

Indian River County
Board of County Commissioners
Alternative Water Supply Master Plan
Public Workshop
Commission Chambers

December 6, 2006
3:00 P.M. – 5:00 P.M.

- | | |
|--|--|
| 1. Call To Order | 3:00 p.m. |
| 2. Invocation | Reverend Jim Newsome
First Baptist Church |
| 3. Pledge of Allegiance | Sandra L. Bowden, Vice Chairman |
| 4. Introductions | Erik Olson, Indian River County
Utilities Services Director |
| 5. Project History | Himanshu Mehta/Mike Hotchkiss |
| a. North County Water Treatment Plant Expansion | |
| b. CUP Application | |
| c. South County Wellfield | |
| 6. Alternative Water Supply Plan | Himanshu Mehta/Dr. Pat Gleason |
| a. Future Demand | |
| b. Near-term Supply (5 years) | |
| c. Long-term Supply (5 to 20 years) | |
| 7. Role of St. Johns River Water Management District in
Water Supply | Kirby Green, Executive Director
SJRWMD |
| 8. South Florida Water Management District | Mark Elsner |
| a. Findings of Upper East Coast Water Supply Plan
Related to Development in SLC | SFWMD |
| 9. Questions | |
| 10. Public Comment | |
| 11. Adjournment | |

Anyone who needs a special accommodation for this meeting may contact the County's Americans with Disabilities Act (ADA) Coordinator at (772) 226-1223 at least 48 hours in advance of meeting.

CDM

**Alternative Water Supply
Master Plan Workshop**

**Indian River County
Utility Services Department**

December 6, 2006



Agenda



- ◆ **Project History**
- ◆ **Alternative Water Supply Plan**
- ◆ **Role of SJRWMD in Water Supply**
- ◆ **SFWMD Upper East Coast Water Supply Plan**
- ◆ **Proposed Alternatives**
- ◆ **Questions**
- ◆ **Public Comment**

Introductions

- ◆ **Erik Olson, Director of Utility Services**
- ◆ **Mike Hotchkiss, Capital Projects Manager**
- ◆ **Himanshu Mehta, Utility Services Engineer**
- ◆ **Dr. Patrick Gleason, CDM**
- ◆ **Kirby Green, Executive Director SJRWMD**
- ◆ **Mark Elsner, Director - Implementation Division, SFWMD**

