

Coastal Georgia Water & Wastewater Permitting Plan For Managing Salt Water Intrusion

**Georgia Water Resources Conference
Environmental Protection Division
Watershed Protection Branch
March 2007**

COASTAL POLICY

June 15, 2006:

Governor Sonny Purdue released the new coastal policy, called “Coastal Georgia Water & Wastewater Permitting Plan for Managing Salt Water Intrusion” (PLAN)

See copy at <http://www.gaepd.org>

Previously defined in the “Interim Strategy for Managing Salt Water Intrusion (1997)”

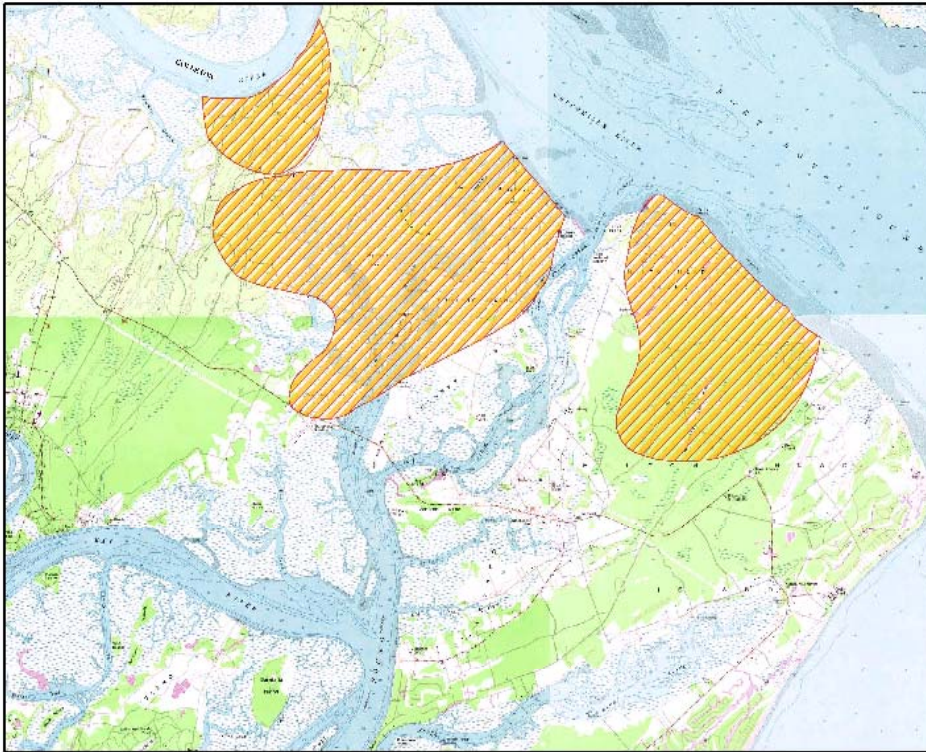
COASTAL POLICY

Implementation of the PLAN is designed to support the continued growth and development of coastal Georgia while ensuring the sustainable use of waters of the Upper Floridan Aquifer.

This will be accomplished through:

1. Managing groundwater withdrawals on the identified salt-water plumes
2. Managing groundwater resources to meet the reasonable future water needs
3. Managing wastewater discharges to avoid increased waste-load demands and protect water quality standards

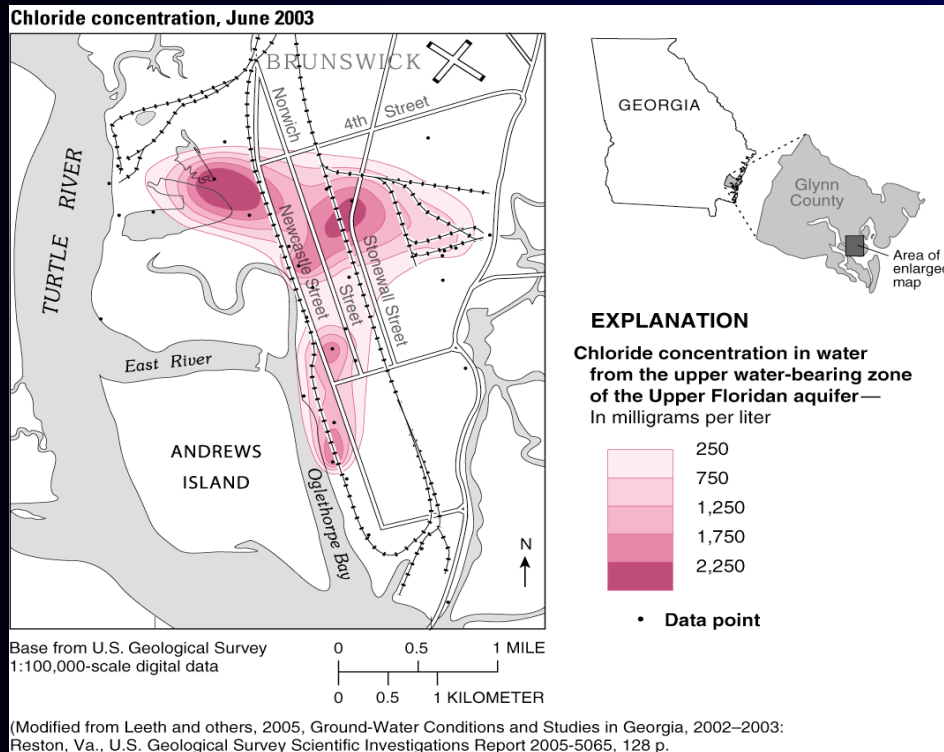
Why Do We Need A Coastal Permitting Plan?



