

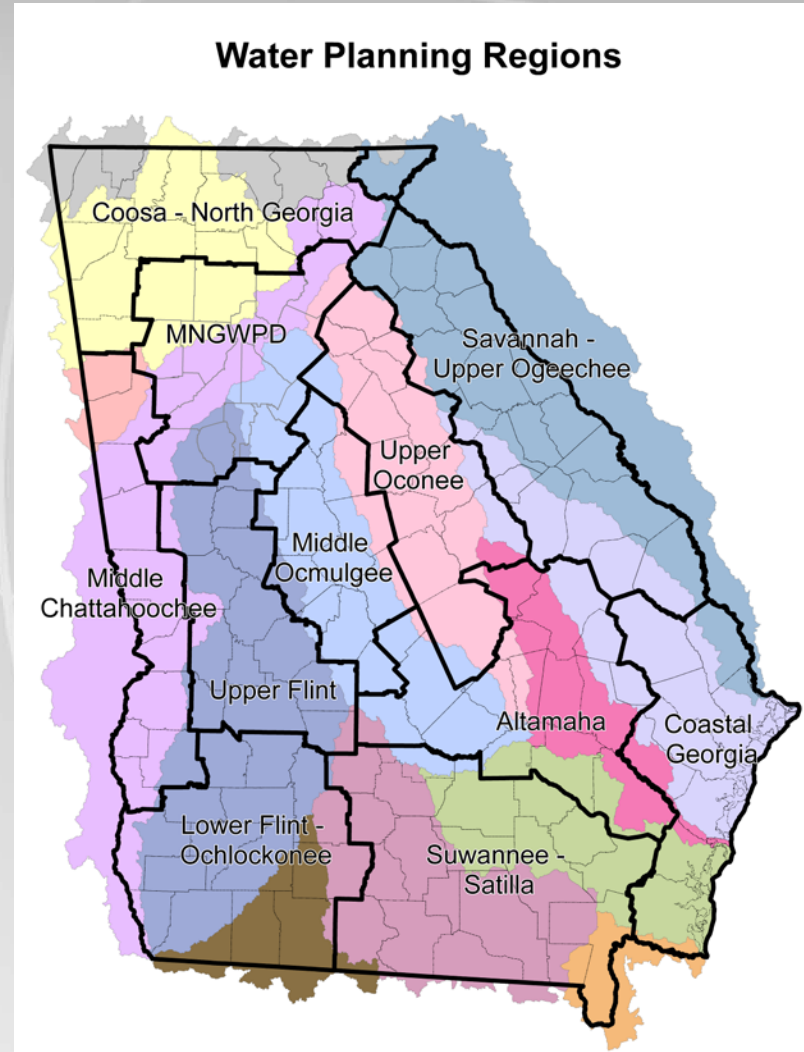
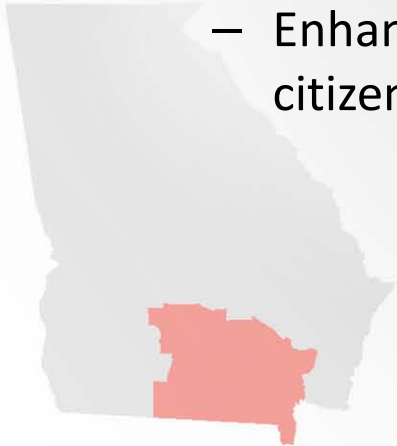


Impact of Regional Water Plans On Land Use Planning

**Cliff Lewis, EPD Assistant Branch Chief
GA EPD, Watershed Protection Branch
Coordinator for Suwannee-Satilla Regional Water
Council**

