Suwannee-Satilla Regional Water Planning Council Meeting

March 9, 2022

GEORGIA
WATER PLANNING
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Council Meeting Agenda

Georgia's State Water Plan

Council Meeting
Suwannee-Satilla Regional Water Council
Draft Agenda – March 9, 2022

Objectives:

1) Review Regional Water Planning Schedule and Review Vision and Goals
2) Receive updates on the Surface Water and Water Quality Resource Assessments
3) Receive updates on Agricultural Water Demand Forecast

10:30 – 10:40 a.m.	Welcome and Introductions
	Approve meeting minutes from April 15, 2021, Council Meeting
	Approve meeting agenda
10:40 – 10:55 a.m.	Updates on Seed Grants (Corey Hull, SGRC and Shayne Wood, CDM Smith)
10:55 – 11:05 a.m.	Updates from EPD (Cliff Lewis, Georgia EPD)
11:05 - 11:30 a.m.	Review Regional Water Planning Schedule and Review Vision and Goals
11:30 - 12:00 p.m.	Surface Water Availability Resource Assessments (Wei Zeng, Georgia EPD)
12:00 - 12:30 p.m.	Lunch
12:30 - 1:00 p.m.	Water Quality Resource Assessments (Liz Booth, Georgia EPD)
1:00 - 1:40 p.m.	Agricultural Water Demands (Mark Masters, GA Water Planning & Policy Center)
1:40 - 2:00 p.m.	Discussion
	Next Steps / Public Comments /Local Elected Official Comments
	Wrap Up
2:00 p.m.	Adjourn


Council Business
www.georgiawaterplanning.org

Council Business

- Welcome and Introductions
- Approve meeting summary from April 15, 2021 Council Meeting
- Approve meeting agenda

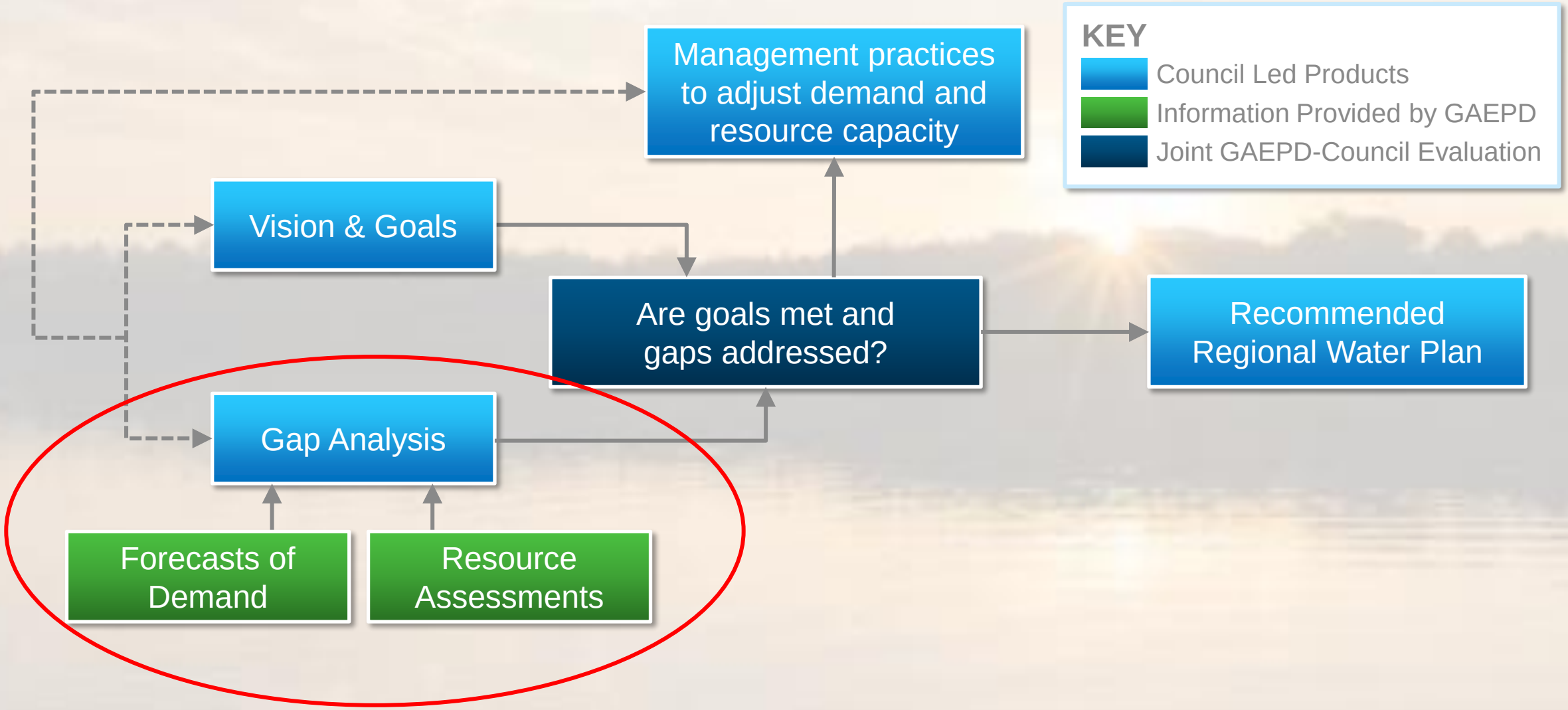
Seed Grant Updates

See Grant Updates

- South Georgia Regional Commission – Corey Hull and Megan Parker
- Others?
- Notes for up-coming grant cycle:
  - Grant awards are limited to $75,000 and the project period is limited to thirty (30) months in duration.
  - Applicants must attend a pre-application meeting with EPD by October 15, 2022 and applications must be e-mailed by October 31, 2022.
  - Contact Joyce McClain, (470) 251-2761, joyce.mcclain@dnr.ga.gov


Updates from EPD
www.georgiawaterplanning.org

Planning Process Diagram



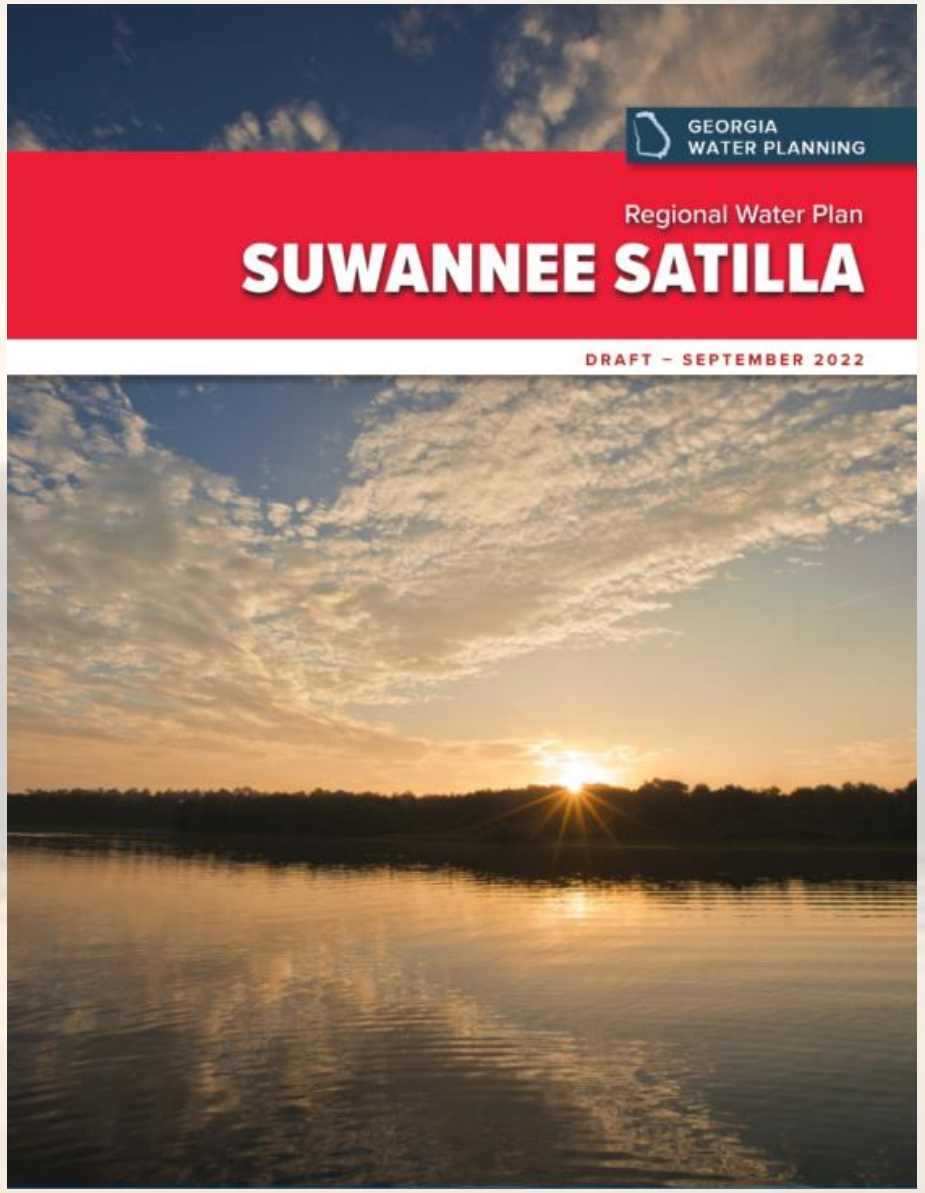
Regional Water Planning Overview

www.georgiawaterplanning.org

Regional Water Planning Review and Revision Process

5-Year Review Process will focus on:

- Updated water demand and wastewater forecasts
- Updated Surface Water and Ground Water Availability Resource Assessments (Quantity)
- Updated Surface Water Quality / Assimilative Capacity Resource Assessment
- Refinement of Management Practices, if needed, to address potential water resource gaps



Regional Water Planning Review and Revision Process

- With the support of the Planning Contractor (PC), the Council will:
  - Evaluate updated municipal & industrial water and wastewater demand forecasts ☑
  - Evaluate updated energy water demand forecasts ☑
  - Evaluate updated agricultural water demand forecasts ☑
  - Evaluate updated water resource assessments
  - Re-evaluate updated potential challenges
  - Re-evaluate management practices

Regional Water Planning Review and Revision Process

- Jennifer Welte – Point of Contact, Project Manager for Review & Revision Process
- Dr. Elizabeth Booth – Surface Water Quality Resource Assessment
- Dr. Wei Zeng - Surface Water Availability Resource Assessment
- Dr. Jim Kennedy – Groundwater Availability Resource Assessment
- Shayne Wood – CDM Smith, Planning Contractor

