Georgia's
State Water Plan

Regional Water Development and Conservation Plan Review and Revision
Altamaha Water Planning Council
November 17, 2016

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Council Meeting 3 Agenda

Georgia's
State Water Plan

Altamaha Regional Water Council Meeting 3
Agenda – Thursday November 17, 2016

Meeting Objectives:

1) Debrief with Council Members from Joint Meeting earlier in the day
2) Council Meeting Business

10:00 a.m. – 1:15 p.m.	Joint Council Meeting (Covered under separate agenda)
1:15 p.m. – 2:15 p.m.	Debrief with Council Members from Joint Meeting earlier in the day • Comparison of available resource capacity • Review and discuss management practices • Joint coordination items
2:15 p.m.– 2:25 p.m.	Council Meeting Business • *319h Grant Update (Rahn Milligan from Pine Country RC&D)* • *Approve meeting minutes from June 23, 2016 Council Meeting* • *Follow-up discussion from September 29, 2016 "Office Hours" Teleconference* • *New Business*
2:25 p.m.- 2:30 p.m.	Public Comment Period
2:40 p.m.- 4:00 p.m.	Joint Council Meeting (Covered under separate agenda)
4:00 p.m.	Adjourn

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Council Meeting Overview

- De-Brief from Breakout Session A held with Upper Oconee, Middle Ocmulgee and members of Suwannee Satilla
- Summary of select forecast information
- Summary of Surface and Groundwater Resource Assessment information
- Preliminary approach to Shared Resource analysis and potential gaps
- Begin review of Management Practices based on updated Forecasts, resource Assessments and Regional Vision and Goals

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Summary of Select Demand and Available Resource Capacity

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Demand Forecasting Summary Statistics

- Population Changes over the Planning Period (2015 – 2050)

Counties with Highest Projected Population Growth	% Change	Wheeler	35%
		Tattnall	23%
		Emanuel	21%
	# People	Tattnall	6000
		Wayne	5400
		Emanuel	4900

Counties with Lowest Projected Population Growth	% Change	Telfair	-12%
		Johnson	-7%
		Treutlen	-6%
	# People	Telfair	-2000
		Johnson	-700
		Dodge	-500

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Demand Forecasting Statistics (cont.)

- Water Demand over the Planning Period (2015 – 2050)

Counties with Highest Water Demand Increase (Excluding Agriculture)			
	% Change	Appling	25%
		Wheeler	22%
		Wayne	11%
	MGD	Appling	9.2
		Wayne	7.3
		Emanuel	0.4

*Red text denotes counties with highest population growth statistics

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Demand Forecasting Statistics (cont.)

- Water Demand by sector over the Planning Period (2015 – 2050)

Counties with Highest Surface Water Demand Increase (Excluding Agriculture)	% Change	Appling	26%
		-	-
		-	-
	MGD	Appling	9.0
		-	-
		-	-

Counties with Highest Groundwater Demand Increase (Excluding Agriculture)	% Change	Wheeler	22%
		Wayne	11%
		Tattnall	11%
	MGD	Wayne	7.3
		Emanuel	0.4
		Toombs	0.3

*Red text denotes counties with highest population growth statistics

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Demand Forecasting Statistics (cont.)

- Wastewater flows over the Planning Period (2015 – 2050)

Counties with Largest Increase in Wastewater Flows			
	% Change	Wheeler	30%
		Tattnall	19%
		Emanuel	16%
	MGD	Wayne	7.7
		Emanuel	0.8
		Tattnall	0.6

*Red text denotes counties with highest population growth statistics

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Magnitude of Surface Water Gaps

- Round 2 Current Condition Results
- Preliminary analysis indicates that surface water usage at planning nodes in the region is agriculture-related

Node	Length of Shortfall (% of Time)	Average Shortfall (MGD)	Counties Affected**	Shared Resource with:
Claxton	21	4	Candler, Evans, Emanuel, Tattnall	Coastal Georgia
Eden*	6	10	Emanuel	Coastal Georgia, UO
Kings Ferry*	6	23	Candler, Emanuel, Evans and Tattnall	Coastal Georgia, SUO, UO
Atkinson*	10	15	Appling, Jeff Davis and Wayne	Suwannee-Satilla
Statenville*	16	16	Wilcox	Suwannee-Satilla

*Denotes node outside of region
**Counties affected were identified based on local drainage areas upstream of the planning node

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Surface Water Quality/Assimilative Capacity Gaps

- Assimilative Capacity Assessment Round 2 Results
  - DOSAG & GA Estuary Models
  - 2000 thru 2012 (2012 is critical year)
  - Assimilative capacity for DO appears to be generally improving compared to Round 1 for future conditions **due to more stringent permit limits that were assumed**
  - Will work with EPD to quantify and identify specific reaches that have limited or exceed the assimilative capacity within the Altamaha Region
  - Distinguish between reaches that have naturally low DO and those with manmade influences

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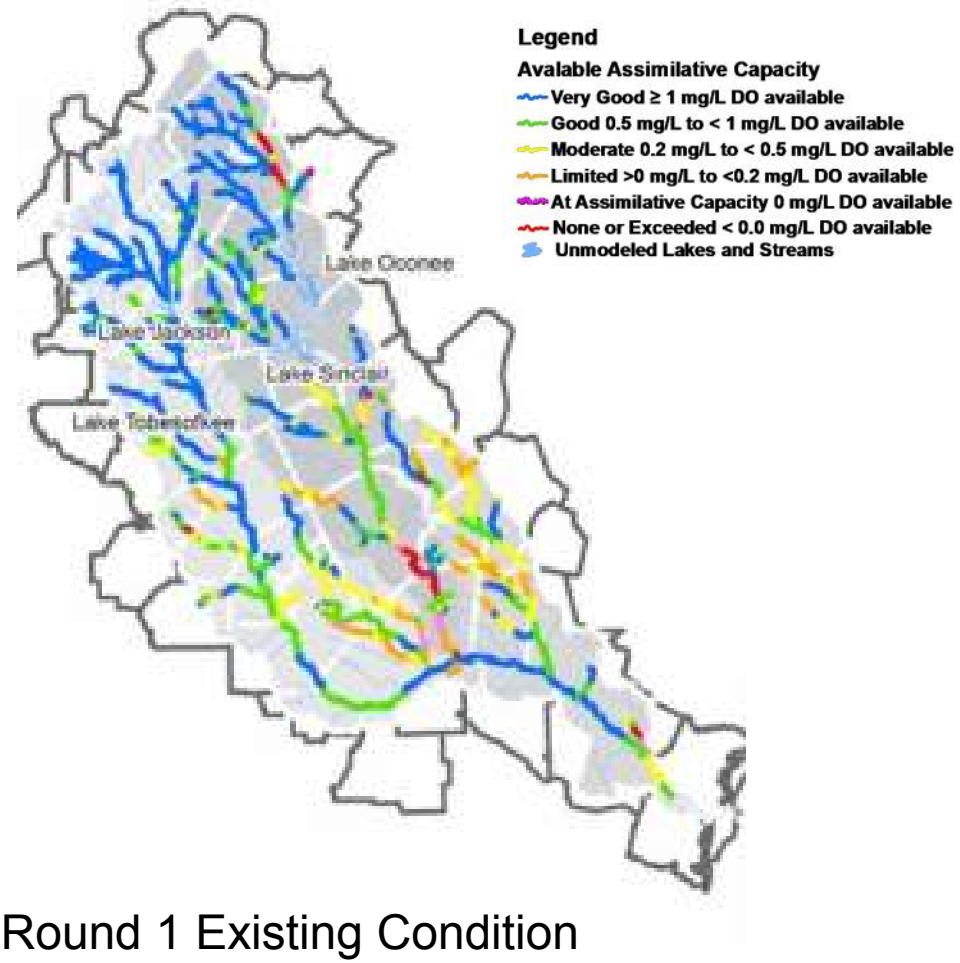
Surface Water Quality/Assimilative Capacity Gaps

