Georgia's

State Water Plan

Regional Water Development and Conservation Plan Review and Revision
Upper Oconee Regional Water Planning Council
March 2, 2017

www.georgiawaterplanning.org

Upper Oconee Council Meeting 4

Objectives:

1) Review Regional Water Plan Deliverables
2) Review and Discuss Management Practices
3) Discuss Approach and Timelines for Remaining Regional Water Plan Updates

9:00 – 9:30 am	Registration
9:30 – 9:45	Welcome and Introductions • Approve Meeting Minutes from November 17, 2016 Individual Council Meeting • Approve Meeting Agenda
9:45 - 10:15	Regional Water Plan Deliverables • Demand Forecast Technical Memorandum • Updates to Regional Water Plan Sections • Schedule for Remaining Regional Water Plan Updates
10:15 - 10:45	Review and Discuss Management Practices
10:45 - 11:00	Break
11:00 - 11:45	Continue Review and Discussion of Management Practices
11:45 - 12:30 pm	Lunch
12:30 - 1:30	Continue Review and Discussion of Management Practices
1:30 - 1:45	Break
1:45 - 2:30	Finalize Review and Discussion of Management Practices
2:30 - 2:45	Wrap Up/ Next Steps/ Council Meeting 5 Preview
2:45 - 3:00	Public Comments/Local Elected Official Comments
3:00	Adjourn

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Upper-Oconee Council Meeting 4

Approve Meeting Minutes

Memorandum

To: *Upper Oconee Regional Water Planning Council*

From: *Dale Jones and Zakiya Seymour, Jacobs*

Date: *December 22, 2016*

Subject:

Upper Oconee Council Meeting 3
Regional Water Plan Review and Revision Process
Draft Meeting Summary (subject to Council review and approval)

This memorandum provides the meeting summary of the Upper Oconee Regional Water Planning Council individual meeting, which took place during the Joint Council Meeting held on November 17, 2016 at the Oconee Fall Line Technical College in Dublin, Georgia. A Joint Council Meeting was held for the six eastern Regional Water Planning (RWP) Councils (Altamaha, Coastal Georgia, Middle Ocmulgee, Suwannee-Satilla, Savannah- Upper Ogeechee and Upper Oconee) from 10 AM to 4 PM. The Upper Oconee RWP Council held a brief individual Council Meeting during the afternoon portion of the Joint Council Meeting. Council Member Hunter Bicknell ran the meeting in Chairman Davis and Vice-Chair Graham's absence. The meeting

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Remaining Schedule

- Draft updated Plans completed before March 31
  - Input from Council during Today's meeting
  - Further work/edit with Subcommittee or Full Council: March
- Public Notice period: March 31 – May 15
- Council Meeting 5: late May – early June
  - Updated Plans finalized in June

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Remaining Schedule

Questions for the Council

Have a Subcommittee or the Full Council dive deeper into a review of the Plan Sections?

Subcommittee

- PC Updates Sections for Review: March 10-13
- Feedback meeting with Subcommittee: March 14-17
- PC Incorporates Feedback: March 20-24

Have an additional Council Meeting after review

- Potential Dates: March 24-29
- In person, conference call, or email voting to accept final draft

- Have a Subcommittee or the Full Council review as well as address EPD and public comments?

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Forecast Technical Memorandum Review

- Introduction
  - General Methodology
  - Population Update
- Municipal Water Forecasting
- Municipal Wastewater Forecasting
- Industrial Forecasting
- Agricultural Water Forecasting
- Energy Water Forecasting
- Regional Summary

Section 3 Review

Section 3. Water Resources of the Upper Oconee Region

This Section summarizes existing conditions in the Region, including existing water usage by sector (i.e., municipal industrial, agriculture, and energy production), surface water and groundwater availability, and water quality conditions.

3.1 Major Water Use in Region

Major water use and water returns are summarized for the Upper Oconee region based on data compiled by USGS in the report 'Water Use in Georgia by County for 2010 and Water-Use Trends, 1985-2010'. For planning purposes, water "withdrawal" is defined as

Section Summary

The Resource Assessments indicate that most streams in the Region have sufficient assimilative capacity; however, select segments of the Oconee River and its smaller tributaries have exceeded their available assimilative capacity. There are potential groundwater sustainable yield limitations in the Crystalline rock system, which serves portions of Athens-Clarke, Jackson, Barrow, and Oconee Counties.

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Section 4 Review

REGIONAL WATER PLAN

4. Forecasting Future Water Resource Needs

Section 4. Forecasting Future Water Resource Needs

Water demand and wastewater flow forecasts and the Resource Assessments described in Section 3 form the foundation for water planning in the Region and serve as the basis for the selection of the MPs discussed in Sections 6 and 7. Any differences between the ~~2005~~ 2010 USGS data presented in Section 3 and the data in this Section are due to variations in data sources and methodologies.

This Section presents the regional water demand and wastewater flow forecasts ~~at 10-year intervals~~

Section Summary

Total water demands are expected to increase from ~~1,377~~166 MGD in 2015~~0~~ to ~~1,412~~226 MGD in 2050. Wastewater flows are likewise anticipated to increase from ~~1,329~~141 MGD in ~~2010~~ 2015 to ~~1,354~~205 MGD in 2050.

~~Energy generation is forecast to continue to make up the largest portion of future water withdrawals; however, the majority of this water is not consumptive, i.e., it is returned to~~

Section 5 Review

Round 1 Table 5-6 (Round 2 Table 5-8):
Summary of Potential Gaps, Needs, or Shortages by County

County	Ground-water Gaps	Surface Water Gaps	Municipal Water Needs	Municipal Wastewater Shortages	Water Quality – Assimilative Capacity Gaps	Water Quality 303(d) Issues
Baldwin					~~Yes~~/No	Yes
Barrow		~~Yes~~/No	Yes	~~Yes~~/No		Yes
Athens-Clarke		~~Yes~~/No	~~Yes~~/No	~~Yes~~/No	~~Yes~~/No	Yes
Greene		Yes	~~Yes~~/No	~~Yes~~/No		Yes
Hancock		Yes				Yes
Jackson		~~Yes~~/No		~~Yes~~/No		Yes
Laurens	~~Yes~~/No				Yes	Yes
Morgan			~~Yes~~/No		Yes	Yes
Oconee		~~Yes~~/No	Yes	~~Yes~~/No		Yes
Putnam					Yes	Yes
Walton				Yes		Yes
Washington	~~Yes~~/No	Yes		~~Yes~~/No	~~Yes~~/No	Yes
Wilkinson	~~Yes~~/No				Yes	Yes
Total Counties	~~3~~/0	~~4~~/3	~~4~~/2	~~7~~/1	~~7~~/4	13

Notes: "Yes" indicates that there is a potential gap or need/shortage in the indicated county or a water quality issue.

"Gap" is defined as a condition where the existing or future conditions exceed the Resource Assessment metric.

"Need" and "Shortage" are defined as a condition where the current permitted capacity of water and wastewater treatment facilities, respectively, is less than the future forecast demands.

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Process to Update Management Practices

- Review High Priority Management Practices Identified during Interim for Potential Revision
- Categorize Remaining Management Practices
  - Keep As-Is
  - Edit
  - Delete
  - Add New
- Review Recommendations to the State
- Have Subcommittee/Full Council
  - Finalize language for edited Management Practices
  - Finalize full set of revised Management Practices & Recommendations to present for approval

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Break

10:45 AM – 11:00 AM

Review and Update Management Measures

Summary of Round 1 Water Conservation Management Practices – Upper Oconee Regional Water Planning Council – *Water Conservation*[1]

Water Conservation Management Practices Selected for Upper Oconee			
Management Practice	**Description/Definition of Action**	**Relationship of Action or Issue to Vision and Goals**	**Identification of Plan Elements for Review**
WC-1. Encourage conservation pricing	Encourage conservation pricing to provide economic incentive for people to use water more efficiently within the entire Region. Specific measures for implementation are to: (1) eliminate declining block rate structures, (2) perform a rate and revenue analysis, and (3) review and update pricing on a regular basis.	Vision: Manage water as a critical resource. Supports WS, RS, ES, and CR goals[1].	
WC-2. Develop water conservation goals	Identify achievable, measurable goals to help local governments evaluate long-term water supply needs and to provide benchmarks for determining progress in reducing water supply gaps through conservation. Goals will be both regional and local with focus on areas where water supply gaps exist.	Vision: Manage water as a critical resource. Supports WS, CR, ES and BP goals[1].	It was noted by the Council that water conservation goals may be more appropriate by individual jurisdiction in relation to gaps and already implemented measures.
WC-3. Consistently meter and report agricultural water withdrawals (> 100,000 gallons per day [gpd])	Meter agricultural withdrawals throughout the Region, allowing GAEPD to estimate safe yield and available supplies to more accurately characterize existing conditions.	Vision: Manage water as a critical resource and develop an educated and engaged citizenry that embraces sound water management. Supports WS, WQ and CR goals[1].	Council discussed possibly updating or removing recommendation based on work already being done in this area.
WC-4. Implement education and public awareness program	Research existing education programs to determine if one can meet water conservation and water quality improvement awareness needs. If an appropriate program does not exist, develop a Region-wide education and public awareness program. Implement the new program.	Vision: Develop an educated and engaged citizenry that embraces sound water management. Supports WS, WQ, ES, and CR goals[1].	

[1] Table 6-1(a), Upper Oconee Regional Water Plan (November 2011)

Review and Update Management Measures

Management Practices

Water Conservation & Reuse Management

- Conservation practices
- Better planning and management

Water Supply Management

- Storage, such as reservoirs
- Water master plans

Wastewater

- Wastewater master plans
- Septage system planning

Water Quality Management

- Reduction in nonpoint source pollution

Review and Update Management Measures

Management Practices

- Data Management
  - Accessible data and information
- Revenue Strategies
  - Sufficient revenues
- Education
  - Educational materials targeting different audiences
- Balance Priorities
  - Economic development, recreation, and environmental interests

Gap Review

Groundwater Availability

- No groundwater resource shortfalls expected over the planning horizon

Surface Water Availability

- Increased demand in the Region may add to a modeled surface water gap downstream of the region at the Eden planning node on the Ogeechee River (Greene, Hancock, and Washington Counties)

2015 Priority Water Conservation Management Practices

WC-2. Develop water conservation goals

2011	Identify achievable, measurable goals to help local governments evaluate long-term water supply needs and to provide benchmarks for determining progress in reducing water supply gaps through conservation. Goals will be both regional and local with focus on areas where water supply gaps exist.
2015	Water conservation goals may be ***more appropriate by individual jurisdiction*** in relation to gaps and already implemented measures.

Keep, Edit, or Delete

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2015 Priority Water Conservation Management Practices

WC-3. Consistently meter and report agricultural water withdrawals (> 100,000 gallons per day [gpd])

2011	Meter agricultural withdrawals throughout the Region, allowing GAEPD to estimate safe yield and available supplies to more accurately characterize existing conditions.
2015	Council discussed possibly ***updating*** or ***removing*** recommendation based on work already being done in this area.

Keep, Edit, or Delete

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2015 Priority Water Conservation Management Practices

WC-7. Encourage non-potable reuse

2011	• Identify areas with potential for reuse application to offset existing or future withdrawals. • Promote irrigation with high quality treated effluent in unrestricted areas, such as golf courses and parks. • Encourage industries to use reclaimed water for processes such as cooling when feasible.
2015	Council discussed possibly ***reviewing non-potable reuse based on public perception*** of water quality in areas like parks.

Keep, Edit, or Delete

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2015 Priority Water Conservation Management Practices

WC-8. Require installation of rain sensor shut-off switches on new irrigation systems

2011	• Require installation or retrofitting to utilize irrigation systems that automatically shut off during rain events or moist soil conditions. • Investigate the potential for legislation or local government ordinances to require installation in new facilities where shortages are anticipated.
2015	Council discussed revising this recommendation to ***distinguish between residential, commercial, and industrial irrigation systems***.

Keep, Edit, or Delete

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2015 Priority Water Conservation Management Practices

WC-9. Require new car washes to recycle water

2011	• Require all new car wash establishments to recycle wash water to minimize the amount of potable water used during their processes. • Programs can either be mandated for new establishments or voluntary. For voluntary programs, incentives, such as a certification that can be displayed and/or advertised, can be offered.
2015	Council discussed the need to review and possibly extend this recommendation. There was a concern about the ***smaller-scale car washes not re-using water*** and being ***difficult to monitor or observe***. It was also noted that this is a ***potential water quality issue*** with runoff of soap suds into waterways.

