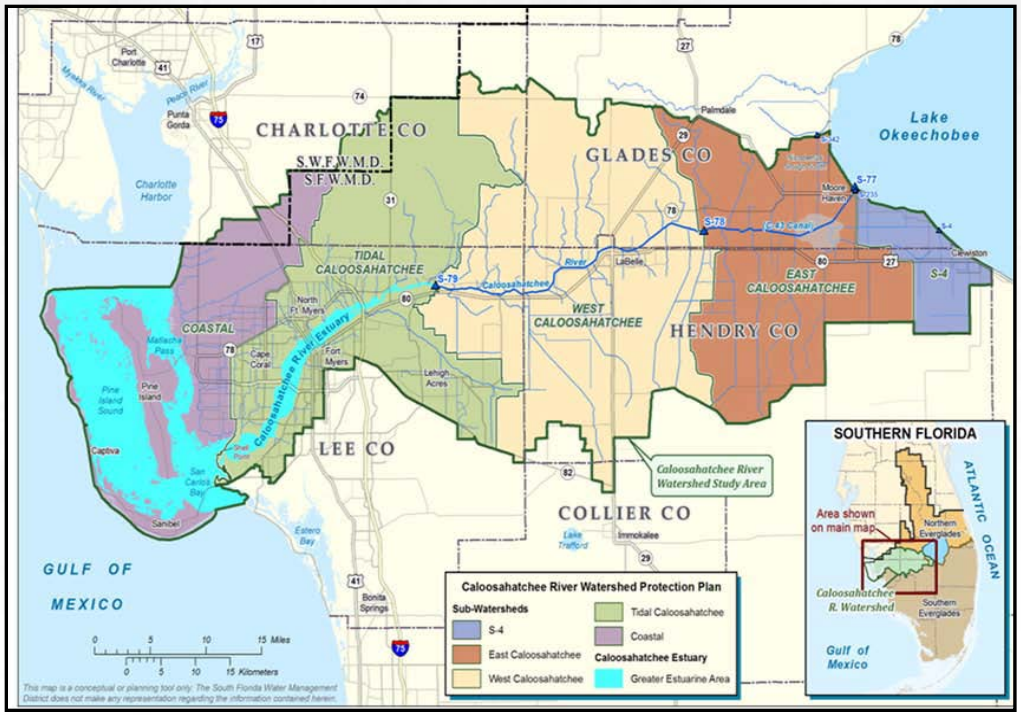
Audit of Dispersed Water Management (DWM) Program