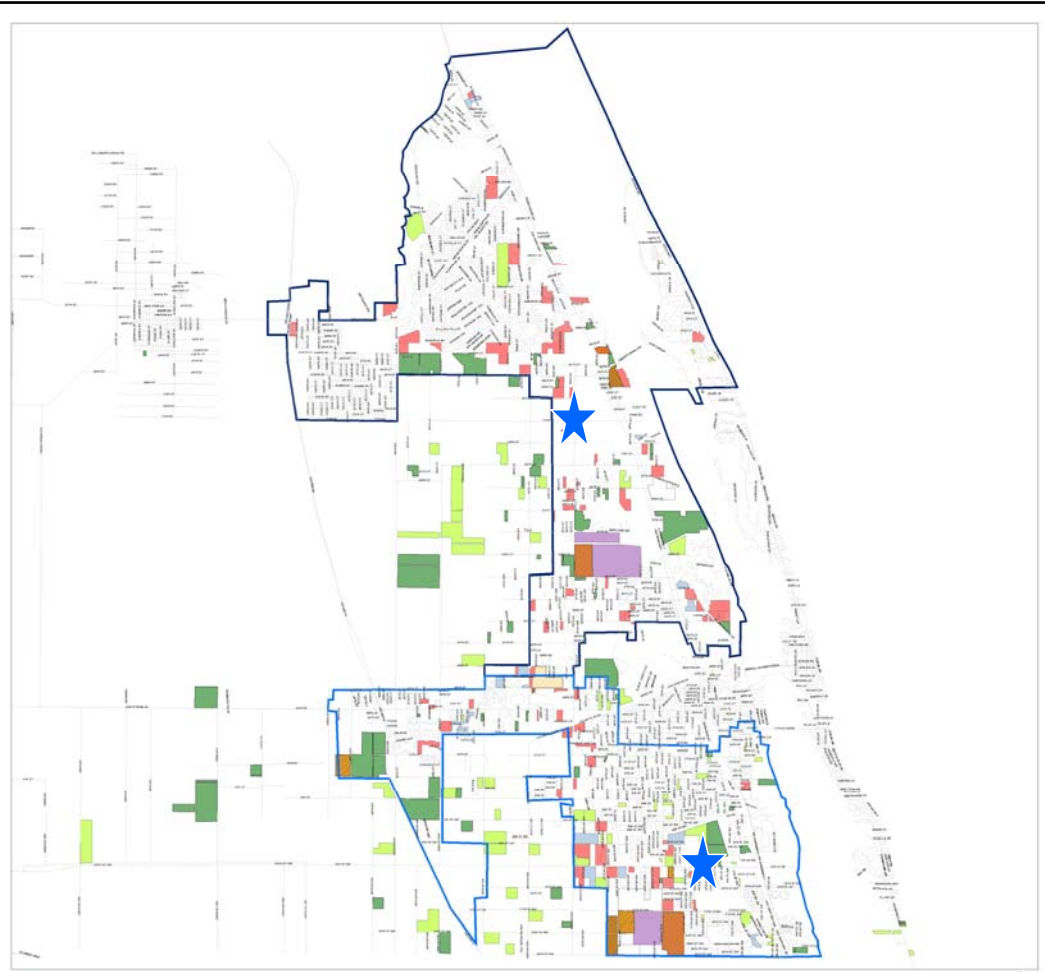
WTP Locations



**North County WTP
(Hobart Park)**



**South County WTP
(Oslo Road)**

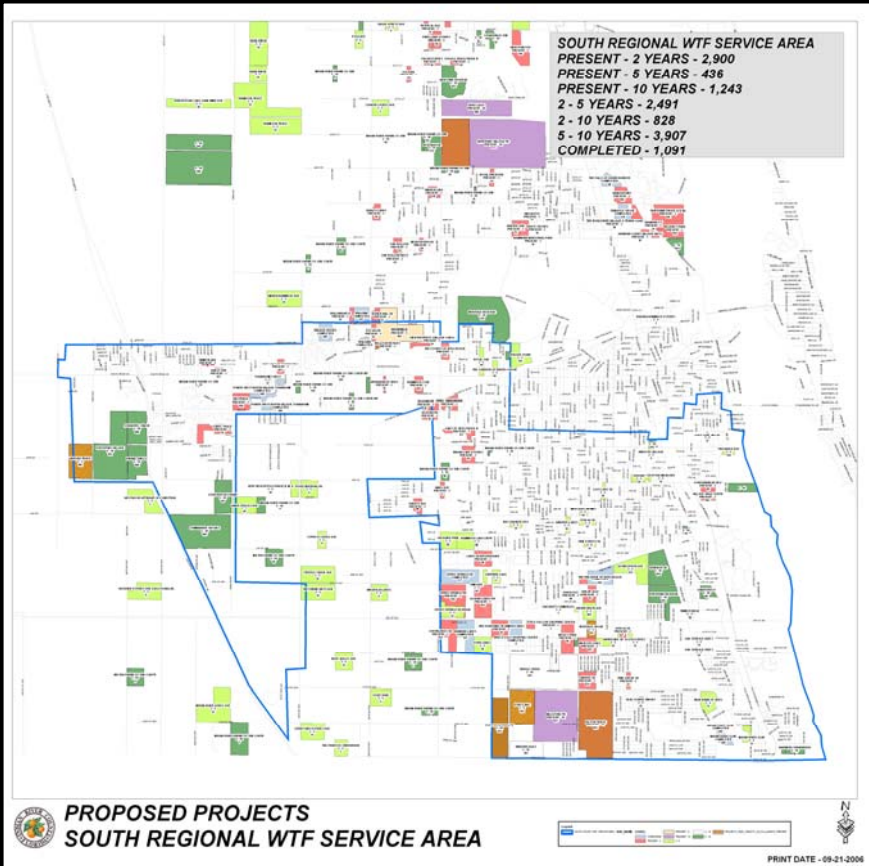


**PROPOSED PROJECTS
NORTH & SOUTH REGIONAL WTF SERVICE AREAS**

