

PALM BEACH COUNTY  
BOARD OF COUNTY COMMISSIONERS  
WORKSHOP SUMMARY

=====  
Meeting Date: September 22, 2009

Department: Water Utilities Department  
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I. EXECUTIVE BRIEF

Title: C-51 Reservoir Feasibility Study.

**Summary:** On November 21, 2006 the Board of County Commission (BCC) approved an Interlocal Agreement (R2006-2551) in the amount of \$80,909 for a Conceptual Feasibility Study of a Sub-regional Lower East Coast Water Supply Solution (Study) with the City of Fort Lauderdale. The study is substantially complete; final remaining tasks include an update of future water supply demands to meet current population trends, coordination with the South Florida Water Management District (District) to describe a regulatory certification process that addresses compliance with the Lower East Coast Regional Water Availability Rule through implementation of a C-51 Reservoir Project, and confirmation that appropriate geologic conditions exist in west central Palm Beach County to locate another water detention reservoir. Palm Beach County and Broward County Water Resources Task Forces, in collaboration with the District, have endorsed continuation of the Study. Future work needs to be done to evaluate and model conveyance alternatives, to quantify the environmental benefits, and to refine the concept alternatives to include possible integration of the project with existing District and Comprehensive Everglades Restoration Project (CERP) water resource plans. Additional work beyond the scope of the original Study will be brought back to the BCC for approval prior to proceeding.

**Background and Policy Issues:** Palm Beach County Water Utilities believes that utilizing excess stormwater that is wasted into the Lake Worth Lagoon, in excess of the critical ecosystem needs of the Lagoon, is a preferred alternative to meeting future water supply needs than from deep, brackish water sources. Construction of a reservoir in west, central Palm Beach County is anticipated to improve water resource management capabilities for the Arthur R. Marshall/Loxahatchee National Wildlife Refuge, minimizing potential climate related salt water intrusion, reducing excess flows into the Lake Worth Lagoon (as required by the Lake Worth Lagoon Management Plan and the County Comprehensive Plan), and eliminating the future need for a reverse osmosis treatment plant in northern Palm Beach County. The elimination of this plant will be at considerable public savings in energy, operations and management costs, and reduce the high carbon footprint associated with this technology.

**Attachments:**

- 1. Presentation

Recommended By:  9/16/09  
Department Director Date

Approved By:  9/18/09  
Assistant County Administrator Date

**II. FISCAL IMPACT ANALYSIS**

**A. Five Year Summary of Fiscal Impact:**

Fiscal Years	2009	2010	2011	2012	2013
Capital Expenditures	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
External Revenues	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Program Income (County)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
In-Kind Match County	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>NET FISCAL IMPACT</b>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
# ADDITIONAL FTE POSITIONS (Cumulative)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

**Budget Account No.:** Fund \_\_\_\_\_ Agency \_\_\_\_\_ Org. \_\_\_\_\_ Rev Source \_\_\_\_\_

Is Item Included in Current Budget? Yes No

Reporting Category N/A

**B. Recommended Sources of Funds/Summary of Fiscal Impact:**

This item has no Fiscal Impact.