Regional Water Planning Overview & Schedule

Regional Water Plan Review and Revision Schedule

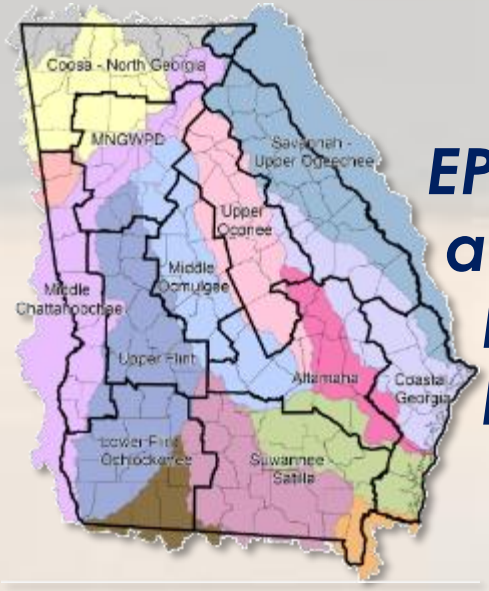
Meeting One
July 2021

Meeting Two
Council Meeting
March 9, 2022

Meeting Three
2nd Quarter 2022

Meeting Four
3rd Quarter 2022
Draft Plan

Meeting Five (Final)
4th Quarter 2022
Incorporate Comments



EPD targeted date of adoption of revised Regional Water Plan by December 2022

Vision and Goals

Vision and Goals

- In Round 1, each Council went through an extensive visioning process to develop Vision and subsequent supporting Goals
- Council Vision will guide and frame the selection of management practices
- Our Region’s vision and goals reflect how we see resources managed to meet regional needs
- Vision and Goals were re-visited in Round 2 with no major changes

Vision and Goals can carry forward into the 5-year update process

- Have any major water issues surfaced in the region?
- Has what you wish to see for this region regarding water resources changed substantially over the last 5 years?
- Are there any things on the horizon that may influence the vision for the region?
- If answers are substantively no, revisions to Vision and Goals are not necessary.

Vision and Goals

Suwannee-Satilla Adopted Vision

as adopted by the Council 9.23.09

"Manage water resources in a sustainable manner under Georgia's regulated riparian and regulated reasonable use laws to support the state's and region's economy, to protect public health and natural resources, and to enhance the quality of life for all citizens; while preserving the private property rights of Georgia's landowners, and in consideration of the need to enhance resource augmentation and efficiency opportunities."

Vision and Goals can carry forward into the 5-year update process

Suwannee-Satilla Adopted Goals
as adopted by the Council 11.11.09

- Manage and develop water resources to sustainably and reliably meet domestic, commercial, industrial water needs, and agricultural water needs including all agricultural sectors (this includes the agro forestry economy of the region).

- Manage ground and surface water to encourage sustainable economic and population growth in the region.

- Manage the region's and state's water resources in a manner that preserves and protects private property rights.

- Ensure an adequate water supply of suitable quality to meet current and future human needs, while protecting environmental resources.

Vision and Goals can carry forward into the 5-year update process

Suwannee-Satilla Adopted Goals
as adopted by the Council 11.11.09

- Identify opportunities to optimize existing and future supplies, and water and wastewater infrastructure.
- Promote efficient use and management of surface and groundwater resources to allow for sufficient supplies for current and future generations.
- Protect and manage surface and groundwater recharge areas to ensure sufficient long-term water supplies for the region.
- Protect, maintain, and where appropriate and practicable, identify opportunities to enhance water quality and river base flows.

Vision and Goals can carry forward into the 5-year update process

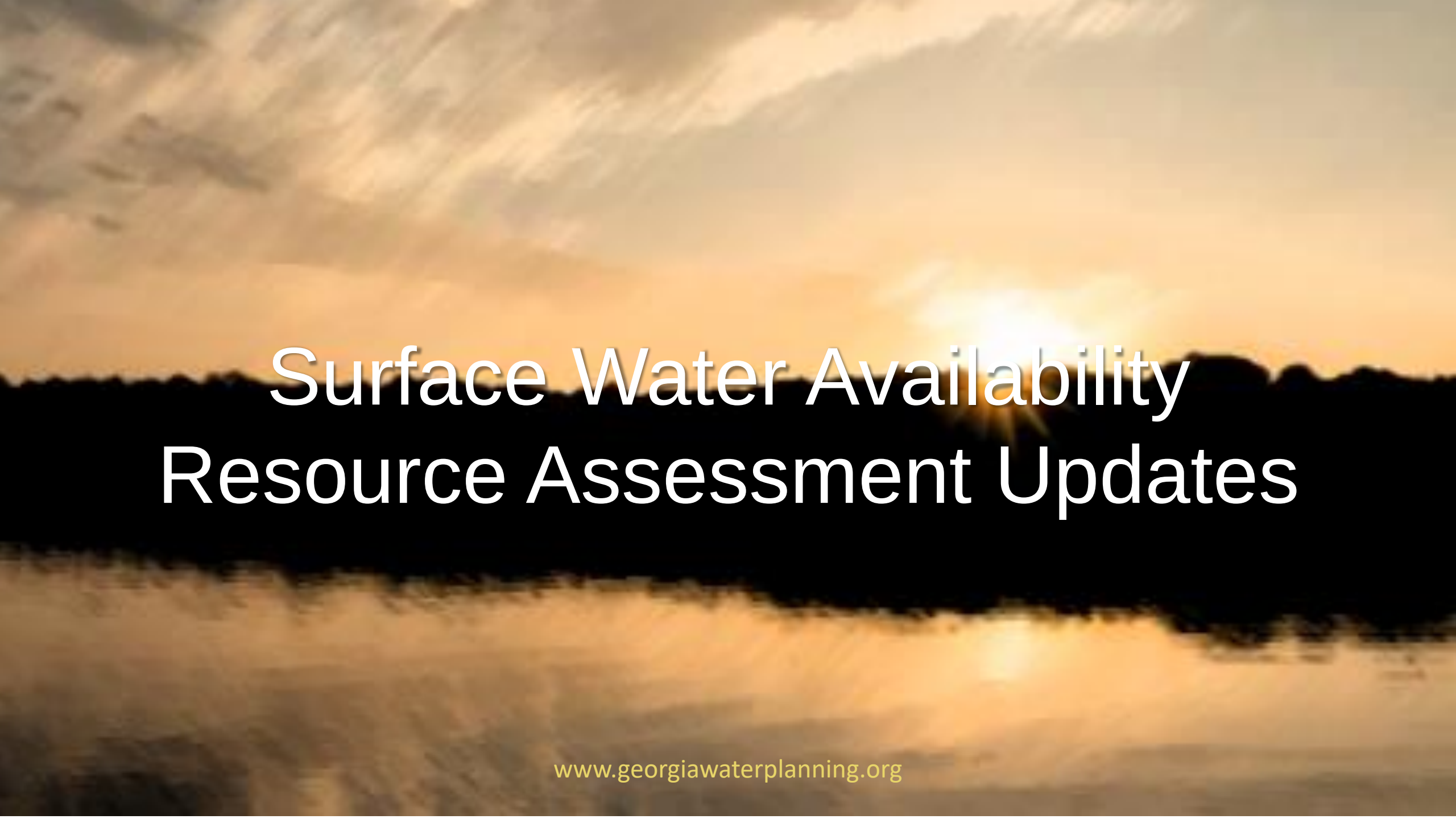
Suwannee-Satilla Adopted Goals
as adopted by the Council 11.11.09

- Protect and maintain regional water-dependent recreational opportunities.
- Identify opportunities to manage stormwater to improve water quantity and quality.
- Identify and implement cost effective water management strategies.
- Seek to provide economically affordable power and water resource service to all citizens of the region.
- Identify and implement actions to better measure and share water use data and information.

Other items the council may want to consider to update

Suwannee-Satilla Adopted Processes and Procedures

- Memo of agreement with Council, EPD and DCA
- Operating Procedures and Rules for Meetings
- Public Involvement Plan



Surface Water Availability Resource Assessment Updates

www.georgiawaterplanning.org

Outline

- **Basin Environmental Assessment Model (BEAM) Review**
- **Model Results Baseline Scenario**
  - Examples of Water Supply Challenges (Water Supply Performance Metrics (PMs))
  - Examples of Wastewater Assimilation Challenges (WW Assimilation PMs)
- **Performance Metric Examples**
  - Performance Metric at Macon for Boating (Recreational PMs)
  - Performance Metric for Fish Habitats(Habitat PMs)
  - Additional PMs to Consider

