

The Permitting Dilemma: **Groundwater Recharge Wetlands for** **Treated Wastewater Disposal**

Debra Segal, Wetland Solutions, Inc.
Nicole Wulff, US Forest Service

Natural Resources
Leadership Institute - Class X

Practicum Presentation
April 15, 2011



Why this project?

Natural Resource Perspective

- Concern about widespread springs degradation due to high nitrogen loading in spring-sheds
- Need to dispose of treated wastewater in a more environmentally protective manner



Why this project?

Personal Perspectives

- Addresses a professional interest of Wetland Solutions; springs protection and treatment wetland technology
- Addresses a local environmental issue and provides an opportunity to learn more about groundwater quality and springs protection



Current WW Treatment Methods

- Conventional land application of treated wastewater (WW) are sprayfields and Rapid Infiltration Basins (RIBs)
- These methods are not always protective of water quality (WQ) in springs or groundwater (GW)



Wastewater Disposal: Sprayfields



Small-scale Wastewater
Sprayfields



City of Tallahassee's
2000-acre sprayfield

Wastewater Disposal: Rapid Infiltration Basins (RIBs)



RIBs at Okaloosa County
Water Reclamation Facility

RIBs in Orlando



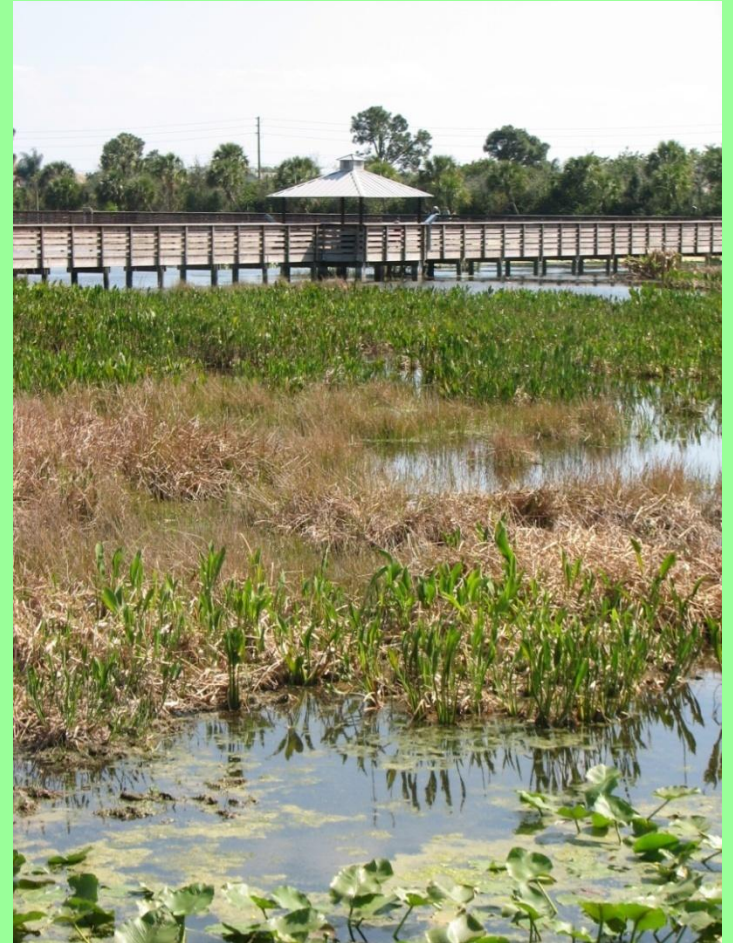
Groundwater Recharge Wetland – An Alternative WW Disposal Option

A treatment wetland that removes nutrients and pollutants from the water and infiltrates water into the GW



Vierra; 200-acre
Treatment Wetland

Groundwater Recharge Wetland



Green Cay
50-acre Groundwater Recharge Wetland
West Palm Beach, FL

What are the advantages of Groundwater Recharge Wetlands?

- Provide additional nitrogen removal through denitrification, thereby minimizing nutrient inputs to GW and connected springs
- Recharge the aquifer with lower nitrogen wastewater
- Less expensive to construct than traditional tertiary wastewater treatment facilities
- Provide wildlife habitat and public use amenities.



Additional Advantages of GRWs

- Require less maintenance and expense to operate than sprayfields
- Require less land area than RIBs
- Reduce groundwater nitrate contamination cost effectively



Existing Barriers

- There is not a recognized permitting framework for GRWs as a WW disposal option.
- Therefore, municipalities and WW consultants are reluctant to design GRWs for WW disposal.