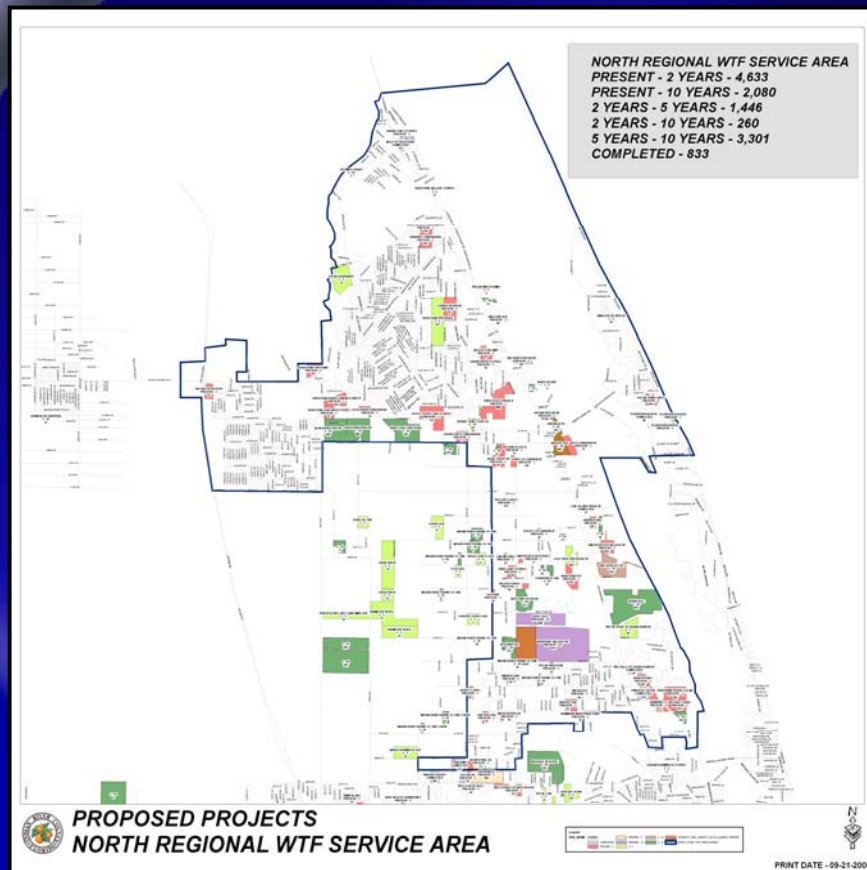


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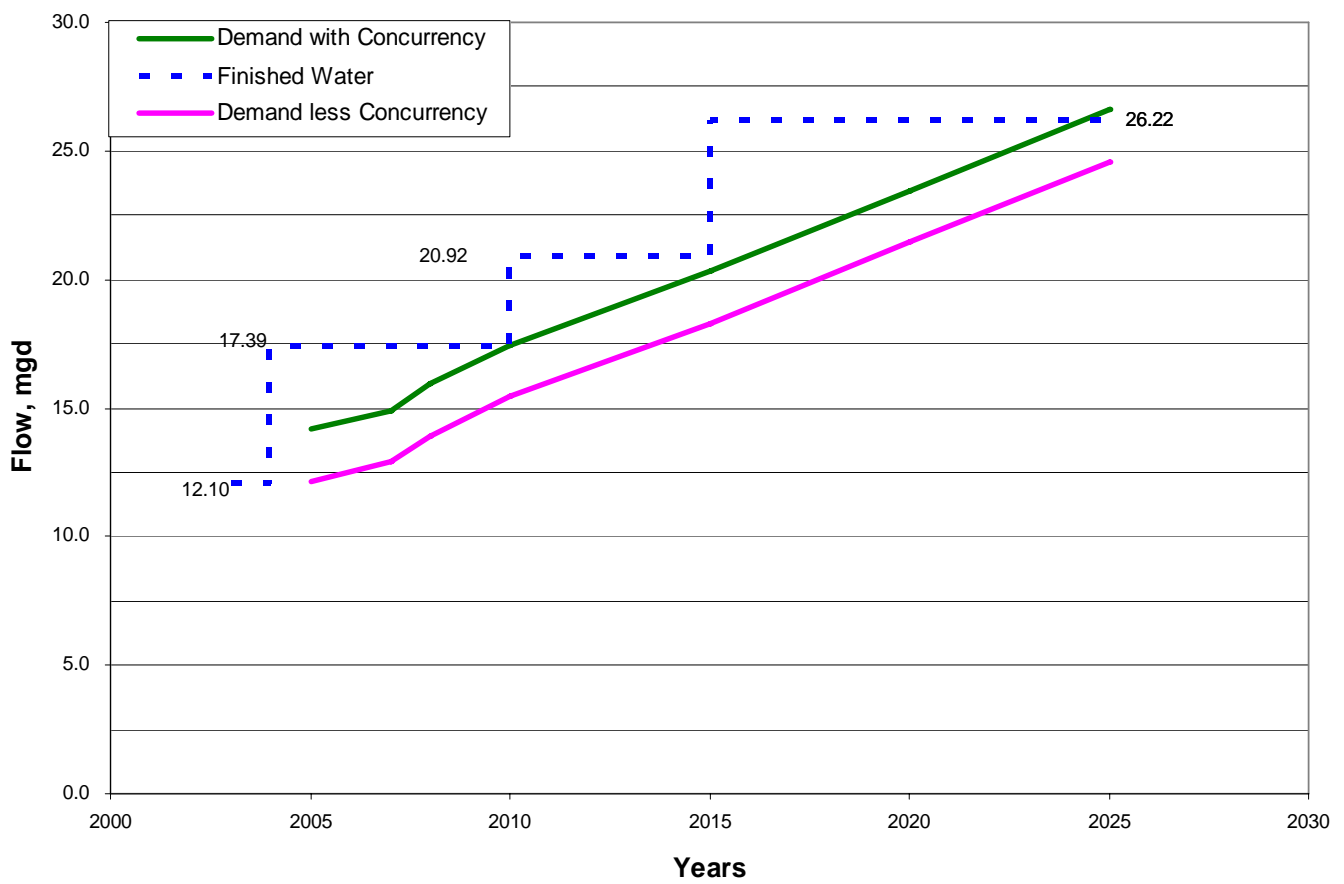
South Regional Water Treatment Plant (WTP) Service Area