SALT WATER PLUMES ON HILTON HEAD ISLAND, PINCKNEY ISLAND AND COLLETON RIVER

- Elevated chloride concentrations at northern end of Hilton Head Island due to aquifer properties and withdrawal rates
- Growth in coastal population and economy; increased demands for water

Why Do We Need A Coastal Permitting Plan?

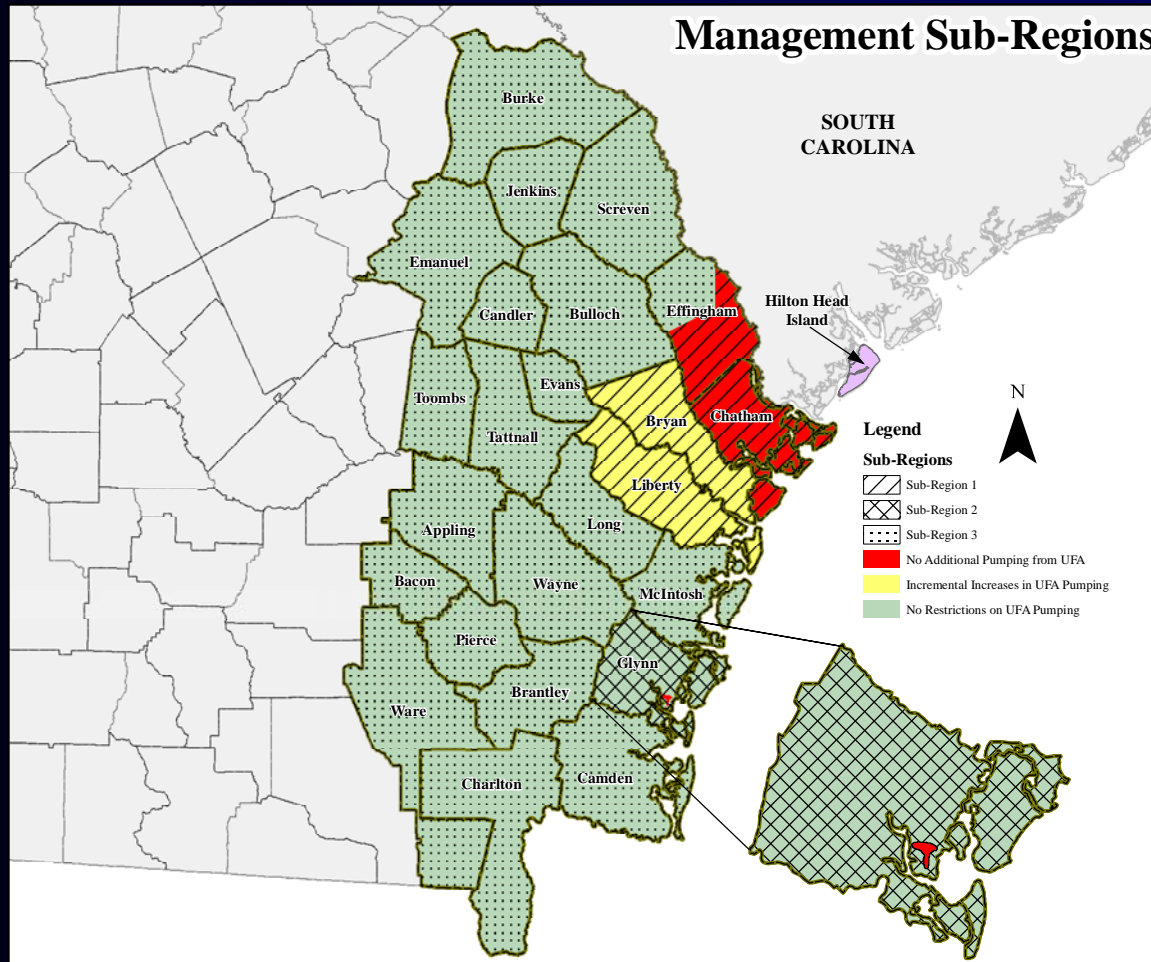


Concern about withdrawal induced chloride levels in monitoring wells in Brunswick

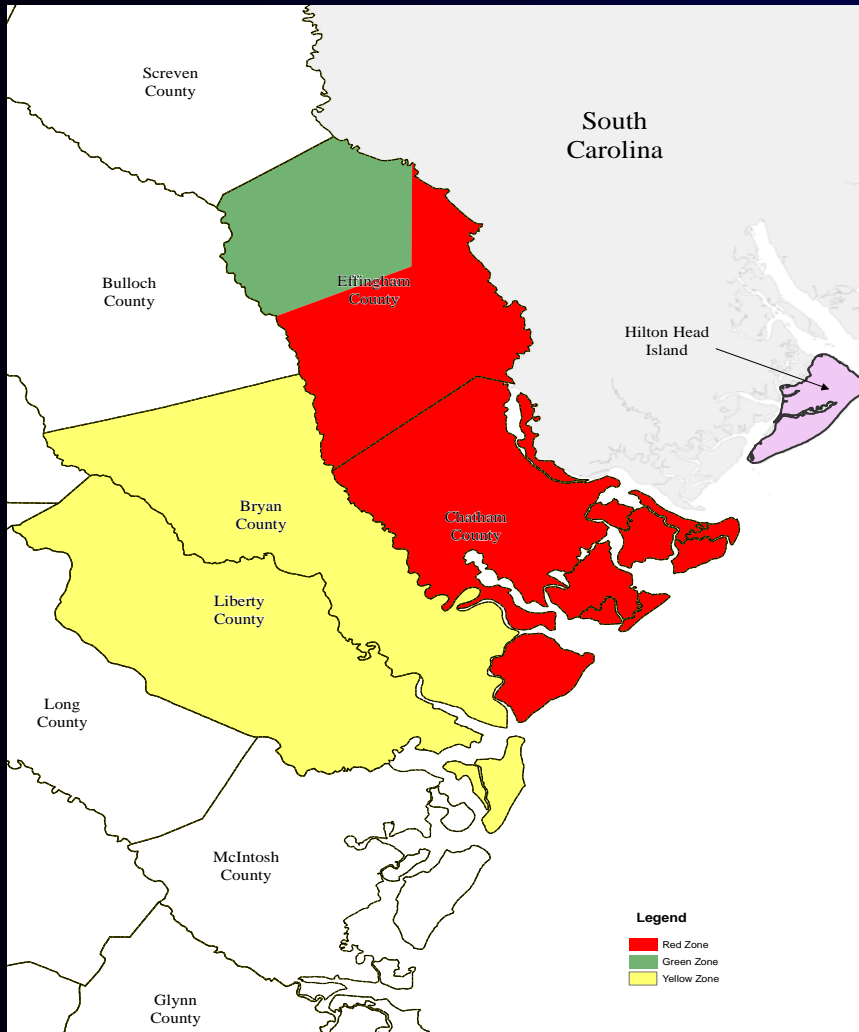
T-SHAPED PLUME AT BRUNSWICK

The Plan Covers 24-Coastal Counties

Sub-regions Based on Vulnerability for or Contribution to Salt Water Intrusion



Sub-Region 1



- Chatham County
- Effingham County
South of Hwy 119
- Bryan & Liberty
Counties

Elements Of the Plan

Sub-region 1 Red Zone

Chatham County & Effingham County South of GA Highway 119

- Restrict withdrawals from Upper Floridan Aquifer – 2004 actuals
- Reduce withdrawals by at least an additional 5 MGD by 2008
- Require implementation of water conservation and reuse measures
- Insure water withdrawal permit amounts requested are justifiable
- Encourage/require use of alternate water supply sources
- Continue to monitor chloride levels in coastal monitoring wells