- Altamaha Region – Results of DO Assimilative Capacity



Round 1 Existing Condition

Updated Existing Condition

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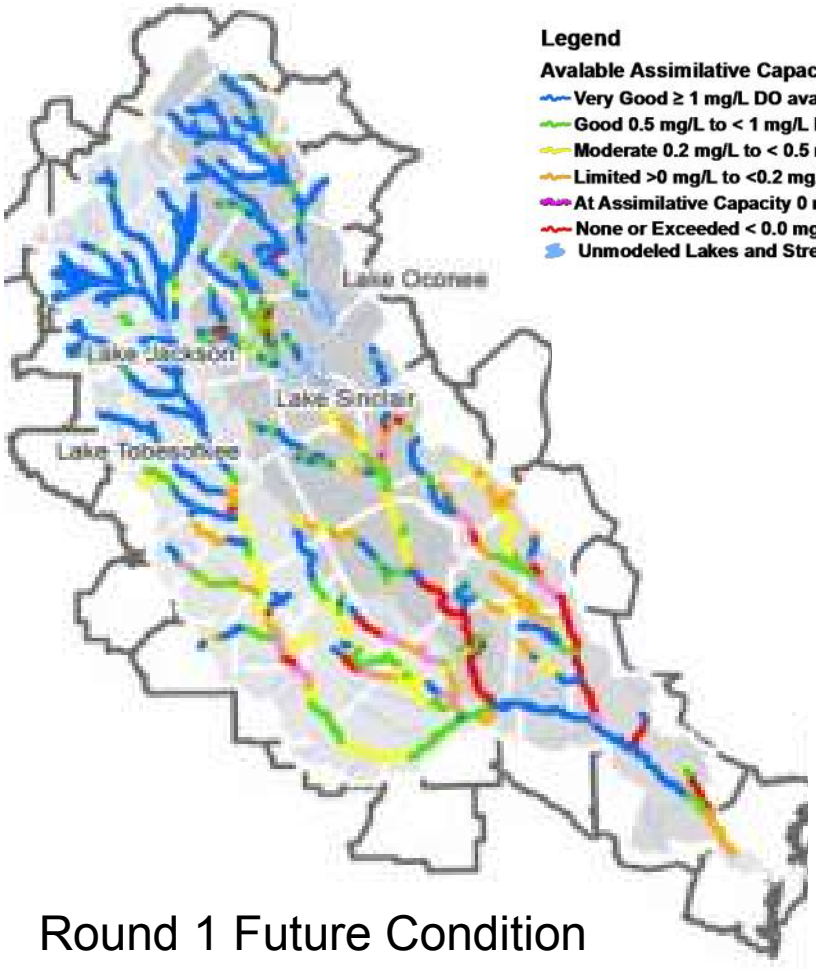
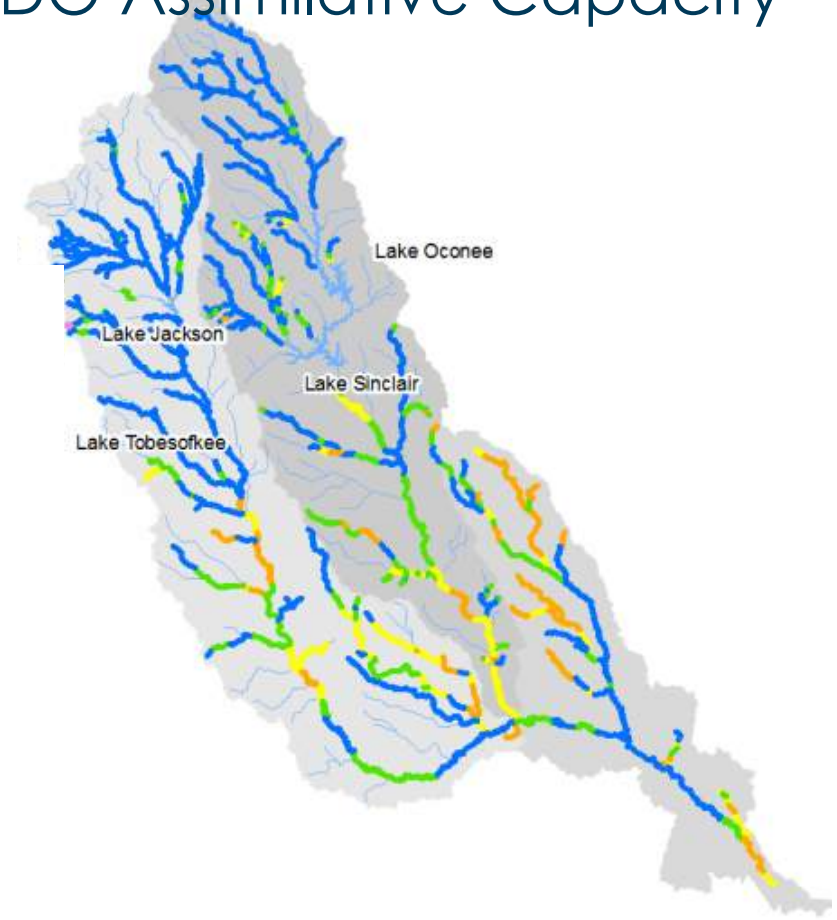
Surface Water Quality/Assimilative Capacity Gaps

- Altamaha Region – Results of DO Assimilative Capacity



Round 1 Future Condition



Updated Future Condition (2050)

Surface Water Quality/Assimilative Capacity Gaps

- EPD also examined nutrient (TN and TP) loading in the region
  - Dry & Wet years
  - Areas of higher loadings in dry years can indicate point sources as potential cause (i.e., wastewater discharge)
    - Emanuel, Wayne and Tatnall Counties show highest forecasted (MGD) increases in wastewater discharge
  - Areas of higher loading in wet years are indicative on nonpoint source runoff
    - Lower reaches of Ocmulgee and Oconee Rivers and confluence with Altamaha River
  - For nonpoint source loadings, Councils will want to re-visit their stormwater best management practices (BMPs)