Keep, Edit, or Delete

2011 Water Conservation Management Practices

WC1 - Encourage conservation pricing	**Keep, Edit, or Delete**
WC4 - Implement education and public awareness program	**Keep, Edit, or Delete**
WC5 - Implement golf course water management education program	**Keep, Edit, or Delete**
WC6 - Encourage variable rate agricultural irrigation systems	**Keep, Edit, or Delete**

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2011 Water Conservation Management Practices

WC10 - Encourage residential water audits	**Keep, Edit, or Delete**
WC11 - Encourage certification of irrigation specialists	**Keep, Edit, or Delete**
WC12 - Encourage commercial water audits	**Keep, Edit, or Delete**
Anything Missing?	

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2011 Water Supply Management Practices

WS1 - Expand existing reservoirs	**Keep, Edit, or Delete**
WS2 - Construct new water supply reservoirs	**Keep, Edit, or Delete**
WS3 - Develop new groundwater wells	**Keep, Edit, or Delete**
WS4 - Encourage development of water master plans with periodic update	**Keep, Edit, or Delete**

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2011 Water Supply Management Practices

WS5 - Encourage indirect potable reuse	**Keep, Edit, or Delete**
WS6 - Expand existing withdrawals from available reservoirs	**Keep, Edit, or Delete**
WS7 - Encourage water system asset management	**Keep, Edit, or Delete**
Anything Missing?	

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Lunch

11:45 AM – 12:30 PM

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Needs & Shortage Review

Municipal Water

- Estimates were calculated by comparing the permitted monthly average withdrawal limit with the forecast annual average demands.
- Future water needs were identified only in Barrow and Oconee Counties.

Municipal Wastewater

- Future demands for municipal wastewater management can largely be met with existing permitted facilities.
- Walton County is the only anticipated county to have a wastewater capacity shortage.

2015 Priority Wastewater Management Practices

WW-6. Provide local government with acceptable parameters for septage disposal at facilities

2011	• Develop a plan and acceptable parameters for septage disposal. • Collect septage manifests and provide to County Boards of Health. • Consider septage disposal needs when upgrading or designing new wastewater treatment facilities.
2015	Council expressed concerns about ***unauthorized septic disposal*** and potentially expanding this recommendation to allow for more regulation.

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2015 Priority Wastewater Management Practices

WW-7. Implement grease management program

2011	• Develop procedures for grease control and enforcement. • Implement fats, oils, and grease (FOG) education efforts.
2015	Council expressed an interest in encouraging the development of ***monitoring and enforcement capacity*** for grease management.

Keep, Edit, or Delete

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2011 Wastewater Management Practices

WW1 - Encourage implementation of centralized sewer in developing areas where density warrants	**Keep, Edit, or Delete**
WW2 - Encourage development of local wastewater master plans / Evaluate wastewater treatment and disposal options to meet future demands	**Keep, Edit, or Delete**
WW3 - Develop recommendations for decentralized sewer systems	**Keep, Edit, or Delete**

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2011 Wastewater Management Practices

WW4 - Develop septic system planning and management policies and guidance	**Keep, Edit, or Delete**
WW5 - Develop and implement sewer system capacity, management, operation, and maintenance (CMOM) program	**Keep, Edit, or Delete**
Anything Missing?	

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Gaps & Issues Review

Assimilative Capacity

- Reaches that exceeded assimilative capacity under the current conditions include:
  - Alligator Creek (Ocmulgee Basin); and
  - Glady Creek, Little Commissioner Creek, Turkey Creek, tributary to Big Indian Creek, and portions of Oconee River (Oconee Basin).
- EPD will continue to evaluate and modify future permit requests and adjust permit limits to avoid potential DO violations

303(d)

- Lake Oconee Dam Pool: chlorophyll level increase slightly due to point and nonpoint sources.
- Lake Sinclair: chlorophyll a levels projected to increase between current and 2050 conditions.

2011 Priority Surface Water Quality Management Practices

WQ1 - Encourage comprehensive land use planning	**Keep, Edit, or Delete**
WQ2 - Encourage local government participation in construction erosion and sediment control	**Keep, Edit, or Delete**
WQ3 - Encourage implementation of agricultural nutrient management programs	**Keep, Edit, or Delete**
WQ4 - Encourage forestry management practices	**Keep, Edit, or Delete**

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2011 Priority Surface Water Quality Management Practices

WQ5 - Encourage stream buffer protection	**Keep, Edit, or Delete**
WQ6 - Evaluate water quality credit trading	**Keep, Edit, or Delete**
WQ7 - Encourage floodplain management / flood damage prevention	**Keep, Edit, or Delete**
WQ8 - Encourage general stormwater practices	**Keep, Edit, or Delete**

2011 Priority Surface Water Quality Management Practices

WQ9 - Support total maximum daily load (TMDL) implementation	**Keep, Edit, or Delete**
WQ10 - Encourage agricultural cropland management practices	**Keep, Edit, or Delete**
WQ11 - Promote post-development stormwater management	**Keep, Edit, or Delete**
WQ12 - Monitor long-term ambient trends	**Keep, Edit, or Delete**

Anything Missing?

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Break

1:30 PM – 1:45 PM

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Implementing Water Management Practices (Section 7)

7.1 Implementation Schedule and Roles of Responsible Parties (Change as Management Practices change)

7.2 Fiscal Implications of Selected Management Practices (No Changes)

7.3 Alignment with Other Plans (No Changes)

7.4 Recommendations to the State

Recommendations to the State

Funding

Identify long-term funding mechanism, beyond grants, to assist responsible parties with implementation.	**Keep, Edit, or Delete**
Work with existing organizations such as the Georgia Soil and Water Conservation Commission to identify incentives to encourage the installation and use of variable rate irrigation systems by a certified irrigation professional.	**Keep, Edit, or Delete**

Recommendations to the State

Coordination

Coordinate with DCA and the RCs to serve as the clearing house and coordinator for ongoing Regional Water Plan planning activities.	**Keep, Edit, or Delete**
To provide continuity between Regional Water Plan updates, a minimum of six to nine members of the original Council should be re-appointed	**Keep, Edit, or Delete**
The Council should meet bi-annually to track implementation and address potential issues or questions regarding implementation or plan amendments	**Keep, Edit, or Delete**

Recommendations to the State

Coordination

Work with existing organizations, such as ACCG, GMA and GAWP to develop templates and materials that each Regional Council, with the assistance of DCA or the RCs noted in Section 2.3, can adapt for regional / local implementation.

Topic areas from Table 7-1 could include: public education program, water conservation goals regional residential and commercial water audit program materials, golf course water management, grease management, CMOM, general stormwater management and stream buffer protection.

Keep, Edit, or Delete

Work with existing organizations such as the GSWCC and the State's University System to develop regional watering, nutrient management, cropland management guidelines for the major crops grown in the Region.

Keep, Edit, or Delete

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Recommendations to the State

Coordination

Coordinate with State and local Public Health Departments to:

- **Develop consistent, minimum design standards that anticipate future centralized sewer connections where appropriate.**
- **Develop example policies for connections to public sewer.**
- **Develop regional recommendations and a model ordinance for decentralized sewer systems.**

Keep, Edit, or Delete

Coordinate with GEMA on development of a model flood damage prevention ordinance.

Keep, Edit, or Delete

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Recommendations to the State

Policy/Programmatic

Develop and implement a consistent program to meter and report agricultural water withdrawals greater than 100,000 gallons per day.	**Keep, Edit, or Delete**
Consider modifying (limiting) the extent of exemptions found in O.C.G.A. § 12-7-17 regarding the Erosion and Sedimentation Control Act.	**Keep, Edit, or Delete**
Revisit DO criteria for South Georgia, and the Region in particular, to consider naturally low background levels found in the Region.	**Keep, Edit, or Delete**

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Recommendations to the State

Policy/Programmatic

Develop regulatory framework and guidelines for water quality credit trading in Georgia.	**Keep, Edit, or Delete**
Build on existing GAEPD monitoring program to develop a regional long-term ambient trend monitoring network for the Region.	**Keep, Edit, or Delete**

Recommendations to the State

Next 5-Year Update

Refine Resource Assessment models to allow presentation of results at a finer resolution.	**Keep, Edit, or Delete**
Conduct further study on the Cretaceous aquifer in Washington, Wilkinson, and Laurens Counties to clarify sustainable yields.	**Keep, Edit, or Delete**
Collect and monitor withdrawal and discharge data from the kaolin industry to refine the water balance and wastewater return ratio assumptions.	**Keep, Edit, or Delete**
Support the evaluation of the current in-stream flow policy to determine whether revisions are needed to protect aquatic resources.	**Keep, Edit, or Delete**

Upper Oconee Council Meeting 4

- Wrap Up
- Next Steps
- Council Meeting #5

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Georgia's State Water Plan

Public Comment Period

- Please limit comments to 3 minutes total
- Council encourages written submission of comments as well

Thank You!

Questions? Comments? Need More Information?

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Dale.Jones@jacobs.com
Zakiya.Seymour@jacobs.com

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Optional Slides

Population Changes (Planning Period: 2015 – 2050)

Counties with Highest Projected Population Growth	% Change	Barrow	148%
		Walton	83%
		Jackson	80%
	# People	Barrow	111,900
		Walton	74,200
		Jackson	51,000

Counties with Lowest Projected Population Growth	% Change	Hancock	-48%
		Wilkinson	-21%
		Washington	-8%
	# People	Hancock	-4,200
		Wilkinson	-2,000
		Washington	-1,600

Negative numbers reflect a decrease in county population

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Water Demand (Planning Period: 2015 – 2050)

Counties with Highest Water Demand Increase (Excluding Agriculture)	% Change	Barrow	135%
		Walton	74%
		Jackson	70%
	MGD	Barrow	12
		Walton	7
		Jackson	5

Wastewater Demand (Planning Period: 2015 – 2050)

Counties with Largest Increase in Wastewater Flows	% Change	Barrow	144%
		Walton	126%
		Jackson	70%
	MGD	Walton	13
		Barrow	11
		Jackson	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	Barrow	138%
		Walton	76%
		Jackson	70%
	MGD	Barrow	8
		Walton	5
		Jackson	4

Counties with Highest Ground Water Demand Increase (Excluding Agriculture)	% Change	Barrow	130%
		Walton	69%
		Jackson	68%
	MGD	Barrow	4
		Walton	2
		Oconee	0.9