**C. Department Fiscal Review:** Delma Morest

**III. REVIEW COMMENTS**

**A. OFMB Fiscal and/or Contract Development and Control Comments:**

[Signature] 9/17/09  
OFMB  
CN 9/15/09

[Signature] 9/17/09  
Contract and Development Control

**B. Legal Sufficiency:**

[Signature] 9/17/09  
Assistant County Attorney

**C. Other Department Review:**

\_\_\_\_\_  
Department Director

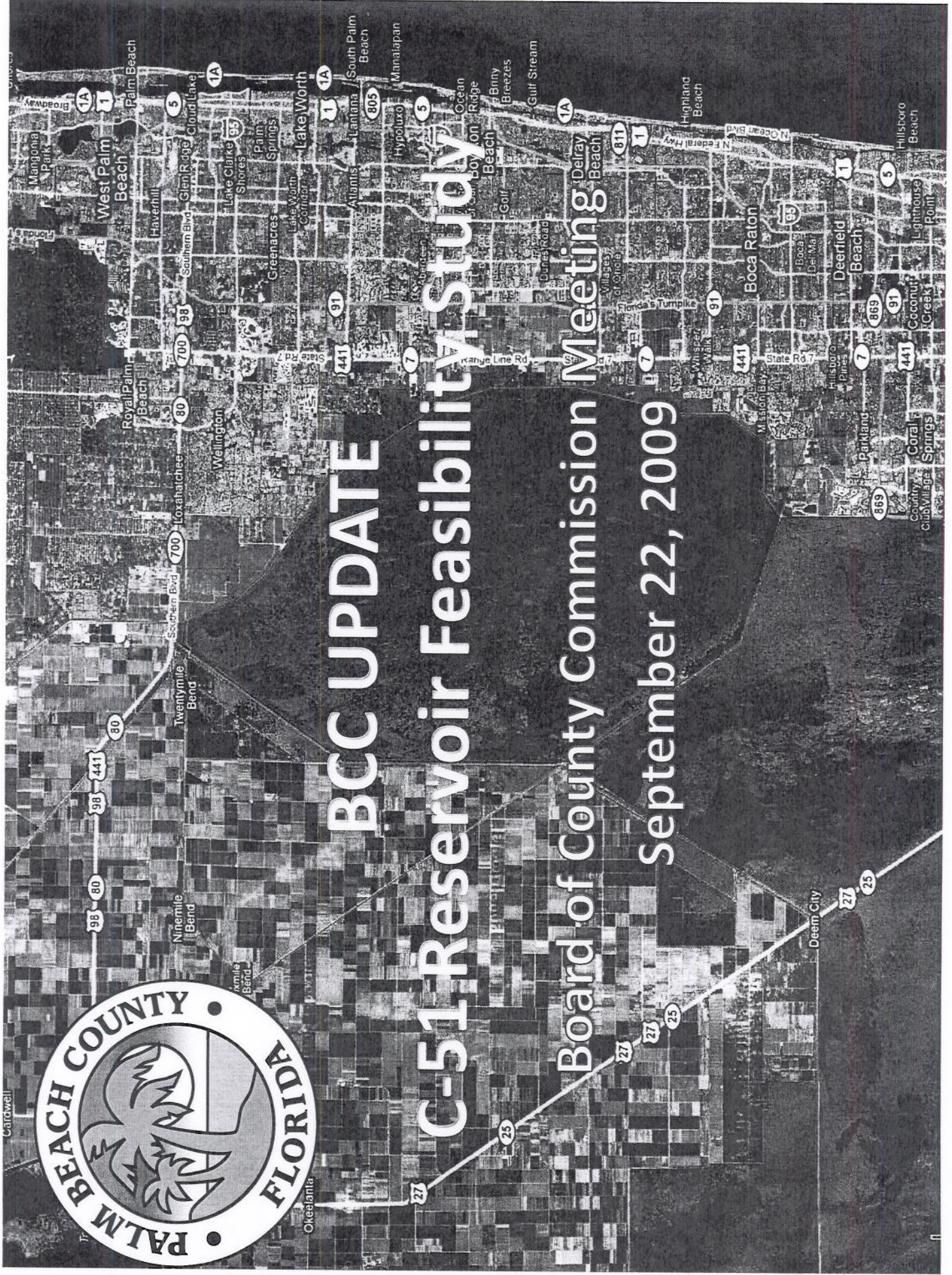
This summary is not to be used as a basis for payment.