Elements of Management Plan

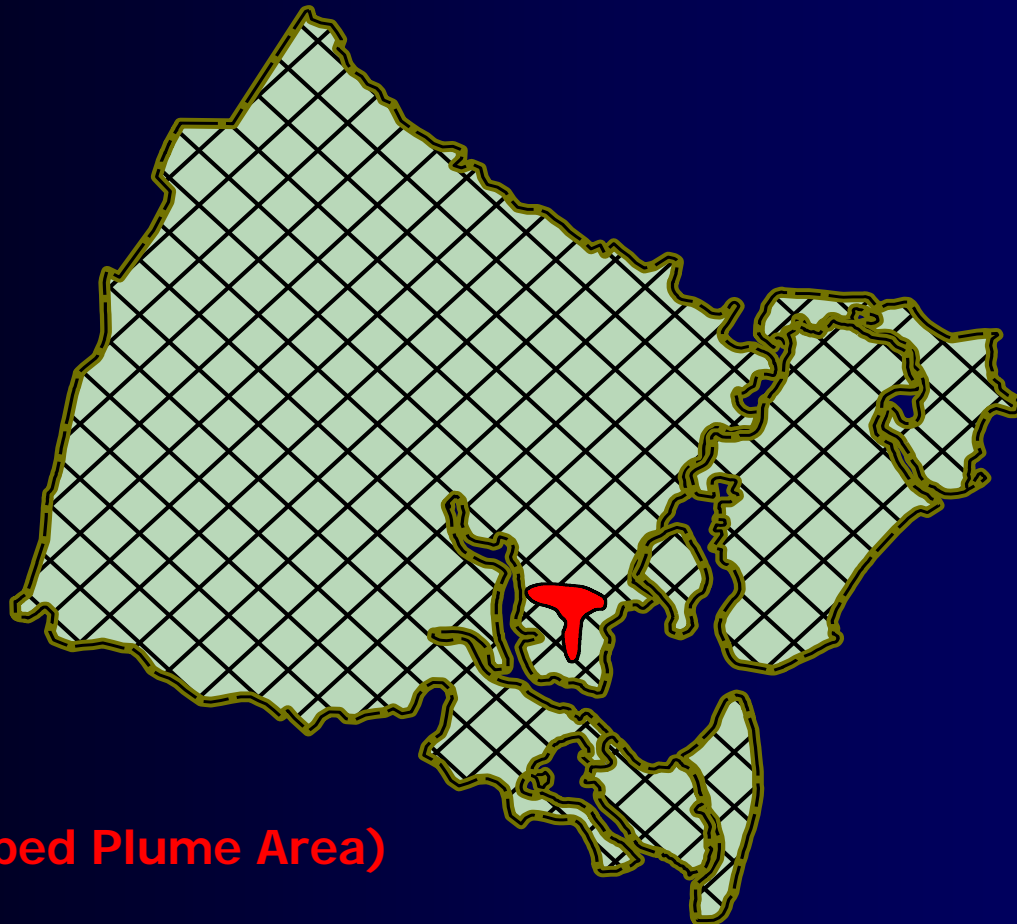
Sub-region 1 Yellow Zone

Bryan County & Liberty County

- **Allow step increases in UFA (up to 5 MGD through 2008);
Monitor impact on aquifer**
- **Require implementation of water conservation and reuse measures**
- **Ensure water needs are justifiable**
- **Continue to monitor chloride levels in coastal monitoring wells**

Sub-region 2

Glynn County



(Brunswick T-shaped Plume Area)