*Red text denotes counties with highest population growth statistics

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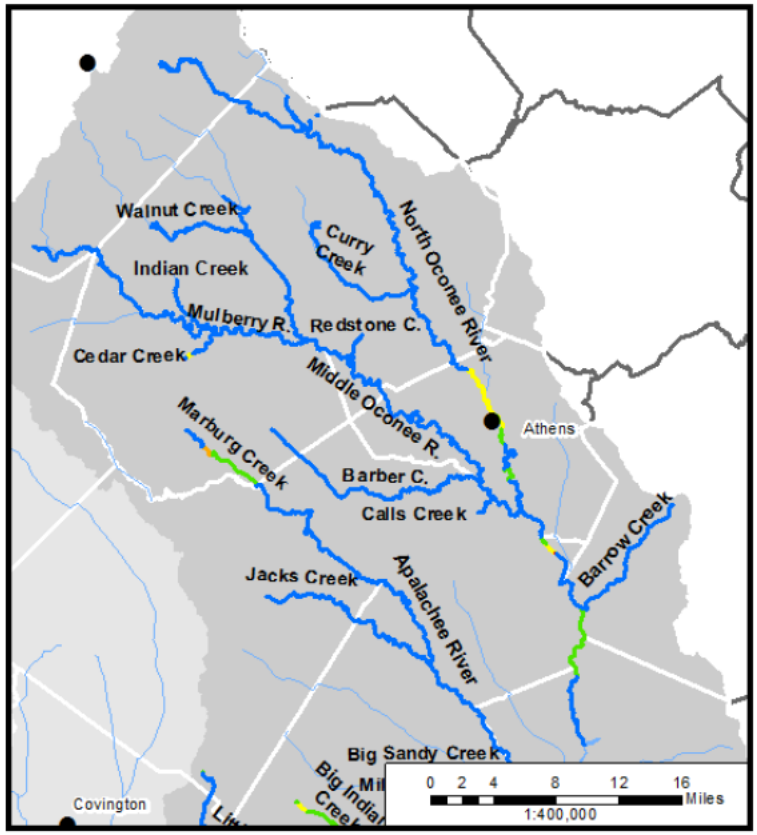
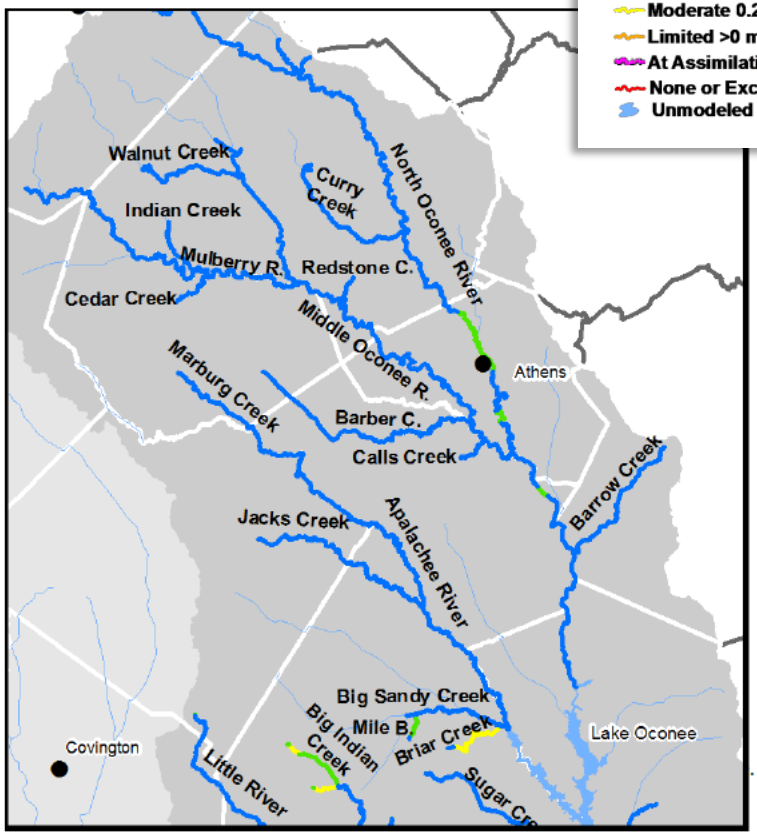
Oconee Basin DOSAG Model Results: Upper Portion



Round 1



Round 2

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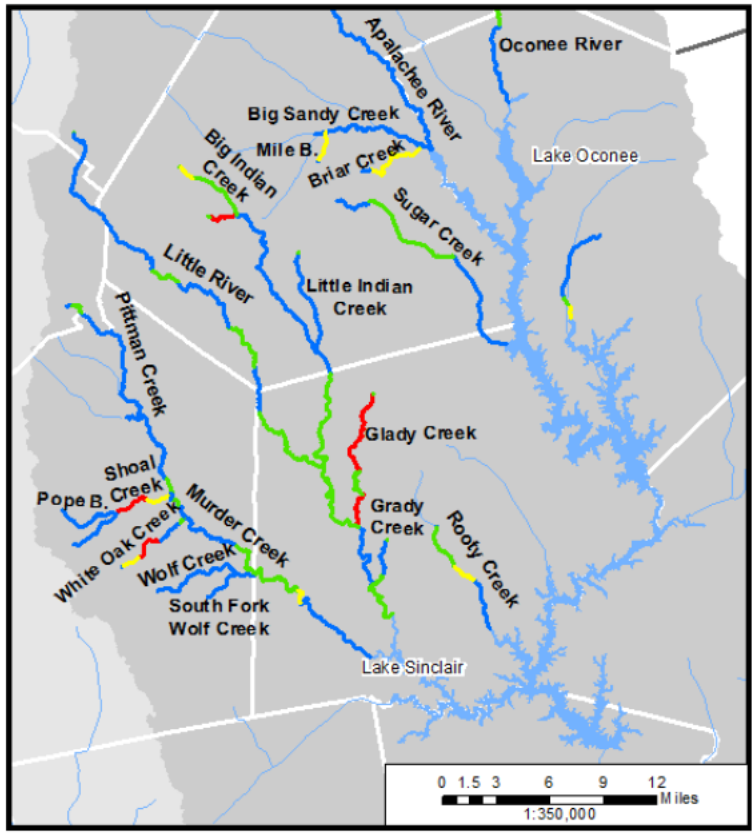
Oconee Basin DOSAG Model Results: Middle Portion



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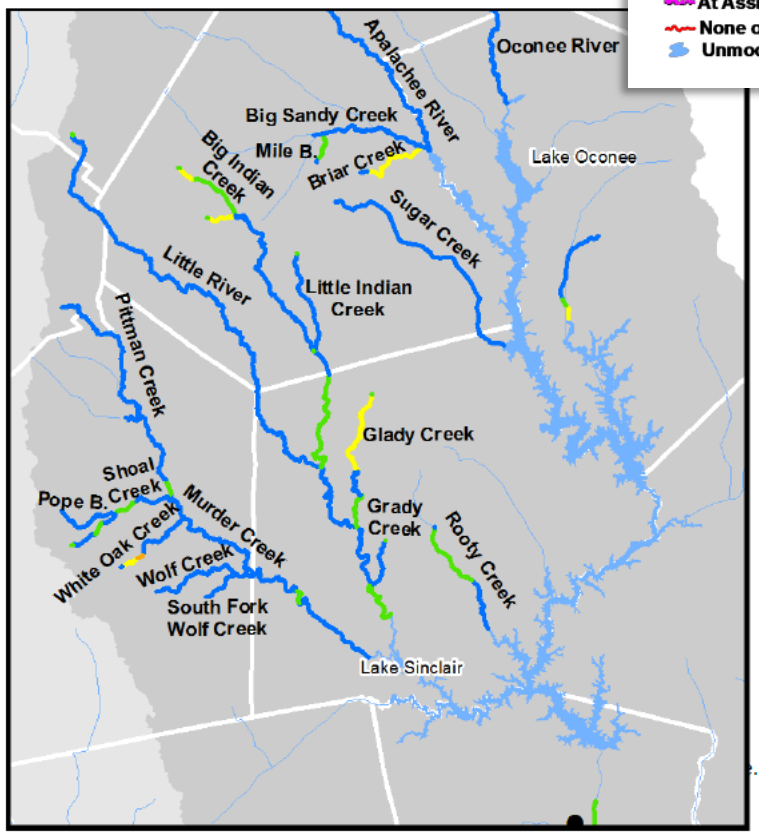
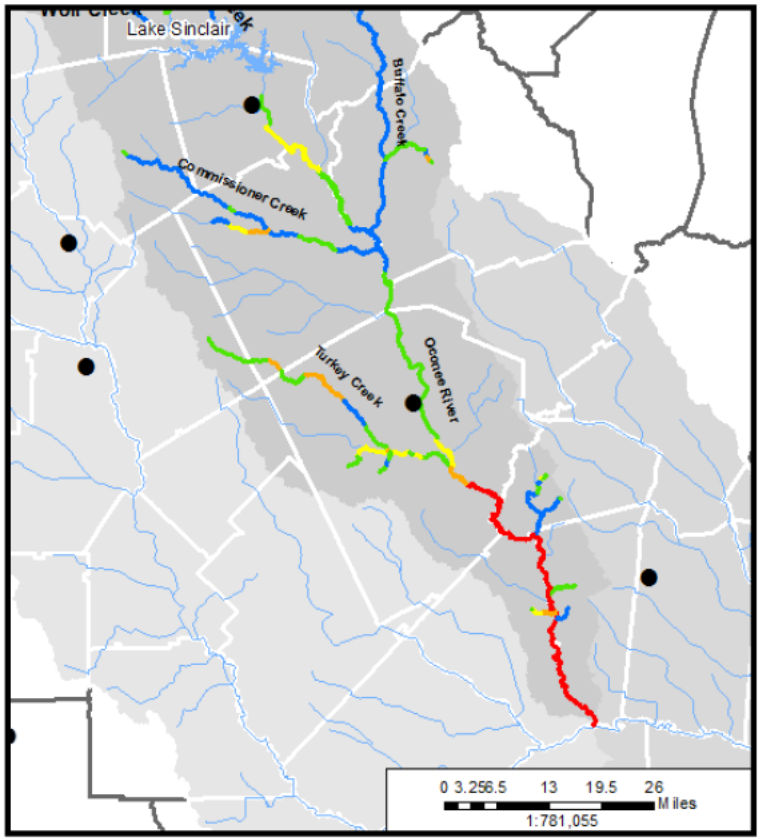


Round 2

Georgia

Oconee Basin DOSAG Model Results: Lower Portion



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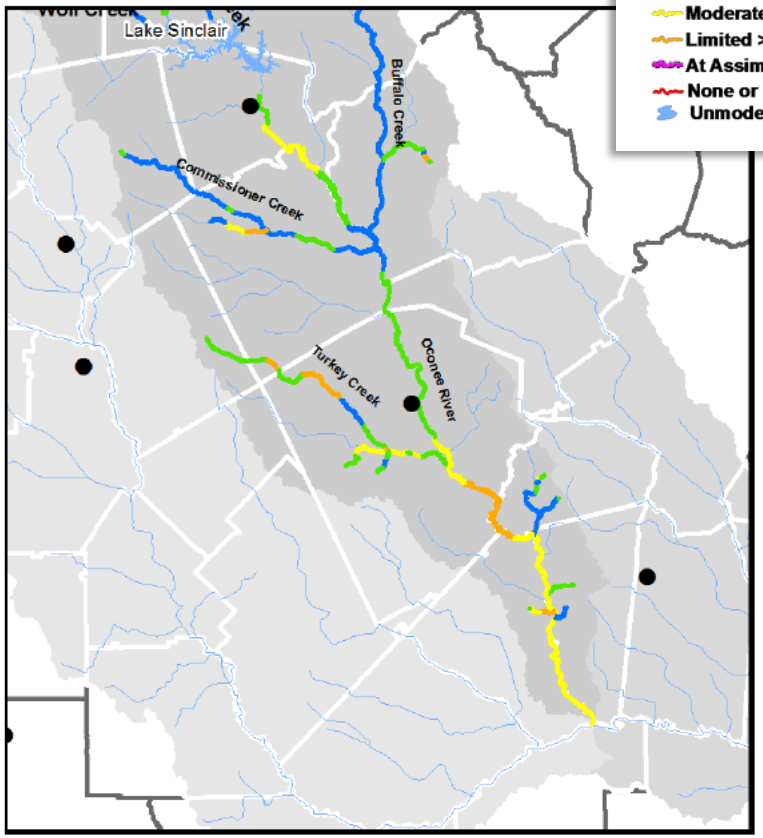

Round 2

Legend

Avalable Assimilative Capacity

- Very Good ≥ 1 mg/L DO available
- Good 0.5 mg/L to < 1 mg/L DO available
- Moderate 0.2 mg/L to < 0.5 mg/L DO available
- Limited >0 mg/L to <0.2 mg/L DO available
- At Assimilative Capacity 0 mg/L DO available
- None or Exceeded < 0.0 mg/L DO available
- Unmodeled Lakes and Streams