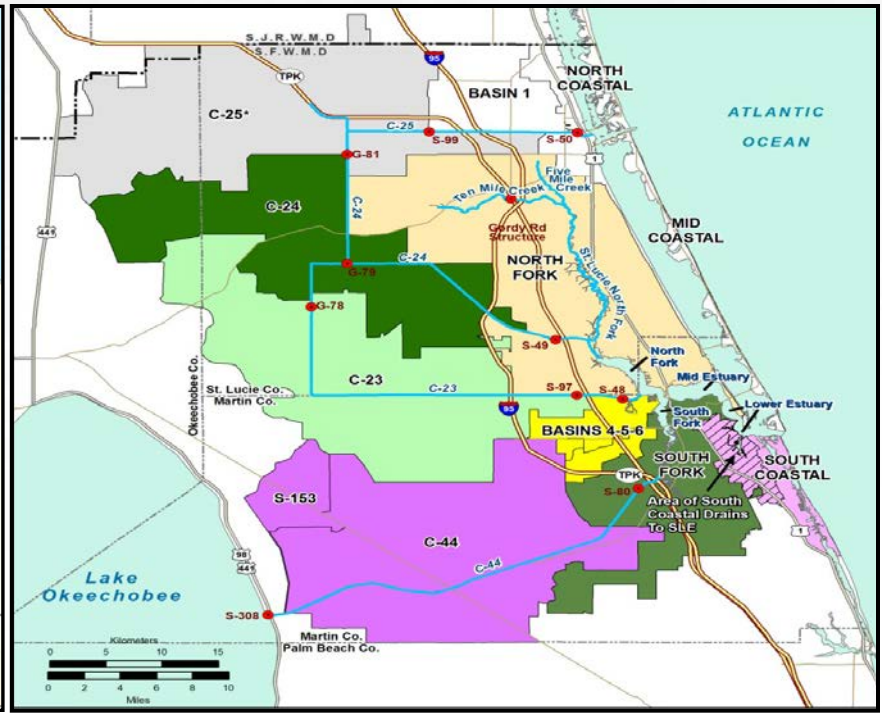
Objectives

- Assess the effectiveness of the program
- Compare the program's cost to other storage methods (e.g., reservoirs)

DWM Projects Objective

- **Reduce water flowing into Lake Okeechobee and reducing damaging discharges and nutrients to St. Lucie & Caloosahatchee Estuaries**





Background

- **DWM projects provide shallow water storage, retention, and detention through the use of existing infrastructure and simple structures that require minimal construction**

DWM Projects Benefits

- Improving water quality and rehydration of drained systems
- Contributing to achieving the Lake Okeechobee TMDL of phosphorous
- Providing habit enhancement for various species

DWM Project – Before & After

Typical DWM Project

Water Farming

Water Storage on Fallow Citrus Land

Agreement Execution Process

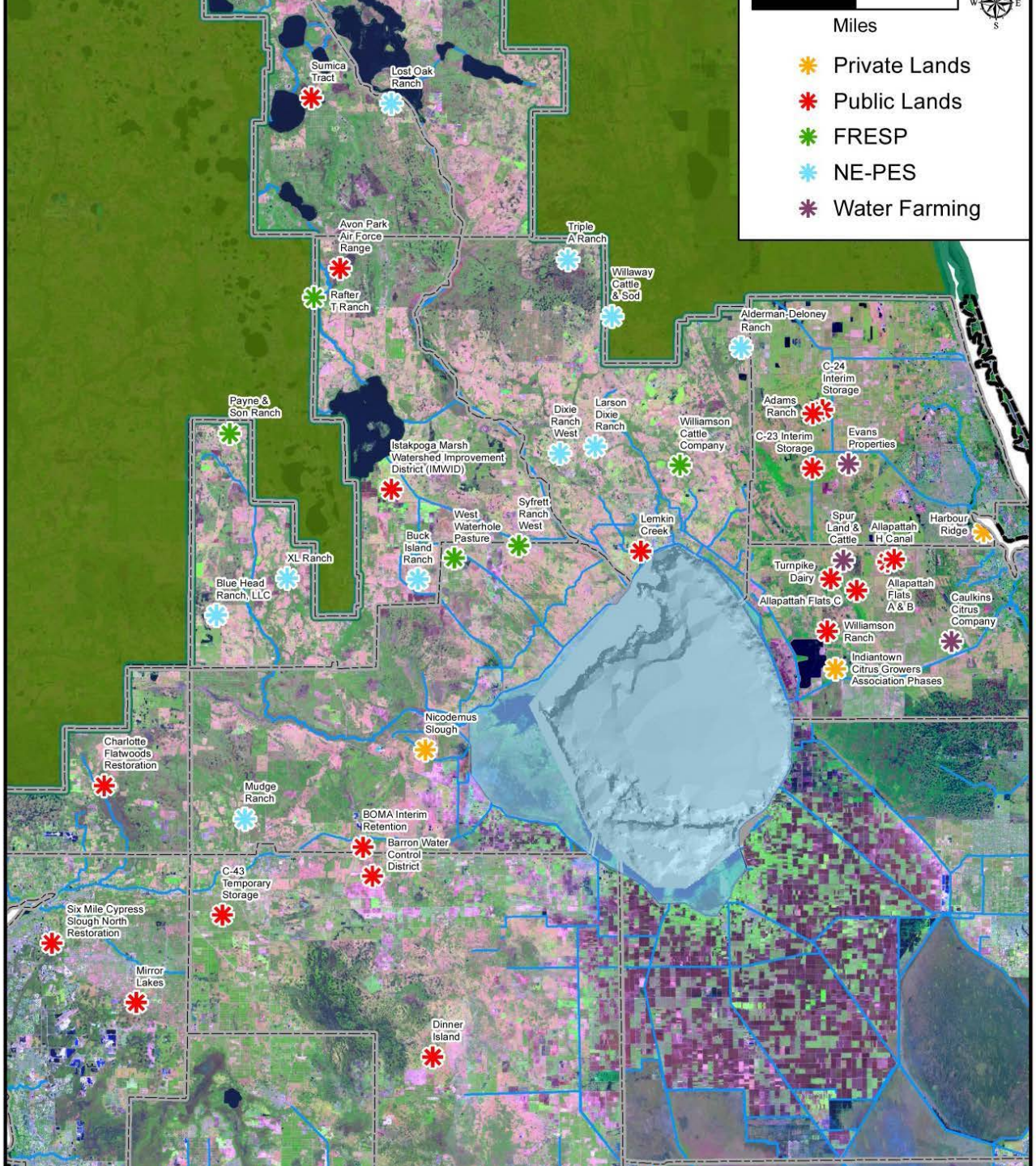
- District solicits proposals
- Proposals are evaluated and ranked
- Governing Board approves proposal rankings
- Annual acre-feet of water retention at proposed site is estimated using water retention model
- PV of cost per acre-foot of retention is calculated
- District negotiates cost with proposal respondent
- If agreement is reached, Contract is executed
- Agreements may be terminated for convenience upon 30 calendar day notice