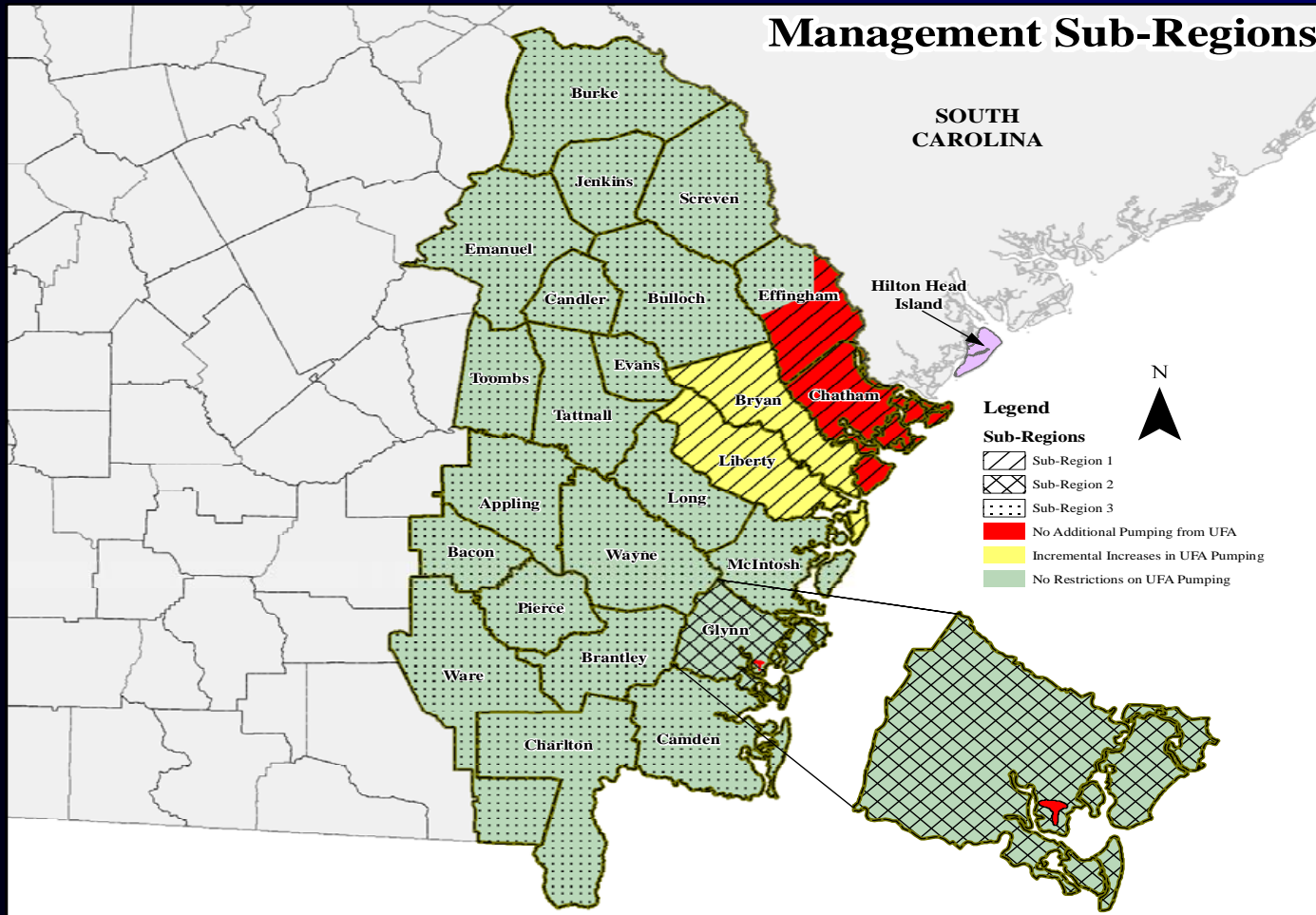
Elements of the Plan

Sub-region 2 – Glynn County

- **Manage withdrawals from upper Floridan aquifer to avoid change in “T-shaped” plume**
- **Require implementation of water conservation and reuse measures**
- **Insure water needs are justifiable**
- **Continue to monitor chloride levels in Brunswick area monitoring wells**

Sub-region 3

19 Counties And Effingham County North Of Hwy 119



Elements of the Plan

Sub-region 3

(19 Counties Plus Effingham County North of Highway 119)

- **Require implementation of water conservation and reuse measures**
- **Ensure water needs are justifiable**
- **Continue collecting data from monitoring well network and stream gauging stations**

Conservation And Reuse

General Requirements for all Sub-regions

Industrial Water Users

- **Water system audit – identify locations to conserve water**
- **Adopt leak detection and repair program**
- **Adopt a metering, meter calibration, repair and replacement program**
- **Conduct a reuse feasibility study**
- **Evaluate alternate water sources as a substitute for groundwater used**
- **Maximize use of recycled or reclaimed water**
- **Adopt and implement outdoor watering schedule**

Conservation And Reuse

General Requirements for all Sub-regions

Drinking Water Providers

- **Develop a water conservation education program**
- **Adopt and implement a conservation-oriented water rate structure**
- **Adopt a policy requiring all customers to abide by outdoor watering schedule**
- **Conduct a reuse feasibility study**
- **Adopt a meter calibration, repair, and replacement program**
- **Adopt ordinances to install purple pipe reuse lines**
- **Adopt a water loss control program**