North Regional WTP Service Area



Estimated Demand and Needed Supply (MDF) - North and South WTPs
1.5 MD PF



South County WTP

- ◆ **Constructed in 1982, 8.57 mgd capacity**
- ◆ **6 UFA Wells, 7th permitted but not constructed**
- ◆ **4 RO Treatment Skids**
- ◆ **Two 2 million gallon storage tanks**
- ◆ **Discharge concentrate to South Relief Canal**
- ◆ **No current plans for expansion**
- ◆ **No restrictions on expansion, given all permit requirements can be met**



North County WTP

- ◆ **Constructed in 1998, 3.53 mgd capacity**
- ◆ **3 UFA Wells**
- ◆ **2 RO Treatment Skids**
- ◆ **One 3 million gallon storage tank**
- ◆ **Discharge concentrate to Indian River Lagoon; proposed relocation to Spoonbill Marsh**

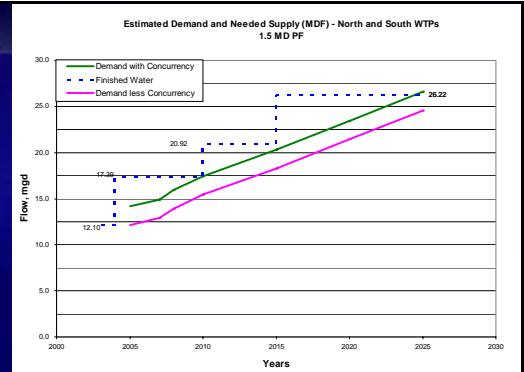


North County WTP Expansion

- ◆ **First expansion planned for 2007 to increase capacity from 3.53 to 8.82 mgd**
- ◆ **CDM authorized by BOCC for Design** **4/13/2004**
- ◆ **FDEP construction permit submitted** **12/27/2004**
 - 3 treatment skids
 - \$21M construction contract awarded to Poole and Kent
- ◆ **Concentrate permit submitted** **5/24/2006**
- ◆ **CUP Application Submitted** **7/14/2006**
 - Add 3 production wells

Future Demand

- ◆ Next Capacity Increase Anticipated in 2011
 - ◆ Originally to be met with final 3 wells and 3 treatment skids
 - ◆ Concerns from local committees, groups and concerned citizens
- ◆ In the Meantime
 - ◆ Well sampling program to sample neighboring artesian wells to establish baseline data
 - ◆ Alternative Water Supply Plan
 - County to explore alternatives to installing final 3 wells



