



Georgia's **State Water Plan**

**Suwannee-Satilla Regional Water Planning
Council Meeting 9
December 8, 2010**

www.georgiawaterplanning.org

Registration

8:30 AM – 9:00 AM

Welcome and
Introductions, Recap CM8,
Approve CM8 Summary,
Approve CM9 Agenda
Public Comment

9:00 AM – 9:15 AM



Georgia's State Water Plan

Suwannee-Satilla Regional Water Council Meeting 9 Draft Agenda - December 8, 2010

Objectives:

- 1) Selection of Final Management Practices for Regional Water Resources
- 2) Discuss final information considerations for Energy Forecasts
- 3) Review status of Water Plan Drafting
- 4) Discussion of Water Quality including TMDL listed streams and 319 grant program
- 5) Review schedule for completing the Regional Water Plan

8:30-9:00 a.m.	Registration
9:00-9:15	Welcome and Introductions - Chair & PC <i>Recap CM8, Approve CM8 Summary, Approve CM9 Agenda, Public Comment</i>
9:15-10:15	Selection of Proposed Final Management Practices - PC & Management Practices Subcommittee <i>Subcommittee report out and discussion of Proposed Final Management Practices</i>
10:15-10:30	Break
10:30-10:45	Selection of Proposed Final Management Practices - PC & Management Practices Subcommittee - PC <i>Identify and discuss any additional water conservation practices regarding water conservation goals, Tier 1-4 practices, and any specific recommended data reporting needs</i>
10:45- 11:00	Water Quality Discussions - PC <i>Identify any additional recommendations regarding TMDL listed streams and 319 grant program</i>
11:00- 11:20	Energy Forecast Results - PC <i>Identify any recommendations for including regional energy demands beyond 2020</i>
11:20 - 11:45	Water Plan Development - PC <i>Review comments received on Sections 1-5 and Discuss Draft Sections 6-8</i>
11:45 - 12:00	Schedule for Completing Regional Water Plan - PC <i>Review timeline for Water Plan Completion; Shared Resource Meetings</i>
12:00 - 12:15 p.m.	Local Elected Official Comments
12:15-12:30	Public Comments
12:30 - 12:40	Wrap Up/ Council Meeting 10 Preview
12:40-1:40	Lunch Adjourn

Council Meeting 10 - Date and Location

- Council Meeting 10 – Adopt Final Draft of Regional Water Plan for Public Comments
 - February 23rd, 2011
 - Adel, GA – (Pike Creek Turf Farms)

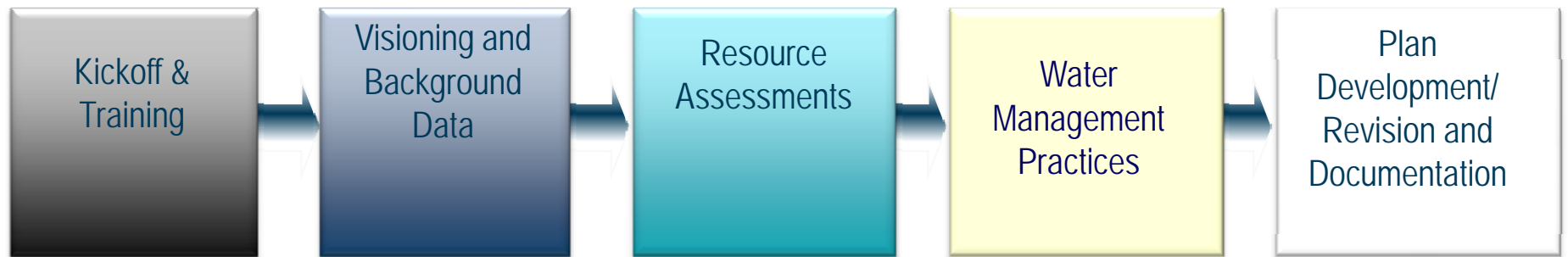
Recap of Council Meeting 8

- Selected draft management practices for regional water resources;
- Reviewed and discussed energy forecasts;
- Reviewed and discussed initial Water Plan Sections;
- Discussed and developed targeted outreach to communicate and solicit input from local governments, water and wastewater utilities and other key stakeholders; and
- Reviewed and discussed schedule for completing Regional Water Plan and identified next steps for Shared Resources.

Council Meeting 9 Objectives

- Select Final Management Practices for Regional Water Resources;
- Discuss final information considerations for Energy Forecasts;
- Review status of Water Plan Drafting;
- Discussion of Water Quality including TMDL listed streams and 319 grant program; and
- Review schedule for completing the Regional Water Plan,

Overview of Regional Water Planning Process



Comprehensive State-wide Water Management Plan 3 Year Implementation Schedule		2008												2009												2010												2011																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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We are here.

Georgia

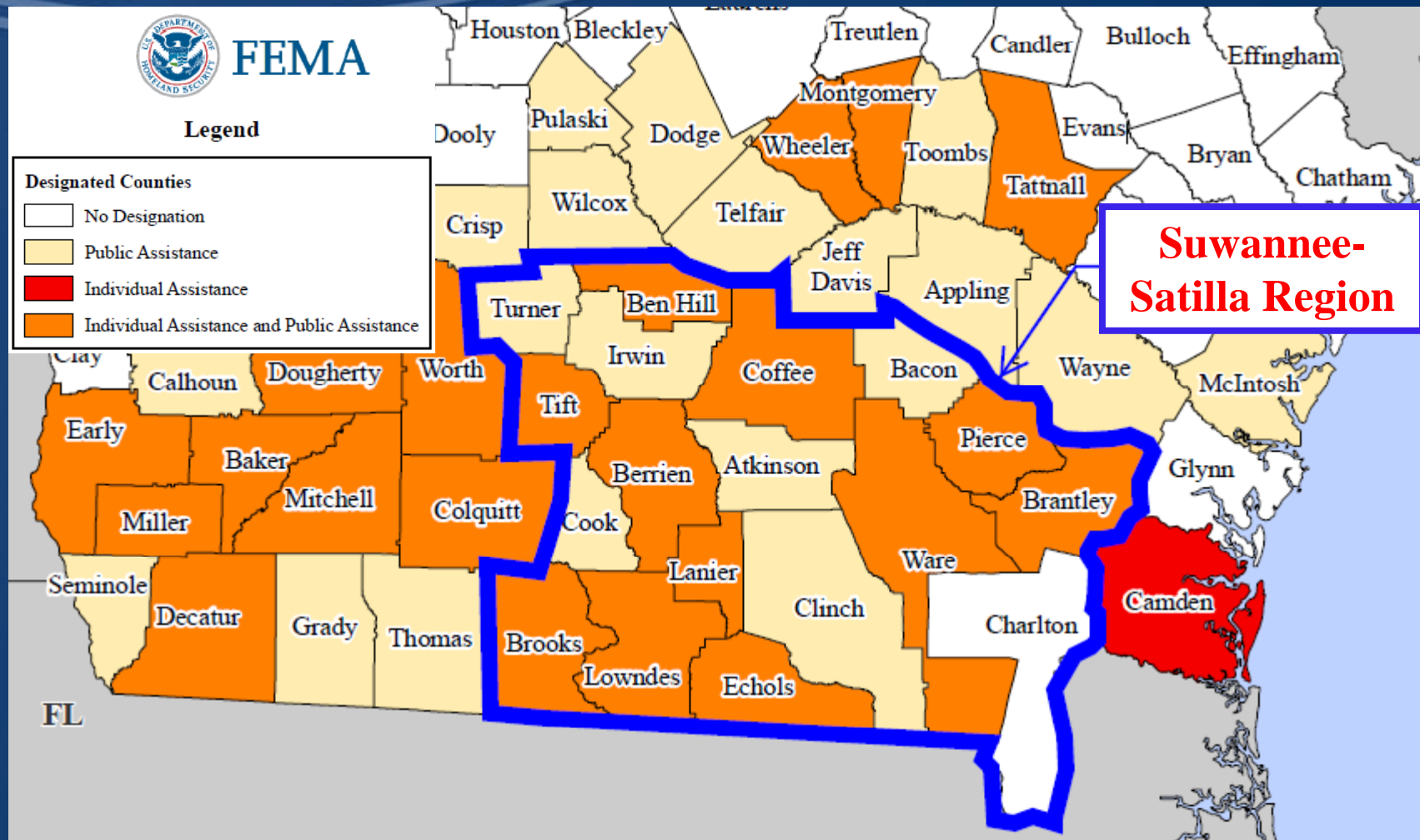
Suwannee-Satilla Drainage Basin: Flood Control Issues and Requested Action