Video form Dr. Zeng w/ follow-up Q&A

- Show Video
- Q&A


Lunch

Water Quality Resource Assessment

Results under Current Conditions

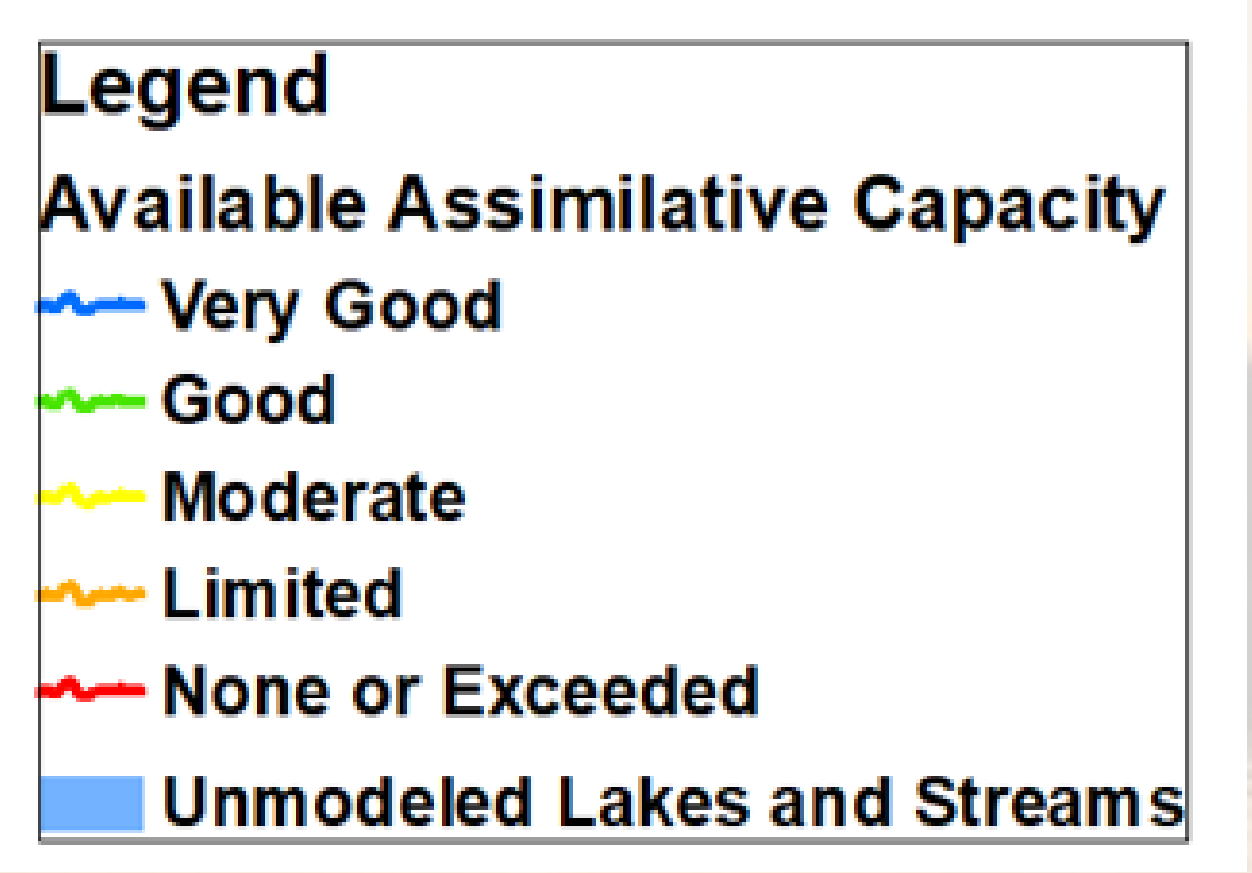
www.georgiawaterplanning.org

Video form Dr. Booth w/ follow-up Q&A

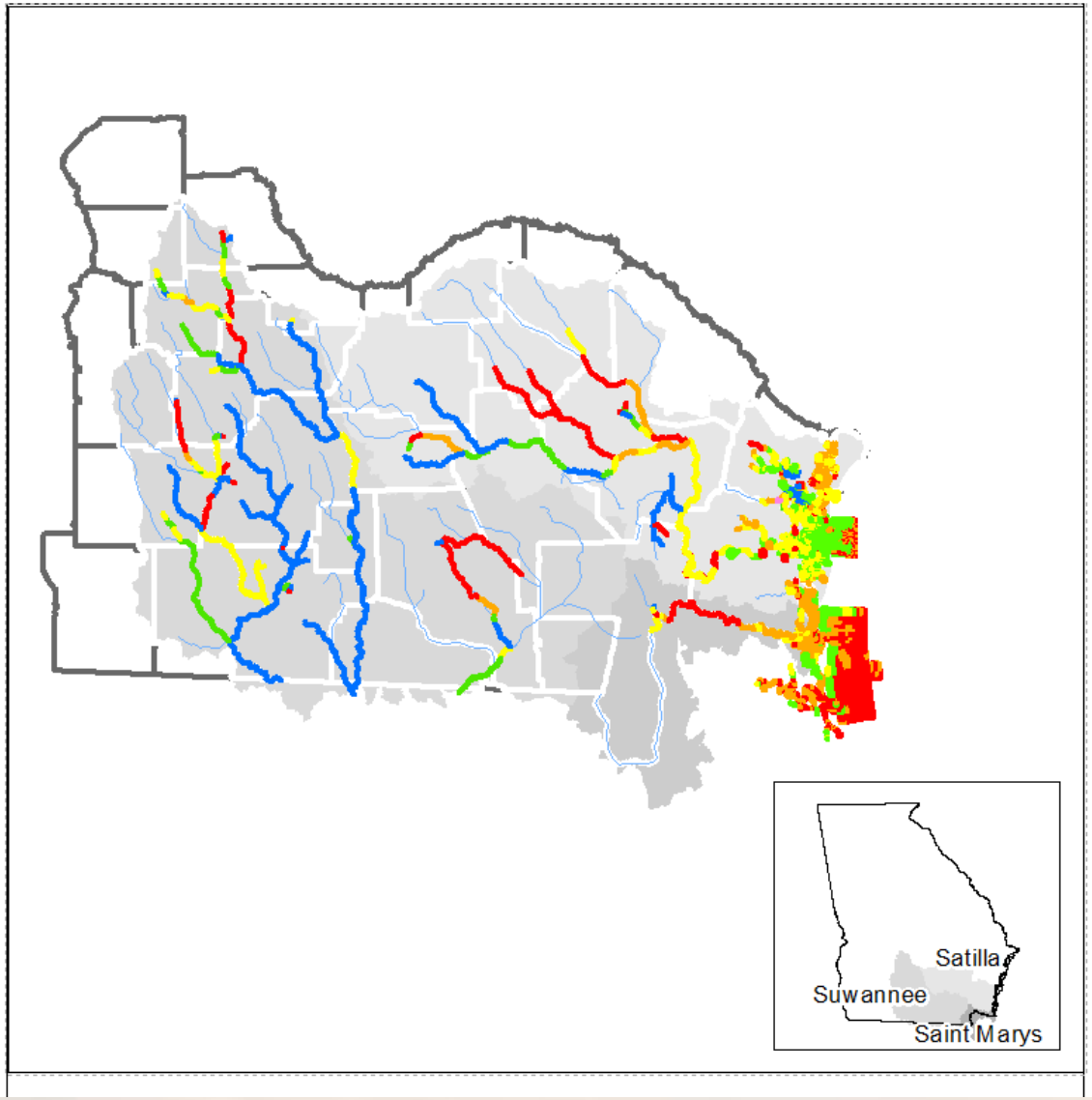
- Show Video / Slides w/ Results and then,
- Q&A

Dissolved Oxygen (DOSAG Models)

- **Current Conditions** Section 3
  - **2019 Permit Limits** Figure 3-6
- **Assimilative Capacity**
  - **How DO levels compare to water quality standard of 5.0 mg/L (or natural conditions)**
- **DOSAG Models:**
  - **Dischargers at permit limits**
  - **High temp, low flow conditions**