Anticipated Alternative Water Supply Plan Schedule

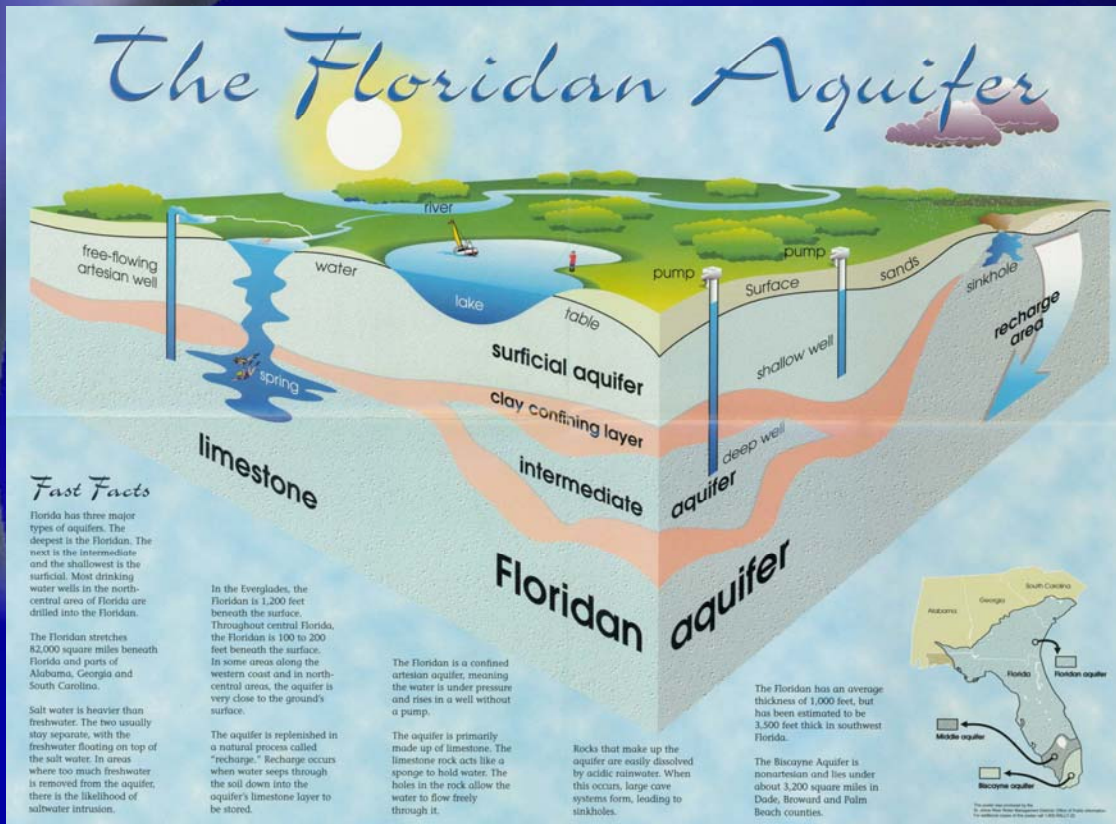
- ◆ 10/24/2006 Authorization
- ◆ 11/2/2006 UAC meeting to discuss alternatives
- ◆ 12/6/2006 **Workshop with BOCC**
- ◆ 1/18/2007 Conceptual Analysis Complete
- ◆ 2/1/2007 Meeting with interested parties to discuss Conceptual Analysis
- ◆ 2/20/2007 Draft Report Complete
- ◆ 3/25/2007 Workshop to receive input on Draft Report
- ◆ 4/22/2007 Final Report Complete

Near-term supply (5 Years)

- ◆ Expand existing Upper Floridan Aquifer (UFA) well system by constructing 3 new wells
- ◆ Add three treatment skids at existing facility
- ◆ Allows for continued use of existing technology to meet immediate needs
- ◆ Expand reclaimed water system to further offset demands on UFA for irrigation purposes



Hydrogeology of Local Aquifers



Neighboring Utilities (a)

Utility	Wells Currently Permitted		Total WTP Capacity	Proposed Wells	
	Surficial Aquifer	Upper Floridan Aquifer		Surficial Aquifer	Upper Floridan Aquifer
Indian River County Utilities	0	10*	12.1	0	3
City of Vero Beach	27	7	14.99	0	0
City of Fellsmere	0	4	-	0	0
City of Sebastian	Served by Indian River County Utilities				
St. Lucie County Utilities	2	0	0.288	0	22
City of Port St. Lucie	28	10	25.15	0	27
Ft. Pierce Utilities Authority	41	9	16	0	2
Brevard County Utilities	18	0	3.4	0	0
Totals	116	30	-	0	54

(a) CDM collected the data in this table by reviewing available information on Utility websites, Existing and Pending CUP Applications, and by personal phone interviews. This data is for informational purposes only and may not include information that was not available at the time of the presentation on December 6, 2006.

*7Th well permitted for S. County, but not constructed.