# BCC UPDATE

## C-51 Reservoir Feasibility Study

Board of County Commission Meeting  
September 22, 2009



## **C-51 Basin Reservoir Project: What is it?**



- Present C-51 (WPB) Canal system has little storage & wastes significant volumes of water to the LWL, resulting in considerable environmental damage**
- This project concept would make available more water to the regional system for multiple uses & significantly less environmental damage to LWL**



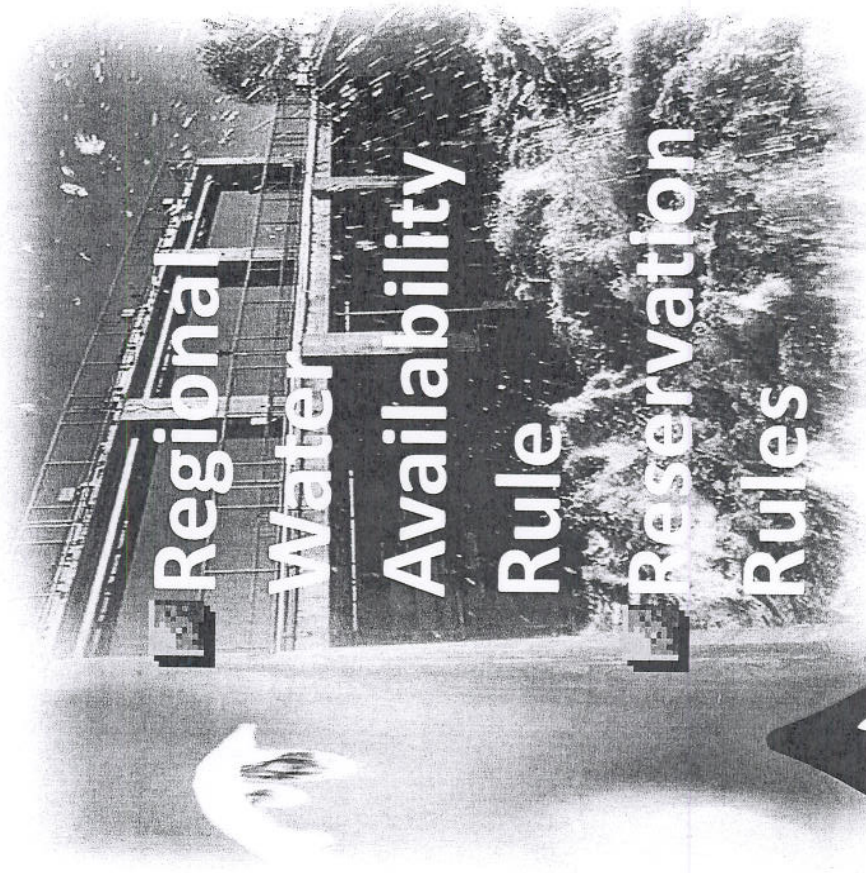
## **C-51 Basin Reservoir Project: What is it?**



- Project is currently in the conceptual stage**
- Project is a long-term project**
- PBC partnered with 7-other utilities & SFWMD to do an initial feasibility concept study – now substantially complete**
- Further feasibility evaluation is needed**