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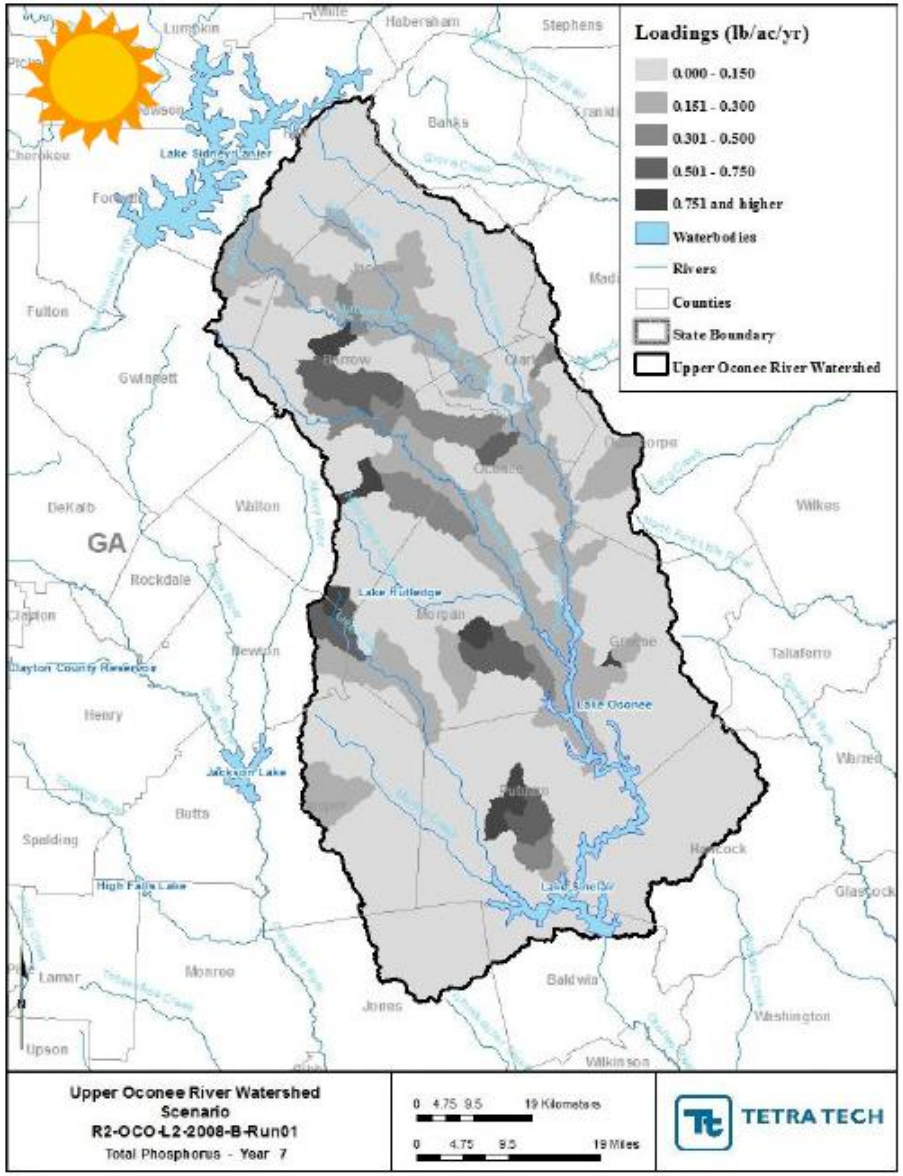
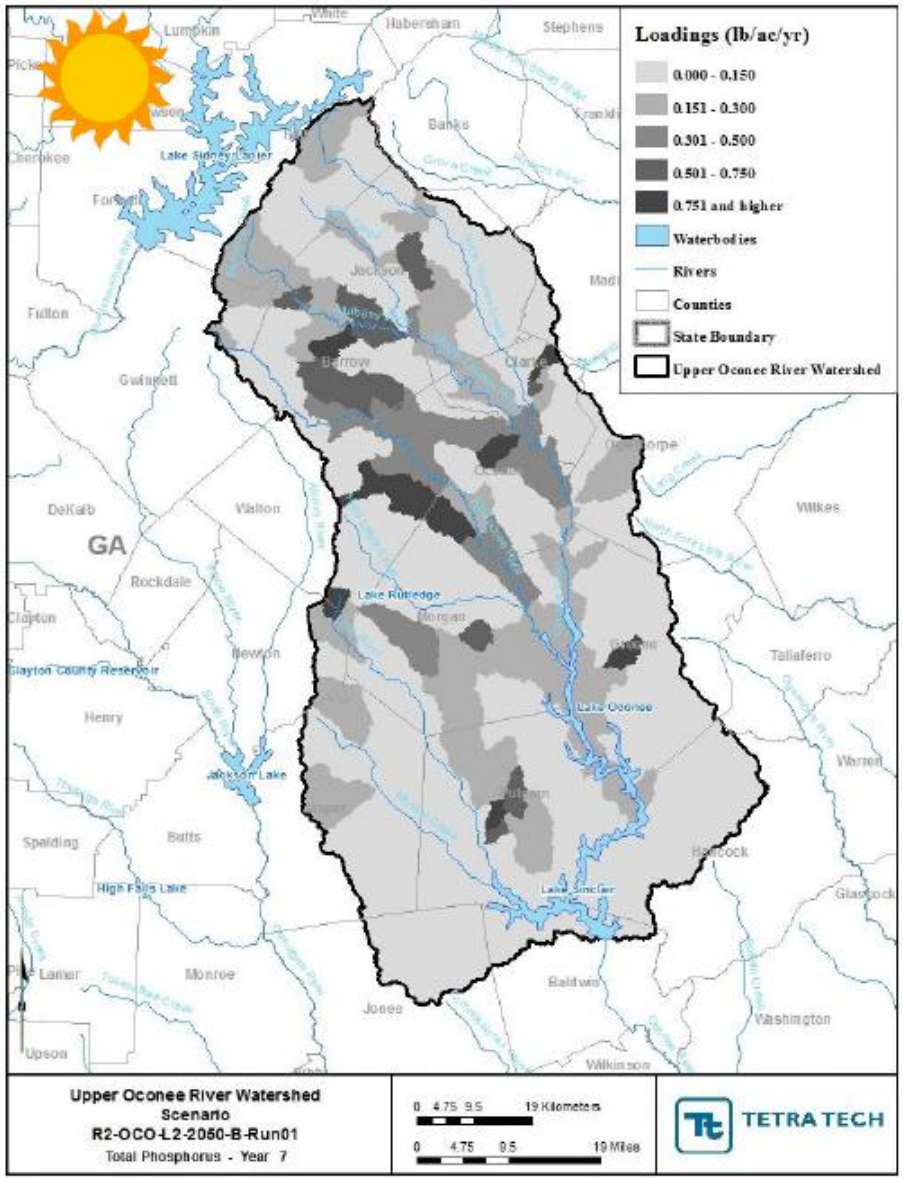
Oconee Basin: Total P Heat Maps - Dry

Current Conditions

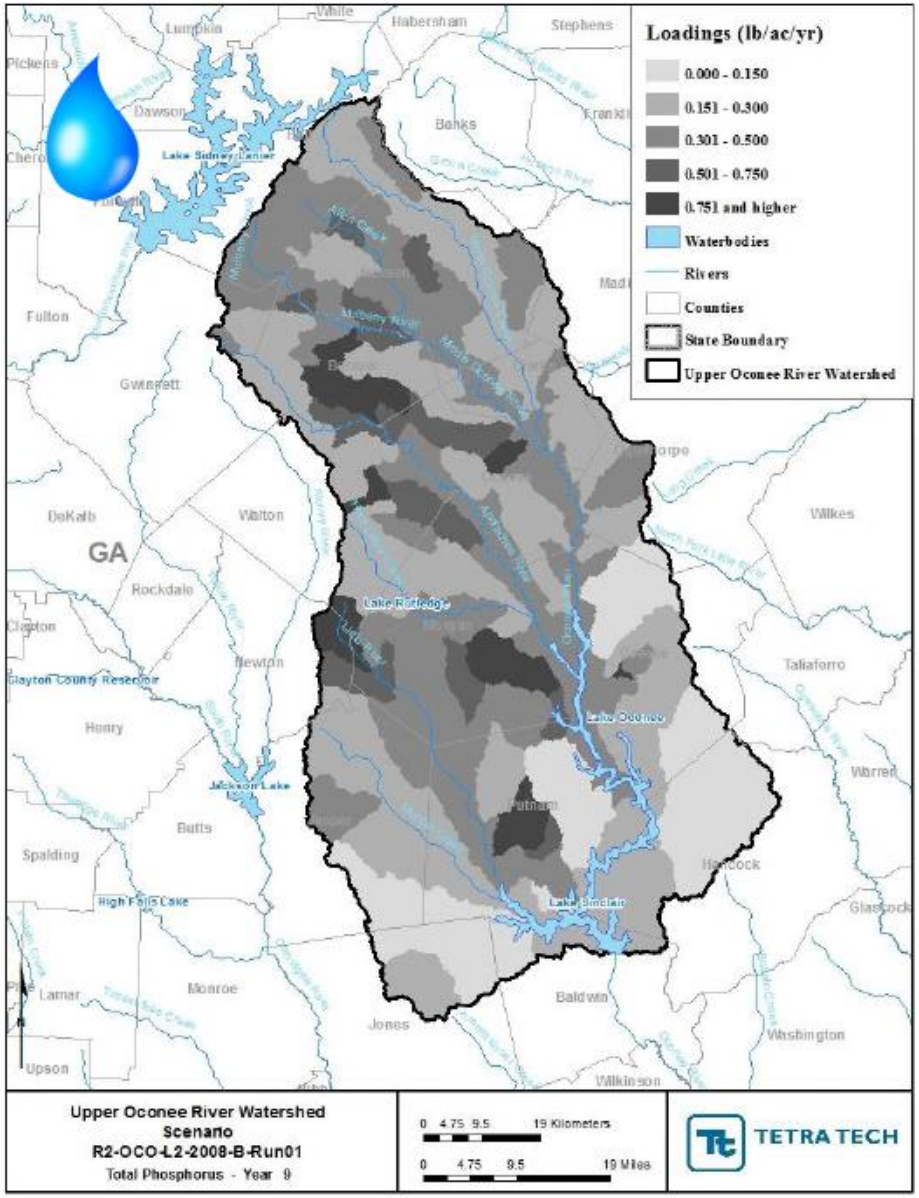


Future Conditions (2050)