Suwannee-Satilla Regional Water Planning Council

Douglas, GA

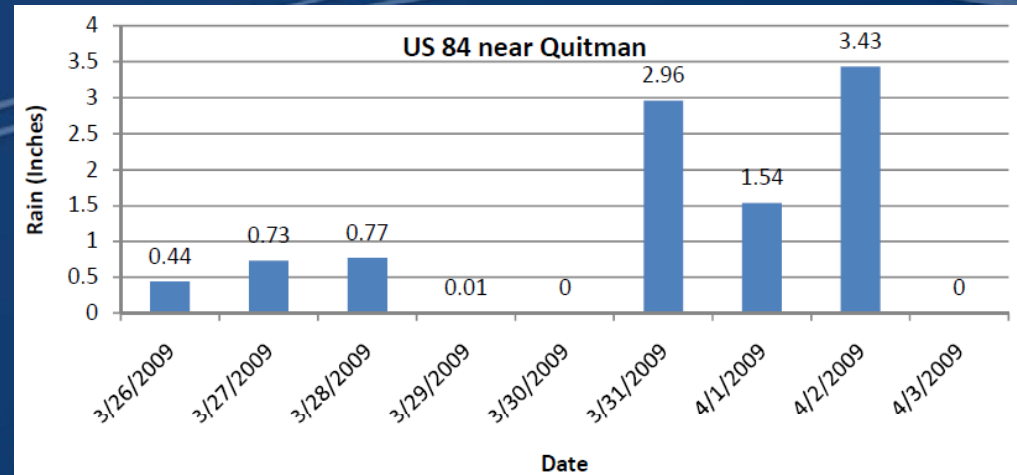
December 8, 2010

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

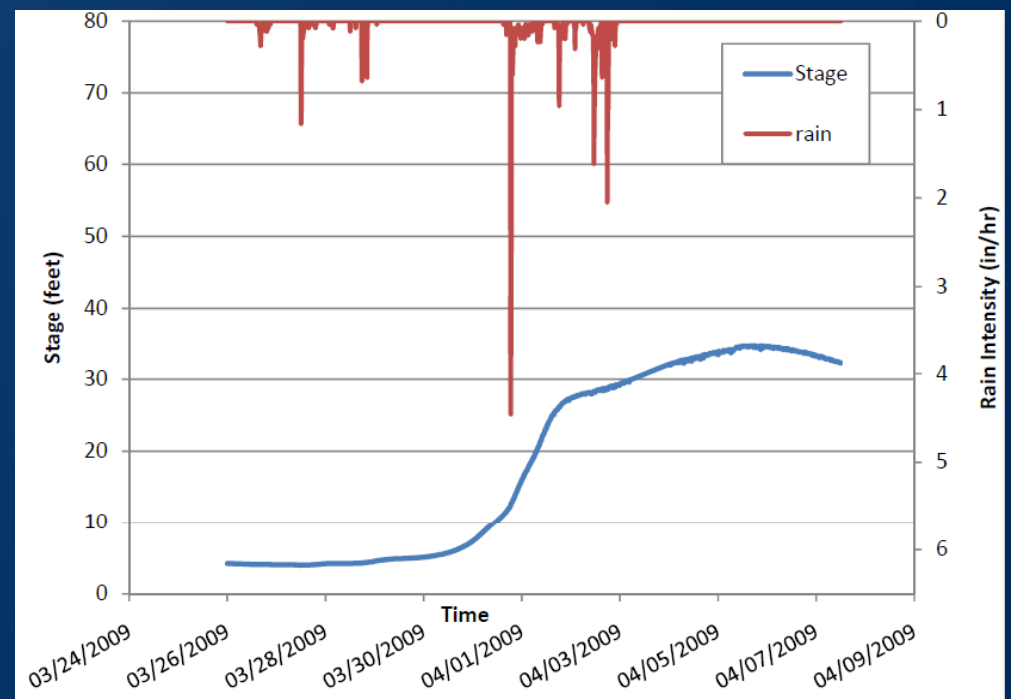


Recorded Data – USGS Streamgauge - Quitman, GA

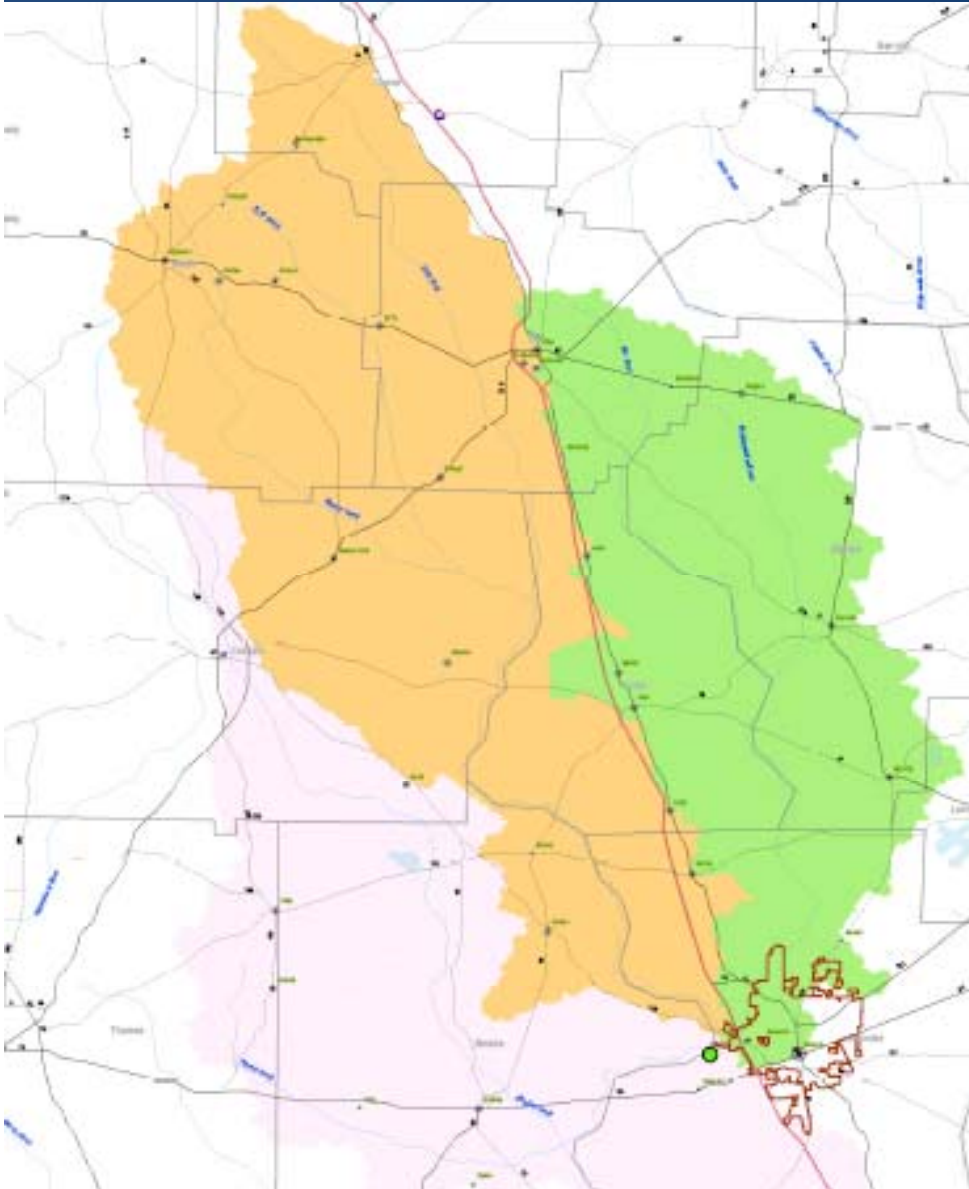
A total of 8.0 inches of rainfall occurred in 3 days.



It took 5 days for the River stage to rise 30 feet, indicating that the source is located upstream

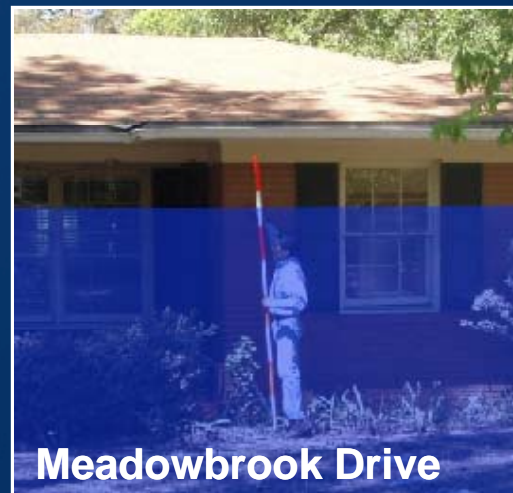


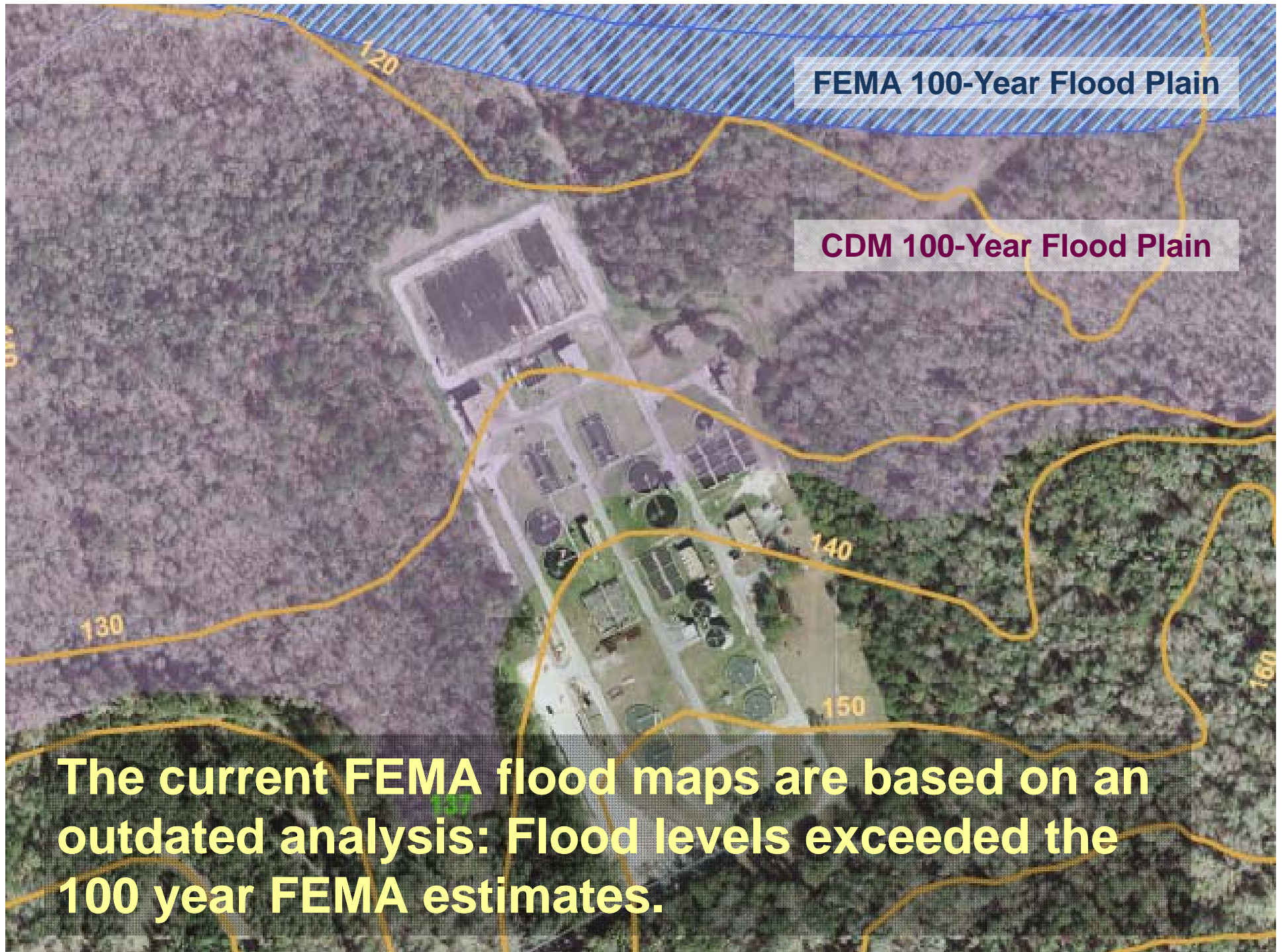
Lowndes County and the City of Valdosta were deeply impacted by the flood