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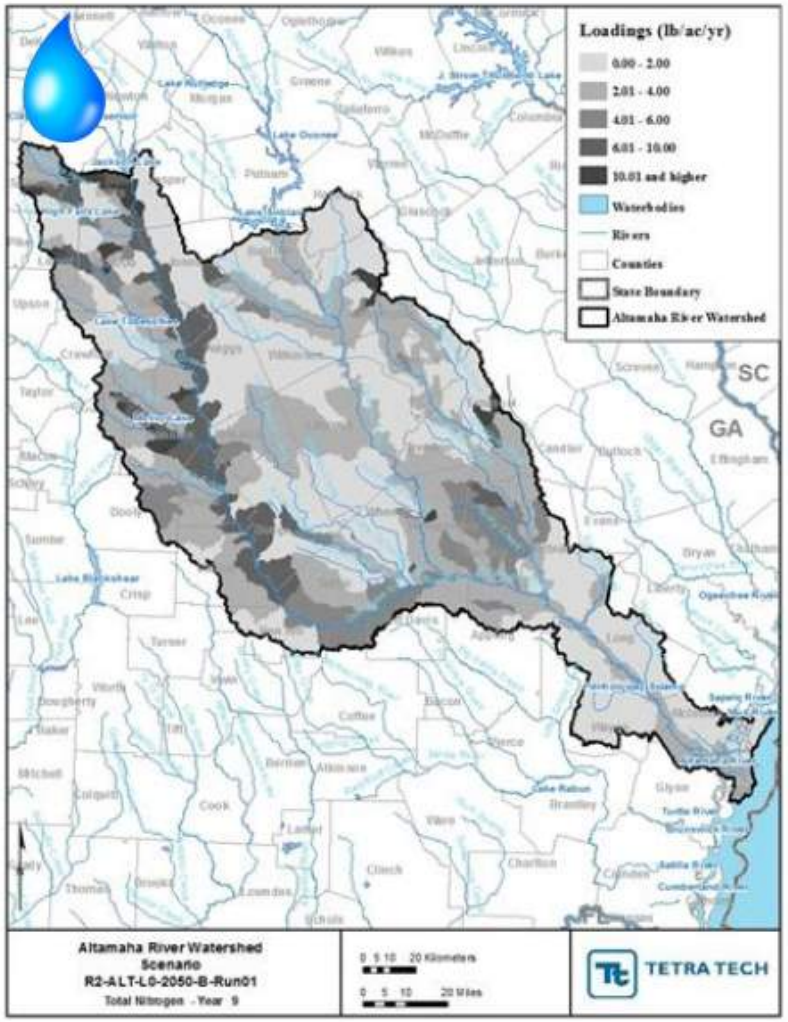
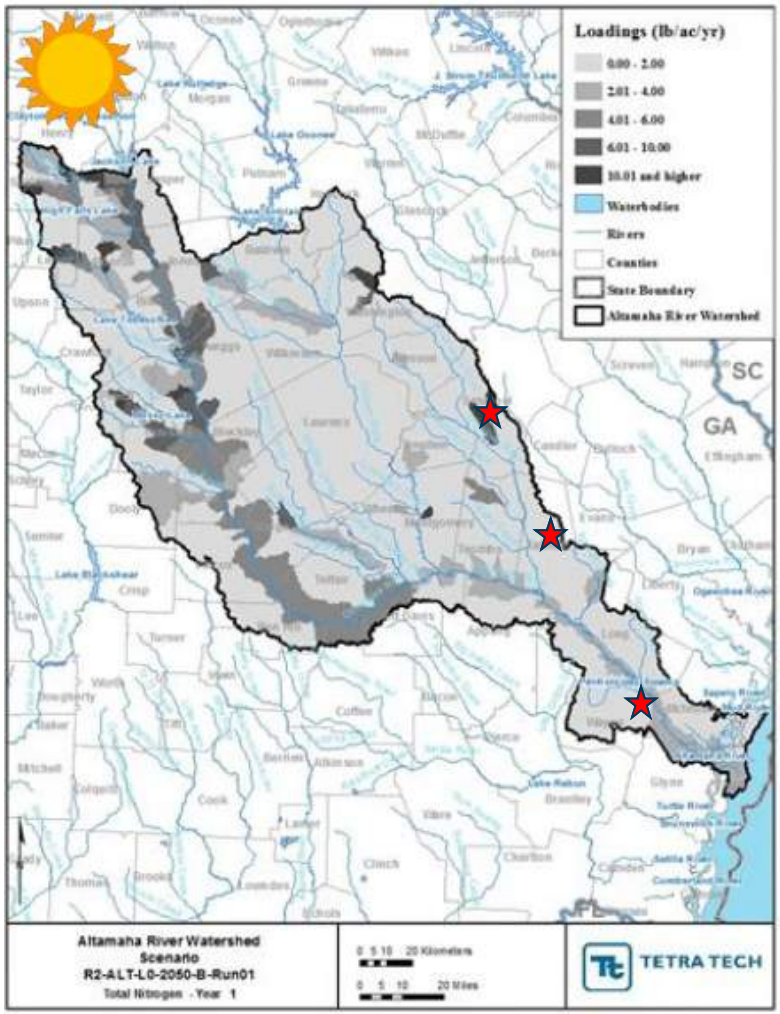
Surface Water Quality/Assimilative Capacity Gaps

FUTURE CONDITIONS (2050)



FUTURE CONDITIONS (2050)



Total N

★ **Denotes Counties with large forecasted increases (mgd) in wastewater discharge**