Overall Goals:

- GRWs will be permitted by FDEP as a wastewater reuse option for treated WW in a manner comparable to permitting other land application methods.
- Municipalities will consider GRWs as an alternative WW disposal method.



Practicum Goals:

1. To discuss the permitting barrier with FDEP and to encourage development of an applicable framework to permit GRWs as a WW disposal option.
2. To meet with the SRWMD and encourage the District to promote GRWs to municipalities within their “springs-rich” District.



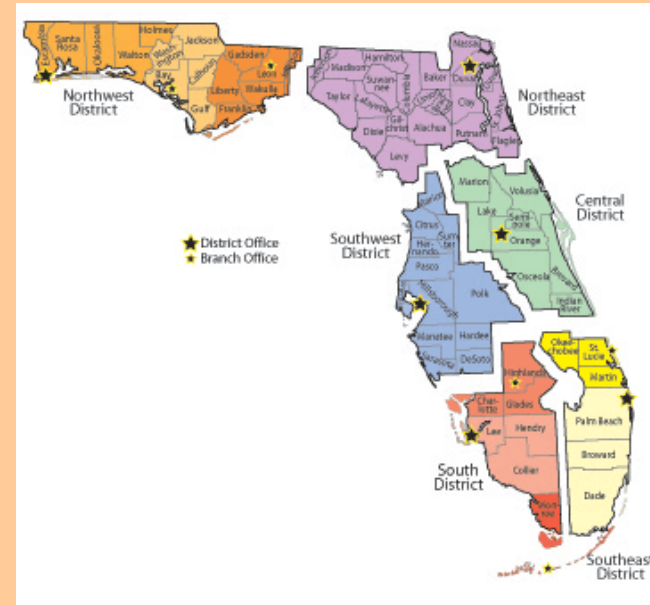
NRLI Tools:

- Situation/Stakeholder Assessment
- Meeting Planning
- Process Agenda
- Facilitation Techniques
- Listening Skills
- Negotiating



FDEP Meeting on 1/18/11

- 24 FDEP staff attended meeting
- Delivered presentation on environmental and economic benefits of GRWs, examples of GRWs, and discussed perceived permitting barrier
- Facilitated an interactive discussion after the presentation



Results of the FDEP Meeting

- FDEP noted that the existing WW Rule allows for alternative methods for WW disposal
- FDEP will provide clarification and a *Guidance Memo* to all regional offices for permitting GRWs under existing rule
- FDEP will correspond with the SRWMD to encourage use of GRWs within their district



Letter from FDEP to SRWMD



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard, Jr.
Secretary

February 18, 2011

Mr. Jon Dinges, Director
Resource Management
Suwannee River Water Management District
9225 CR 49
Live Oak, FL 32060

Dear Mr. Dinges:

On January 18, Department staff met with Dr. Bob Knight of Wetland Solutions, Inc., regarding groundwater recharge wetlands. Dr. Knight indicated during this meeting that the Suwannee River Water Management District is exploring possible reuse and other water resource development projects for funding within the District, including their groundwater recharge wetland system. In accordance with Florida Statute 403.064, which states that water reuse is a state objective, we are interested in the potential of such systems, especially related to the wetlands' mechanisms for nutrient reduction.

Regulations governing water reuse in Florida are contained in Chapter 62-610 of the Florida Administrative Code (F.A.C.). While a groundwater recharge wetland is not specifically described in Chapter 62-610, F.A.C., this activity, as proposed by Dr. Knight, would qualify as reuse per Rule 62-610.810(2), F.A.C. Furthermore, Rule 62-610.100(10), F.A.C., allows the Department to permit other types of reuse and land application systems not otherwise specifically addressed in the rule as long as reasonable assurance is provided that the system will meet applicable ground water and surface water quality standards as well as protection of public health. This rule further states that "to the extent practical, design and operational control measures should be established based on the most similar reuse or land application type..." The Department has

Results of SRWMD Meeting- 03/10/11

- District's highest priority is to use treated WW for irrigation to offset GW pumpage
- SRWMD will promote GRWs to municipalities as an alternative to sprayfields and RIBs
- SRWMD will consider cost-sharing for GRWs in the future as funds become available



Successes

- Invited the right people to the meeting
- Planned the meetings early and followed-up
- Involved technical experts
- Asked for two specific action items from FDEP– they agreed to both and have produced one



Lessons Learned

- Confirm number of remote attendees
- Lengthen meeting with a large number of attendees
- Don't assume the meeting must end on time
- Don't assume there will be conflict



Special Thanks To:

- **Bob Knight** – Technical Expert
- **Chris Keller** – Technical Expert
- **Bruce Delaney** – NRLI Facilitation Expert



Questions?