# Water: A Scarce Resource



**AVERAGE DAILY FLOW  
(MGD)**



**C-51 ALL UTILITIES  
CANAL IN PBCO.**

Based on SFWMD Data Records

# Water: Enormous Amounts Being Wasted

270 MGD Average Flow  
From C-51 To Lake Worth  
Lagoon



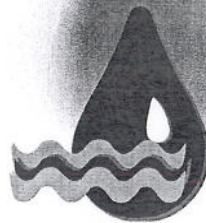
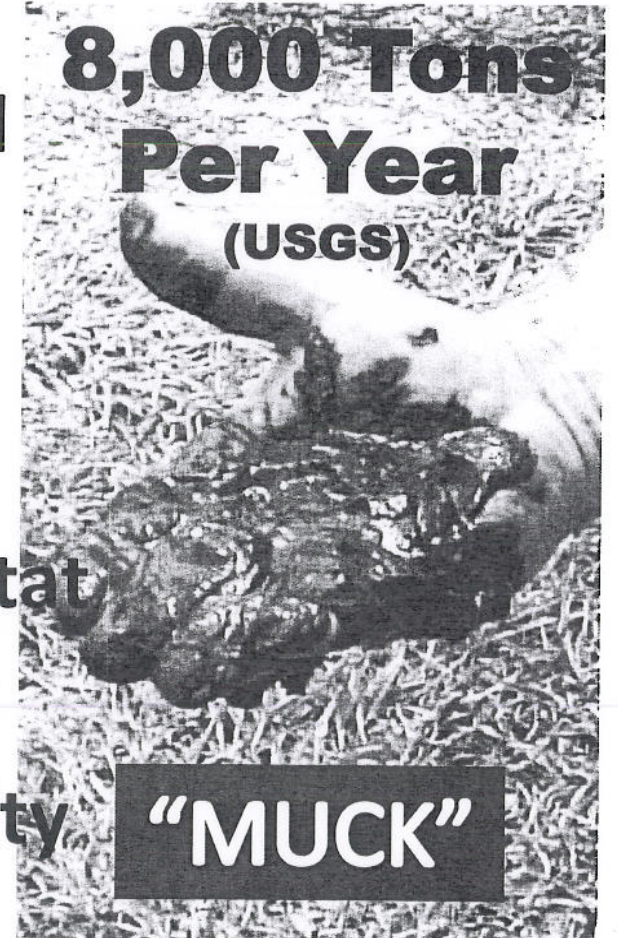
## Water: LWL Environmental Problems Due to C-51 Discharge



### Increased Sediment Load

- Increased Turbidity
- Decreased Light Penetration
- Reduced Benthic Habitat
- Reduced Bio-Diversity
- Degraded Water Quality