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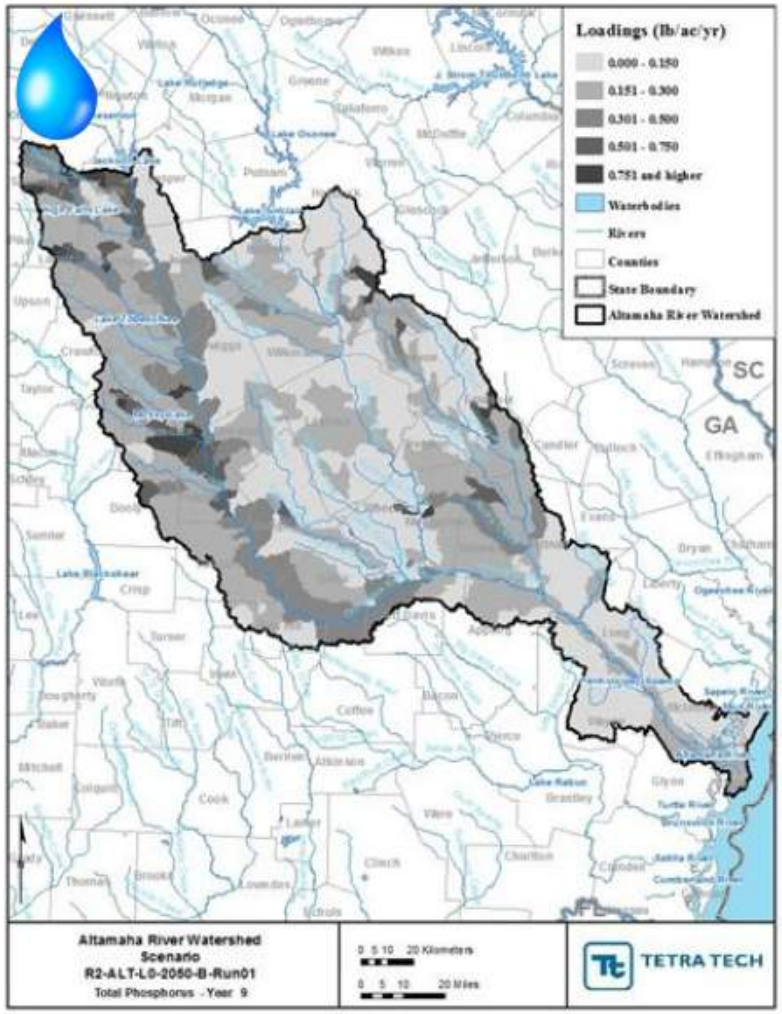
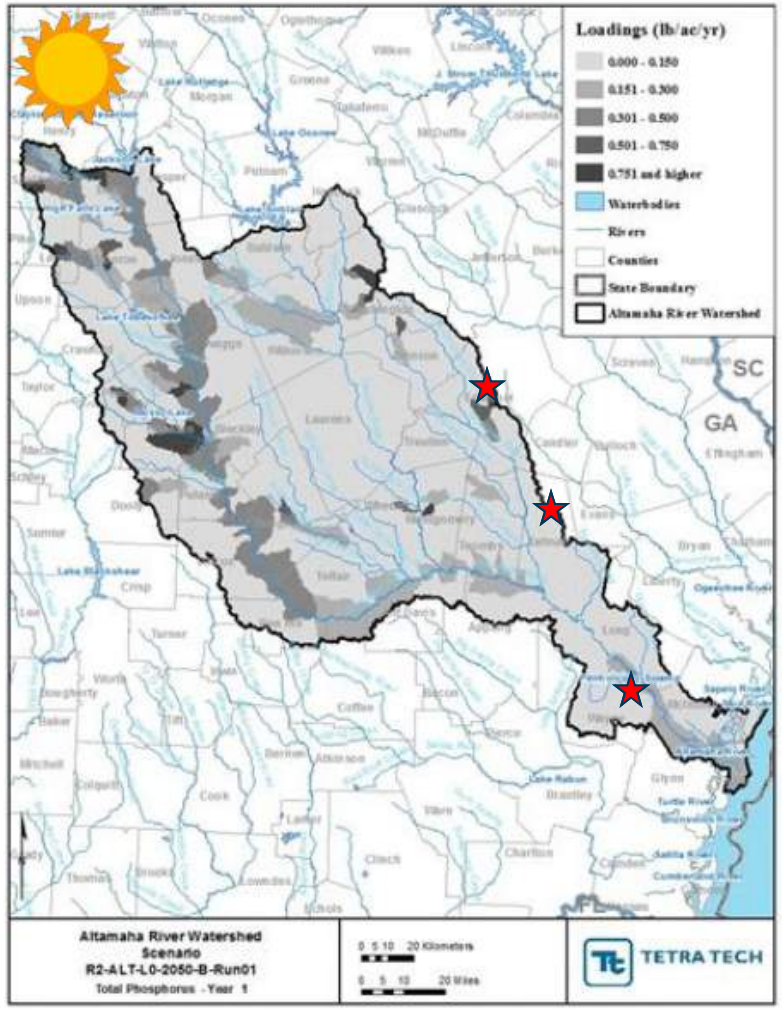
Surface Water Quality/Assimilative Capacity Gaps

FUTURE CONDITIONS (2050)



FUTURE CONDITIONS (2050)



Total P

★ **Denotes Counties with large forecasted increases (mgd) in wastewater discharge**

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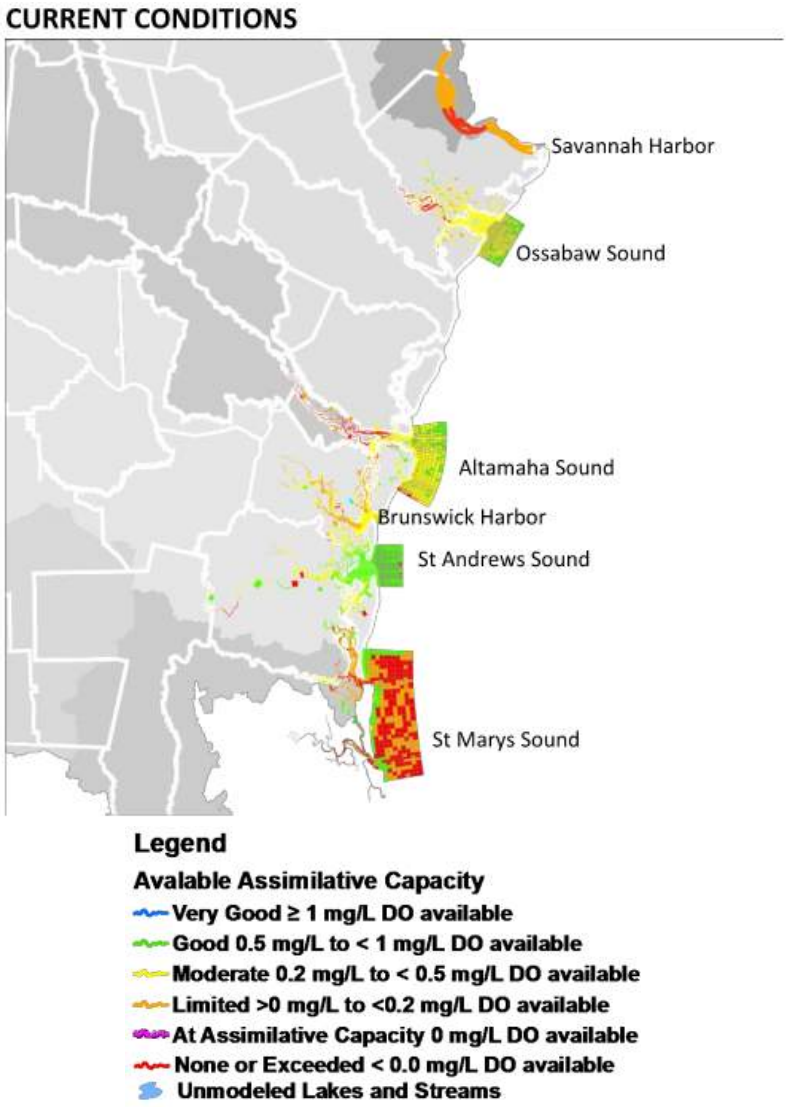
Surface Water Quality/Assimilative Capacity Gaps

- EFDC Lake & Estuary Model Results
  - Limited assimilative capacity in lower reaches of Altamaha River
  - Lower assimilative capacity may be due to slower moving waters which contribute to naturally low DO levels



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Altamaha Region Gap Summary

- Surface Water Resource:
  - All potential gaps are surface water quantity related
    - Claxton, Eden, Kings Ferry, Atkinson, Statenville
  - All non-agricultural surface water use occurs at planning nodes with no gaps
  - Therefore, management practices can:
    - Focus on agriculture to address potential surface water gaps
    - Consider groundwater as a resource to make up a portion of the potential gap
    - Consider other demand reduction options
    - Other
  - Surface water flow is influenced by a number of natural and human induced factors including climate, land use, channel and flow alterations, etc.

Altamaha Region Gap Summary (cont.)

- Groundwater Resource
  - Consistent with Round 1, there are no gaps identified
  - Emanuel, Tatnall, Toombs and Wayne Counties have highest forecasted increases (mgd) in groundwater use
  - Continue water conservation practices
  - Resource may be used to address portion of potential surface water gap
  - Potential gaps in groundwater in Coastal Region
    - Increased coordination & discussion between Councils
    - Portions of Altamaha region subject to the 24 County Coastal Permitting Plan

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Altamaha Region Gap Summary (cont.)