Conservation And Reuse

Requirements for all Sub-regions

Agricultural Water Users

- **Promote educational efforts to explain importance of implementing efficient irrigation practices and reducing water withdrawals**
- **Require installation of water meters and report annual water usage**
- **Identify and fix leaks, eliminate off-target application**
- **Require the use of cost effective, water efficient irrigation technology**
- **No new traveler irrigation systems in sub-region 1**
- **Conduct reuse feasibility study to use reclaimed water**

Conservation And Reuse

Requirements for all Sub-regions

Golf Course Water Users

- Non-farm water use permittees required to conduct study of feasibility of using reclaimed water as a substitute for UFA water
- Schedule for implementation of best management practices (BMPs) adopted by Georgia golf course superintendents association

Implementation Considerations

Sub-region 1

(Chatham County, Effingham County South Of Hwy 119, Bryan & Liberty Counties)

- No net increases in UFA withdrawals above 2004 levels in Chatham and south Effingham counties
- Reducing withdrawals by additional 5 MGD by 2008 in Chatham and south Effingham
- Allocation and management of 5 MGD increase in Bryan and Liberty counties
- Encourage diversification of sources, i.e. surface water, lower Floridan aquifer, other aquifers

Drinking Water Operating Permits

- All publicly owned and privately owned permitted water systems in the 24 coastal counties have been notified on March 16, 2007, that their operating permits will be reissued with an effective date of July 1, 2007.
- The new permits will include the “new coastal permit conditions”
- Permit conditions are specific to each sub-region and targeted for different types of facilities

Drinking Water Operating Permits

(Example of new operating permit requirements)

Sub-Region1- Public System with both Withdrawal and Operating Permits

- Water conservation education program (*12 months from issue date*)
- Conservation-oriented water rate structure (*12 months from issue date*)
- Outdoor watering schedule (*12 months from issue date*)
- Conduct a reuse feasibility study (*24 months from issue date*)
- Evaluate alternate water sources (*24 months from issue date*)
- Meter calibration, repair, and replacement program (*12 months from issue date*)
- Gov't systems adopt ordinances to install purple pipe reuse lines (*24 mos.*)
- Water loss control program (*12 months from issue date*)
- Meter all fire hydrant flushing events

Drinking Water Operating Permits

(Example of new operating permit requirements)
Sub-Region1- Private System with an Operating Permit

- Water conservation education program (*12 months from issue date*)
- Conservation-oriented water rate structure (*12 months from issue date*)
- Outdoor watering schedule (*12 months from issue date*)
- Meter calibration, repair, and replacement program (*12 months from issue date*)

Drinking Water Operating Permits

(Example of new operating permit requirements)

Sub-Region1- Private Industrial System with both Withdrawal and Operating Permits

- Water conservation education program (*12 months from issue date*)
- Perform an audit of facility's water system (*18 months from issue date*)
- Water leak detection and repair program (*18 months from issue date*)
- Meter calibration, repair, and replacement program (*12 months from issue date*)
- Conduct a reuse feasibility study (*24 months from issue date*)
(*Food production facilities are exempt*)
- Evaluate alternate water sources (*24 months from issue date*)
- Maximize use of recycled or reclaimed water (*60 months from issue date*)
- Outdoor watering schedule (*12 months from issue date*)

GROUNDWATER WITHDRAWAL PERMITS

- All permit holders have been informed
- Completed ENHANCED groundwater withdrawal permit applications are due by June 30, 2007
 - Require additional conservation information
 - Water demand forecasts and projections
- Permit issue by December 31, 2007, with new special permit conditions

GUIDELINES ON EPD WEB-SITE

Guidelines will be available on EPD web-site to help systems to develop various programs required by the permits.

Implementation Considerations

Sub-region 1

- Monitoring of potential salt water intrusion in areas other than Hilton Head Island
 - Offshore near Tybee Island
 - Savannah Harbor channel
- Wastewater assimilative capacity – will not approve wastewater solutions that increase point source discharges of oxygen-demanding substances to the Savannah Harbor or upland streams

Implementation Considerations

Sub-region 2 – Glynn County

- Establish buffer around current t-shaped plume area
- Ensure that no new wells are cited within buffer area
- Do not permit any withdrawal increases of wells currently located within the t-shaped plume area
- Continue monitoring efforts to alert EPD of any shifting of the plume

Implementation Considerations

Sub-region 3

19 Counties Plus Effingham County North of Highway 119

- Monitor water levels in Upper Floridan aquifer as ground water withdrawals increase
- Monitor surface water bodies to see if they are impacted by increased ground water withdrawals

Questions ?