- ◆ The Withlacoochee and Little River basins encompass about 1,450 square miles
- ◆ Valdosta's drainage area to the river is only 1%
- ◆ Very limited benefits will be achieved without regional coordination with other communities
- ◆ Coordination with the FEMA, USACOE, and EPD is necessary to involve upstream communities

Lowndes County/Valdosta recorded more than 150 homes and 20 businesses severely flooded





The Withlacoochee WWTP was severely flooded

Tertiary Filter No. 1

Temporary Earth Berm

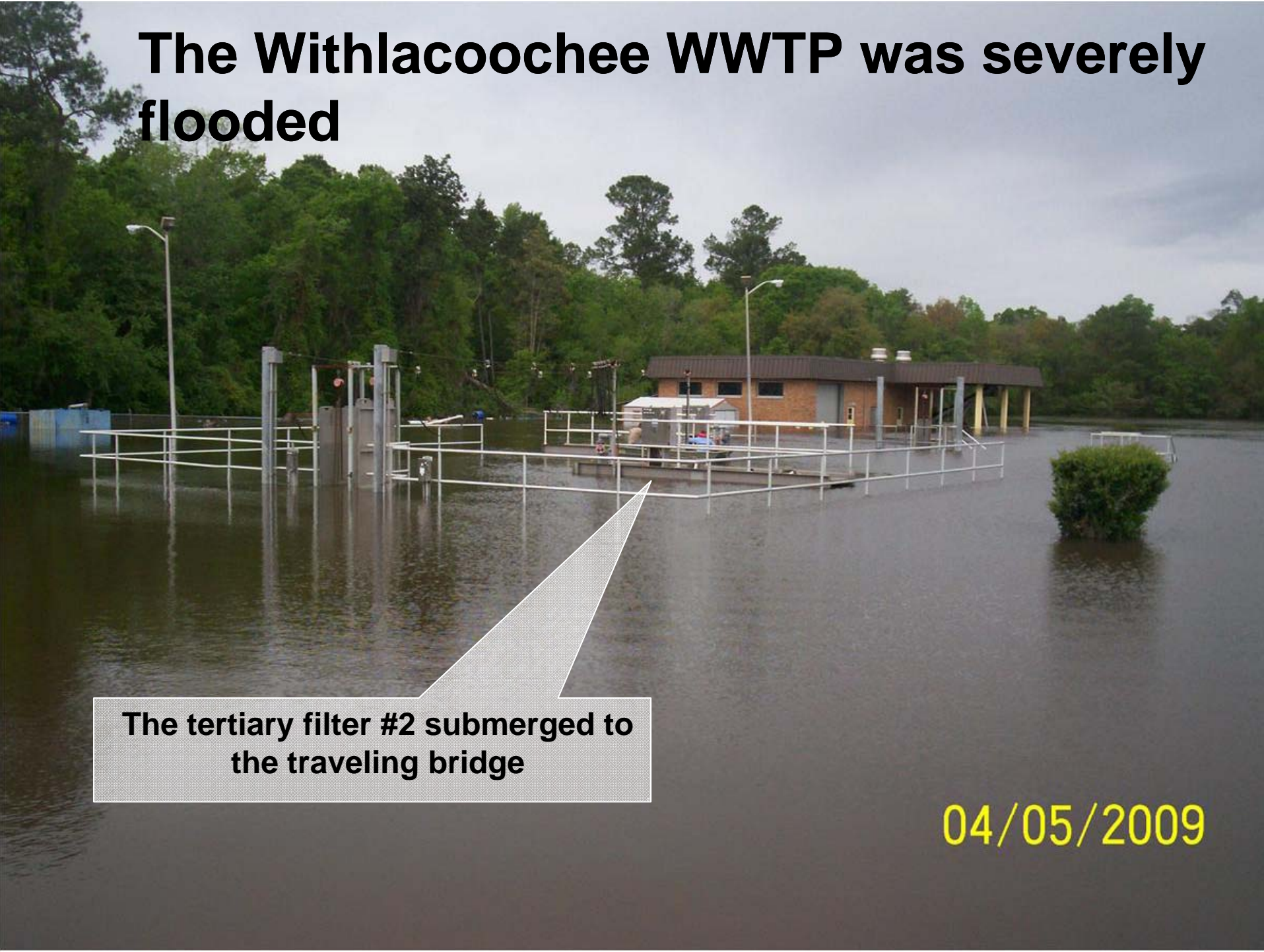
Chlorine Building

Influent Pump Station

04/05/2009



The Withlacoochee WWTP was severely flooded



The tertiary filter #2 submerged to the traveling bridge

04/05/2009

This occurrence was extreme, but it has become more frequent in recent years

The Withlacoochee River has reduced its ability to convey flows due to significant sedimentation and obstructions by dead trees.



Tree/Debris Removal at SR. 84

Potential Factors contributing to recent floods

- ◆ Upstream communities in our area have implemented different runoff control measures, without regional coordination.
- ◆ Some communities lack proper regulations as well as expertise and resources to address their needs.
- ◆ Some of the existing dams and levees can release significant volumes of water and require coordination and advance notice to downstream communities.
- ◆ A city by city or county by county approach is inefficient, more costly and not as effective as a regional approach.

Immediate Response Needed in the Suwannee-Satilla watershed

- 1. A series of storage areas should be identified to control stormwater flows, while providing a much needed water supply reservoir network.**
- 2. Recharge areas combined with stream buffers should be considered to reduce the stream flow and recharge the aquifers.**
- 3. Stream restoration should be considered in selected areas that are degrading and releasing significant sediment and debris loads.**
- 4. State and Federal funding is essential to the development of these solutions that are beyond the financial and institutional capacity of any jurisdiction in the watershed.**

Regional Regulatory/Coordination Needs

- 1. Urban areas need to start controlling runoff in regional facilities to retrofit areas that were developed in the past before regulations were established and accommodate current and future needs.**
- 2. A tool-kit of best practices and options could be prepared to help communities select the right choices for their individual issues and needs.**
- 3. A common ordinance template could be prepared to create consistency between different communities.**
- 4. Ordinances should consider stormwater control within private property for both sub-division and commercial development.**
- 5. Roadway projects can increase the peak runoff and velocities without the appropriate stormwater best management practice, and should be included as part of the regional solution.**

Recommended Actions for Water Council

- ◆ **Form a sub-committee to study the regional stormwater issue.**
- ◆ **Develop education materials and model policies and ordinances for communities to consider that take into account unique needs.**
- ◆ **Study the possibility of regional reservoirs that address flood control as well as provide opportunities for additional water supply.**
- ◆ **Propose solutions and request funding in the states 5 year plan to include GEFA eligibility.**

Questions?