Georgia's State Water Plan

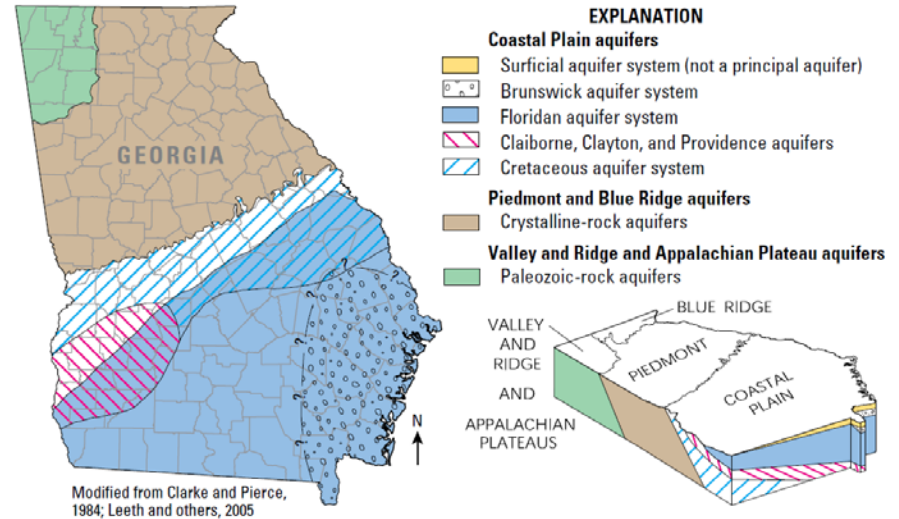
- Water Planning Process Approved by Legislature in 2008
- The wise use and management of water is critical to:
 - Support State's economy
 - Protect public health and natural systems
 - Enhance quality of life for all citizens



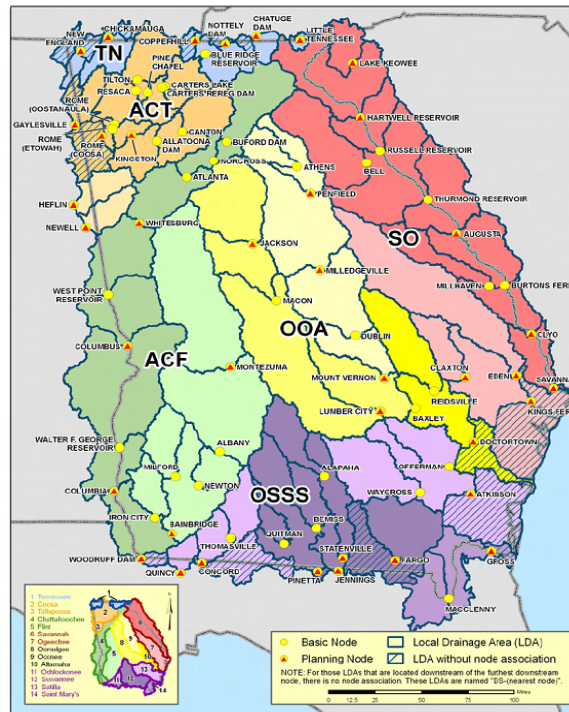
Resource Assessments

- Three Resource Assessments Completed to Assess Availability of the Resource to Meet Future Needs