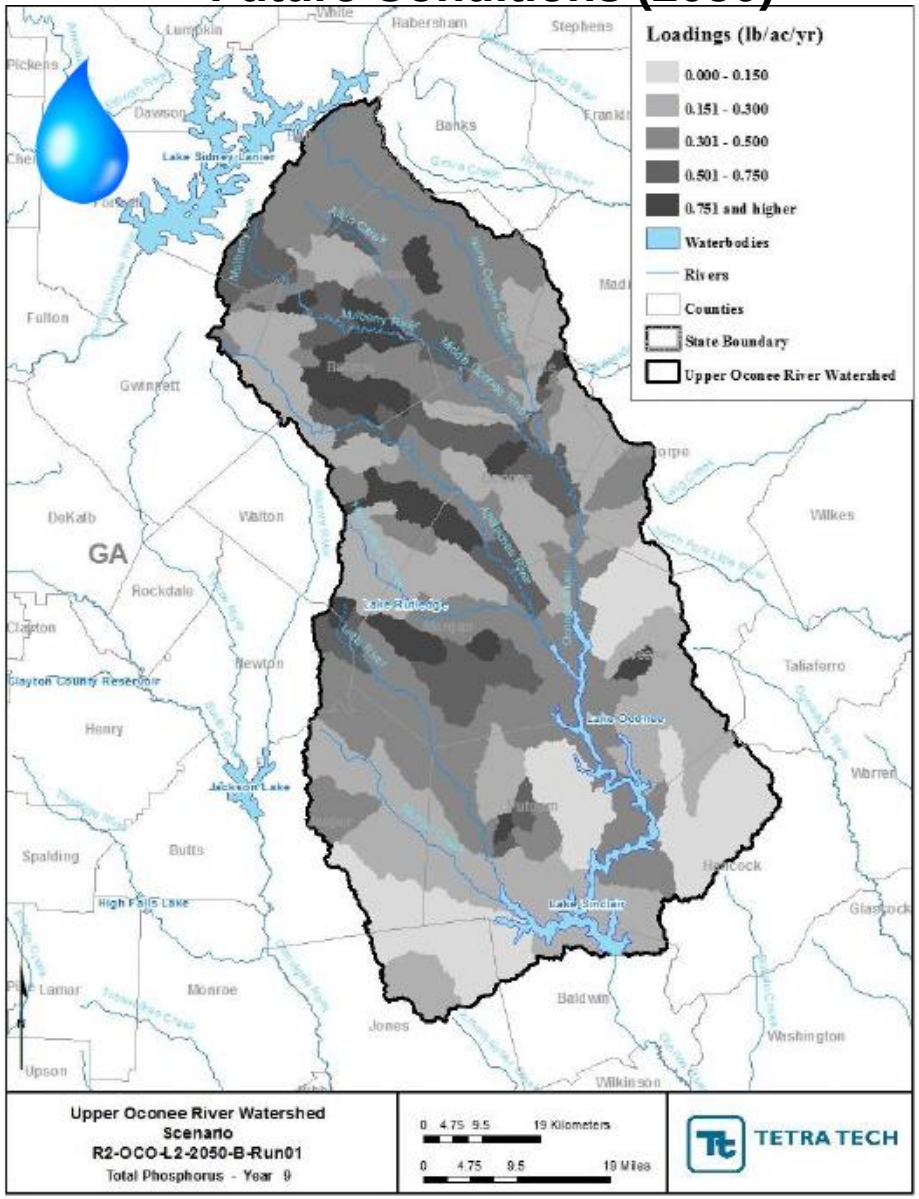


Oconee Basin: Total P Heat Maps - Wet

Current Conditions

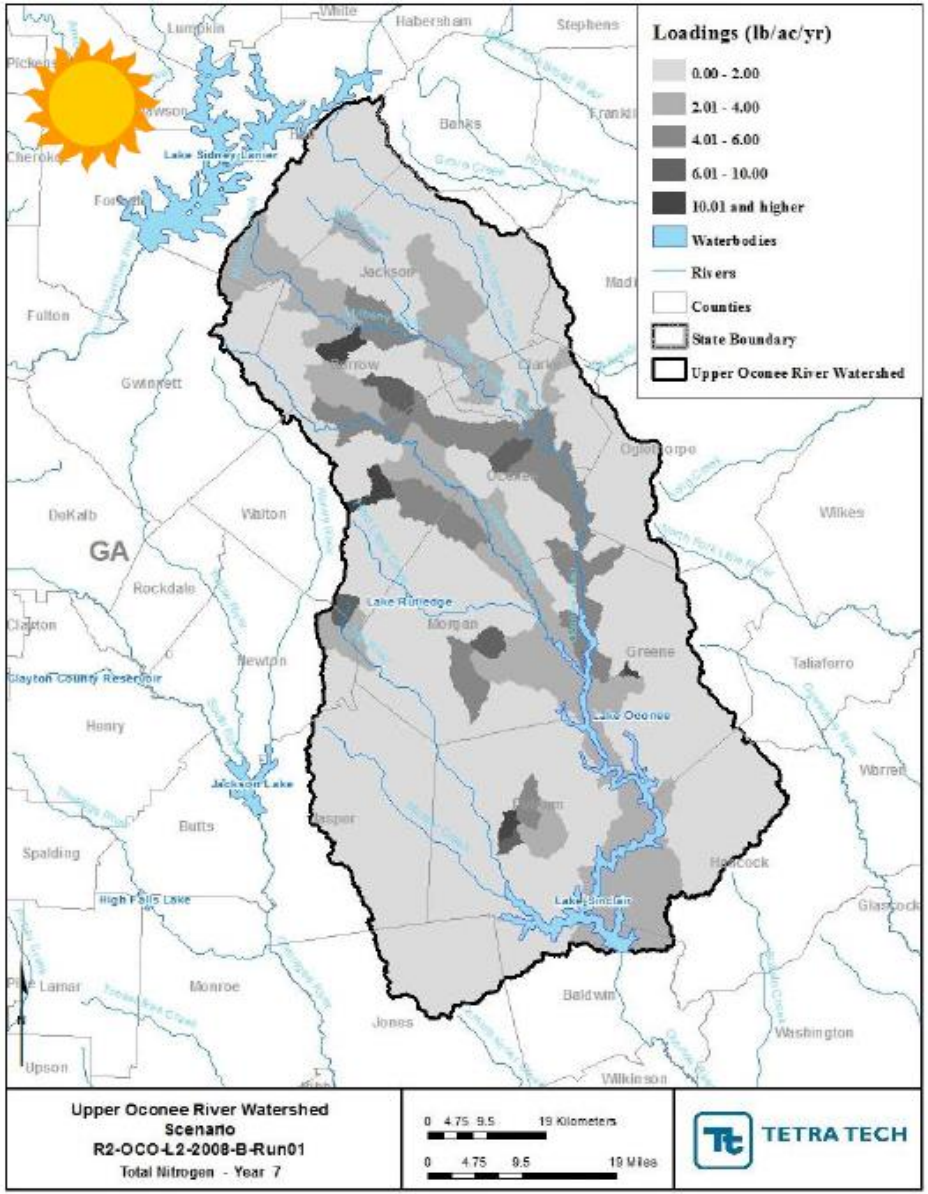


Future Conditions (2050)

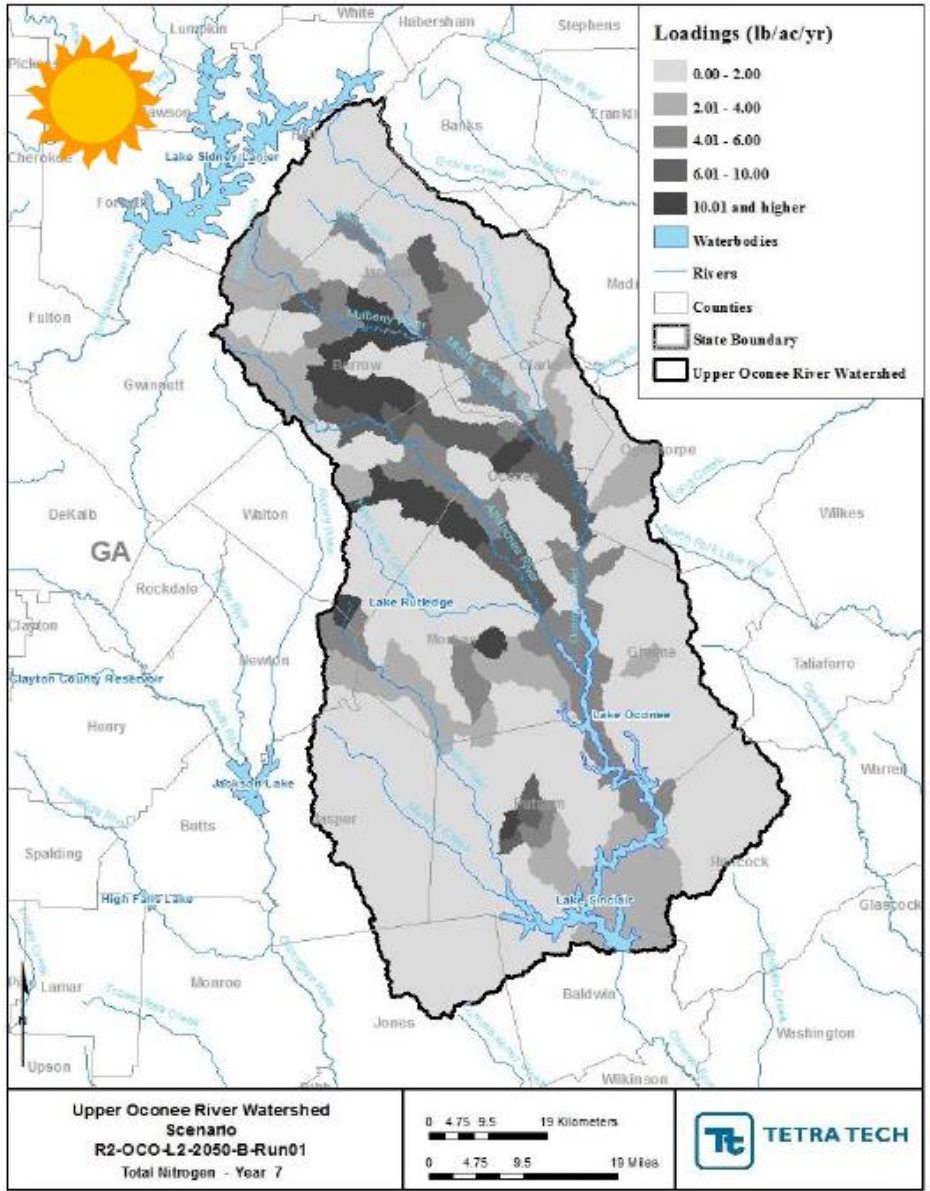


Oconee Basin: Total N Heat Maps - Dry

Current Conditions

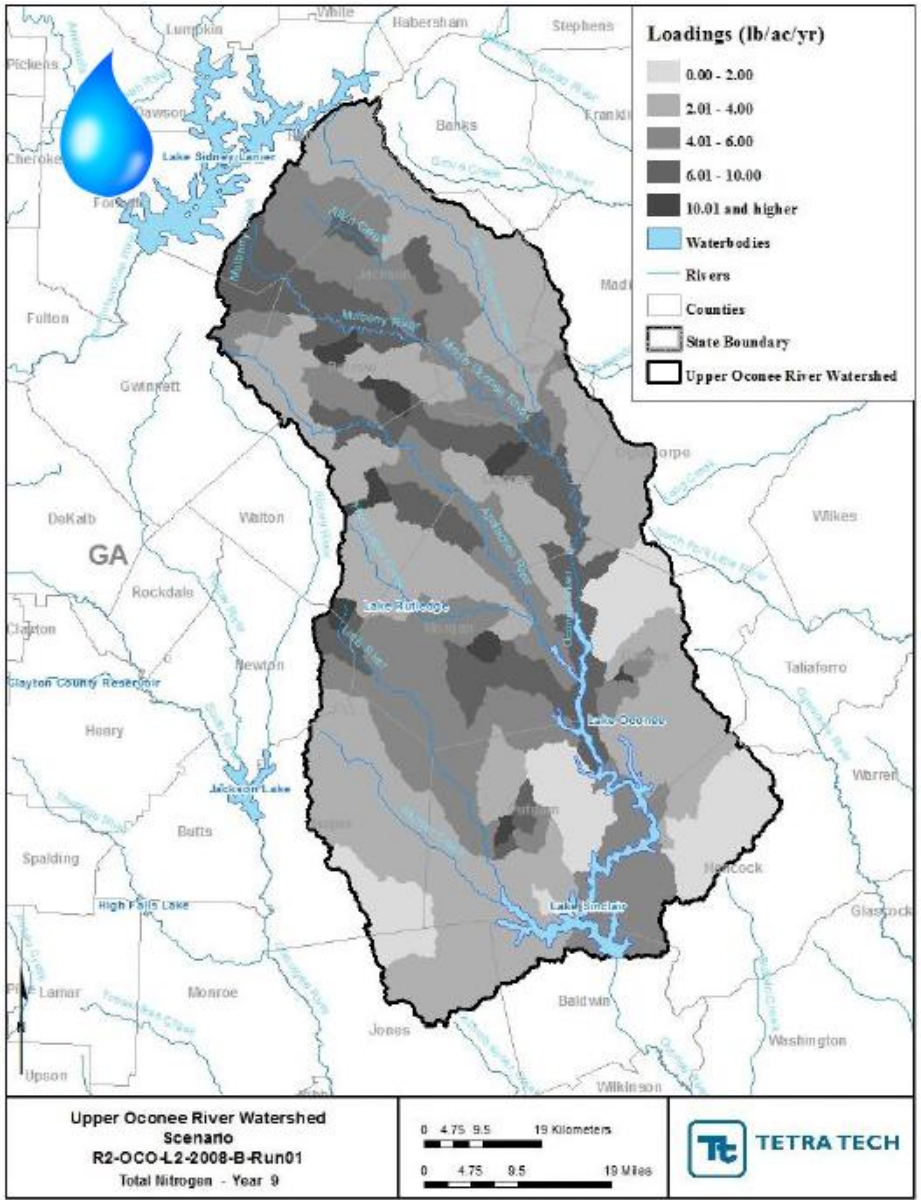


Future Conditions (2050)