**8,000 Tons  
Per Year  
(USGS)**





# Water: Is There a Solution to Wasting Water?

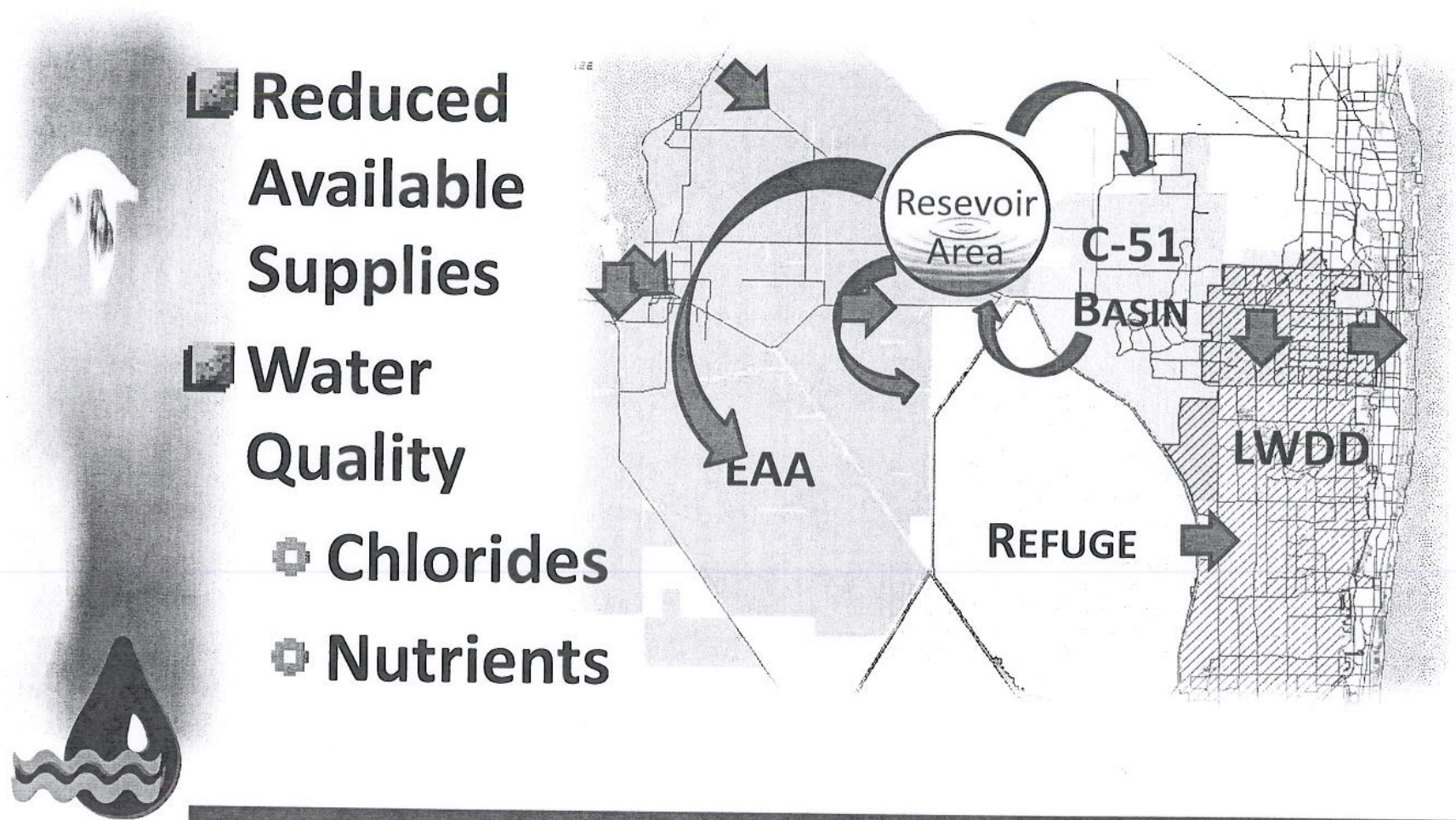


## New Reservoir

- Unique Geologic Formation in PBC
- In Vicinity of Existing L-8 Storage Reservoir
- Storage for Reallocation
- Flexible Management Options



# Water: Refuge Environmental Concerns?



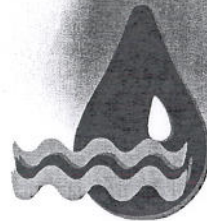
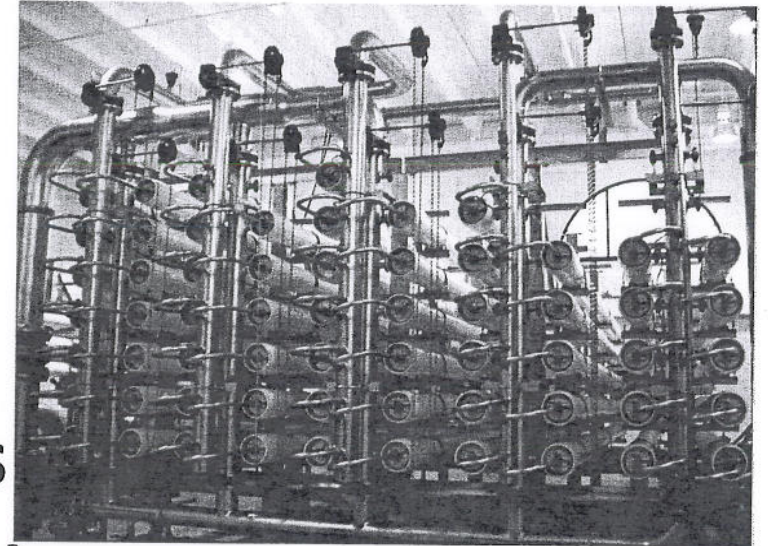
- **Reduced Available Supplies**
- **Water Quality**
  - ⊗ **Chlorides**
  - ⊗ **Nutrients**

## Water: An Alternative?

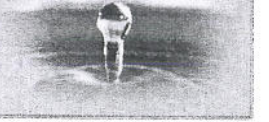


### Reverse Osmosis

- ⊗ High O&M Costs
- ⊗ High Energy Costs
- ⊗ Expensive Technology
- ⊗ Significant Carbon Footprint