Suwannee-Satilla Regional Water Planning Council

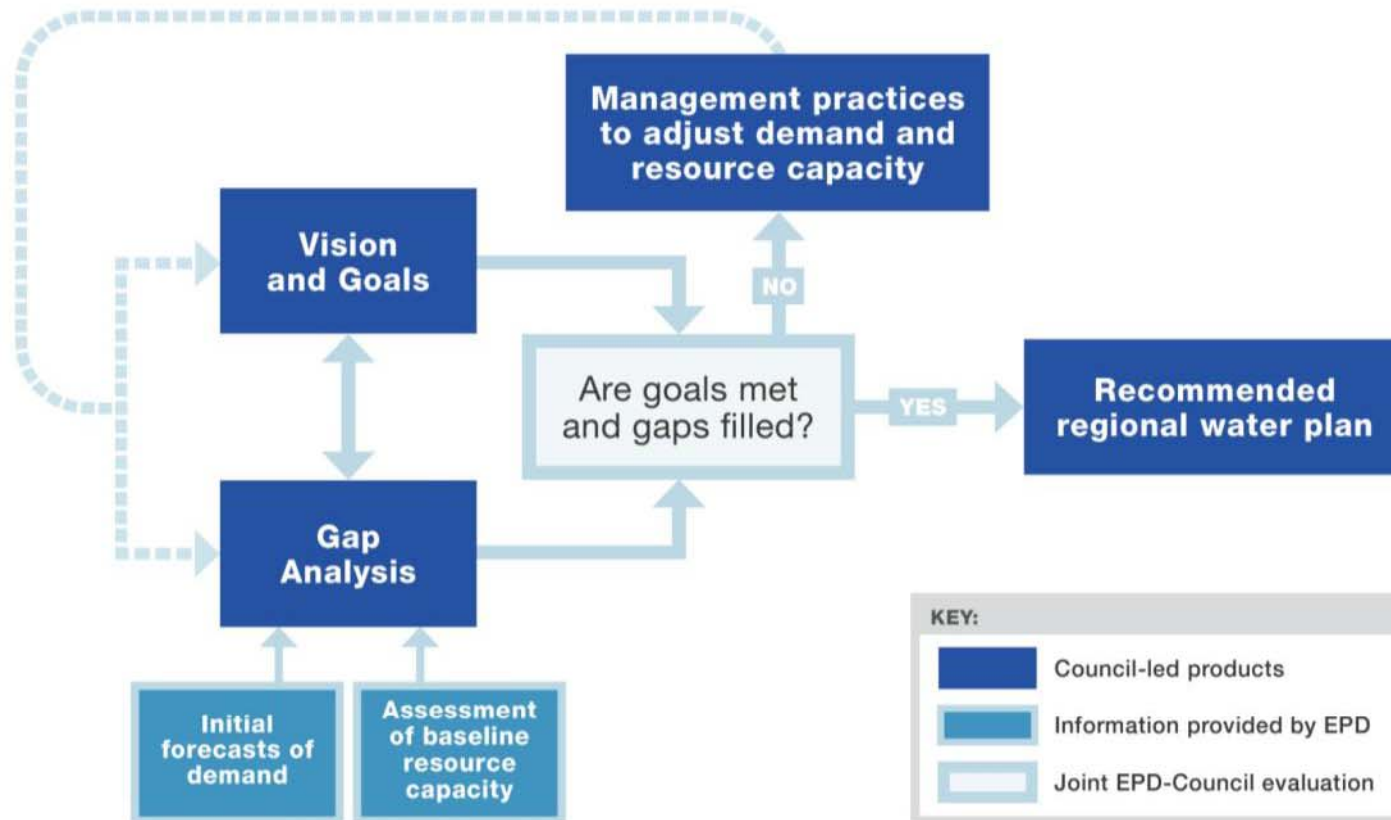
Douglas, GA

December 8, 2010

Selection of Proposed Final Management Practices – PC & Management Practices Subcommittee

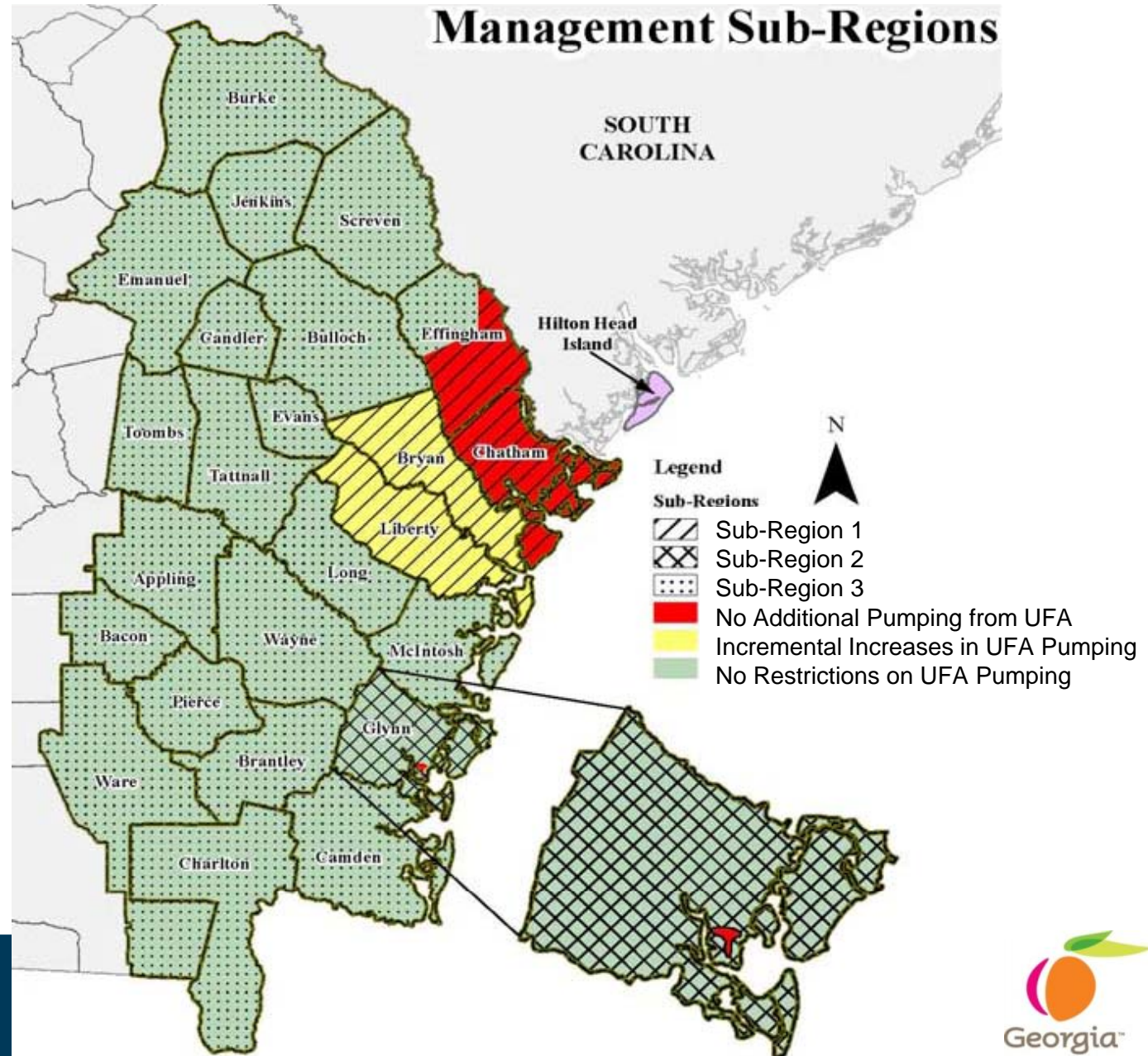
9:15 AM – 10:15 AM

Management Practices



Coastal Georgia Water & Wastewater Permitting Plan for Managing Salt Water Intrusion, June 2006

- All Coastal Georgia counties subject to Permitting Plan
- Special conditions for water conservation added to groundwater permits



Coastal Permitting Plan – Water Conservation

INDUSTRY

Sub-Regions	Water Conservation Tier	Special Condition in Groundwater Withdrawal Permit
All	T2	Facility water system audit
All	T2	Leak detection and repair program
All	T2	Metering, meter calibration, repair/replacement program
All	T2	Reuse and alternate source feasibility study
1,2	T4	Maximize use of recycled or reclaimed water

Coastal Permitting Plan – Water Conservation

PUBLIC AND PRIVATE DRINKING WATER PROVIDERS

Sub-Regions	Water Conservation Tier	Special Condition in Groundwater Withdrawal Permit
All	T3	Water conservation education program
All	T2	Conservation-oriented rate structure
All	T1	Outdoor water schedule - to include volume or time limitation
All	T2	Reuse and alternate source feasibility study
All	T2	Meter calibration, repair, and replacement program
All	T1	Water loss control program (IWA-AWWA)
1,2	T2	Annual meter calibration for top 10% water users
1,2	not listed	Adopt ordinance requiring new developments to install purple pipe reuse line
1,2	T1	Metering fire hydrant flushing

Coastal Permitting Plan – Water Conservation

AGRICULTURE

Sub-Regions	Water Conservation Tier	Water Conservation Practice
All	T3	EPD/NRCS/SWCC develop program to identify/fix leaks and off-target applications
1,2	T3	Install meters and report annual water use
1,2	T4	New permits require cost effective, water efficient irrigation technology
1,2	T3	No new traveler irrigation systems for Effingham, Chatham, Bryan and Liberty
1,2	not listed	New, modified or transferred permit applicants must conduct reuse feasibility study for non-food product

Coastal Permitting Plan – Water Conservation

GOLF COURSES

Sub-Regions	Water Conservation Tier	Water Conservation Practice
All	T4	Compliance with Best Management Practices MOA by Georgia Golf Course Superintendents Association/EPD May 2004
1,2	T4	Reclaimed Water Feasibility Study

Road Map to Address Water Supply Needs and Regional Goals

2050
TOTAL REGIONAL WATER
(GROUND AND SURFACE)
SUPPLY NEEDED



Monitor progress toward addressing resource gaps and regional needs/goals. If short-term measures do not address gaps/needs, implement additional management practices.

Monitor progress toward addressing resource gaps and regional needs/goals. If short- and mid-term measures do not address gaps/needs, implement additional management practices.