- Assimilative Capacity/Water Quality:
  - Assimilative capacity for DO appears to be generally improving compared to Round 1 for future conditions
    - Due to assumptions regarding tighter permit limits
  - Areas of higher loadings in dry years can indicate point sources as potential cause (i.e., wastewater discharge)
    - Emanuel, Wayne and Tatnall Counties show highest forecasted increases in wastewater discharge
  - Areas of higher loading in wet years are indicative of nonpoint source runoff
    - Lower reaches of Ocmulgee and Oconee Rivers and confluence with Altamaha River
    - Re-visit BMPs for nonpoint source loadings

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Shared Resources

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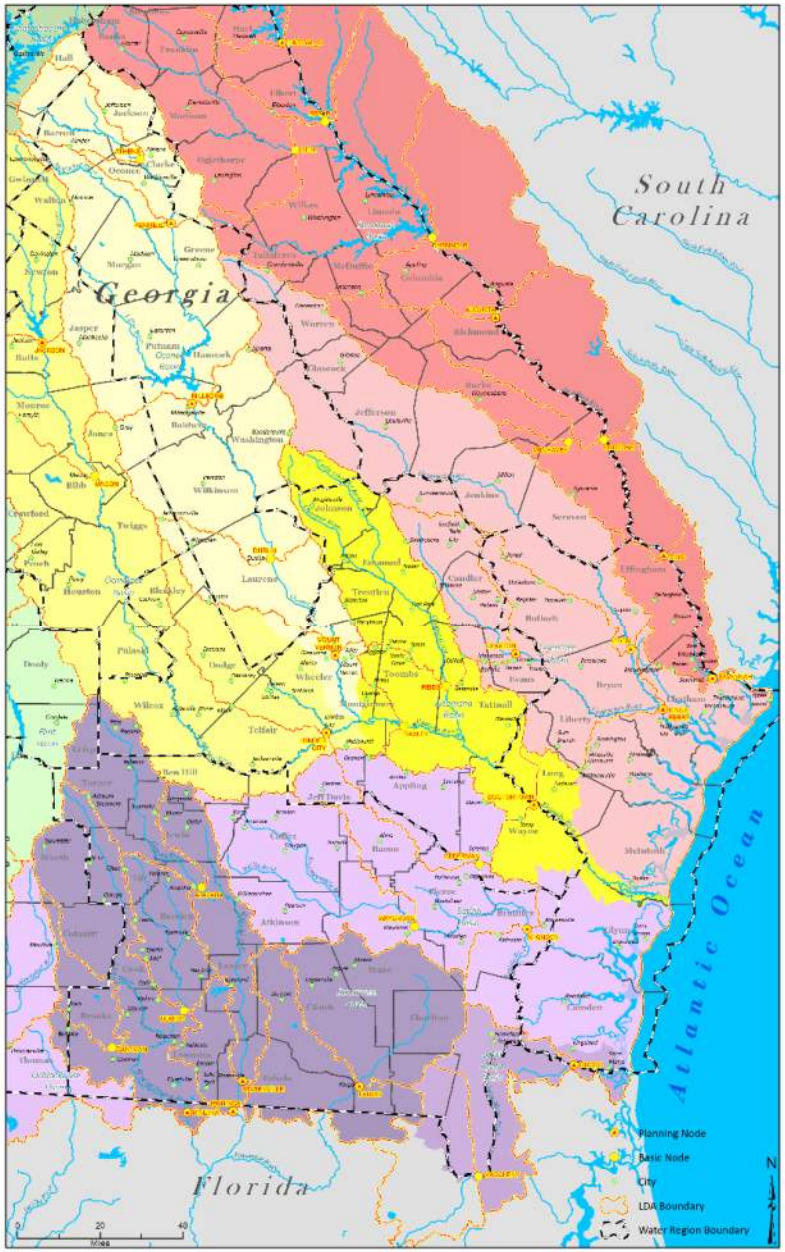
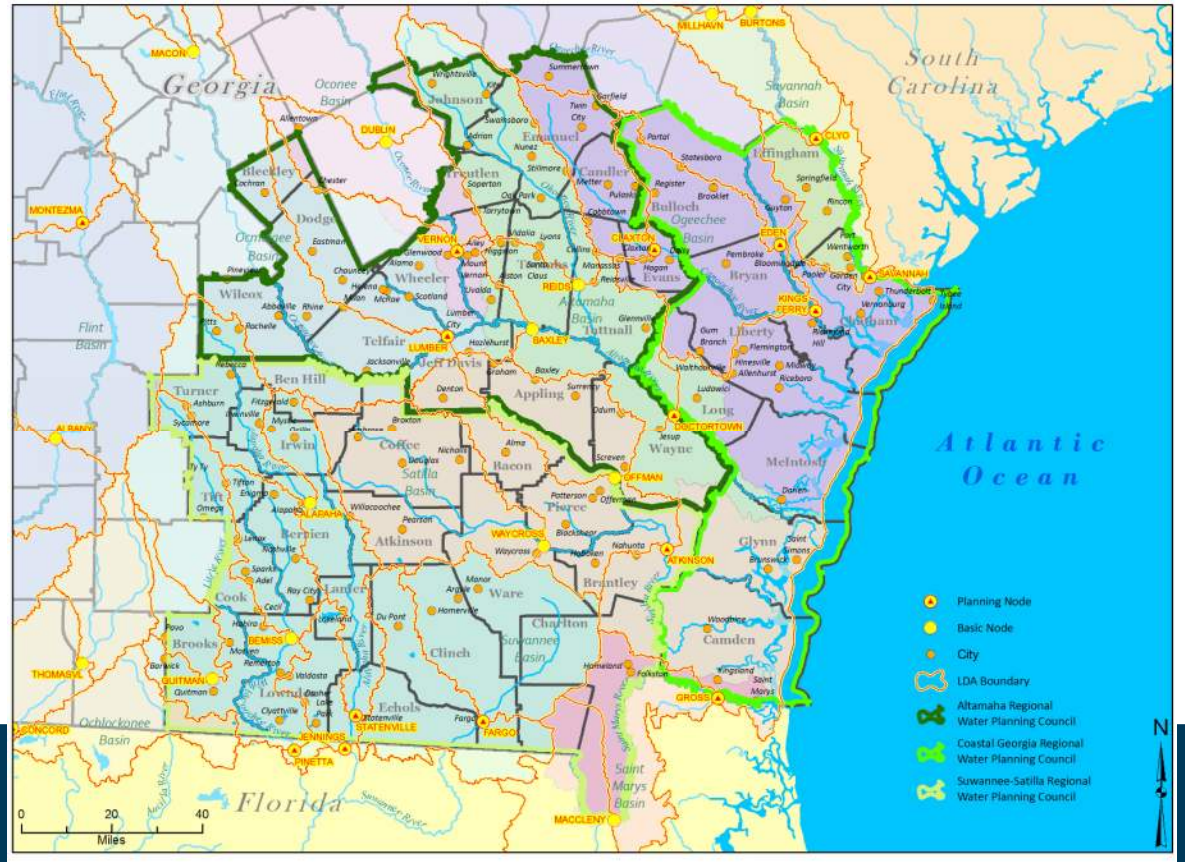
Shared Resources