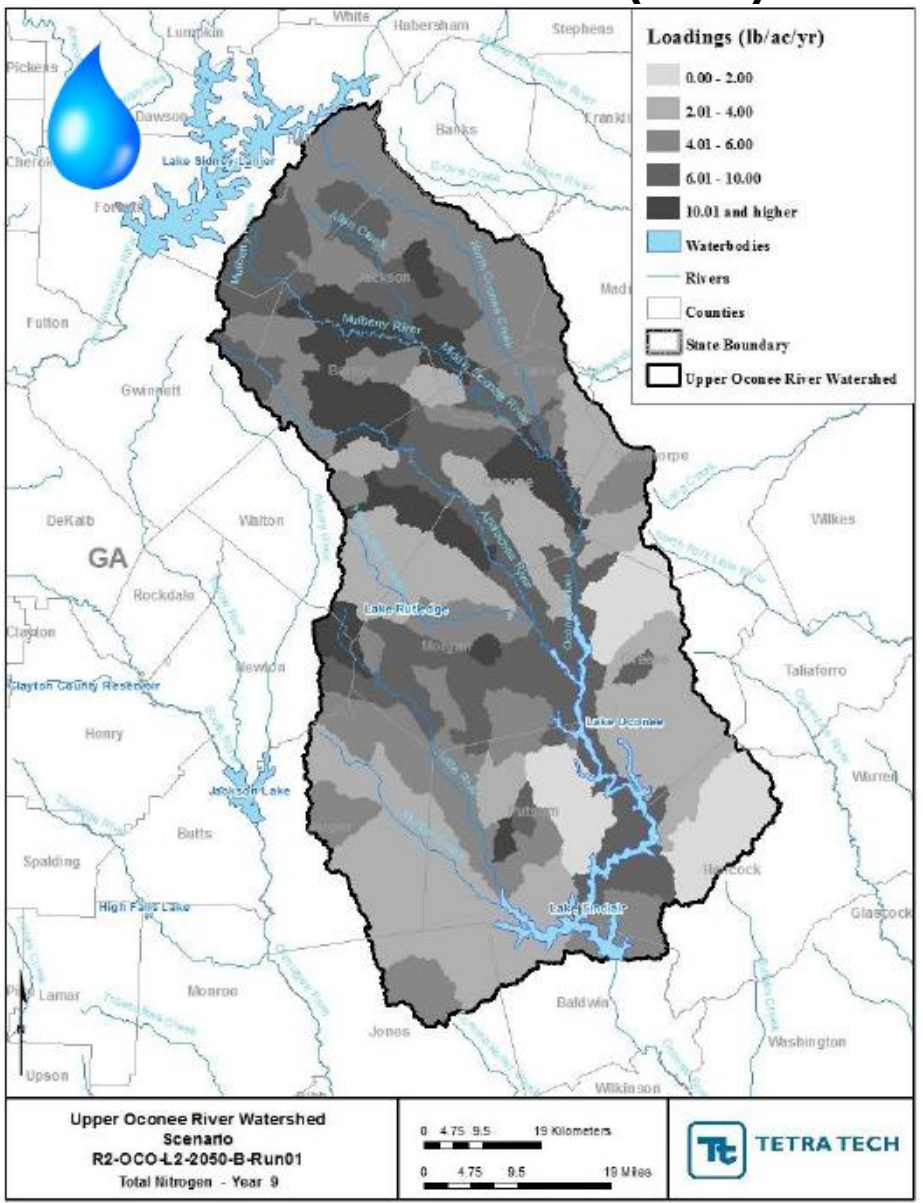


Oconee Basin: Total N Heat Maps - Wet

Current Conditions

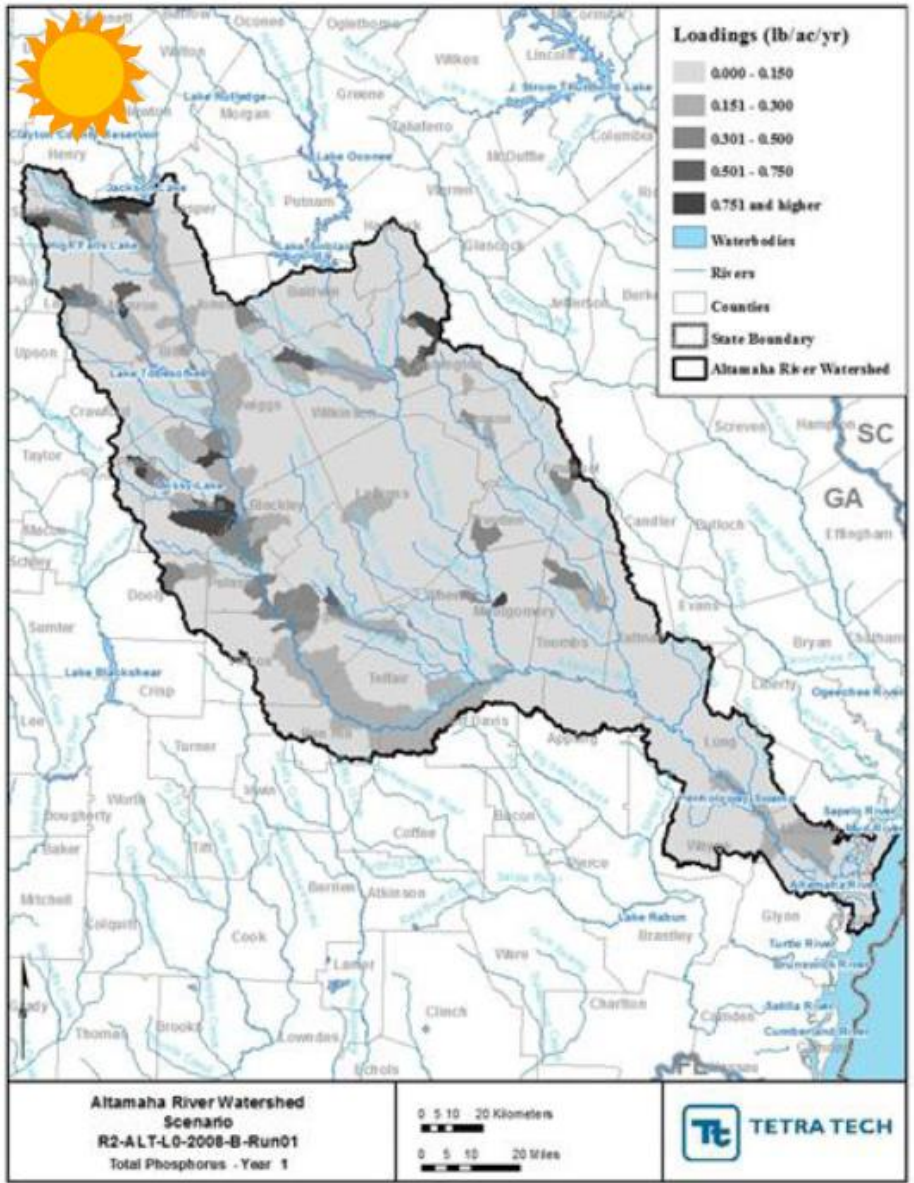


Future Conditions (2050)



Altmaha Basin: Total P Heat Maps - Dry

Current Conditions



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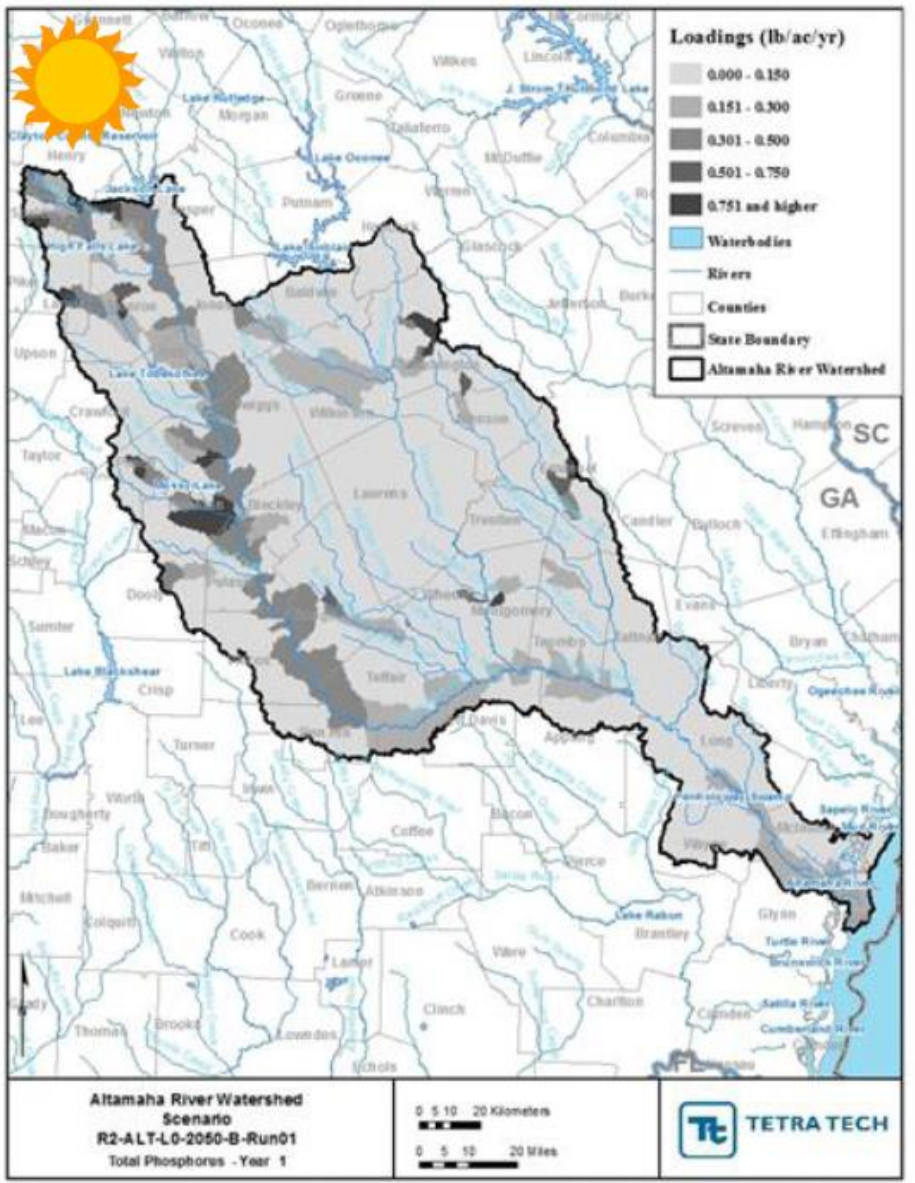
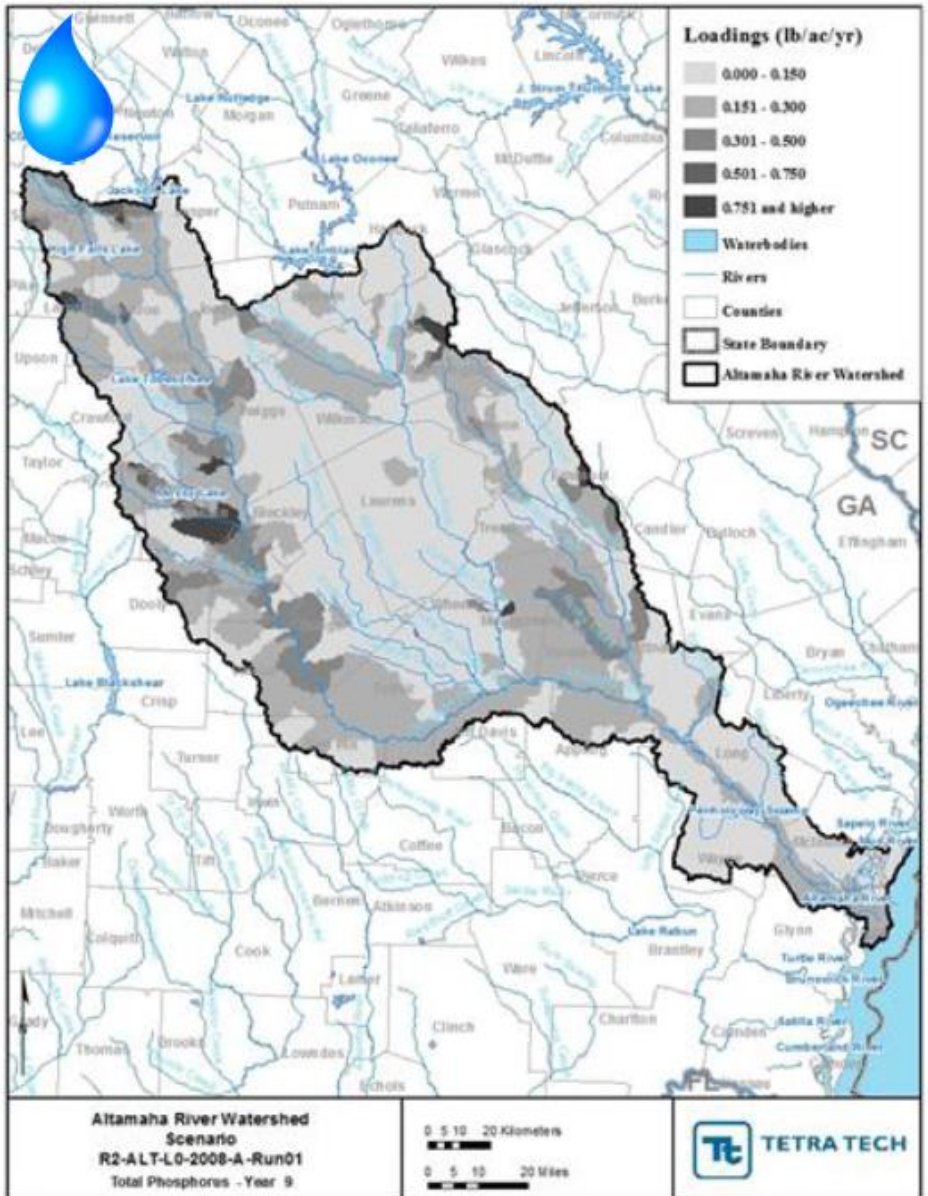
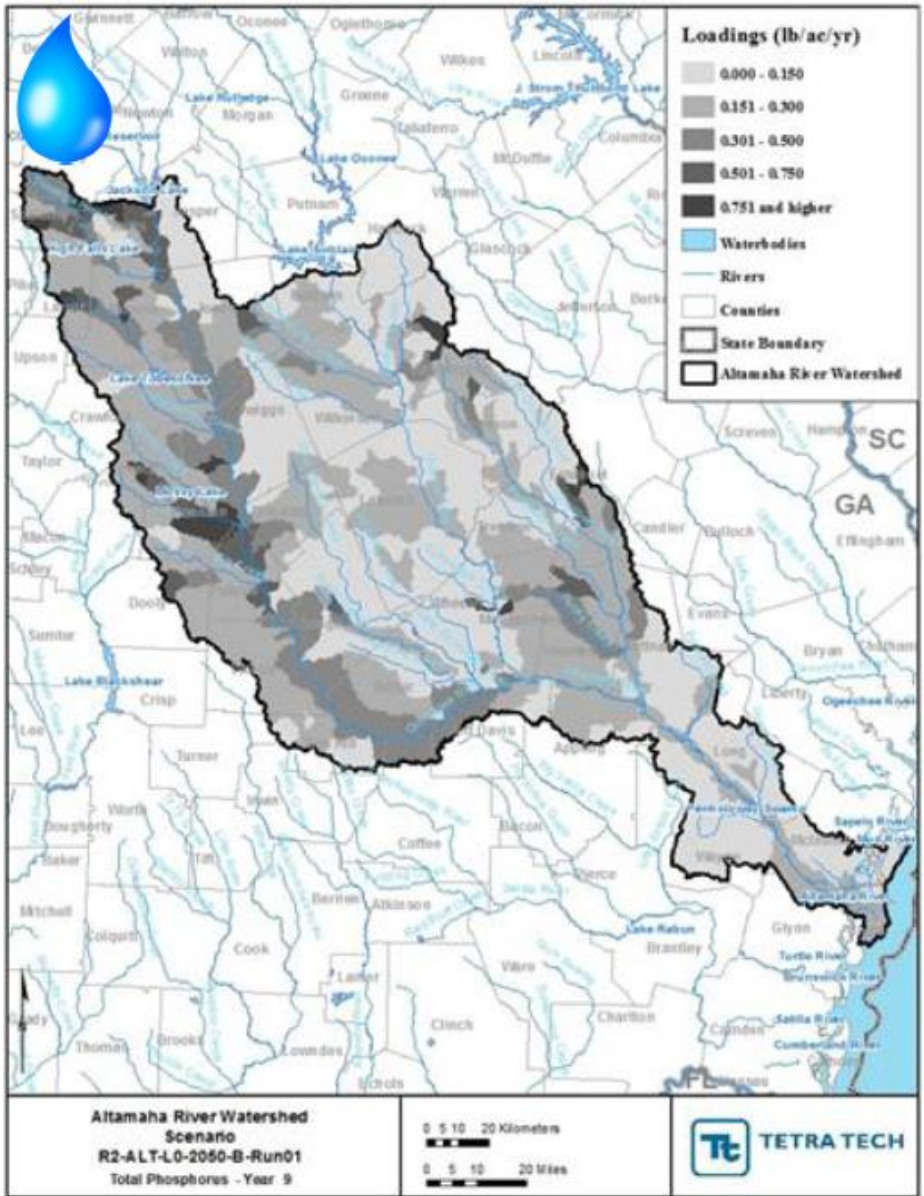