- Identify feasibility of regional inter-basin transfer and implement if deemed implementable
- Implement multi-purpose storage if needed and implementable

- Utilize SW and GW within the available resource capacity
- Water Conservation
- Data collection and research to confirm frequency, duration, severity, and drivers of surface water gaps (forecast methodology/assumptions and resource assessment modeling)
- Evaluate and ensure that current and future SW permit conditions do not contribute to 7Q10 low-flow concerns
- Encourage sustainable GW use as preferred supply in regions with SW 7Q10 low-flow concerns
- Identify incentives and a process to sustainably replace a portion of existing SW use with GW use to address 7Q10 concerns
- Evaluate potential to use existing storage to address 7Q10 low-flow conditions
- Education to reduce surficial GW use where it impacts SW with low 7Q10 concerns

- Consider feasibility/implement management practices to improve infiltration, manage wetlands, and aquifer storage to address 7Q10 low-flow concerns
- Evaluate incentive based programs to manage/increase/restore wastewater and stormwater returns
- Identify potential/feasibility of multi-purpose reservoir

SHORT-TERM (1-10 YRS)

MID-TERM (10-20 YRS)

LONG-TERM (20-40 YRS)

WATER RESOURCE PLANNING PERIOD (2010 – 2050)



Short-Term Practices (0 – 10 Years)

- **Utilize SW and GW within the available resource capacity**
- **Water Conservation**
- **Data collection and research to confirm frequency, duration, severity, and drivers of surface water gaps (forecast methodology/assumptions and resource assessment modeling)**
- **Evaluate and ensure that current and future SW permit conditions do not contribute to 7Q10 low-flow concerns**
- **Encourage sustainable GW use as preferred supply in regions with SW 7Q10 low-flow concerns**
- **Identify incentives and a process to sustainably replace a portion of existing SW use with GW use to address 7Q10 concerns**
- **Evaluate potential to use existing storage to address 7Q10 low-flow conditions**
- **Education to reduce surficial GW use where it impacts SW with low 7Q10 concerns**

Mid-Term Practices (10 – 20 Years)

- **Consider feasibility/implement management practices to improve infiltration, manage wetlands, and aquifer storage to address 7Q10 low-flow concerns**
- **Evaluate incentive based programs to manage/increase/restore wastewater and stormwater returns**
- **Identify potential/feasibility of multi-purpose reservoir**

Long-Term Practices (20 – 40 Years)

- **Identify feasibility of regional inter-basin transfer and implement if deemed implementable**
- **Implement multi-purpose storage if needed and implementable**

Road Map to Address Water Quality Needs and Regional Goals

**2050
TOTAL REGIONAL
WATER
QUALITY NEED**

Monitor progress toward addressing resource gaps and regional needs/goals. If short-term measures do not address gaps/needs, implement additional management practices.

- **Point Sources** - support and fund current permitting and waste load allocation process to improve treatment of wastewater and increase treatment capacity
- **Point Sources** - data collection and research to confirm discharge volumes and waste concentrations, and receiving stream flows and chemistry
- **Non-point Sources** - data collection to confirm source of pollutants and causes; encourage stormwater ordinances, septic system maintenance, and coordinated planning
- **Non-point Sources** - ensure funding and support for BMP programs by local and state programs including:
 - Urban BMPs
 - Rural BMP
 - Forestry BMPs
 - Agricultural BMPs
- **Non-point Source Existing Impairments – TMDL listed streams**
 - Improve data on source of pollutant and length of impairment
 - Identify opportunities to leverage funds and implement non-point source BMPs

- **Point Sources** - continue wastewater master planning updates and waste load allocation
- Pursue additional non-point source controls and need for stormwater ordinances

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- Pursue additional non-point source controls and need for stormwater ordinances

Monitor progress toward addressing resource gaps and regional needs/goals. If short- and mid-term measures do not address gaps/needs, implement additional management practices.

SHORT-TERM (1-10 YRS)

MID-TERM (10-20 YRS)

LONG-TERM (20-40 YRS)

WATER RESOURCE PLANNING PERIOD (2010 – 2050)



Short-Term Practices (0 – 10 Years)

- **Point Sources - support and fund current permitting and waste load allocation process to improve treatment of wastewater and increase treatment capacity**
- **Point Sources - data collection and research to confirm discharge volumes and waste concentrations, and receiving stream flows and chemistry**
- **Non-point Sources - data collection to confirm source of pollutants and causes; encourage stormwater ordinances, septic system maintenance, and coordinated planning**
- **Non-point Sources - ensure funding and support for BMP programs by local and state programs including:**
 - **Urban BMPs**
 - **Rural BMP**
 - **Forestry BMPs**
 - **Agricultural BMPs**
- **Non-point Source Existing Impairments – TMDL listed streams**
 - **Improve data on source of pollutant and length of impairment**
 - **Identify opportunities to leverage funds and implement non-point source BMPs**

Mid-Term Practices (10 – 20 Years)

- **Point Sources - continue wastewater master planning updates and waste load allocation**
- **Pursue additional non-point source controls and need for stormwater ordinances**

Long-Term Practices (20 – 40 Years)

- **Point Sources - continue wastewater master planning updates and waste load allocation**
- **Pursue additional non-point source controls and need for stormwater ordinances**

Council-Recommended Changes to MPs

DCAR-10: Add "...wetlands systems/potential water retention structures, including streams ..."

DCAR-3: Add "...runoff, and groundwater-surface water interconnections)"

General: When referencing research institutions, recommend in-state institutions first.

NPSF-2: Strike "; and if necessary seek enforcement actions against registered foresters that operate out of compliance with BMPs"

Major Regional Resources – Gaps/Regional Needs



- Groundwater – No gap on regional basis
- Surface water – gaps
- Water quality – point source gaps: quality and additional infrastructure
- Existing Impairments non-point source TMDLs
- Satilla Nutrient Model non-point source

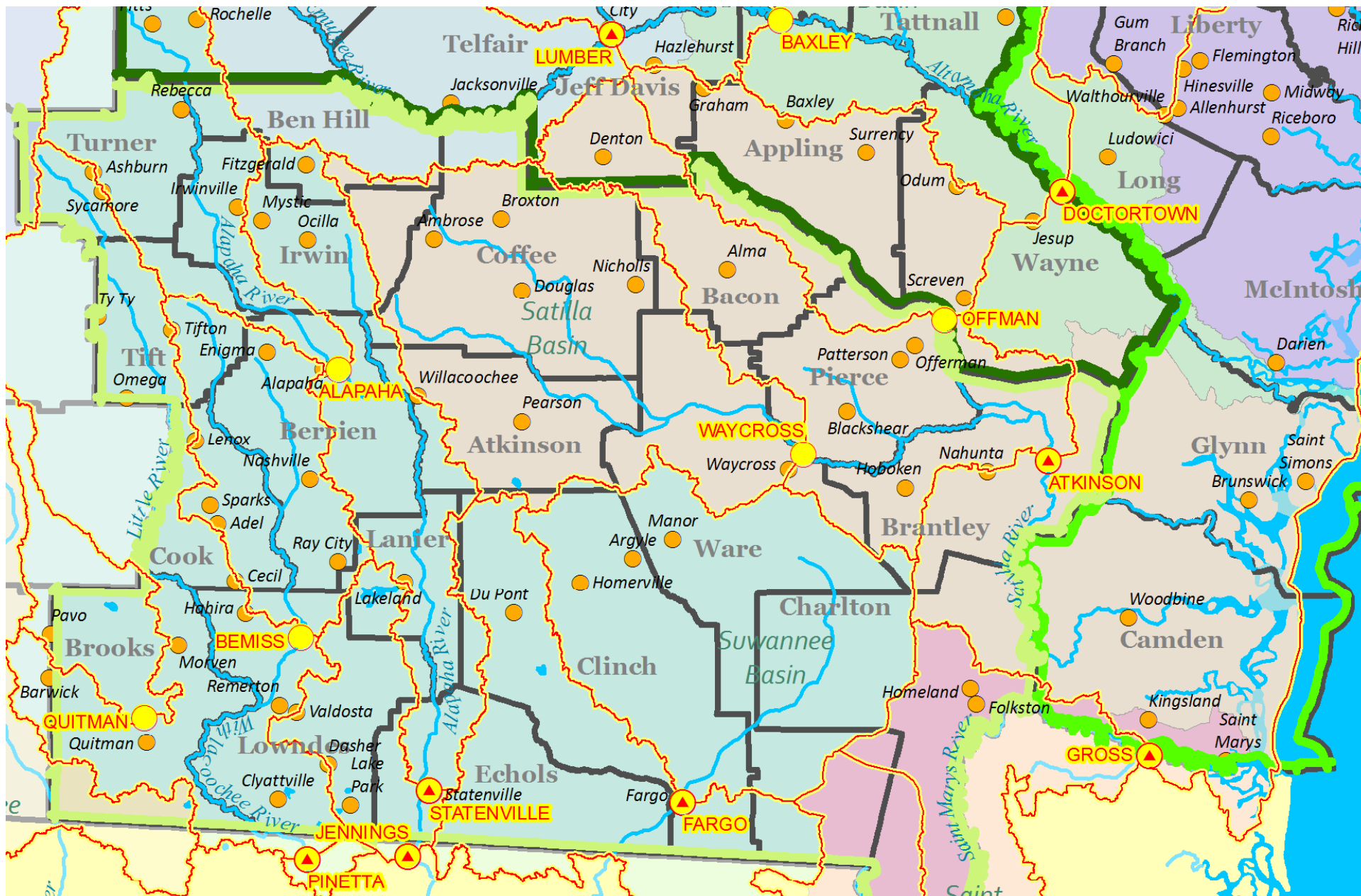
Break

10:15 AM – 10:30 AM

Selection of Proposed Final Management Practices – PC & Management Practices Subcommittee