- Surface Water
  - Addressing potential gaps will require evaluating surface water resource availability and demands at the watershed level
  - Council boundaries and demand forecast summaries are county based
  - GIS and other tools will allow a look at potential gaps from a watershed perspective using county based demand forecasts



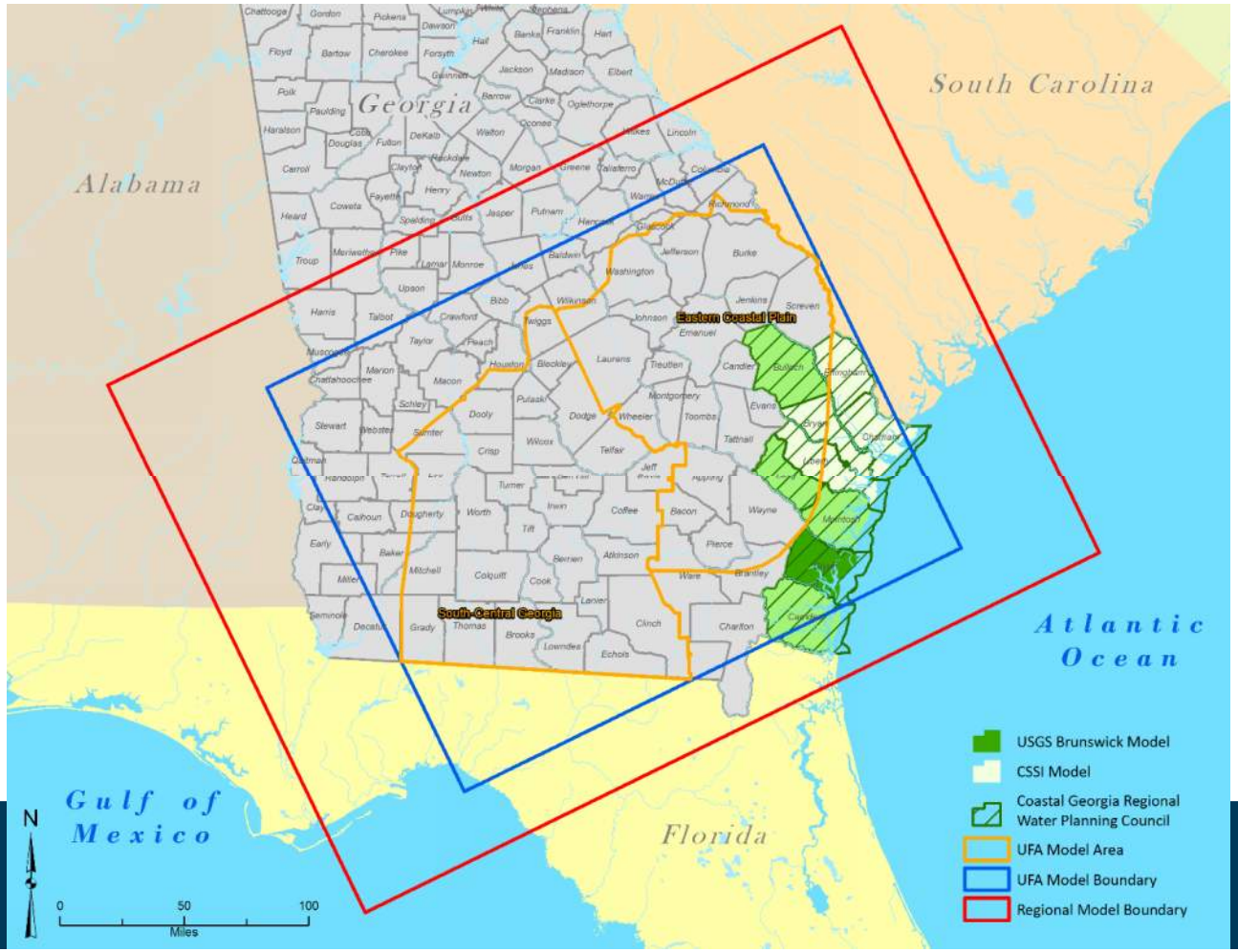
Shared Resources

- A closer look at spatial relationships of planning nodes, watershed (local drainage areas or LDAs), adjoining councils, and county locations will inform the selection of management practices and implementation considerations



Shared Resources

- Groundwater – Floridan Aquifer model boundaries used for determining sustainable yield – this resource is utilized in multiple planning regions



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Management Practices

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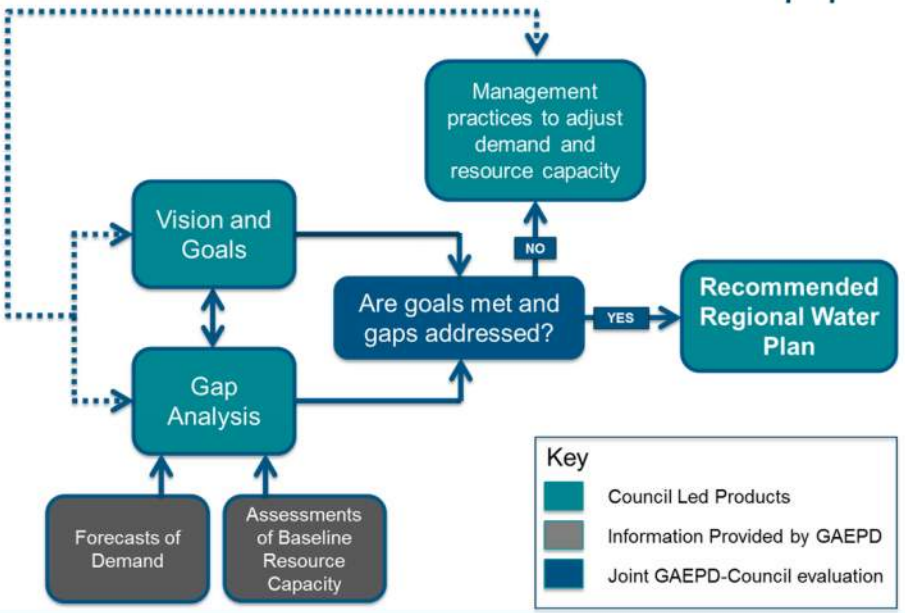
Management Practices Definition

- Any program or activity that:
  - Helps meet the regional vision and goals
  - Can be employed to ensure that there is sufficient water (surface and groundwater quantity) and assimilative capacity (surface water quality) to sustainably meet future needs
- Management practices can increase resource capacity and/or adjusts forecasted demands (i.e., water efficiency measures)

Altamaha RWPC Vision

Wisely manage, develop, and protect the Region's water resources for current and future generations by ensuring that the Altamaha basin's water resources are sustainably managed to enhance quality of life and public health, protect natural systems including fishing, wildlife and wildlife utilization activities, and support the basin's economy.