Long-term supply (5 to 20 Years)

- ◆ **Seek an alternative to next three wells**
- ◆ **Explore an alternative that can be implemented in five years (2011)**
- ◆ **Explore an alternative that is longer-term**
- ◆ **Possible alternatives**
 - ◆ **Upper Floridan Aquifer**
 - ◆ **Surface Water/Reservoirs**
 - ◆ **Surficial Aquifer**
 - ◆ **Desalination of Seawater**

Long-term supply (5 to 20 Years)

- ◆ **May require use of UFA wells until long-term source can be implemented**
- ◆ **Options restricted by permitting requirements and disposal of concentrate**

Water Supply Opportunities for Indian River County

**Presented by Kirby B. Green III
Executive Director
St. Johns River Water Management District**

December 6, 2006



**St. Johns River
Water
Management
District**

Chapter 373, F.S., Water Supply Planning Requirements

- Water supply assessment, which determines
 - ◆ Areas where projected uses cannot be sustained with proposed sources without unacceptable impacts to water resources and related natural systems – *priority water resource caution areas*
- Water supply plan
 - ◆ Focus on priority water resource caution areas
 - ◆ Identifies
 - Water supply development projects adequate to meet projected water supply needs
 - Water resource development projects
 - Sources of project funding
 - Water supply entities and associated projects



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District

Water Supply Mission

Mission

- **To implement a regional strategy to provide sufficient water for users and the environment**

Implementation strategies

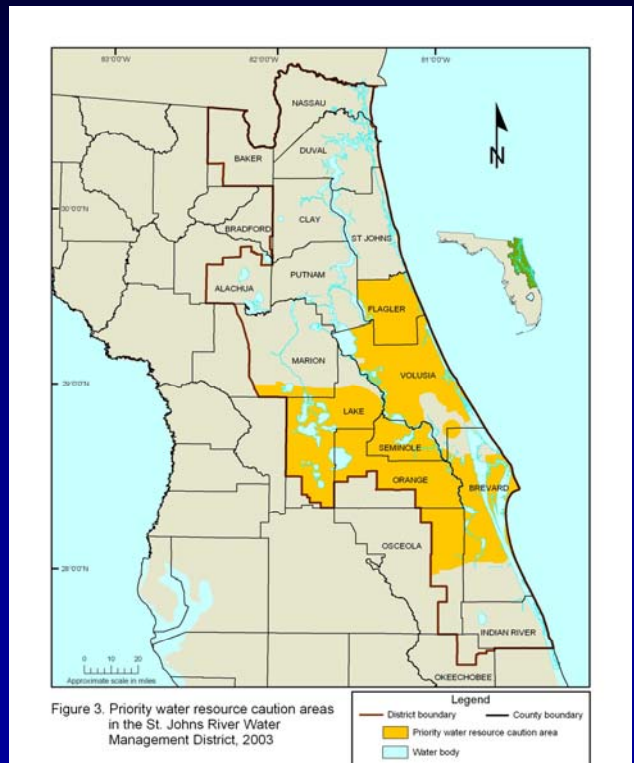
- **Consumptive use permitting**
 - ◆ **Interference with existing legal uses**
 - ◆ **Reasonable-beneficial use**
 - ◆ **Public interest**
- **Water supply planning**
 - ◆ **Water supply assessment**
 - ◆ **Water supply plan**
- **Project implementation**



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Priority Water Resource Caution Areas 2003

Areas where proposed sources of water cannot sustain proposed uses through 2025 without unacceptable impacts to water resources and related natural systems



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Water Supply Conclusions for Indian River County

- **Now**
 - ◆ Brackish groundwater sources can meet demands through 2025 (WSA 2003)
 - ◆ Interference concerns in area of North County Wellfield can be addressed in CUP process
- **Future**
 - ◆ Concentrate management may become more difficult in future
 - ◆ Potential growth in region could further limit groundwater availability
 - ◆ Investigation of alternative sources is wise



SJRWMD Water Supply Planning Efforts in Indian River County

- **Preparing 2008 District Water Supply Assessment**
 - ◆ **New groundwater model development**
 - ◆ **Coordination with local governments**
- **Coordinating with county staff and consultants to identify alternative water supply projects**
- **Evaluating water supply potential of Upper St. Johns River Basin Project**
- **Coordinating with SFWMD concerning C-25 Diversion Project**



Potential Surface Water Sources

- **Sources**
 - ◆ Fort Drum Marsh Conservation Area
 - ◆ Blue Cypress Marsh Conservation Area
 - ◆ Sebastian River Water Control District
 - ◆ Indian River Farms Water Control District
 - ◆ C-25 Basin
 - ◆ C-54 Canal
- **Available quantities**
 - ◆ Up to 300 million gallons per day

Potential Surface Water Source Locations



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Alternative Water Supply Project Unit Production Costs

- **Range of estimated costs for 6 million gallons per day project**
 - ◆ **\$2.50 per 1,000 gallons to \$5.20 per 1,000 gallons**
 - **Depending on treatment method**
 - **Not including storage costs**