Current DO Conditions: All Basins

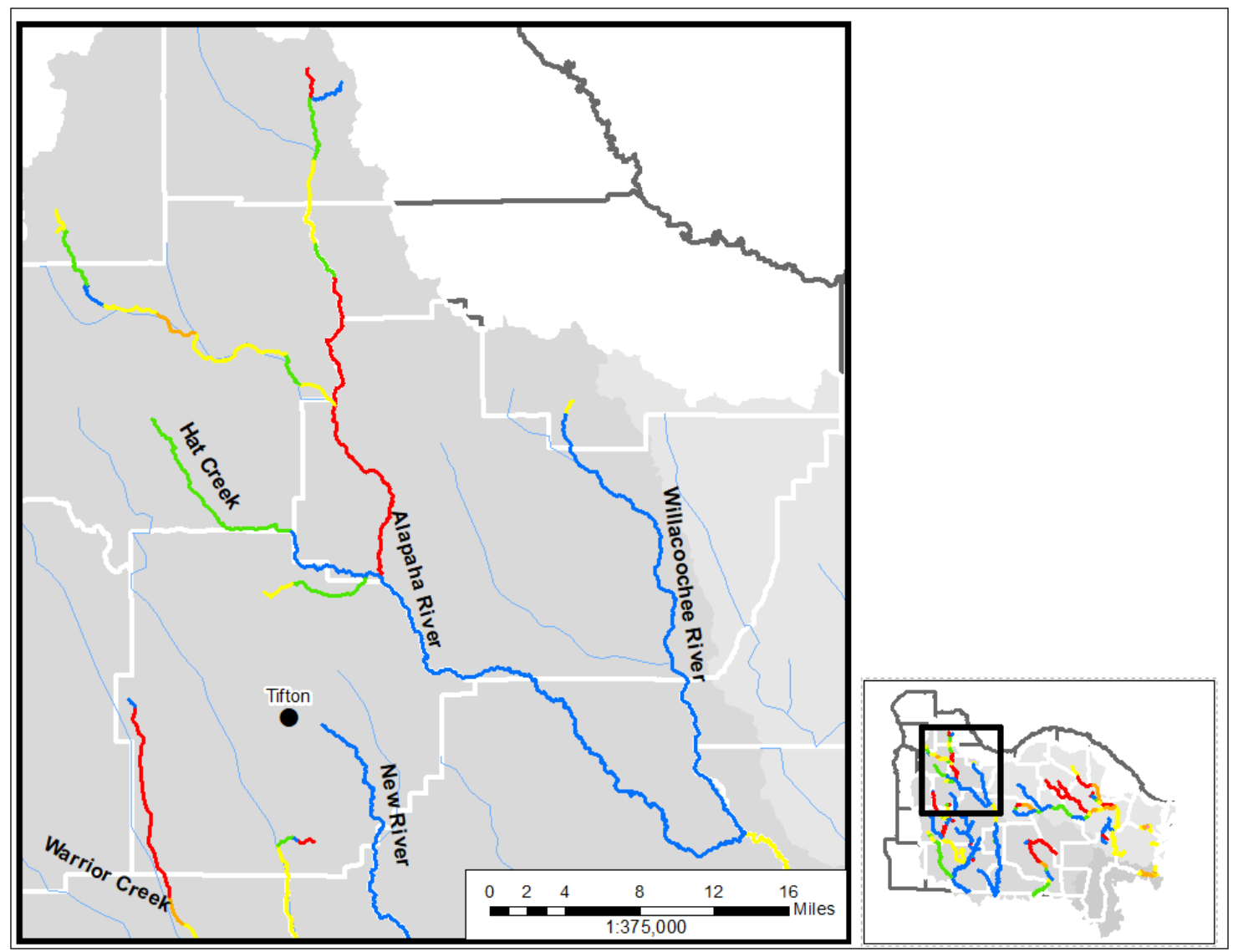


Legend

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

Current DO Conditions: Upper Suwannee Basin



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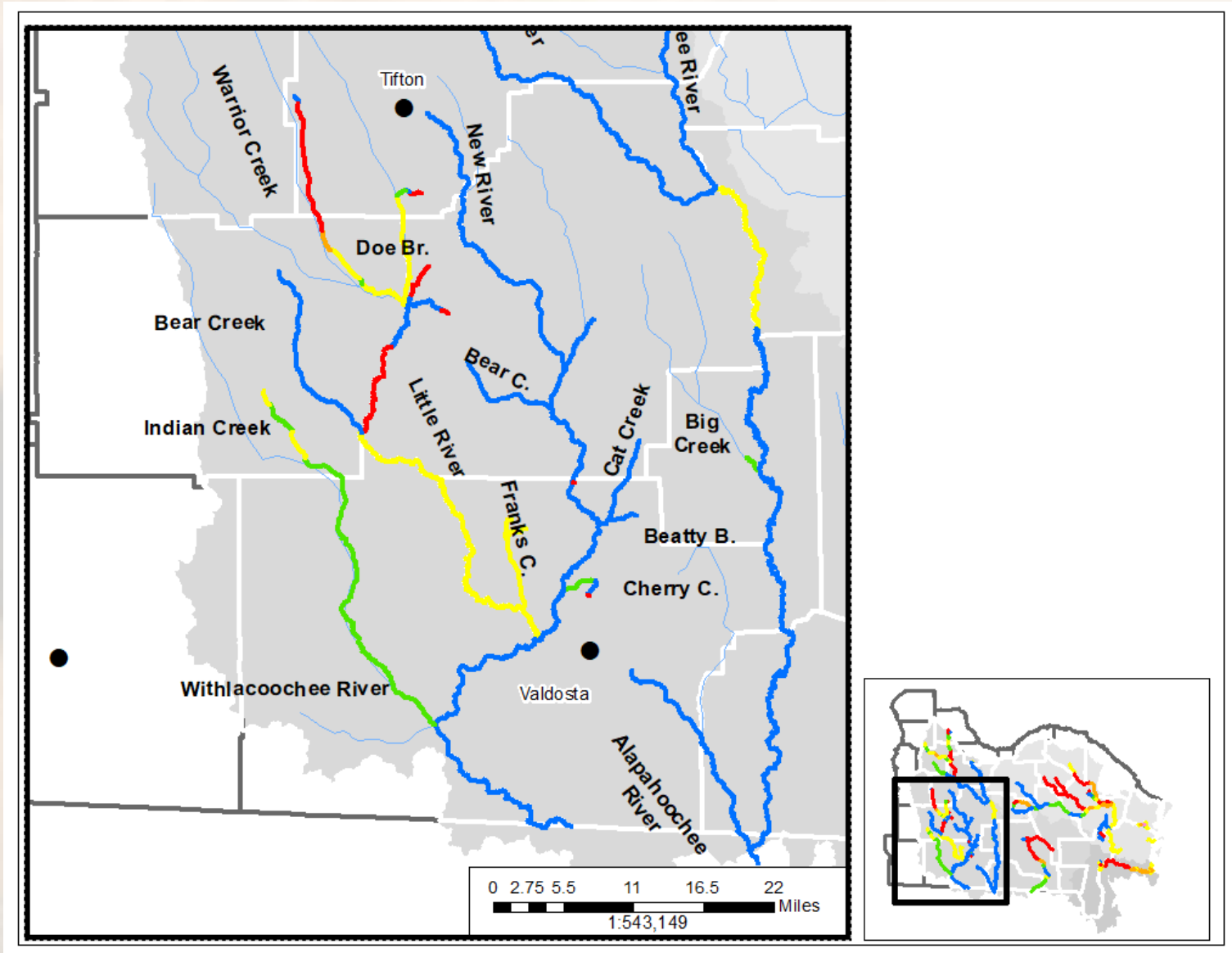
Available Assimilative Capacity

- Very Good
- Good
- Moderate
- Limited
- None or Exceeded
- Unmodeled Lakes and Streams

Current DO Conditions: Western Suwannee Basin



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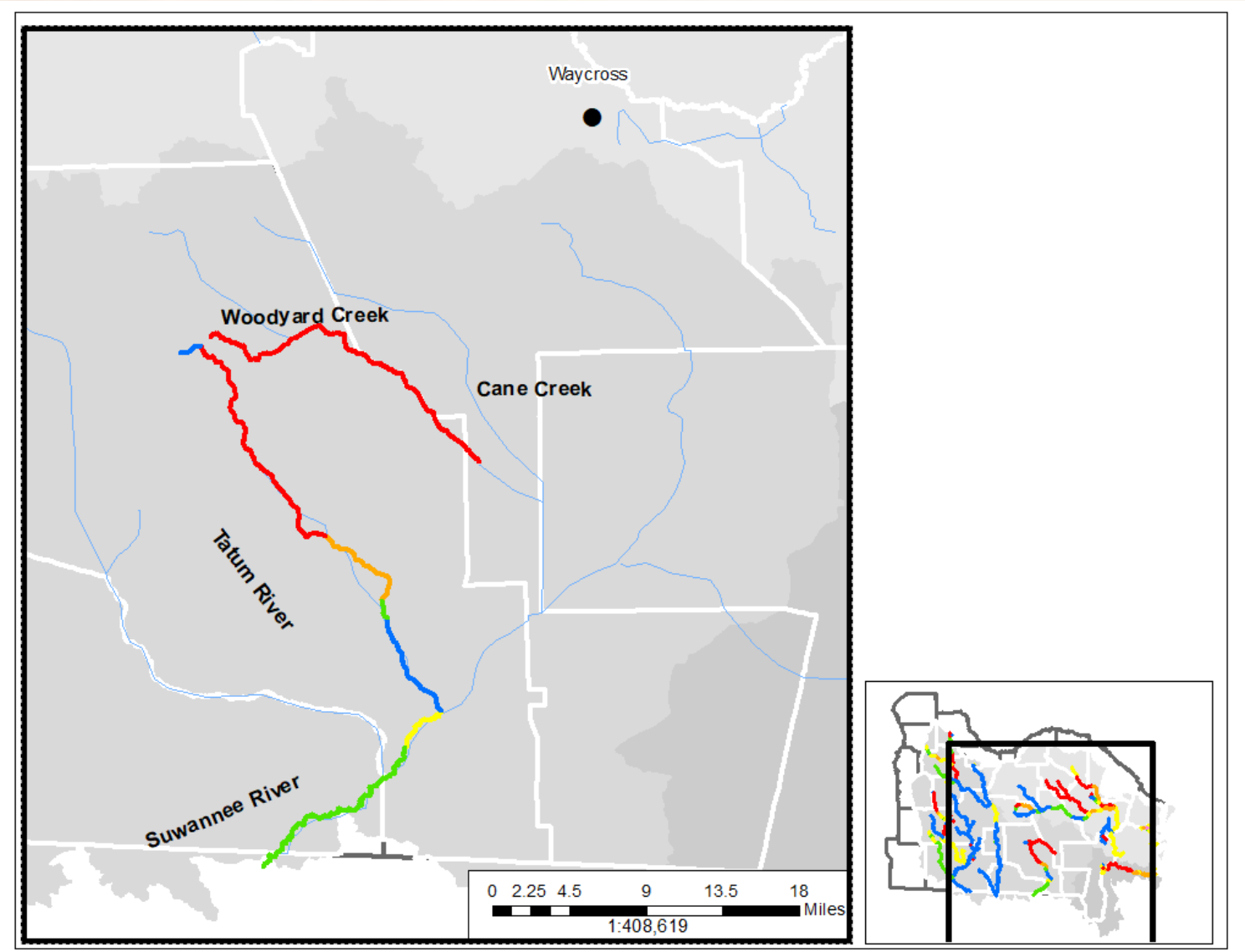
Available Assimilative Capacity

- Very Good
- Good
- Moderate
- Limited
- None or Exceeded
- Unmodeled Lakes and Streams

Current DO Conditions: Eastern Suwannee Basin



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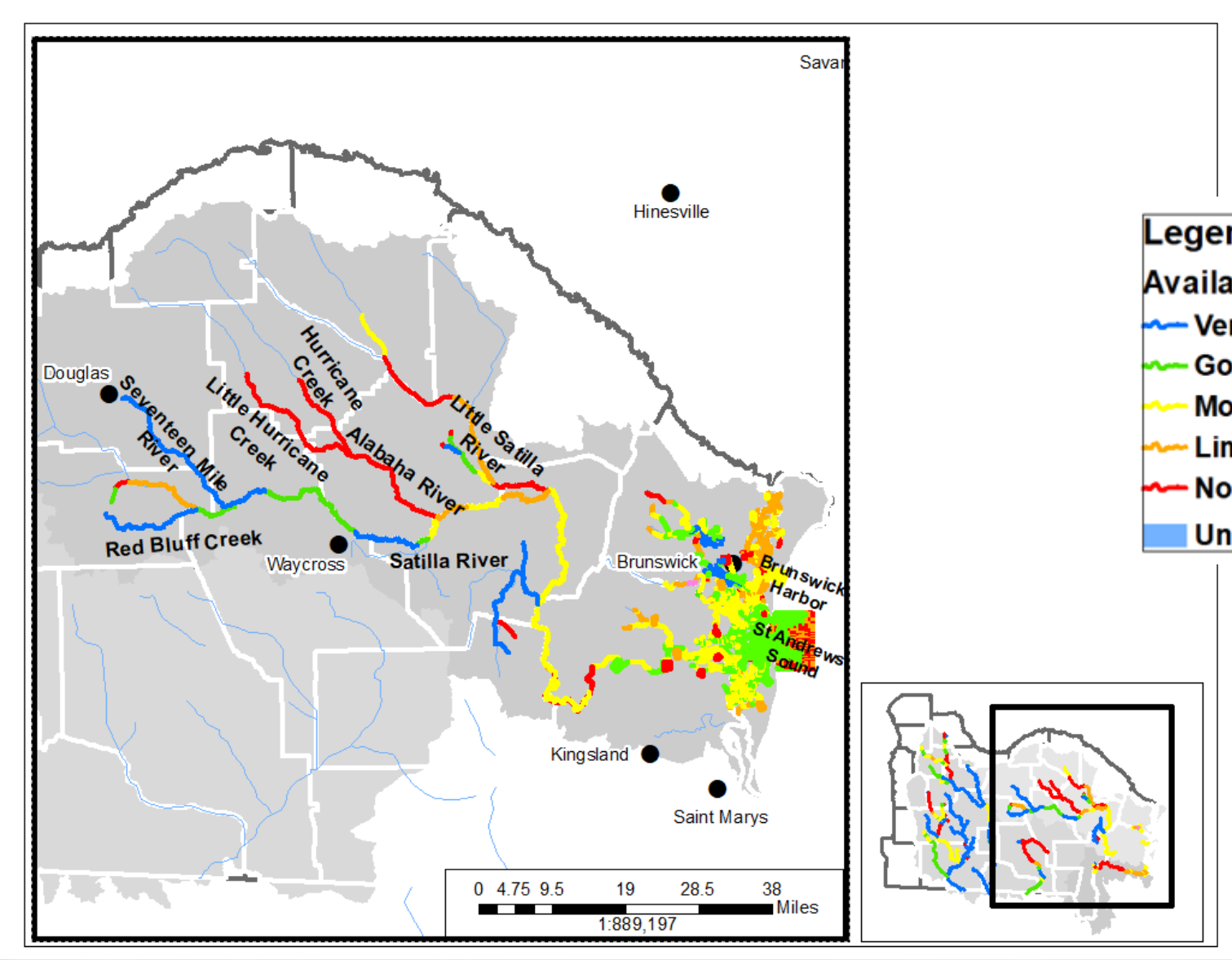
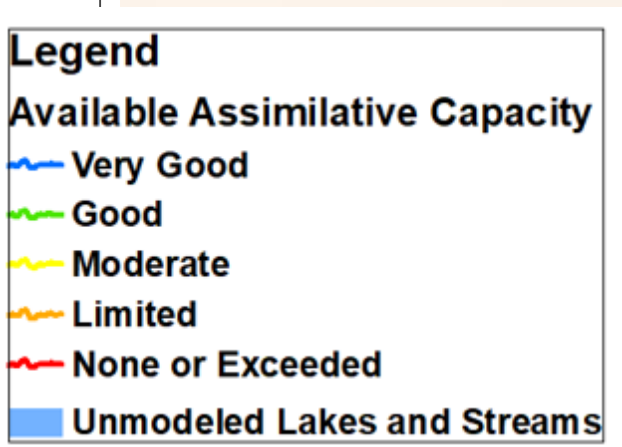
Available Assimilative Capacity