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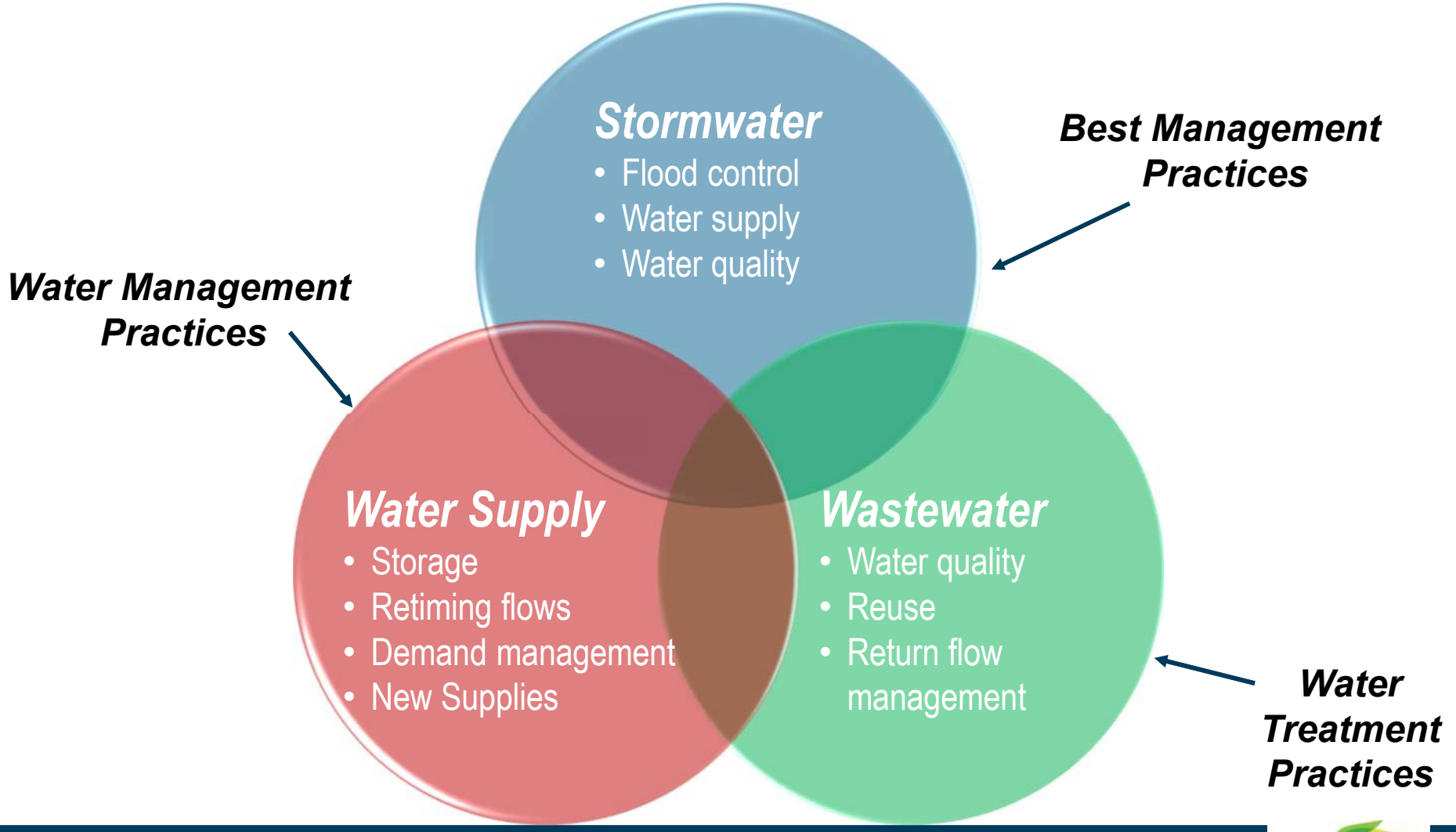
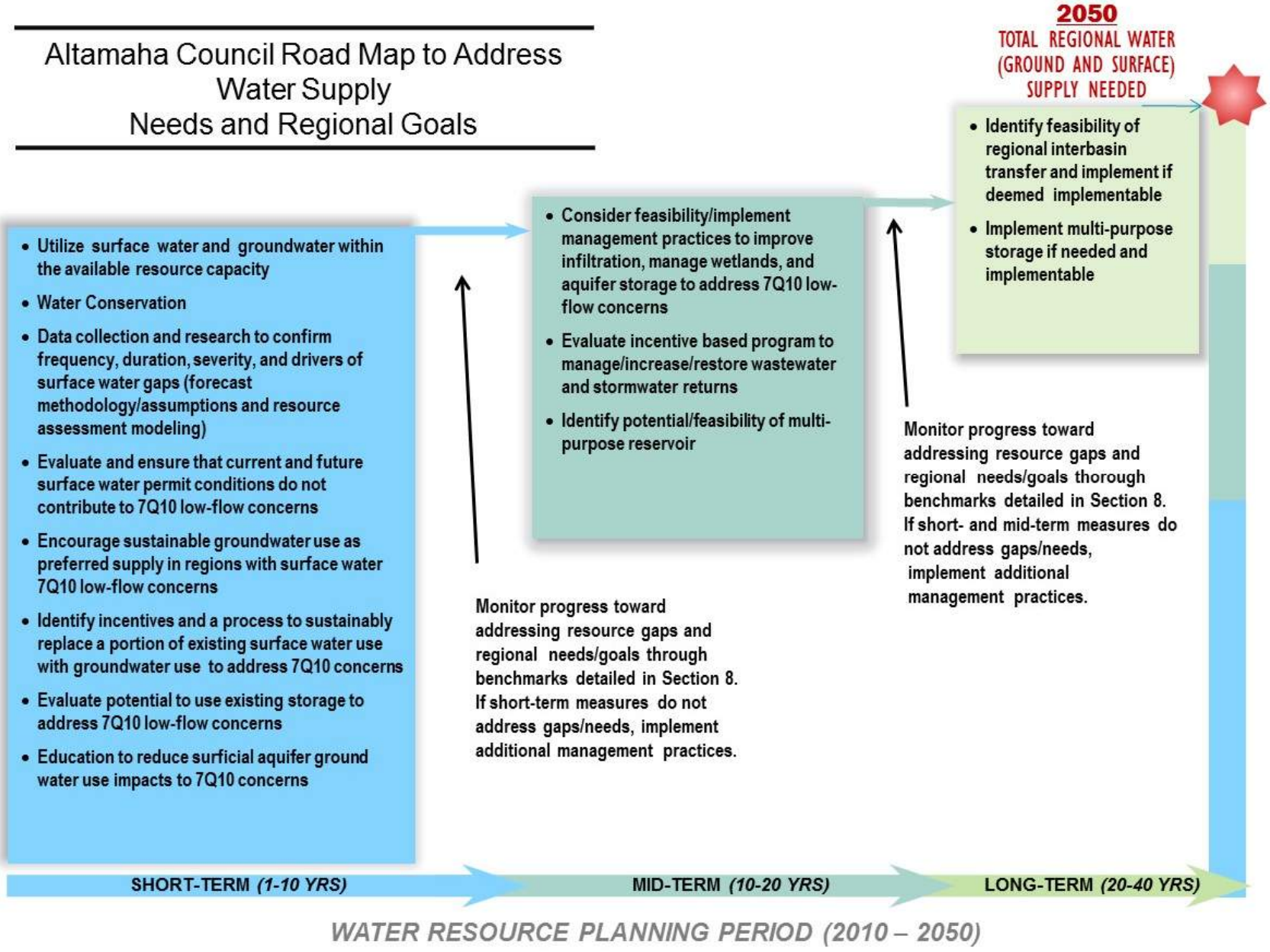
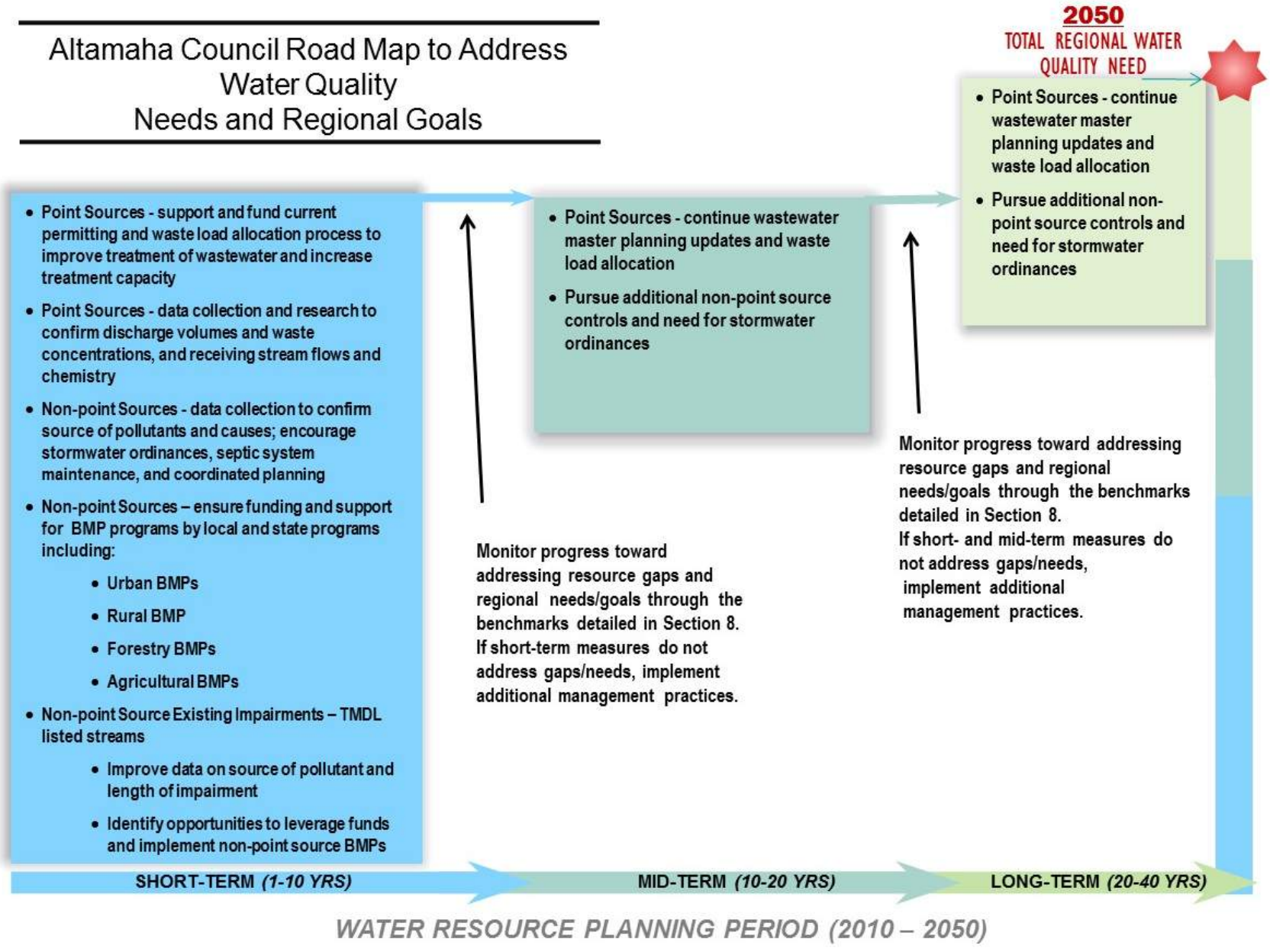
Developing a Water Plan Decision Framework