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Recommendations

- **Coordinate planning with other local governments**
- **Evaluate feasibility of potential sources to meet future county needs**
- **Coordinate throughout 2008 water supply assessment process**
- **Coordinate with SFWMD on C-25 diversion and regulatory issues**



St. Johns River Water Management District

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On the Internet: *www.sjrwmd.com*

***Service centers in Jacksonville, Altamonte
Springs and Palm Bay***



**St. Johns River
Water
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SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Upper East Coast Water Supply Plan

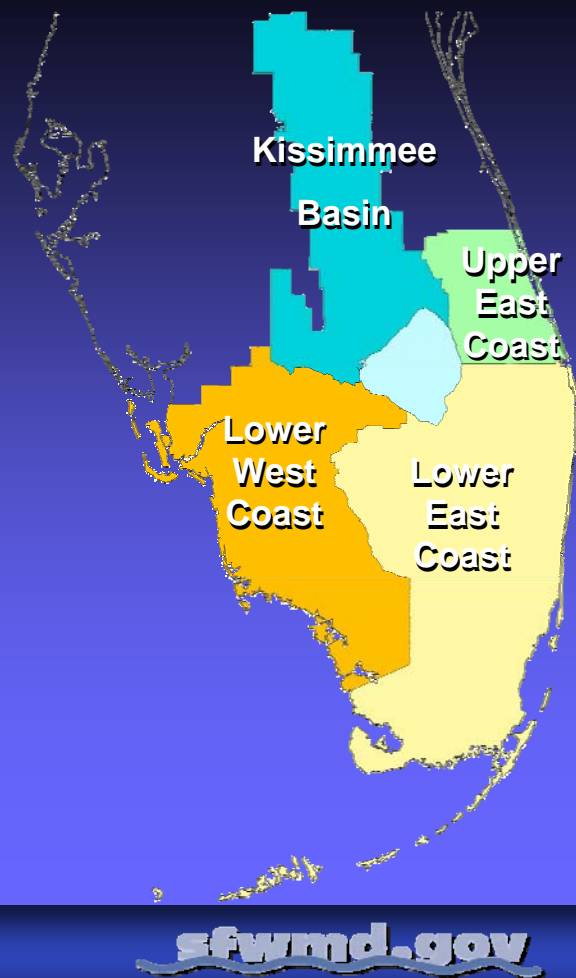
*Mark Elsner, P.E.
Director, Implementation Division*

*December 6, 2006
Indian River County BOCC
AWS Master Plan Workshop*

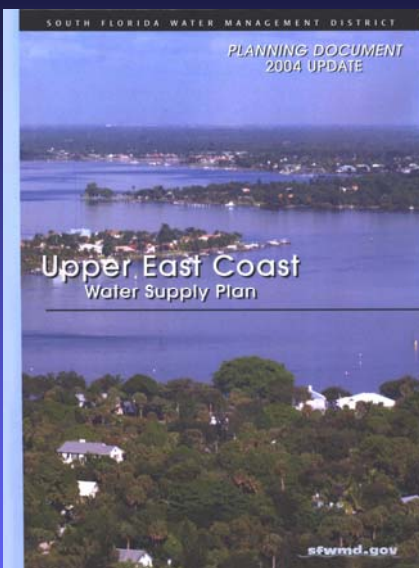


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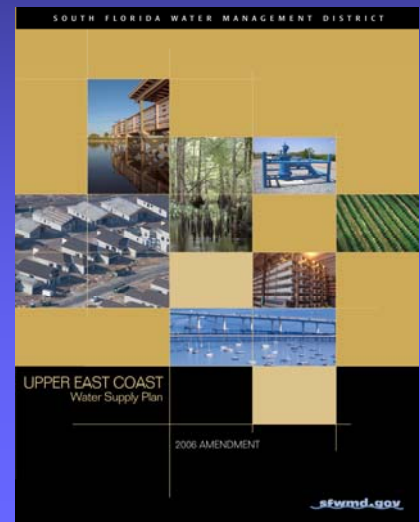
**South Florida Water
Management
District's Four
Planning Regions**



Upper East Coast Water Supply Plan



- ◆ Plan Approved June 2004
- ◆ Amendment July 2006
- ◆ Planning Horizon 2000 -2025



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Upper East Coast Planning Area