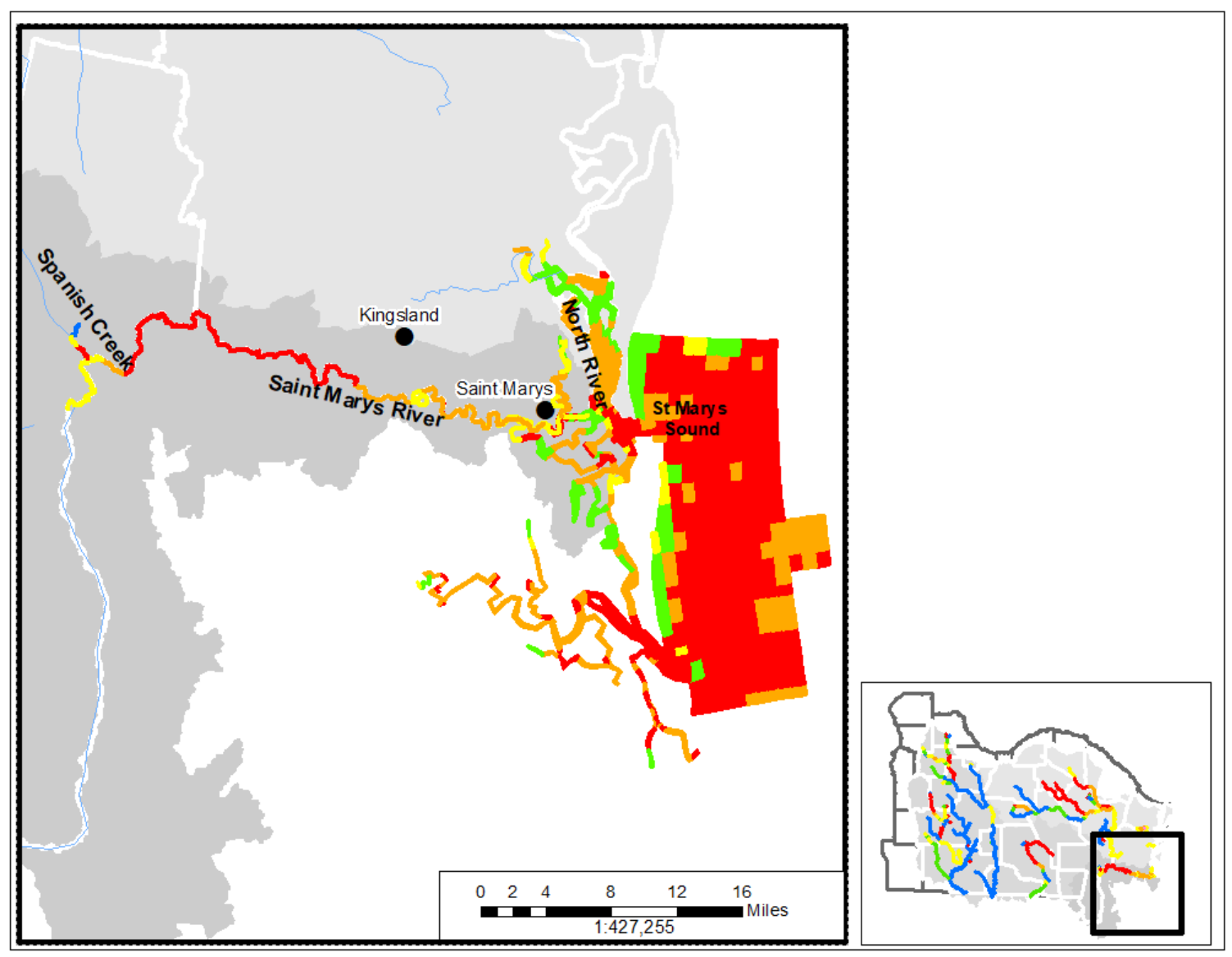
- Very Good
- Good
- Moderate
- Limited
- None or Exceeded
- Unmodeled Lakes and Streams

Current DO Conditions: Satilla Basin





Current DO Conditions: St. Marys Basin



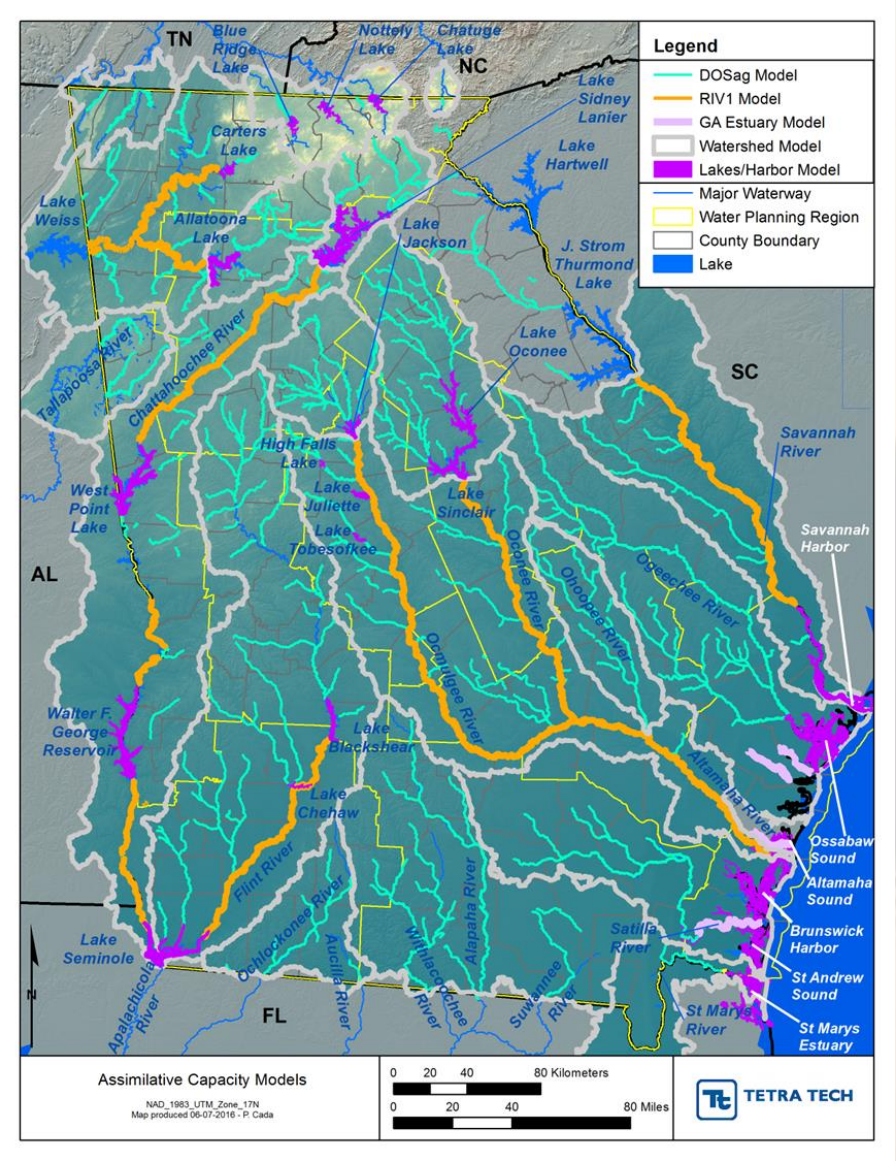
Legend

Available Assimilative Capacity

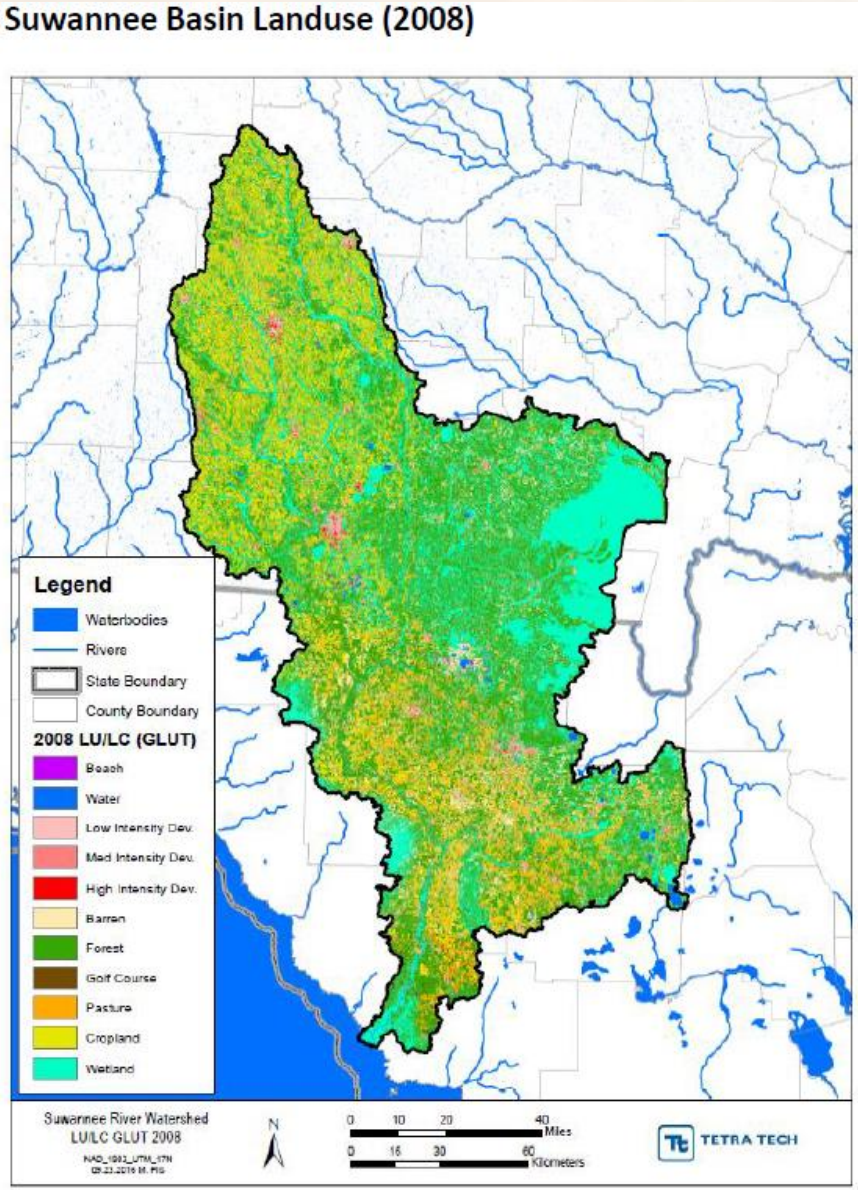
- Very Good
- Good
- Moderate
- Limited
- None or Exceeded
- Unmodeled Lakes and Streams