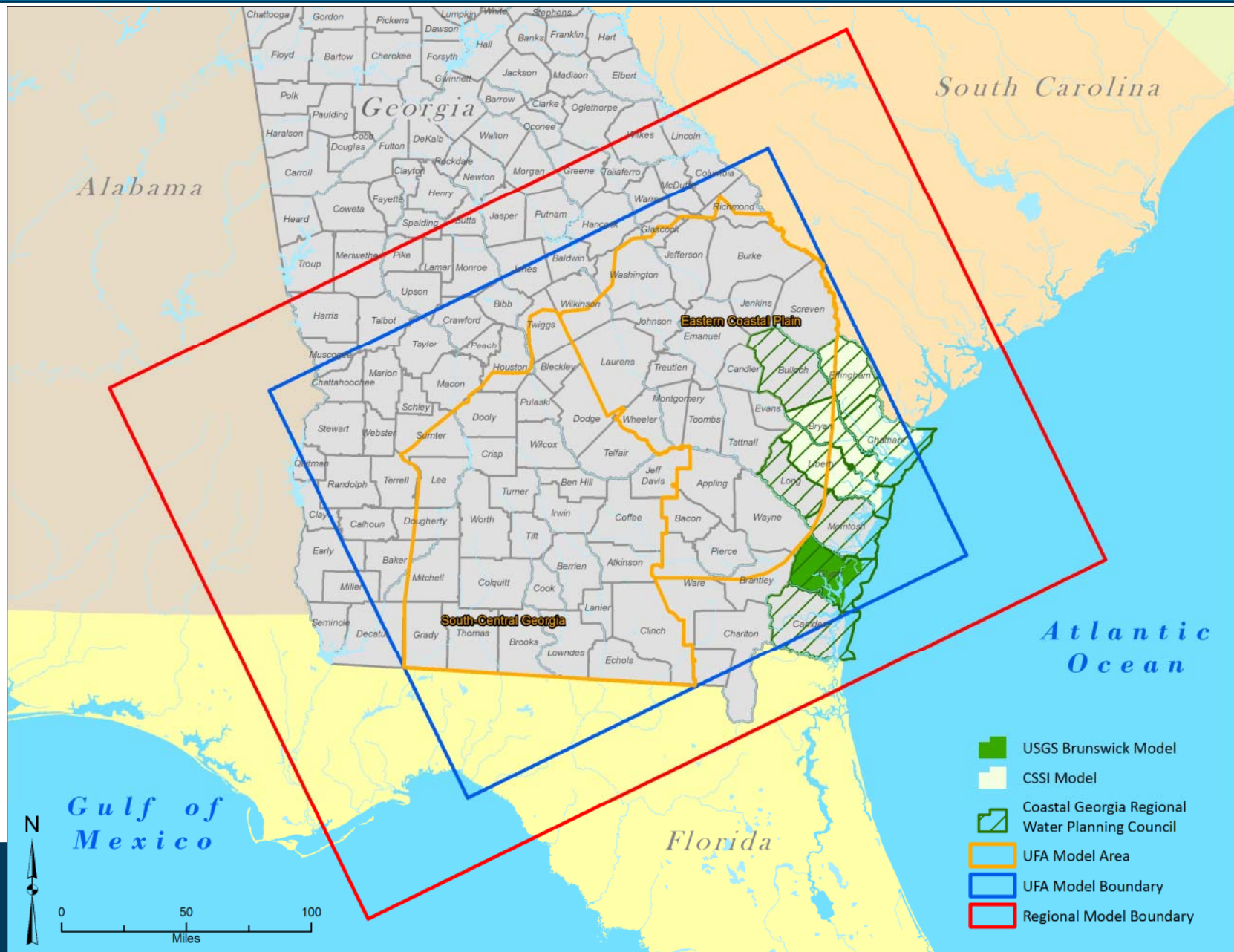
10:30 AM – 10:45 AM





Suwannee-Satilla Region

Groundwater Model Extents



Water Quality Discussions

10:45 AM – 11:00 AM

Nonpoint Source Implementation Funding

Section 319(h) Nonpoint Source Implementation Grants



Background Information:

- Federal Grant under authority of Clean Water Act, distributed to GAEPD
- Requires 40% local (non-Federal) match
- Eligible recipients are governmental entities (cities, counties, universities, RC&D Councils, Regional Commissions, etc.)

Project Criteria:

- Target impaired waters and focus on small watersheds
- Demonstrate quantitative success (estimates of load reductions, monitoring results, ordinances implemented, etc.)
- Projects must follow applicable State and Federal guidance (no Federal permit requirements, etc.)

Nonpoint Source Implementation Funding

Section 319(h) Nonpoint Source Implementation Grants

Eligible Project Examples:

- Stormwater projects (such as rain gardens, bio-swales, and constructed wetlands)
- Projects to encourage low impact development (ordinances, LID demonstrations, outreach, etc)
- Management practices to restore or protect water quality (stream restoration, agricultural management practices such as livestock exclusion)



Nonpoint Source Implementation Funding

Section 319(h) Nonpoint Source Implementation Grants

Ineligible Project Examples:

- NPDES Permit Requirements (CAFOs, MS4 permits, wastewater permits, etc)
- Implementing elements of a permit (Watershed Assessments, Watershed Protection Plans, and/or other plans associated with permit requirements)
- Dam Construction and Removal
- Lake Dredging
- Surface Paving
- Fulfillment of Consent Orders and Decrees
- Installation of Wastewater Infrastructure (including sewer connections)
- Water Quantity/Supply Projects (reservoirs, wells, infrastructure, etc)
- Installation of incinerators for dead live-stock

Nonpoint Source Implementation Funding

Constructed Wetland at City of Covington Complex

- Provides stormwater treatment adjacent to City vehicle yard and buildings
- Improves natural habitat
- Serves as outdoor classroom for local developers, municipal staff, residents, businesses, and students
- Includes 1 full year of post-construction monitoring (ongoing) to demonstrate results



Nonpoint Source Implementation Funding

Green Roof Pavilion and LID Practices at Rock Mill Park

- Reduces stormwater peak flow rates from Park to better mimic pre-development conditions and minimize downstream erosion
- Provides stormwater treatment for flow into Big Creek
- Serves as outdoor classroom for public



Nonpoint Source Implementation Funding

Soque River Watershed: Implementing a Watershed Plan

Activities:

- Stormwater practices (rain gardens, residential rain barrel programs)
- Agricultural Management Practices (fence-outs, alternative water sources, etc)
- Community outreach efforts
- Education

Results:

- Sediment load reduction: 1,710 tons/year
- Bacterial reductions being measured through monitoring



Nonpoint Source Implementation Funding

Better Back Roads Implementation

- Improve water quality by identifying cost-effective techniques/materials for stabilizing road surfaces and ditches
- Establish and monitor 20 statewide demonstration sites
- Document/Publish project results in the Unpaved Road Improvement Manual
- Provide statewide training opportunities to county officials, state and federal agencies responsible for maintaining unpaved public roads



Nonpoint Source Implementation Funding

- Other LID Practices (bioswales, permeable paving, etc)
- Streambank Stabilization
- Buffer Establishment (beyond State minimum)
- Ordinance Development/Revision
- Active Education (would include BMP demonstration)



Nonpoint Source Implementation Funding

- \$100,000 federal funding maximum
 - \$66,667 required minimum match
- 2-year maximum timeframe
 - Anticipate beginning Fall 2011
- Address waterbodies that are identified by:
 - Assimilative Capacity Resource Assessments as “Moderate,” “Limited,” or “None/Exceeded”; and/or
 - 303(d) List of Impaired Waters; and/or
 - Components of TMDL Implementation Plans or other watershed management plans
- Projects are due to EPD January 31st



Nonpoint Source Implementation Funding

Council Actions Needed:

- Identify the specific project to fund
- Identify funding recipient (public or governmental agency)
- Include the Council's project in the Regional Water Plan
- Project recipient works with Council and EPD Liaison to draft workplan and submit for approval

Energy Forecast Results

11:00 AM – 11:20 AM

Assigning Additional Energy Water Needs Three Methods:

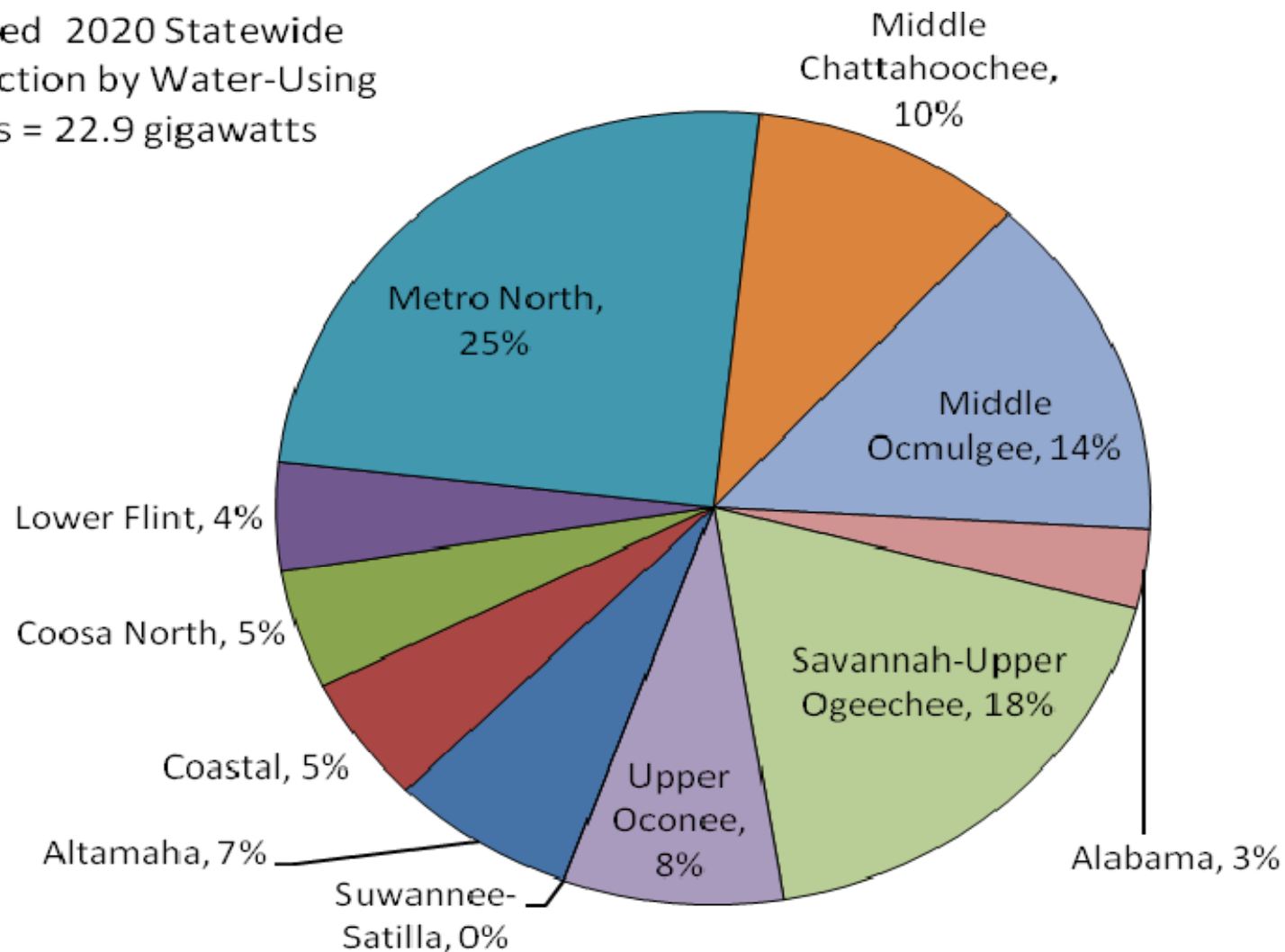
1. Percent of estimated 2020 statewide power generation by water using power generation combinations in the region
2. Percent of forecasted statewide population growth by region from 2020 to 2050
3. No additional energy water needs considered