## Water: New Reservoir Benefits?



- Reduced Water to Lake Worth Lagoon
  - ◊ Improved Ecosystem Response
- Consistent with LWL Management Plan
- Improved Regional System Management Flexibility
- Potential for Improved Water Quality & Flows to the Refuge
- Water Supply Offsets to Help Lower Future Drinking Water Supply Costs



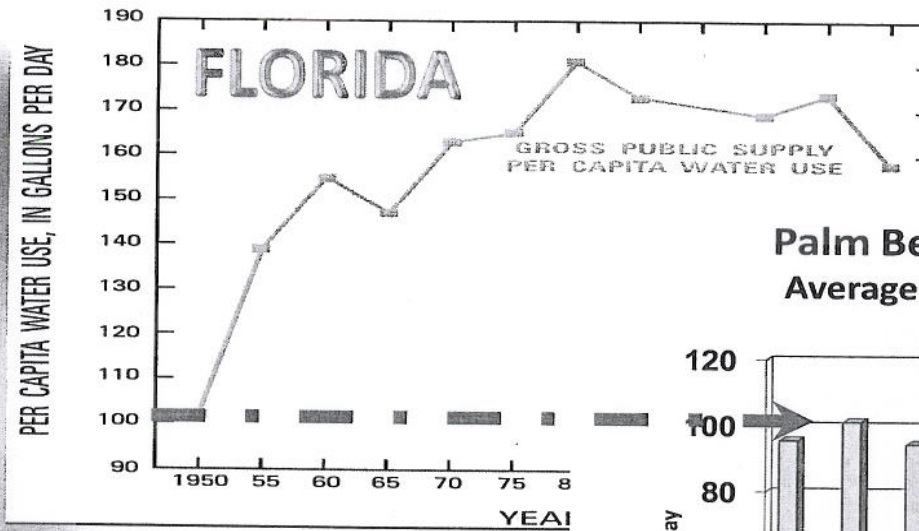
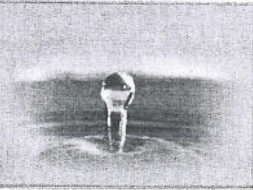
## **C-51 Basin Reservoir Project: Next Steps?**



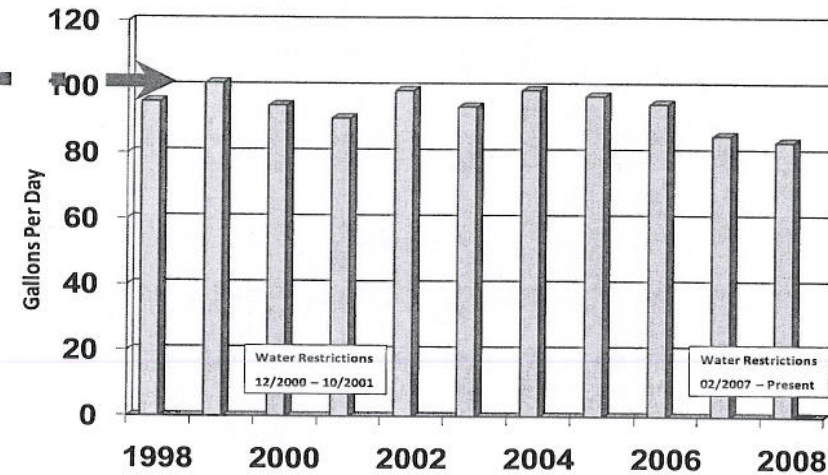
- ▣ Further more detailed project evaluation is needed to address concerns raised by numerous agencies & stakeholders
- ▣ Additional study will clearly define project benefits and costs
- ▣ Subsequent BCC consideration & approval of next project feasibility phase



# Water: WUD Per Capita Status



**Palm Beach County Water Utilities  
Average Gross Per Capita Consumption**





Thank You

Any Questions?

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