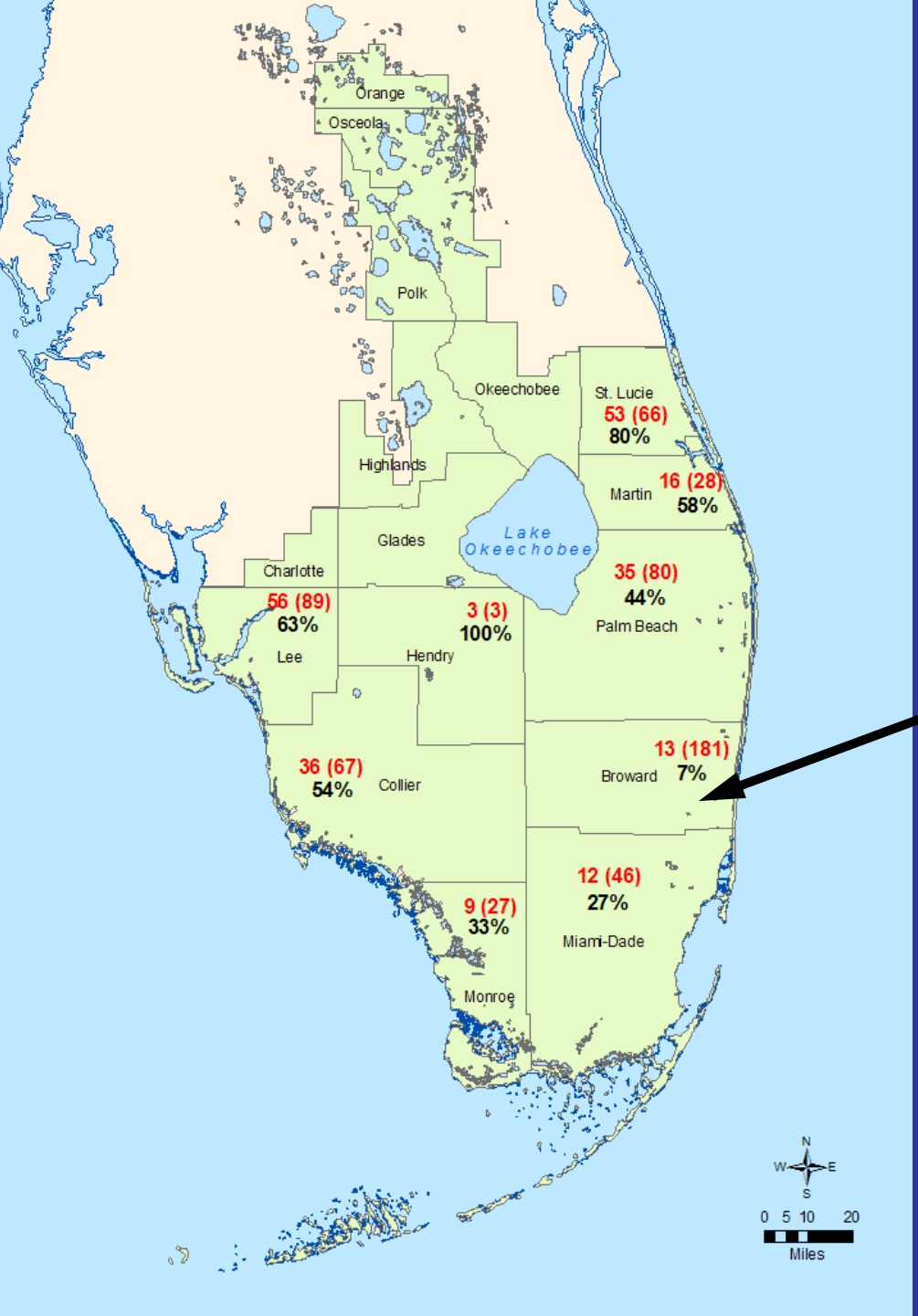
Bonita Springs
Cape Coral - North
Cape Coral - Southwest
Clewiston
Collier County - North
Collier County - South
Fort Myers
Greater Pine Island Assoc.
Island Water Association
Lee County - Corkscrew
Lee County - Green Meadows
Lee County - North
Lee County - Pinewoods
Marco Island

Desalination Plant by Plant Size in MGD

Two seawater desalination plants in the Keys

MGD = Million Gallons per Day

2008 Desalination Capacity Percent of Utility Total Capacity in the South Florida Water Management District



Legend

Broward

13 = Current desalination capacity (MGD)

(181) = Current system capacity of utilities with desalination plants (MGD)

7 % = Current desalination capacity as percent of total system capacity (13 divided by 181)

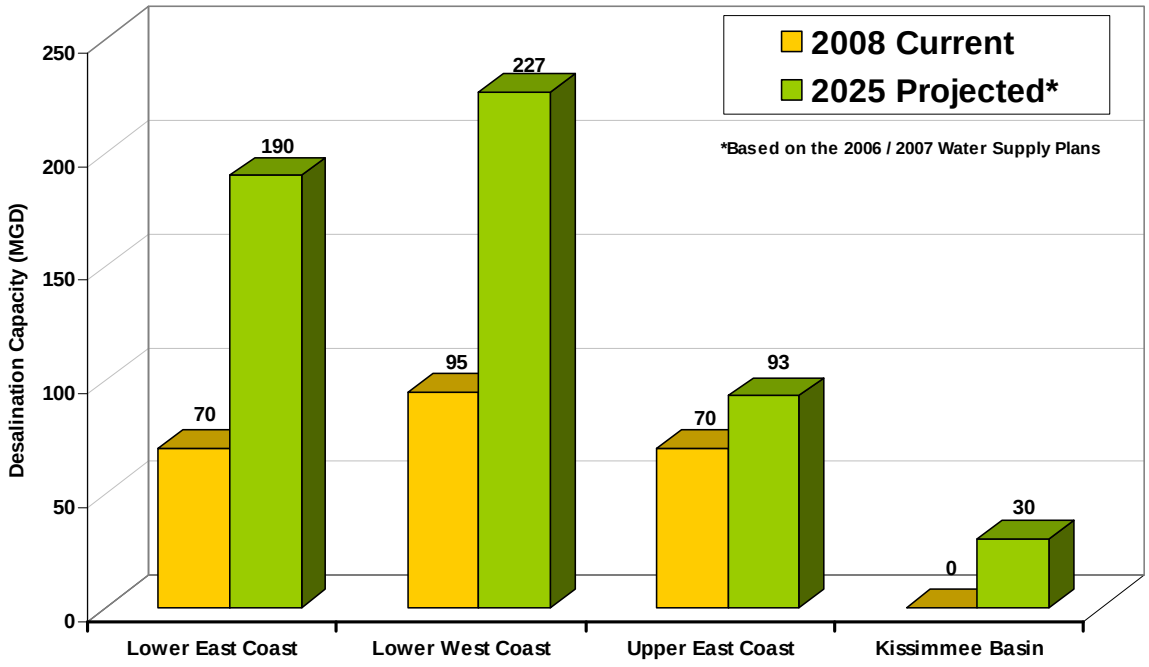
- **Total 2008 desalination capacity:180 MGD (235 MGD by 2012) (20%)****
- **Projected 2025 desalination capacity: 540 MGD (35%)***

****2025 Projections based on the District's 2006 / 2007 Water Supply Plans***

***** 20% includes plants started in 2008 that will be completed by 2012.***

MGD = Million Gallons per Day

Desalination Summary of Planning Regions 2008 versus 2025



Growth of Desalination in the SFWMD