Percent of Statewide Power Production Approach

- Considers the estimated regional 2020 power production for all water-using power generation combinations (i.e., those responsible for additional capacity demands)
 - Fossil fuel & biomass facilities with steam turbines
 - Nuclear facilities with steam turbines
- Regional sum of production for each water-using combination determines total 2020 regional production
- Regional percent of statewide water-using combinations' power production in 2020 determines portion of additional capacity demand

Estimated Percent of Statewide Power Production by Region, 2020

Total Estimated 2020 Statewide Power Production by Water-Using Combinations = 22.9 gigawatts

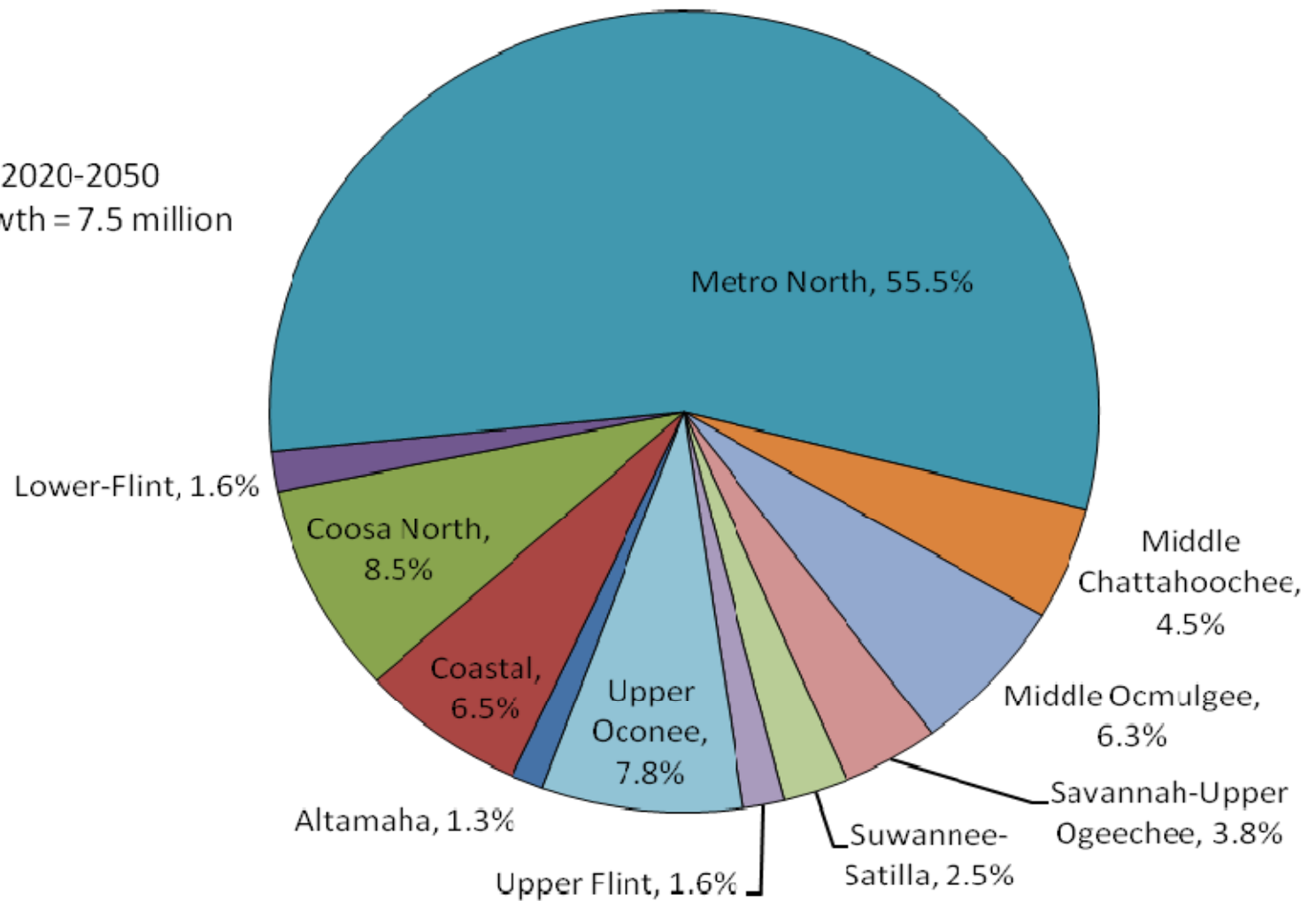


Percent of Statewide 2020-2050 Population Growth Approach

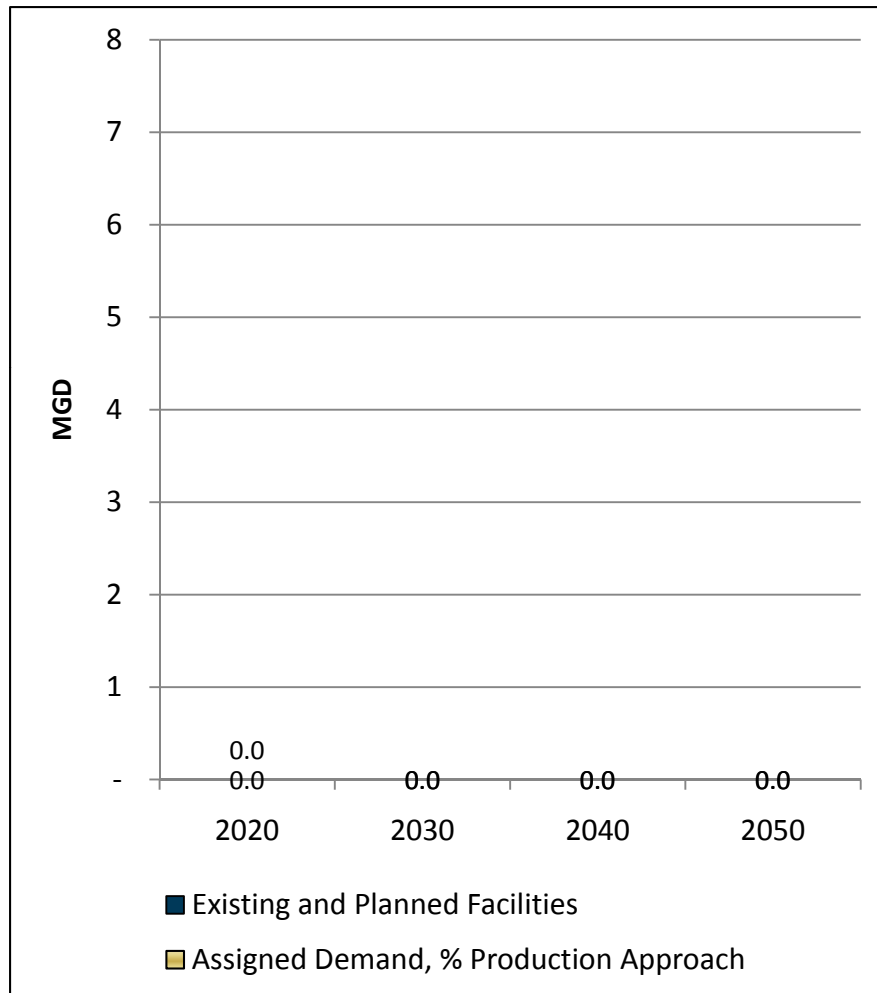
- Considers the ratio of a region's total population growth to the total statewide population growth from 2020 to 2050
- Regional percent of total statewide growth applied to additional capacity demands for each forecast year between 2020 and 2050