Altmaha Basin: Total P Heat Maps - Wet

Current Conditions

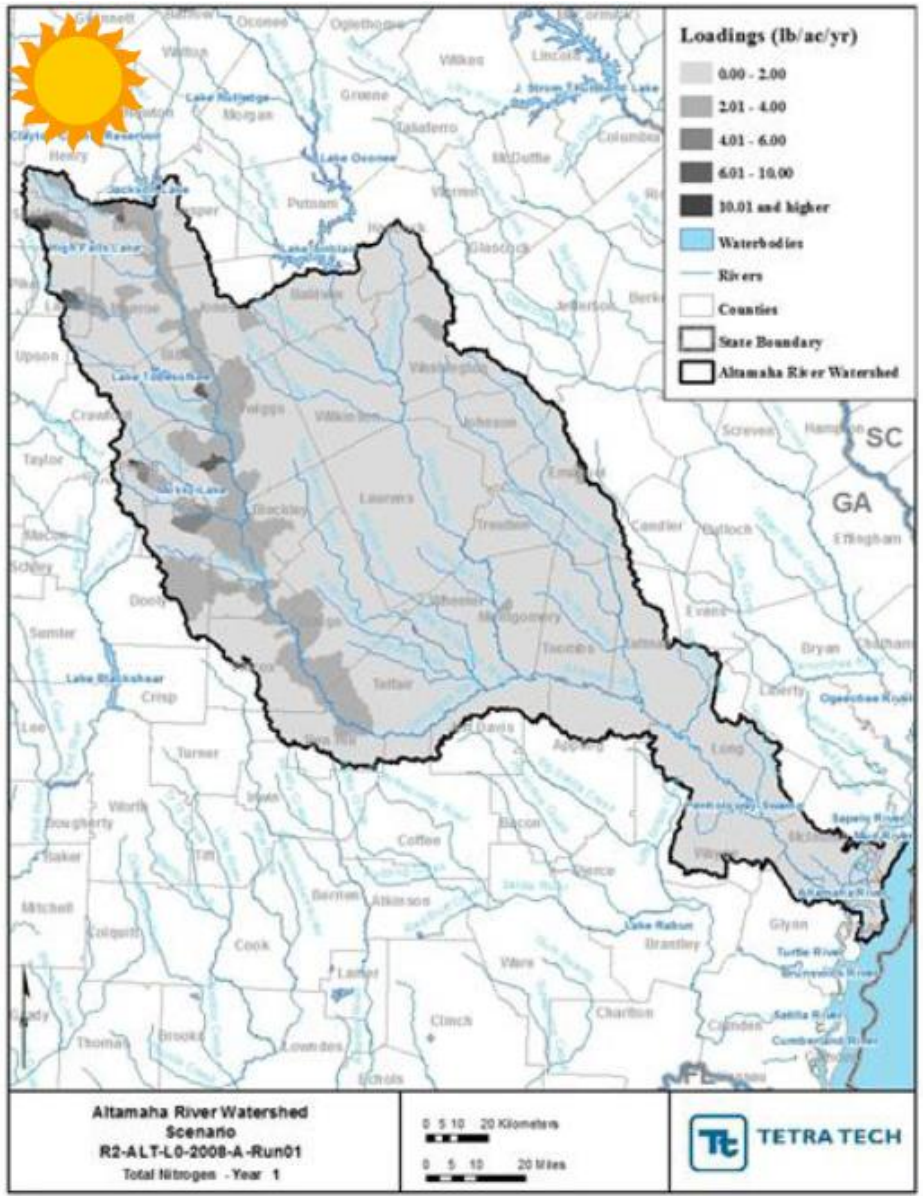


Future Conditions (2050)