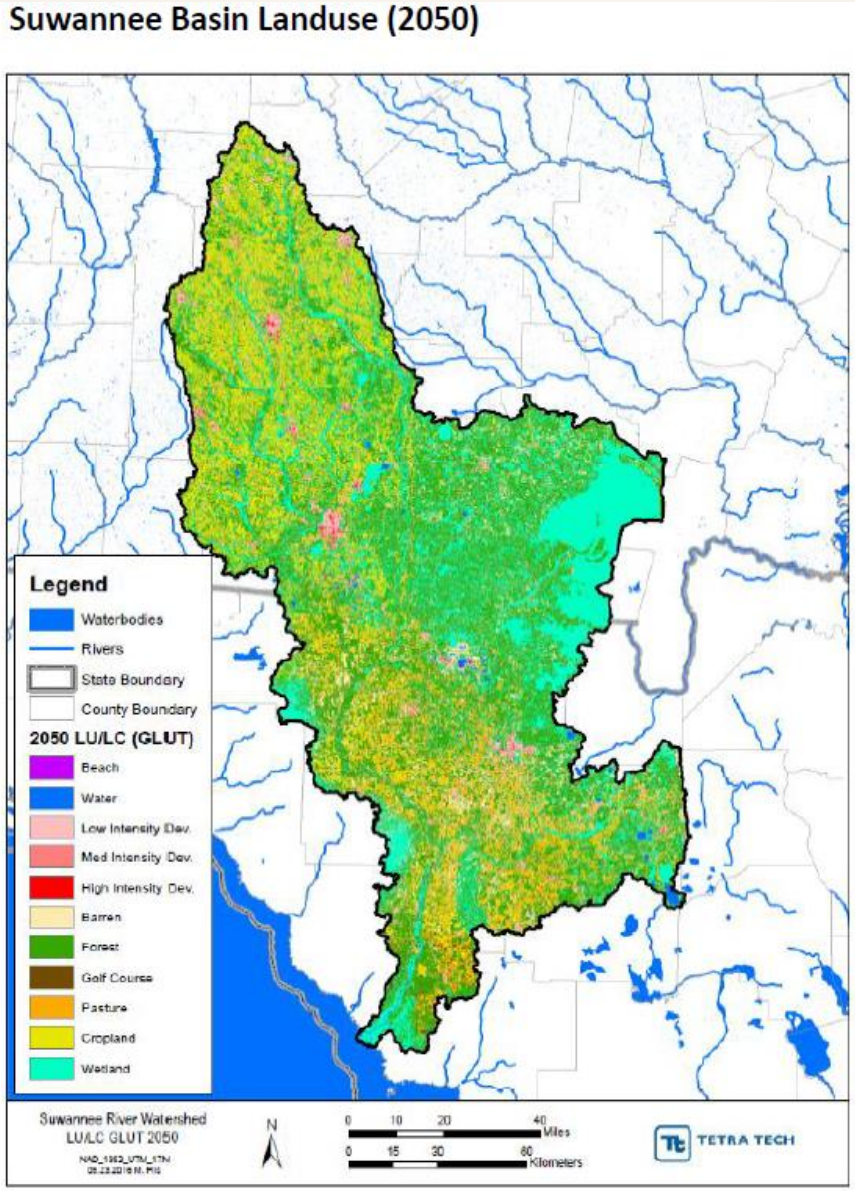
Heat Maps (Watershed Models)

- **Land use & runoff**
- **Meteorological information**
- **Dischargers at permit limits**
- **Heat Maps**
  - **Loadings – by subbasin – under representative wet and dry years**
  - **Biochemical Oxygen Demand (BOD)**
  - **Total Nitrogen**
  - **Total Phosphorus**