Annual Retention ~ 95,000 Acre Feet
Operational & Planned

Dispersed Water Management Project Type (Operational & Planned)	Acre-Feet Operational	Acre-Feet Under-Const.	Total Average Acre-Feet of Annual Retention	
FL Ranchlands & Enviro Serv Projects (F RESP)	6,145		6,145	Private ~ 60K 63%
Northern Everglades –Pmt Envr Serv (NE-PES)	4,777	3,859	8,636	
Water Farming Pilot Projects	6,780	4,505	11,285	
Private Lands – Eight-Year Contract with a Private Entity (Nicodemus Slough)		34,000	34,000	
Agreements with Private Entities – One-time Contribution of District Funds	4,217		4,217	Public ~ 35K 37%
Public Lands – Agreements with Public Entities	16,311	2,350	18,661	
District-Owned Pre-Project Lands – Interim Storage	5,369		5,581	
District-Owned Lands – Easements Funded NRCS Wetland Reverse Program	4,047	1,243	5,290	
Prior FRESP Projects on Private Lands – Easements Funded by NRCS Wetland Reverse Program	1,082		1,082	
Total – Acre-Feet	48,728	45,957	94,685	

Estuaries Watersheds

- Lake Okeechobee
- Caloosahatchee
- St. Lucie



Estimated Storage ~ 95,000 Acre-Feet

Operational and planned DWM projects provide approximately 6% to 9% of estimated storage needs

	Estimated Storage Needs (Acre-Feet)	
Watershed	Early Planning Pre-River of Grass	2009 River of Grass Planning
St. Lucie	200,000	200,000
Caloosahatchee	400,000	400,000
Lake Okeechobee	1,100,000	512,500
Total	1,700,000	1,112,500

- There are no plans to scientifically determine the impact of current operational DWM projects on flow reduction in the three water sheds to the estuaries.
- District in now performing a comprehensive assessment of storage needs north of the Lake at a sub-watershed level which will be more beneficial than measuring flows to the Lake and the St Lucie and Caloosahatchee Estuaries.

Recommendations

- Ensure the storage needs assessment for north of Lake Okeechobee is completed in a timely manner.
- If the suitability analysis for north of Lake Okeechobee concludes that certain operational DWM projects in specific sub-watersheds are not in the preferred mix of projects to meet storage goal then consider terminating the contracts.
- Consider performing the same storage needs assessment for the St. Lucie and the Caloosahatchee River Watersheds.