Percent of Statewide Population Growth, 2020-2050 by Region

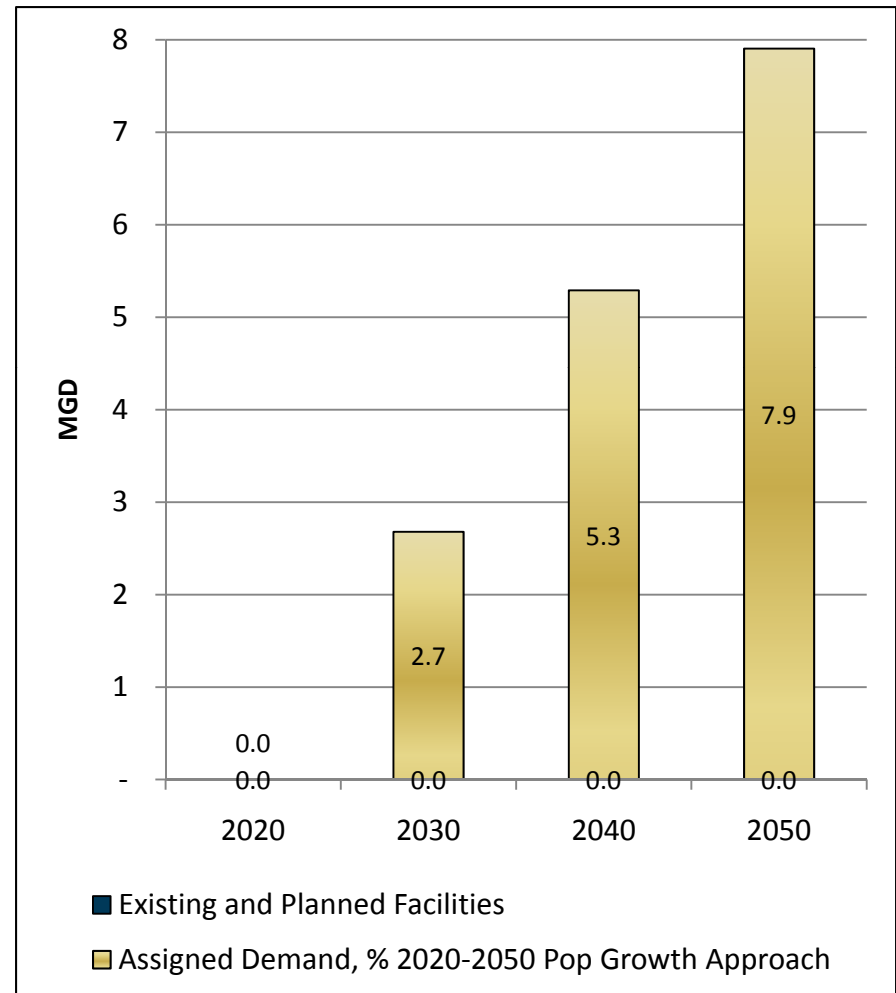
Total Statewide 2020-2050
Population Growth = 7.5 million



Suwannee-Satilla 2020-2050 Energy Sector Withdrawals, Baseline Power Needs Scenario



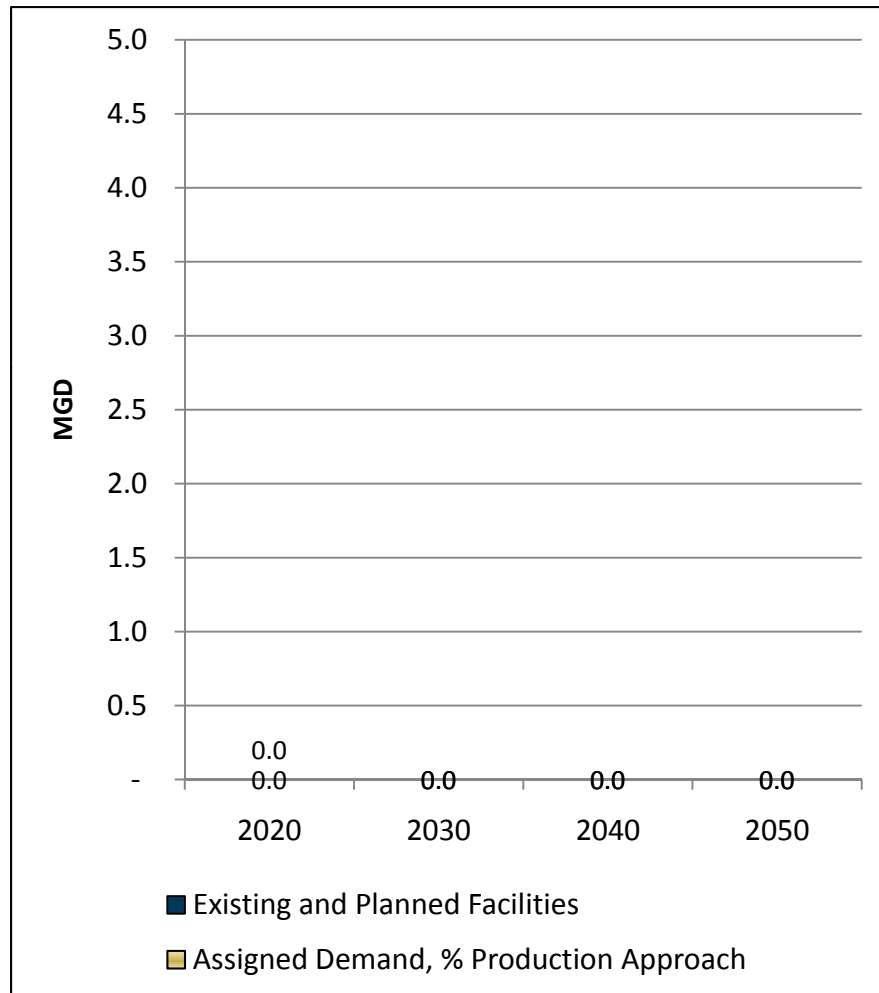
0% of power production of water-using power generation combinations in 2020.



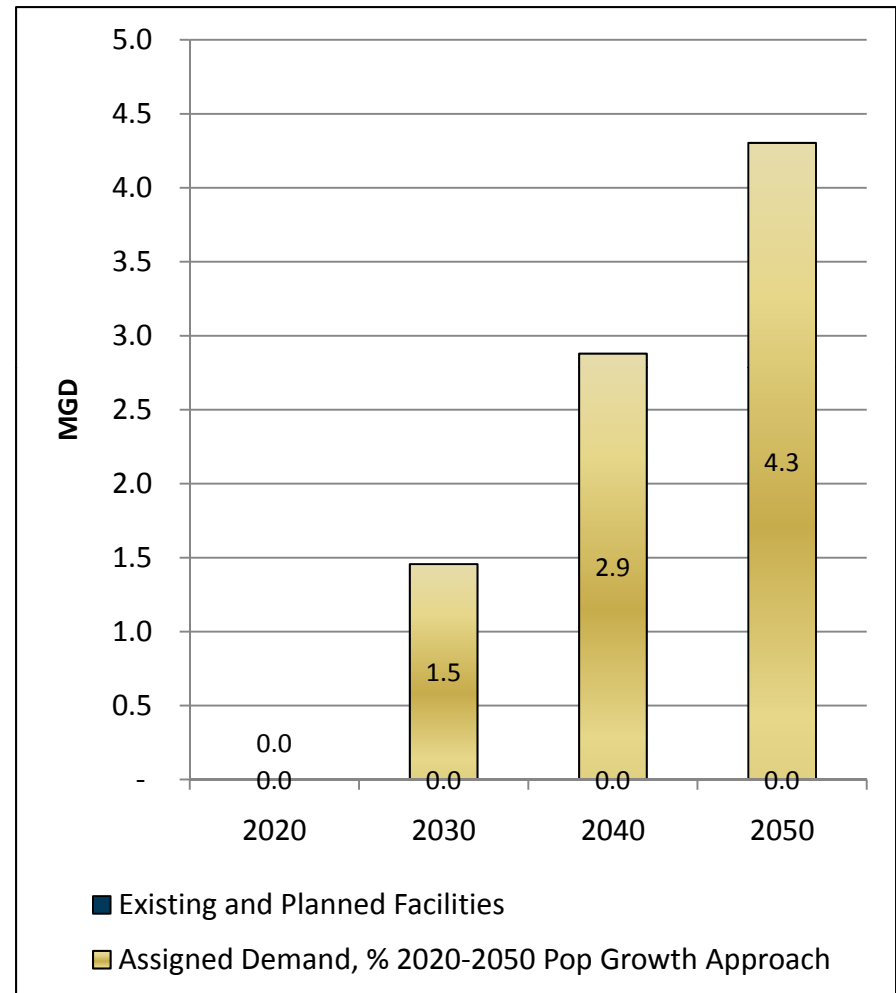
2.5% of total forecasted statewide population growth from 2020 to 2050.



Suwannee-Satilla 2020-2050 Energy Sector Consumption, Baseline Power Needs Scenario



0% of power production of water-using power generation combinations in 2020.



2.5% of total forecasted statewide population growth from 2020 to 2050.



Water Plan Development

11:20 AM – 11:45 AM

Schedule for Completing Regional Water Plan

11:45 AM – 12:00 PM

Schedule of Remaining Water Plan Tasks

Description	2010	2011								
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Suwannee-Satilla Regional Water Council Timeline										
Select Management Practices										
Finalize Draft Plan and Submit to EPD										
Public Comment Period										
Revise Plans Based on Public and EPD Comment and Submit Final Plan										
EPD Extension Timeline										
Select Management Practices										
Submit Draft Plan to EPD										
Public Comment Period										
Revise Plans Based on Public and EPD Comment and Submit Final Plan										

Local Elected Official Comments

12:00 PM – 12:15 PM

Public Comments

12:15 PM – 12:30 PM

Wrap-Up, Council Meeting 10 Preview

12:30 PM – 12:40 PM

Lunch Adjourn

12:40 PM – 1:40 PM