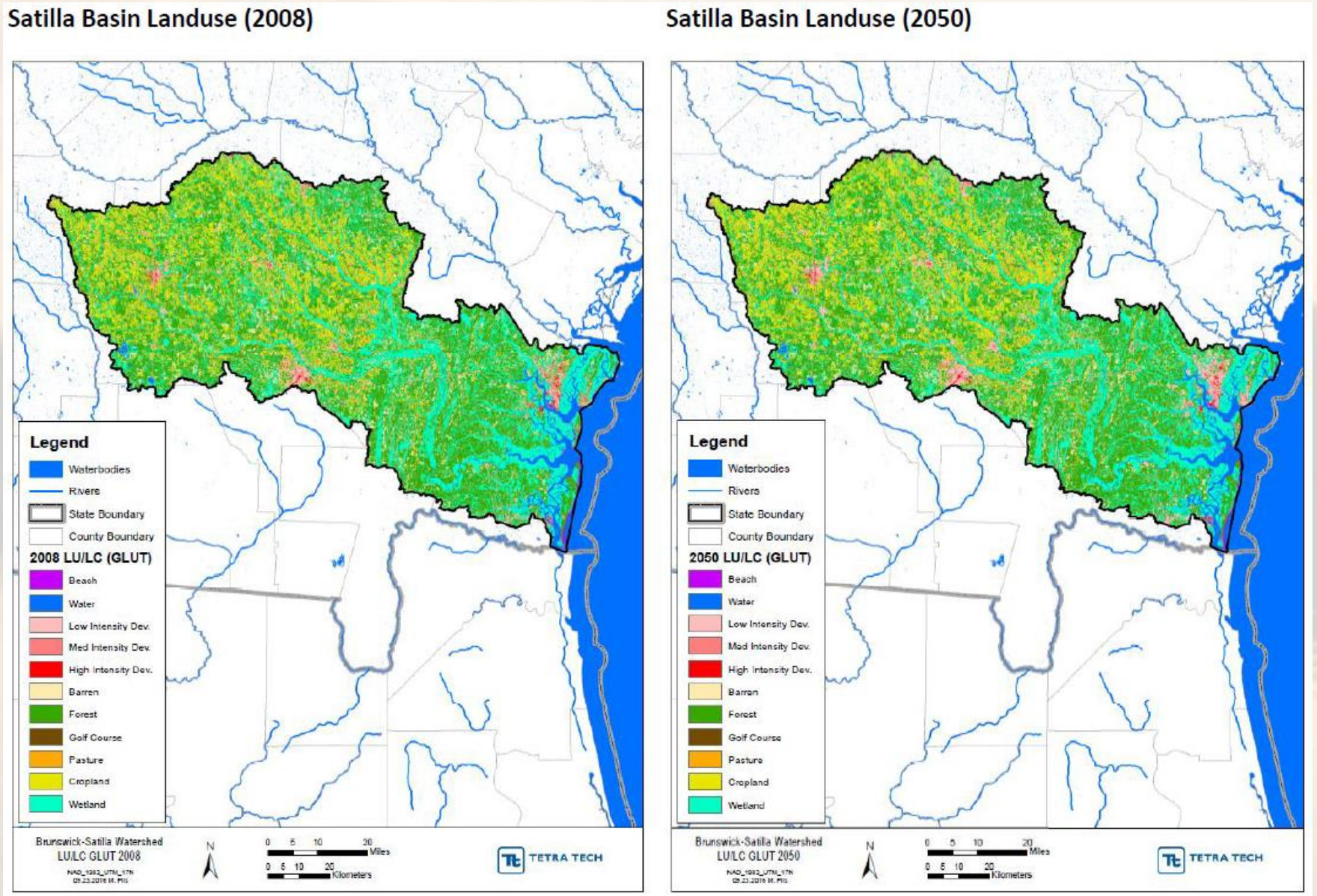


Land Use Changes: Suwannee Basin



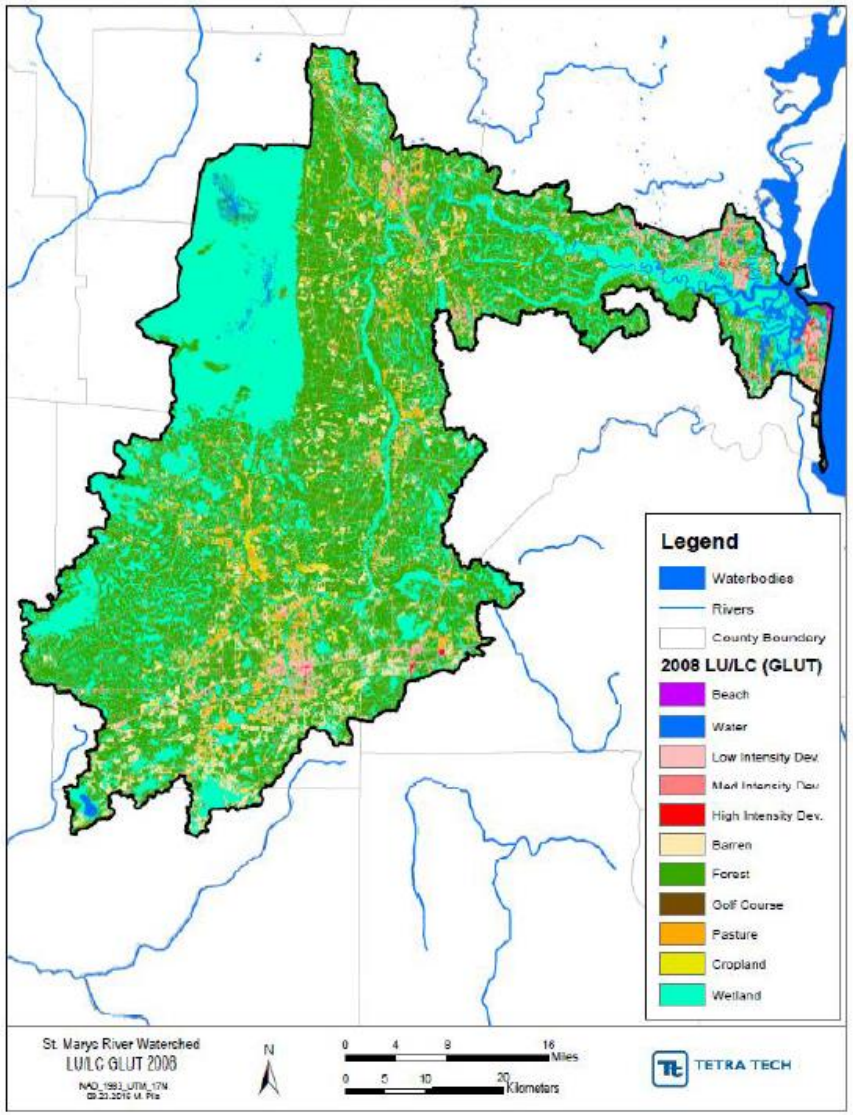


Land Use Changes: Satilla Basin

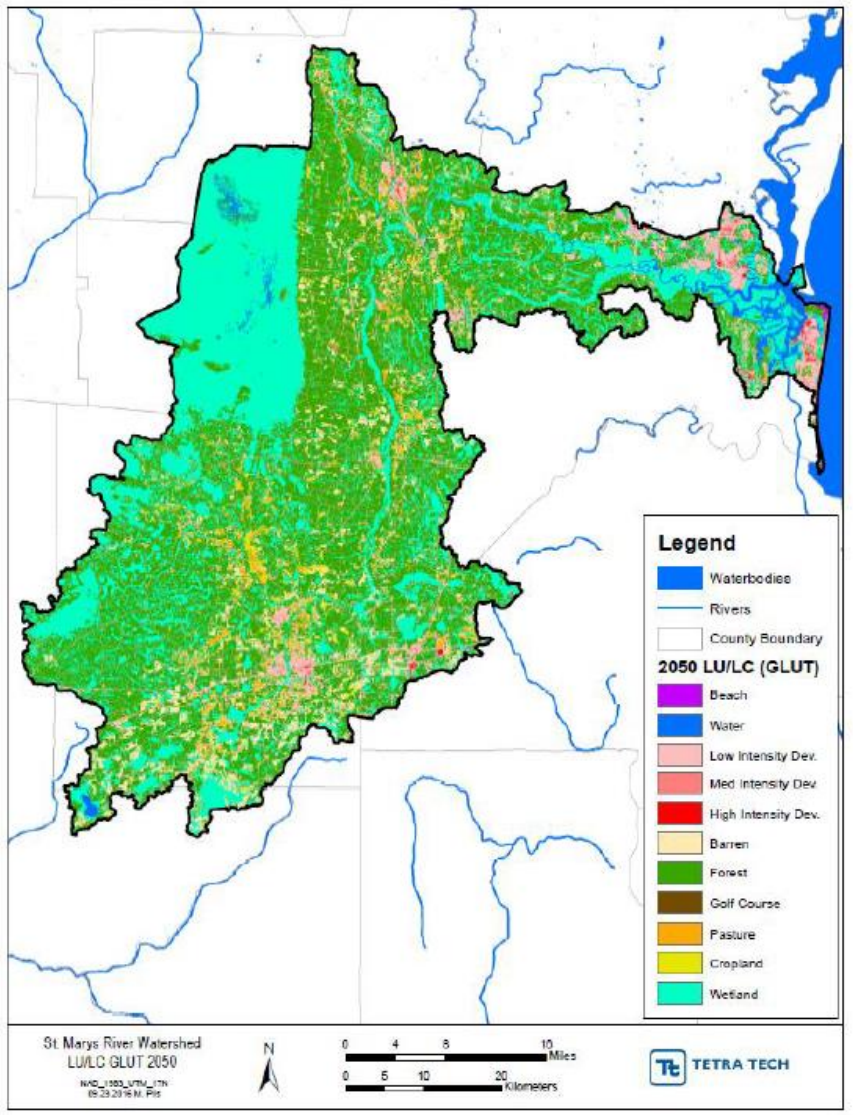


Land Use Changes: St. Marys Basin

St. Marys Basin Landuse (2008)



St. Marys Basin Landuse (2050)

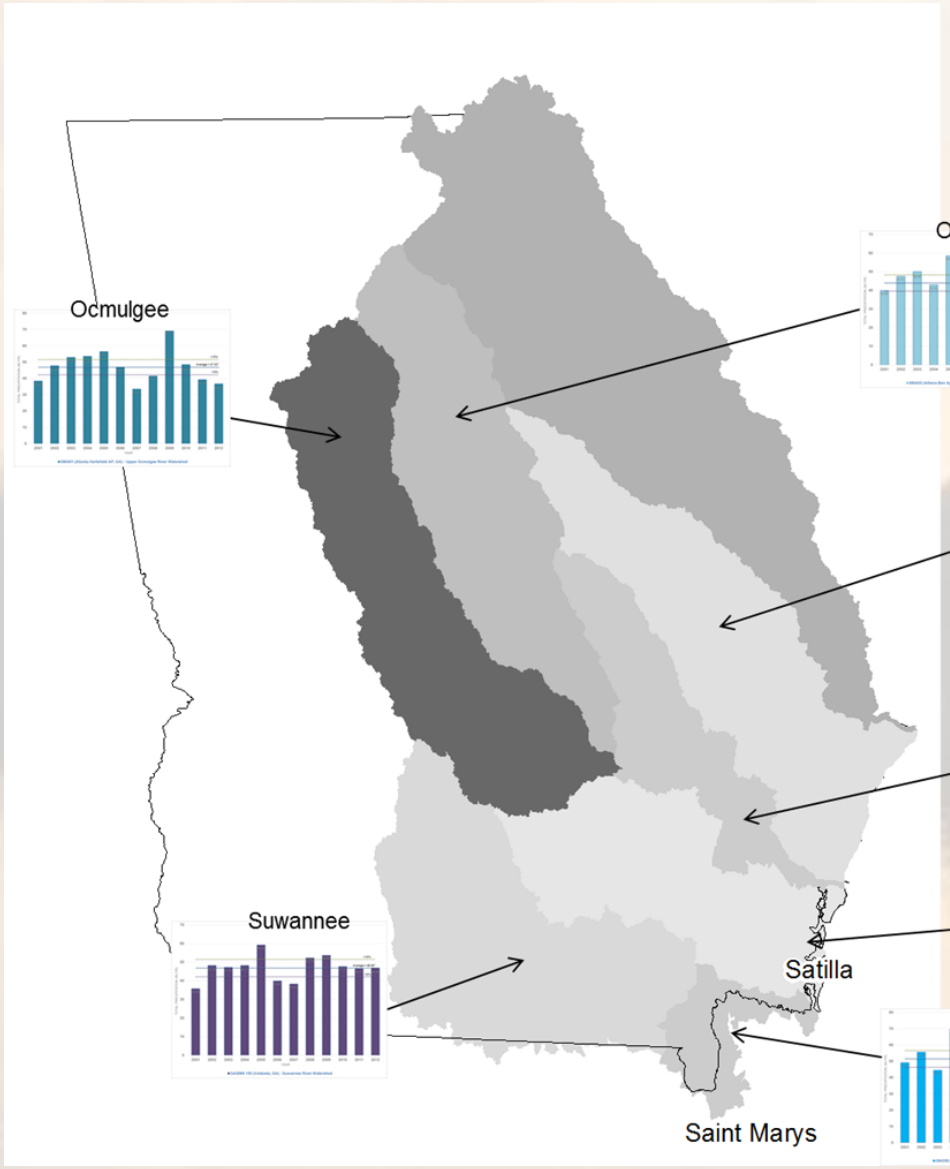


Land Use Changes Summary

Changes in Landuse between 2008 and 2050

Landuse	Suwannee		Satilla		St Marys		Total	
	2008	2050	2008	2050	2008	2050	2008	2050
Beaches/Dunes/Mud	0.12%	0.11%	0.39%	0.37%	0.17%	0.16%	0.20%	0.18%
Open Water	0.92%	0.89%	0.78%	0.76%	1.66%	1.64%	0.96%	0.93%
Utility Swaths	0.17%	0.17%	0.27%	0.25%	0.06%	0.06%	0.19%	0.18%
Developed, Open Space	4.32%	5.00%	4.19%	5.15%	4.41%	5.35%	4.29%	5.08%
Developed, Low Intensity	1.38%	1.55%	1.64%	1.89%	1.32%	1.49%	1.45%	1.63%
Developed, Medium Intensity	0.14%	0.17%	0.18%	0.25%	0.16%	0.18%	0.15%	0.19%
Developed, High Intensity	0.01%	0.01%	0.01%	0.02%	0.02%	0.02%	0.01%	0.02%
Clearcut/Sparse	6.57%	6.53%	6.10%	5.98%	7.81%	7.63%	6.57%	6.50%
Quarries/Strip Mines	0.10%	0.10%	0.02%	0.02%	0.01%	0.01%	0.07%	0.07%
Rock Outcrop	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Deciduous Forest	6.06%	5.92%	5.37%	5.21%	4.96%	4.85%	5.77%	5.62%
Evergreen Forest	27.57%	27.23%	32.77%	32.20%	39.70%	39.16%	30.19%	29.77%
Mixed Forest	5.65%	5.54%	1.97%	1.93%	1.54%	1.49%	4.26%	4.17%
Golf Courses	0.37%	0.37%	0.02%	0.02%	0.01%	0.01%	0.24%	0.24%
Pasture	5.80%	5.54%	1.98%	1.85%	1.53%	1.42%	4.35%	4.14%
Row Crop	12.73%	11.33%	12.61%	11.48%	1.62%	1.46%	11.56%	10.36%
Irrigated Row Crop	3.80%	5.31%	3.08%	4.05%	0.00%	0.05%	3.22%	4.44%
Forested Wetland	22.28%	22.15%	21.93%	21.73%	30.87%	30.78%	23.07%	22.93%
Non-forested Salt/Brackish Wetland	0.00%	0.00%	0.00%	4.54%	1.81%	1.80%	0.19%	1.38%
Non-forested Freshwater Wetland	1.16%	1.15%	5.32%	0.76%	1.53%	1.52%	2.29%	1.09%
Developed, Low Intensity (Impervious)	0.40%	0.43%	0.47%	0.53%	0.37%	0.42%	0.41%	0.46%
Developed, Medium Intensity (Impervious)	0.19%	0.22%	0.29%	0.34%	0.20%	0.23%	0.22%	0.25%
Developed, High Intensity (Impervious)	0.20%	0.21%	0.29%	0.30%	0.17%	0.19%	0.22%	0.23%
All Other Impervious	0.00%	0.01%	0.00%	0.02%	0.00%	0.01%	0.00%	0.01%
Landuse Application Systems	0.04%	0.04%	0.26%	0.26%	0.05%	0.05%	0.10%	0.10%
Failed Septic Systems	0.03%	0.04%	0.06%	0.09%	0.02%	0.02%	0.04%	0.05%

Watershed Models: Wet & Dry Years



Basin	Wet 💧	Dry ☀️
Savannah	2003	2007
Ogeechee	2003	2001
Oconee	2009	2007
Ocmulgee	2009	2007
Altamaha	2009	2001
Satilla	2003	2001
St Marys	2004	2010
Suwannee	2005	2001

Watershed Model Heat Maps

- Current Conditions
  - 2014 permit conditions
  - Calibrated to temperature, salinity and DO data collected from 2001 through 2012
- Future Conditions
  - 2050 forecasted permit conditions (2017 Plan)