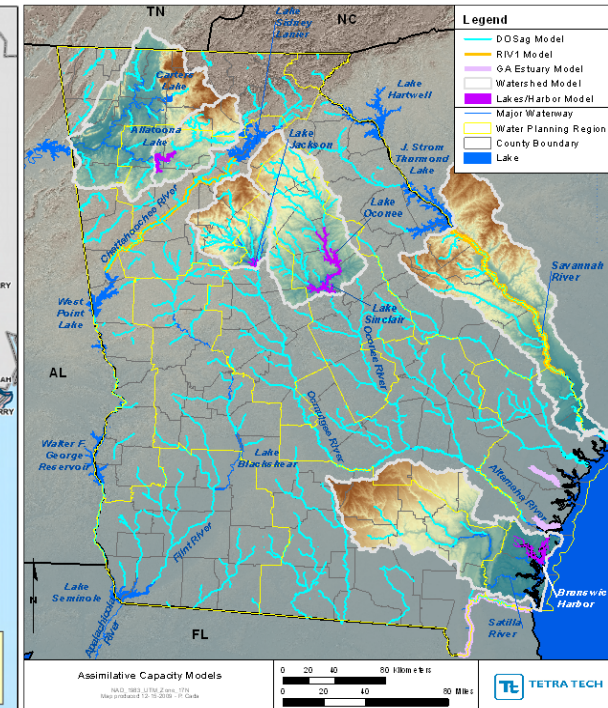
Groundwater Availability



Surface Water Availability

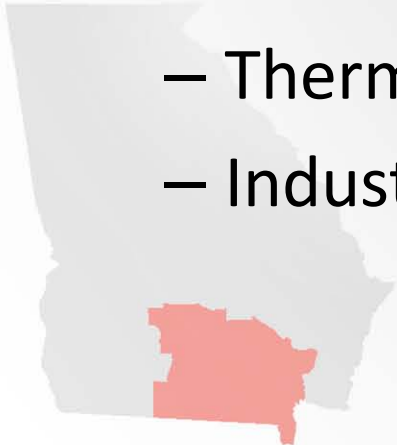


Surface Water Quality (Assimilative Capacity)



Forecasting Water and Wastewater Needs

- Forecasts developed for 40 year planning horizon (2010-2050)
- 4 Major Demand Sectors
 - Agricultural
 - Municipal (includes commercial and self supplied)
 - Thermoelectric Energy
 - Industrial



Regional Water Development and Conservation Plans

- Governor, Lt. Governor, and Speaker appointed 300 people to serve on 10 regional water councils around the state
- Regional Councils met quarterly for 3 years to discuss regional water issues, understand technical work and water demands through 2050, and develop water management practices to meet all future water needs



These Water Management Concepts....

- are consistent with current Georgia law
- do not affect the EPD Director's authority during emergency water shortages
- do not affect water use priorities during emergency periods of water shortage (1st – human consumption and 2nd – farm use)
- do not affect current statutory provisions for water withdrawal permitting



Land use affects water quality and quantity!

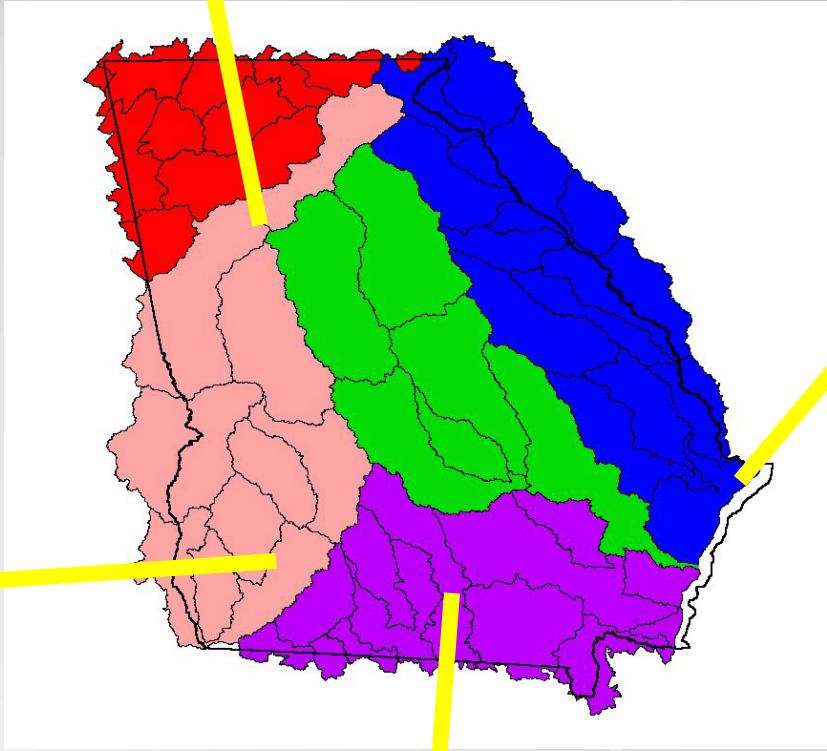
- How do we balance water quantity and water quality needs?
- How will increased development affect stream quality?
- How can we make decisions that allow for growth while protecting water resources?