2011 RWP Recommended Management Practices



2011 RWP Recommended Management Practices

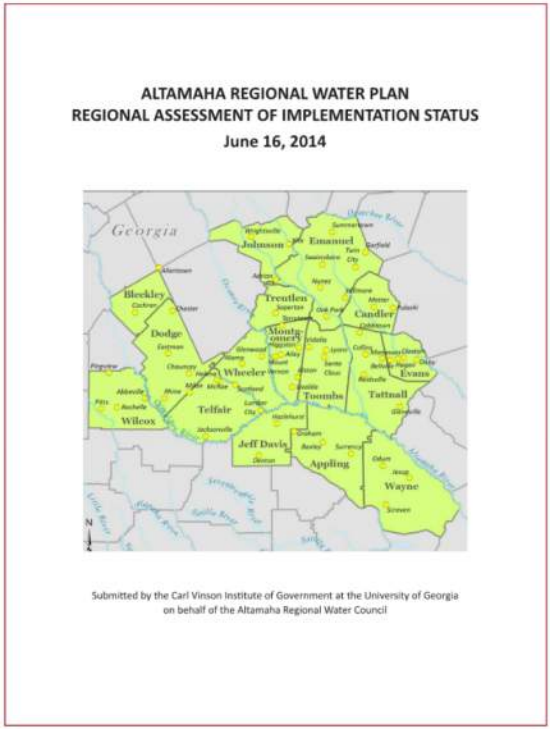


Management Practices

- Over 70 Management Practices Identified in 2011 RWP
  - Water Conservation
  - Water Supply
  - Wastewater and Water Quality
  - Information Needs
- Based on updated forecasts and demands:
  - Are there additional practices not currently in plan?
  - Are there ones that should be refined?
  - Ones that should be eliminated?

Interim Planning Period

- Regional Assessment of Implementation Status Report (2014)
- Many accomplishments achieved in the Altamaha region in the areas of:
  - Water Demand Management
  - Wastewater & Water Quality
  - Stormwater & Water Quality
  - Information Needs
- Made specific recommendations
  - Implementing Entities
  - Enhancing Inter-Council Planning



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Path Forward for Developing Management Practices

- Potential surface water gaps appear largely related to agricultural surface water use
- Potential surface water gaps involve use across multiple council boundaries
- Consider formation of a multi-council subcommittee to work with agricultural users from affected regions and other key stakeholders
- The Coastal Georgia Council is also considering a subcommittee to focus on Floridan Aquifer use/gaps in Bryan, Chatham, Effingham, and Liberty counties (red and yellow zones)

De-Brief from Breakout Sessions

- What did the Council learn during the Breakout Sessions and what are the implications for their Plan updates?
- Can the Council identify any specific management practices that need to be addressed in light of the result of the Resource Assessment updates?
- What topics or messages would be most beneficial to bring back and share with other Councils at the Joint Council Meeting?
- Has the Council identified any further joint coordination items that the Council wants to see occur prior to finalizing updates of their Plans?

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Council Meeting Business

- See Agenda

Thank You!

Questions? Comments? Need More Information?

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