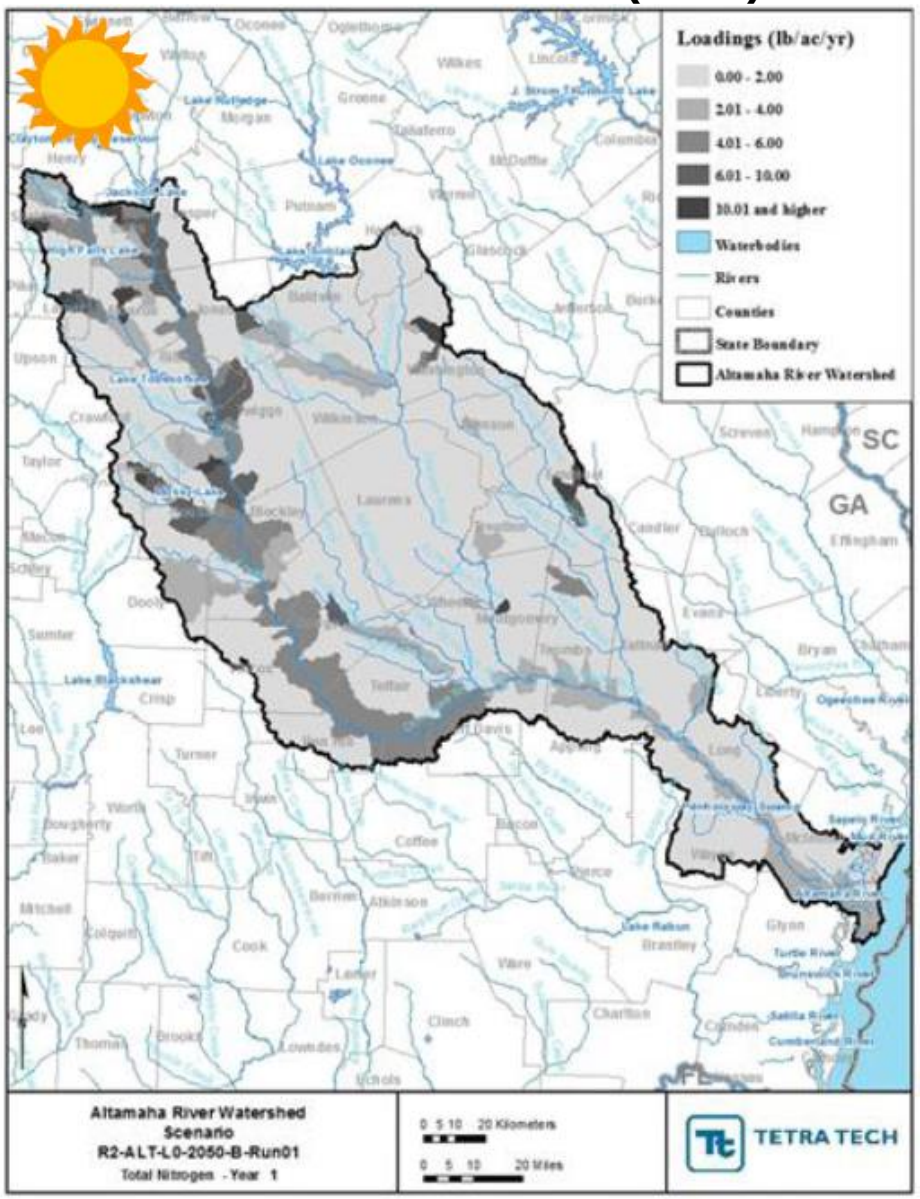


Altmaha Basin: Total N Heat Maps - Dry

Current Conditions

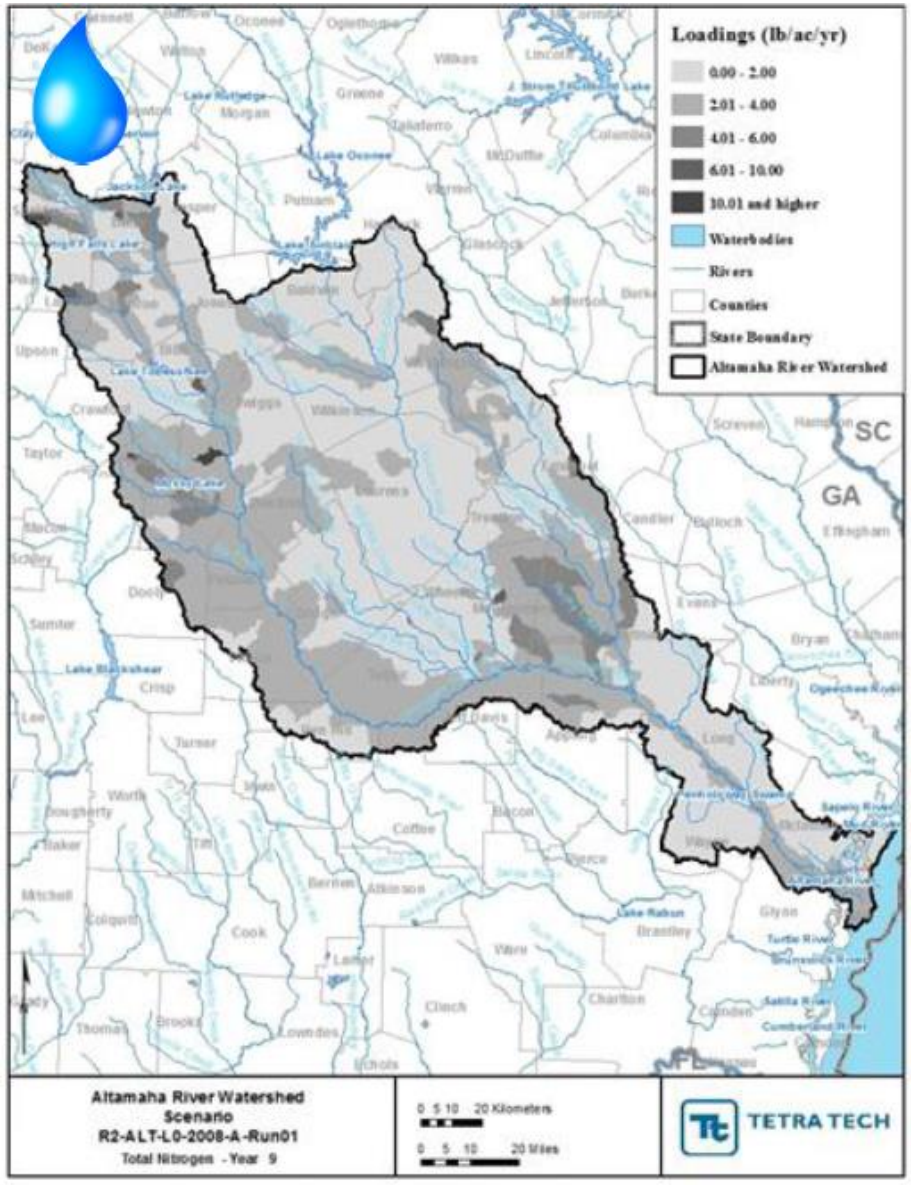


Future Conditions (2050)

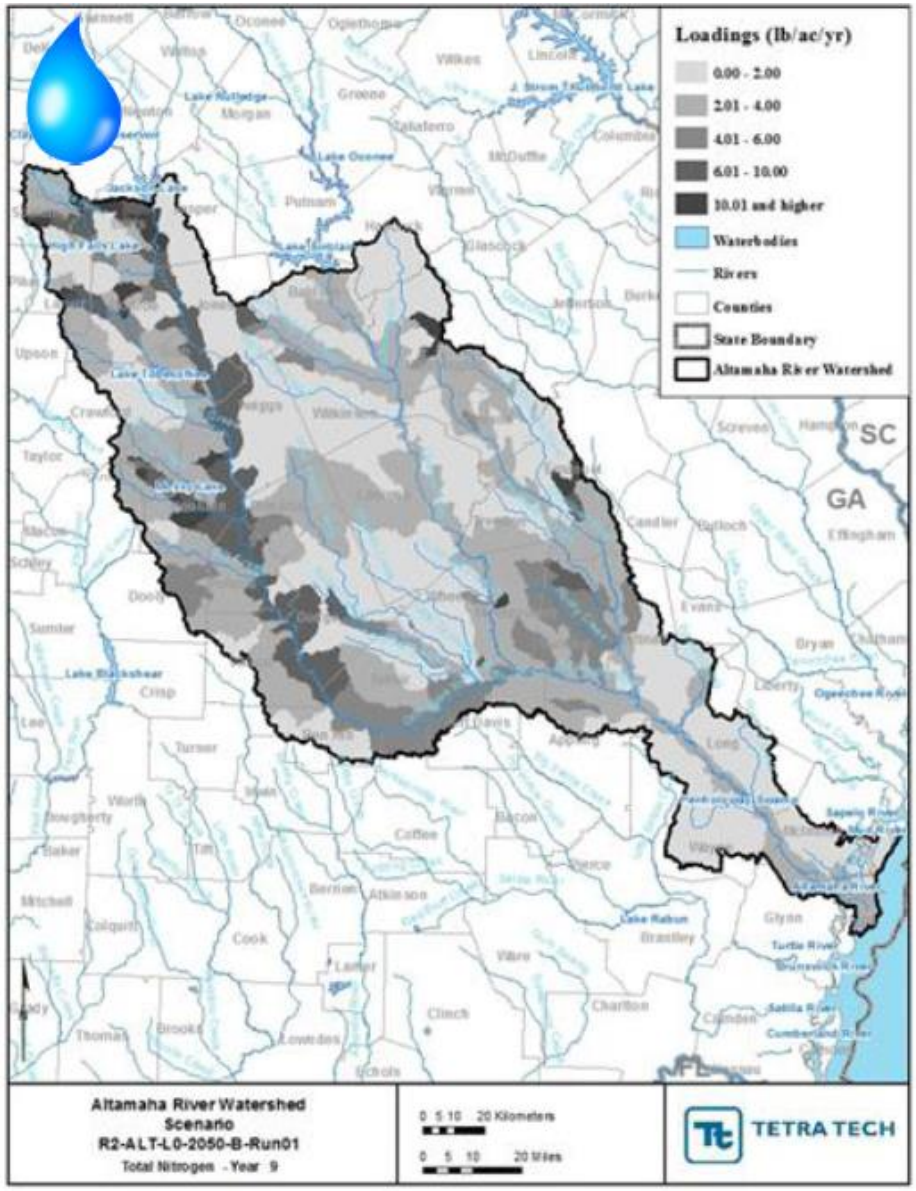


Altmaha Basin: Total N Heat Maps - Wet

Current Conditions

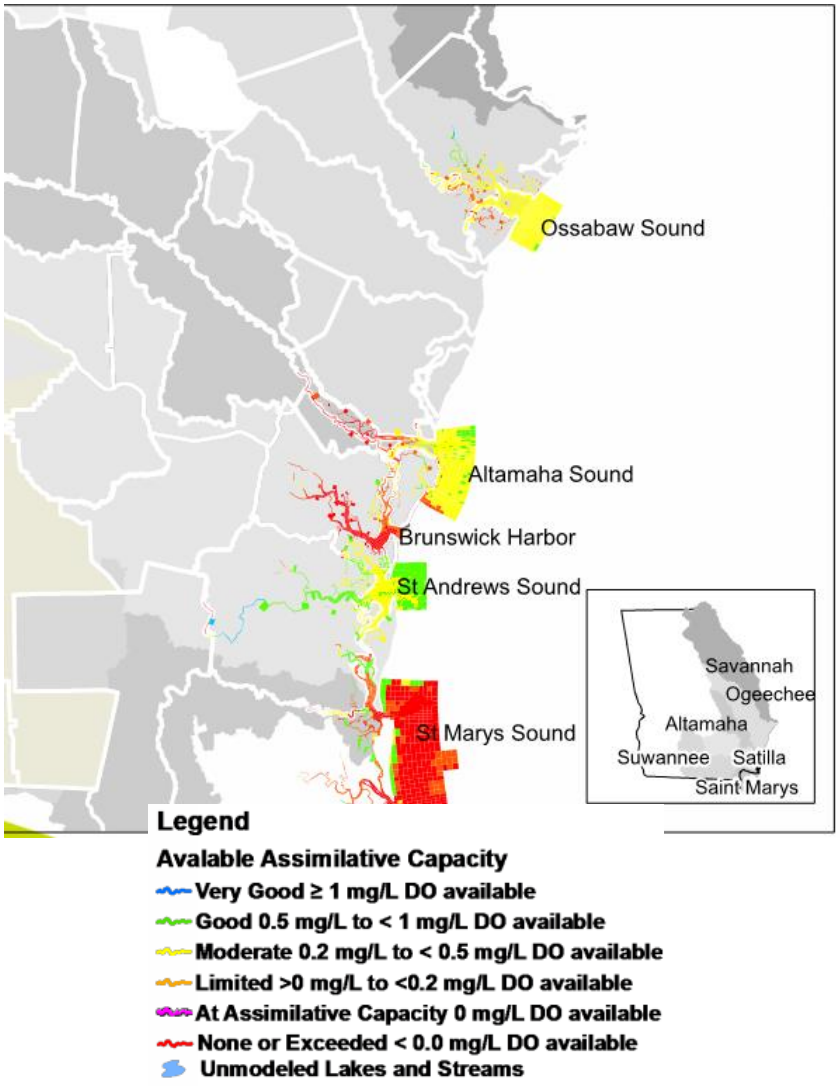


Future Conditions (2050)



Surface Water Quality/Assimilative Capacity Gaps

- EFDC Lake & Estuary Model Results
  - Limited to no assimilative capacity in lower reaches of Altamaha River and Altamaha Sound
  - Lower assimilative capacity may be due to slower moving waters which contribute to naturally low DO levels



Georgia

Upper Oconee Goals Related to Water Conservation

Goal# 1

Promote alternatives and technologies that conserve, reuse, return, and recycle water within the Upper Oconee region.

Goal# 3

Educate stakeholders in the region on the importance of water quality and managing water as a resource including practices such as water conservation and increased water efficiency.

Goal# 6

Recommend innovative strategies (water, sewer, and/or stormwater) that provide sufficient revenues to maintain a high level of service while promoting water conservation and efficiency.

2015 Priority Water Conservation Management Practices

WC-2. Develop water conservation goals

2011	2015
Identify achievable, measurable goals to help local governments evaluate long-term water supply needs and to provide benchmarks for determining progress in reducing water supply gaps through conservation. Goals will be both regional and local with focus on areas where water supply gaps exist.	Water conservation goals may be ***more appropriate by individual jurisdiction*** in relation to gaps and already implemented measures. **Keep, Edit, or Delete**

Georgia

2015 Priority Water Conservation Management Practices

WC-3. Consistently meter and report agricultural water withdrawals (> 100,000 gallons per day [gpd])

2011	2015
Meter agricultural withdrawals throughout the Region, allowing GAEPD to estimate safe yield and available supplies to more accurately characterize existing conditions.	Council discussed possibly ***updating*** or ***removing*** recommendation based on work already being done in this area.

Keep, Edit, or Delete

Georgia

2015 Priority Water Conservation Management Practices

WC-7. Encourage non-potable reuse

2011	2015
• Identify areas with potential for reuse application to offset existing or future withdrawals. • Promote irrigation with high quality treated effluent in unrestricted areas, such as golf courses and parks. • Encourage industries to use reclaimed water for processes such as cooling when feasible.	Council discussed possibly ***reviewing non-potable reuse based on public perception*** of water quality in areas like parks.

Keep, Edit, or Delete

2015 Priority Water Conservation Management Practices

WC-8. Require installation of rain sensor shut-off switches on new irrigation systems

2011	2015
• Require installation or retrofitting to utilize irrigation systems that automatically shut off during rain events or moist soil conditions. • Investigate the potential for legislation or local government ordinances to require installation in new facilities where shortages are anticipated.	Council discussed revising this recommendation to ***distinguish between residential, commercial, and industrial irrigation systems***. **Keep, Edit, or Delete**

Georgia

2015 Priority Water Conservation Management Practices

WC-9. Require new car washes to recycle water

2011	2015
• Require all new car wash establishments to recycle wash water to minimize the amount of potable water used during their processes. • Programs can either be mandated for new establishments or voluntary. For voluntary programs, incentives, such as a certification that can be displayed and/or advertised, can be offered.	Council discussed the need to review and possibly extend this recommendation. There was a concern about the ***smaller-scale car washes not re-using water*** and being ***difficult to monitor or observe***. It was also noted that this is a potential water quality issue with runoff of soap suds into waterways **Keep, Edit, or Delete**