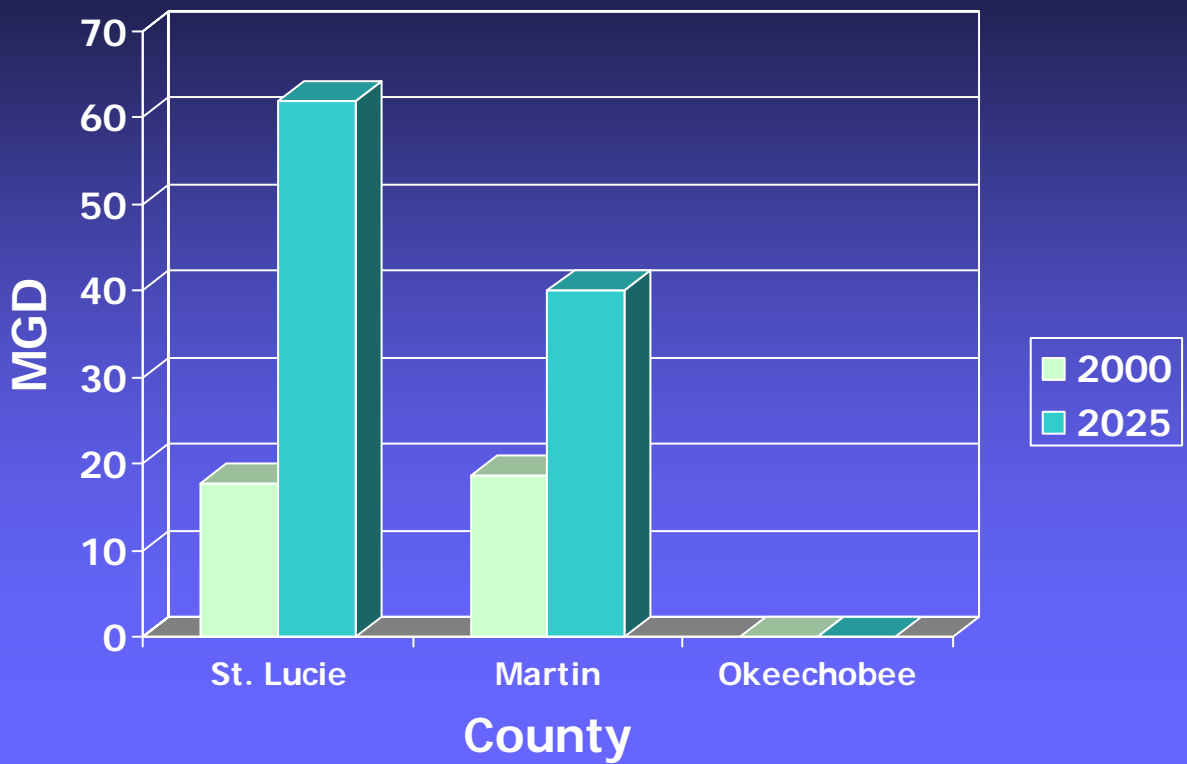


- ◆ Planning Horizon 2000 -2025
- ◆ Population projected to increase by 264,263 (82%) to 584,927
- ◆ Overall water demands estimated to increase by 88 MGD (30%) to 378 MGD

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UEC Public Water Demands

Raw Water



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How will future demands be met?



- ◆ Brackish – Floridan
- ◆ Reclaimed Water
- ◆ Conservation



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Thank You



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Proposed Long-Term Water Supply Alternatives

- ◆ **Supply Sources/Treatment Processes**
 - ◆ Upper Floridan Aquifer
 - ◆ Surface Water/Reservoirs
 - ◆ Surficial Aquifer
 - ◆ Desalination of Seawater
- ◆ **Water Conservation Element (to offset potable demand) – Apply regardless of alternative supply method identified**
 - ◆ Reclaimed Water
 - ◆ Capture of Stormwater

Components of Alternative Water Supply Assessment

- ◆ **Feasibility of timely implementation**
- ◆ **Identification of permitting issues**
- ◆ **Budget-level cost estimates for each option**
- ◆ **Historical successes with similar projects in Florida**

Anticipated Implementation Schedule

Milestone	Start	End	2006	2007	2008	2009	2010	2011
Identify Alternative Supply Source	12/6/06	5/1/07	5 Months					
Design	5/1/07	4/30/08		12 Months				
Permitting Process	11/1/07	10/31/08			12 Months			
Bidding Process/Award of Contract	11/1/08	2/28/09				4 Months		
Construction Period	3/1/09	3/1/11				24 Months		
Implementation by 12/31/2011								

Discussion

- ◆ Upper Floridan Aquifer
- ◆ Surface Water/Reservoirs
- ◆ Surficial Aquifer
- ◆ Desalination

End of Presentation