DWM vs. Regional Projects

	Regional Projects	DWM Projects
Similarities	Nutrient load reductions	
	Habitat improvement	
	Groundwater recharge	
Differences	Water stored & released during dry periods	Water retained on site – Generally not available for dry periods
	Project life – long term (~50 Yrs)	Project Life – short term (~10 Yrs)
	Long planning & Construction Period	Simple infrastructure
	Large capital cost	Low initial capital cost
	Land purchases & interim management	No land purchase costs
	No recurring lease/service payments	Recurring annual lease payments
	Acquired lands removed from tax rolls	Lands kept on tax rolls

Storage Cost Comparison

Annual Storage Cost Per Acre-Foot			
Storage Method	Initial Capital	Recurring Payments & Operations	Total
DWM - Public Lands	$ 4.05	$ 3.97	$ 8.02
DWM - Private Lands	$ 22.65	$ 80.45	$ 103.10
Reservoirs	$ 147.32	$ 20.53	$ 167.84

Recommendations

- **Perform an updated comprehensive analysis of all District-owned pre-project land parcels and other publicly owned lands to determine whether there are feasible sites that can be used for interim water retention.**
- **Include District lands leased for cattle grazing as part of the comprehensive analysis of all District-owned pre-project land parcels and other publicly owned lands to determine whether there are feasible sites that can be used for interim water retention.**

Program Funding

DWM Program's Revenues & Planned Expenditures

as of June 3, 2014

Fiscal Year	Spend Down Funding and Other Revenue	Commitments & Planned Expenditures	Annual Surplus (Shortage)	Cumulative Revenue Less Expenditures
2014	$11,882,777	$11,792,401	$90,376	$90,376
2015	22,590,553	22,590,551	2	90,378
2016	4,727,013	4,727,013	0	90,378
2017	4,103,777	4,103,778	(1)	90,377
2018	4,079,963	4,171,116	(91,153)	(776)
2019	-	4,290,474	(4,290,474)	(4,291,250)
2020	-	4,361,973	(4,361,973)	(8,653,223)
2021	-	4,165,495	(4,165,495)	(12,818,718)
2022	-	3,144,220	(3,144,220)	(15,962,938)
2023	-	705,579	(705,579)	(16,668,517)
2024	-	688,700	(688,700)	(17,357,217)
	$47,384,083	$64,741,300	($17,357,217)	

Recommendations

- **Continue working with the Florida Department of Environmental Protection as part of the District's budget cycle, to identify funding mechanisms for the DWM Program, to address the budget shortfall from Fiscal Year 2018 to Fiscal Year 2024.**
- **Increase efforts to cost share the expenses of DWM projects by obtaining grants and partnering with public and private entities and other stakeholders.**

Recommendations for Additional Improvements to Enhance the DWM Program's Effectiveness

- **Refine the Potential Water Retention Model (PWRM), which calculates the average annual water retention over a 10-year period of rainfall record, to better estimate water retention levels for agreement negotiations.**
- **Train staff to use the model so that water retention capacities can be closely monitored.**
- **Ensure that all required contract compliance documentation is submitted by service providers and maintained by the District.**
- **Require DWM Program staff to perform and document periodic site visits to all DWM project sites and document such visits. (Implementation Completed)**
- **Require DWM staff to ensure that construction costs are adequately substantiated before payments are made. (Implementation Completed)**

Recommendations for Additional Improvements to Enhance the DWM Program's Effectiveness

- **Consult with Engineering and Construction Bureau's staff, with construction cost estimating expertise, to review proposed construction costs. (Implementation Completed)**
- **Revise an agreement where the District is paying a contracted party about $23,512 annually in administrative fees for essentially making payments to a FRESP service provider, where such party's only involvement is forwarding invoices to the District for reimbursement. (Implementation Completed)**
- **Ensure that all future DWM contracts specify allowable general and administrative costs. (Implementation Completed)**

Governing Board Discussion

? Questions ?

Governing Board Approval

- **Recommend Approval of the Audit Report**