- Water Supply
- Stormwater
- Wastewater

**Metro
N. GA**



Coastal

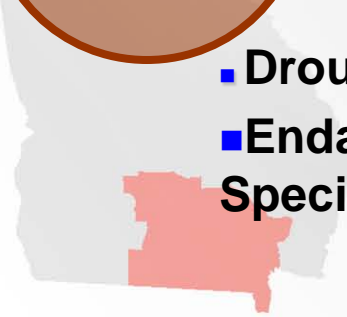
- Salt Water Intrusion

**Lower
Flint**

- Drought
- Endangered Species

**Suwannee-
Satilla**

- Small Watersheds
- Non-point pollution



Altamaha Regional Water Plan

Management Practice

- ALTERNATIVE SURFACE WATER SUPPLY PRACTICE based on Land Management Incentives

Why?

- Surface water supply shortages during some periods of dry years

Goal?

- Aquifer recharge & stream baseflow support



Altamaha Regional Water Plan

Management Practice

- NON-POINT SOURCE PRACTICES: Link Nutrient Loading With Current land Use

How?

- BMP Implementation

What Water Use Sectors?

- Agriculture
- Forestry
- Rural & Urban



APPLICATION?...

- Impervious Surface Reduction
- Ordinances
- Green Infrastructure BMPs

NON-POINT

- Water quality trading
- Incentivising non-point controls



Coastal Regional Water Plan

CHALLENGES

- Salt Water Intrusion
- Low DO
- Water withdrawal Permit restrictions

MANAGEMENT PRACTICES

- Water Conservation
- Alternative Water Supplies
- Engineered solutions (ex. DESAL, ASR)



Suwannee-Satilla Water Planning Region

- 18 counties, in southeastern portion of Georgia
- Common border with Florida
- Major population centers include: Valdosta, Tifton, Waycross, and Douglas
- Major rivers include: Alapaha, Satilla, St. Marys, Suwannee, and Withlacoochee









GOLF COURSE RD

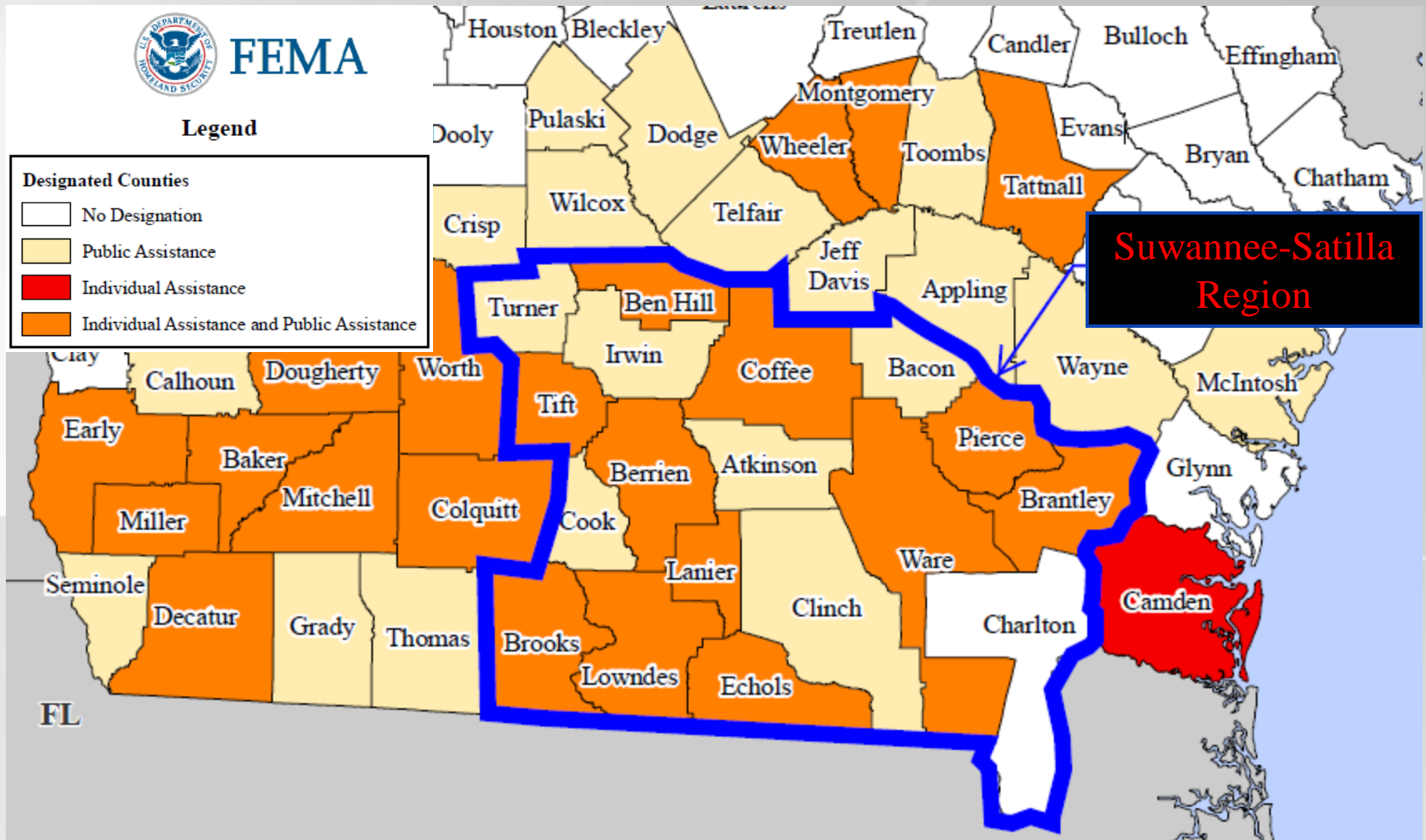
NO-SEE-UM RD



GOLFING



In April 2009 a total of 46 Georgia Counties declared Disaster Emergency



Suwannee-Satilla Regional Water Plan



Management Practice

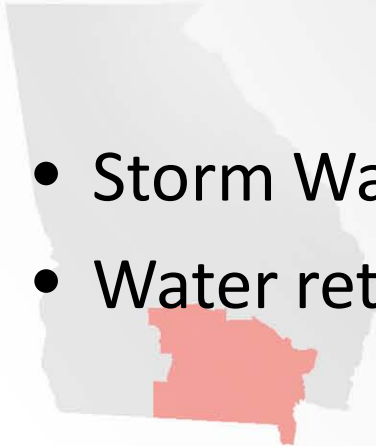
- Alternative to Existing Surface Water Supply Sources (ASWS-9) focuses on “Incentives for Greater Wastewater Return Flows; Coordinated Management”

Why?

- address extreme flow conditions (low and high) on the Withlacoochee River

Next Steps...

- Storm Water ordinances in regional communities
- Water retention reservoirs along the river



Land Use Considerations in the Regional Water Plans

- GA Land Use Trends (GLUT) Maps Updated
- Impervious Surface Map
- Land use model to 2050 for use in water quality modeling

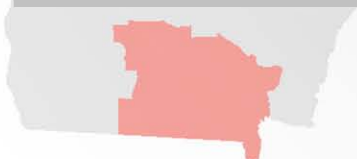
** EPD does not regulate land use. Land Use decisions are made by local governments.*



2050 Scenario



Land Use	BASELINE		2050		DIFFERENCE	
	area (acres)	% Total	area (acres)	% Total	area acres	% Total
Open Water	33980	1.21%	27099	0.97%	-6881	-20.25%
Developed, Low Intens	88071	3.15%	228558	8.17%	140487	159.52%
Mixed Forests	95483	3.41%	49364	1.77%	-46118	-48.30%
Row Crop	61148	2.19%	42534	1.52%	-18615	-30.44%



Example Model Run



UO – High BMP Application		
Sector	Range of Implementation	Percent Land Use
Forestry	HIGH	100
Agriculture – Row Crops	LOW	100
Agriculture – Pasture	LOW	100
Urban – MS4 Permittees	HIGH	100
Urban – Non MS4 Permittees	LOW	100



EPD RWP Activities & land Use

- Water Quality Models
- Groundwater Use Model
- Surface Water Availability Model

Regional Water Plan implementation will be primarily the responsibility of the Regions' Water Users and Local Govt's





More information can be found at
WWW.Georgiawaterplanning.org

THANK YOU!