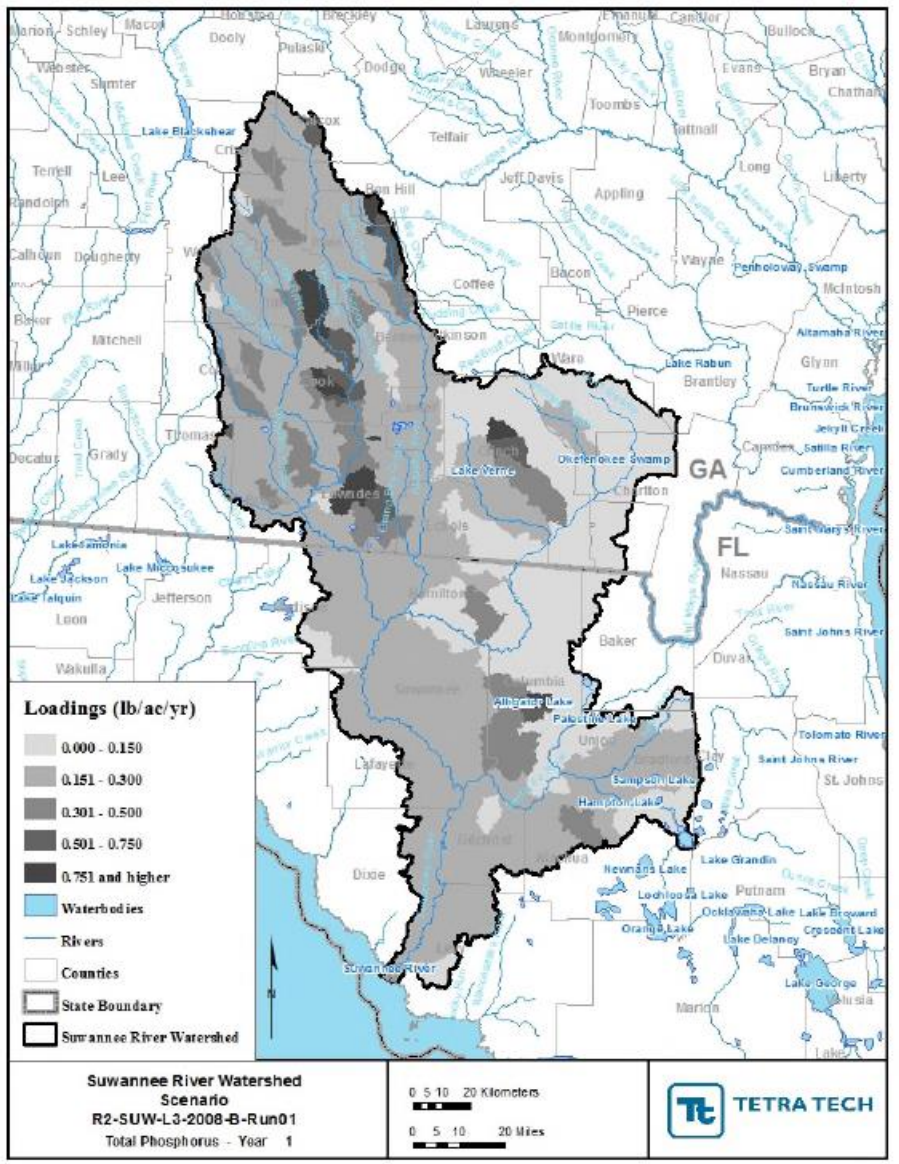
Section 3.2.1

Nutrient Modeling

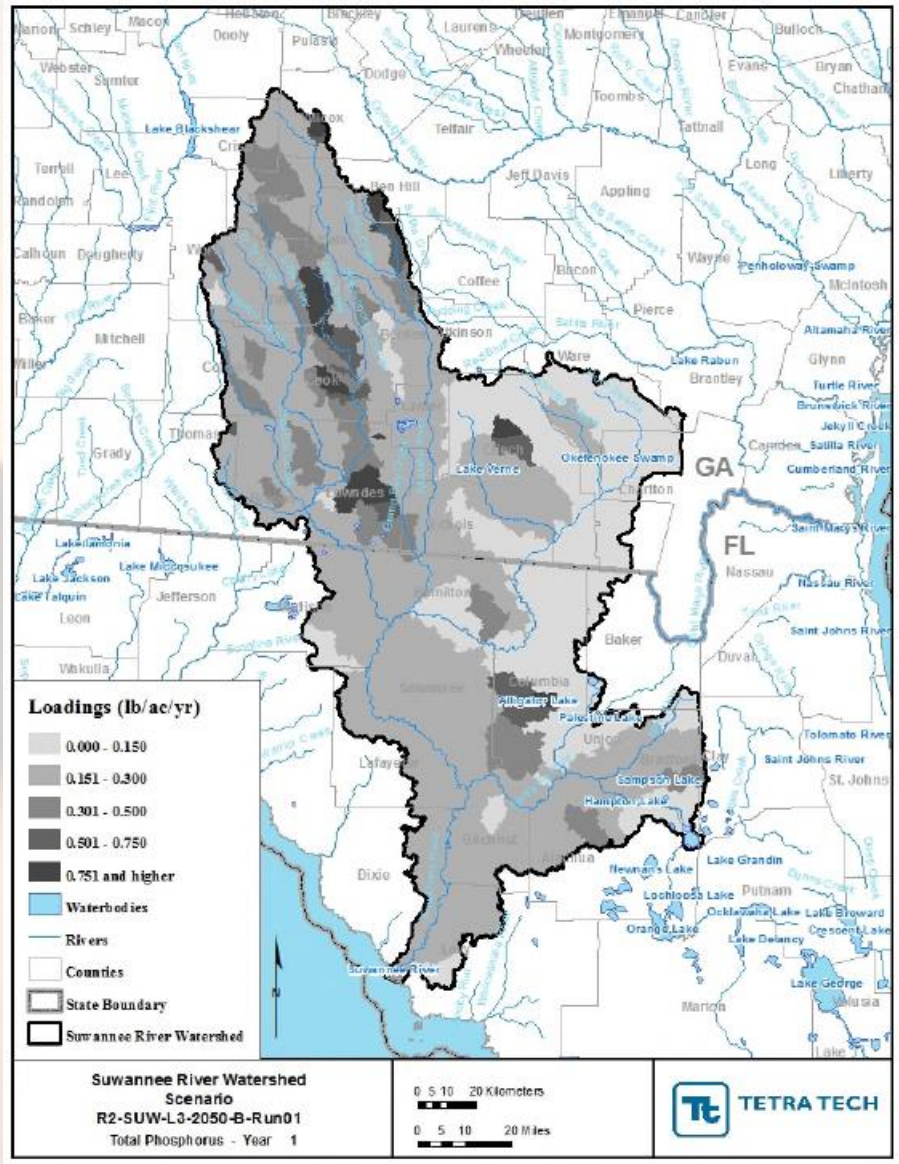
In addition to Assimilative Capacity modeling for DO, EPD completed nutrient (total nitrogen and total phosphorous) modeling for the watersheds in the Suwannee–Satilla region. The location of the watershed model boundaries, and harbors and estuaries model locations are shown in Figure 3-5. There are currently no nutrient standards for total nitrogen and total phosphorus, but these standards may be developed within this region following a public stakeholder process(es). The watershed models evaluate point and non-point source nutrient loadings of total phosphorus and total nitrogen to the Brunswick Harbor and to the state line. The Suwannee-Satilla Council proactively identified several non-point source best management practices (BMPs) that can be used to help reduce nutrient loading as discussed in Section 6.

Total P in Suwannee Basin (Dry Year)

CURRENT

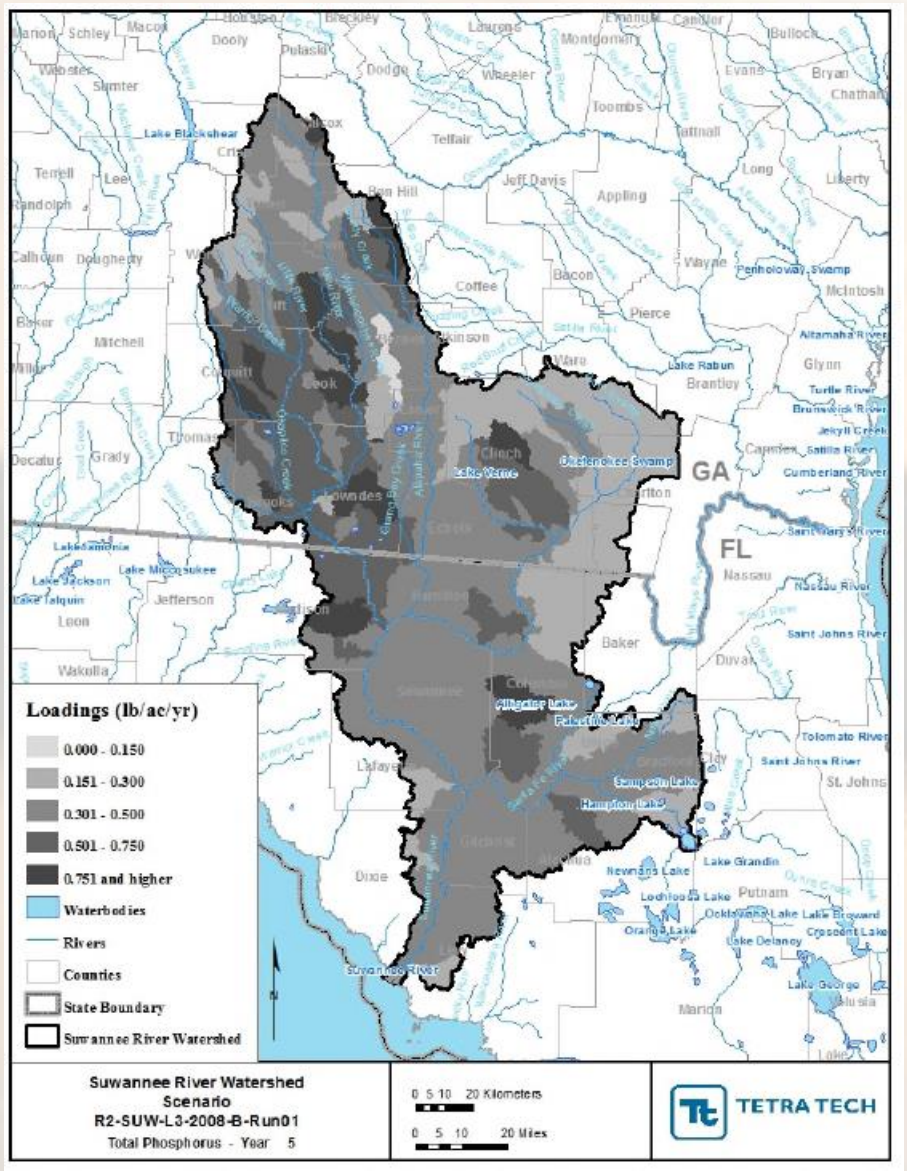


FUTURE

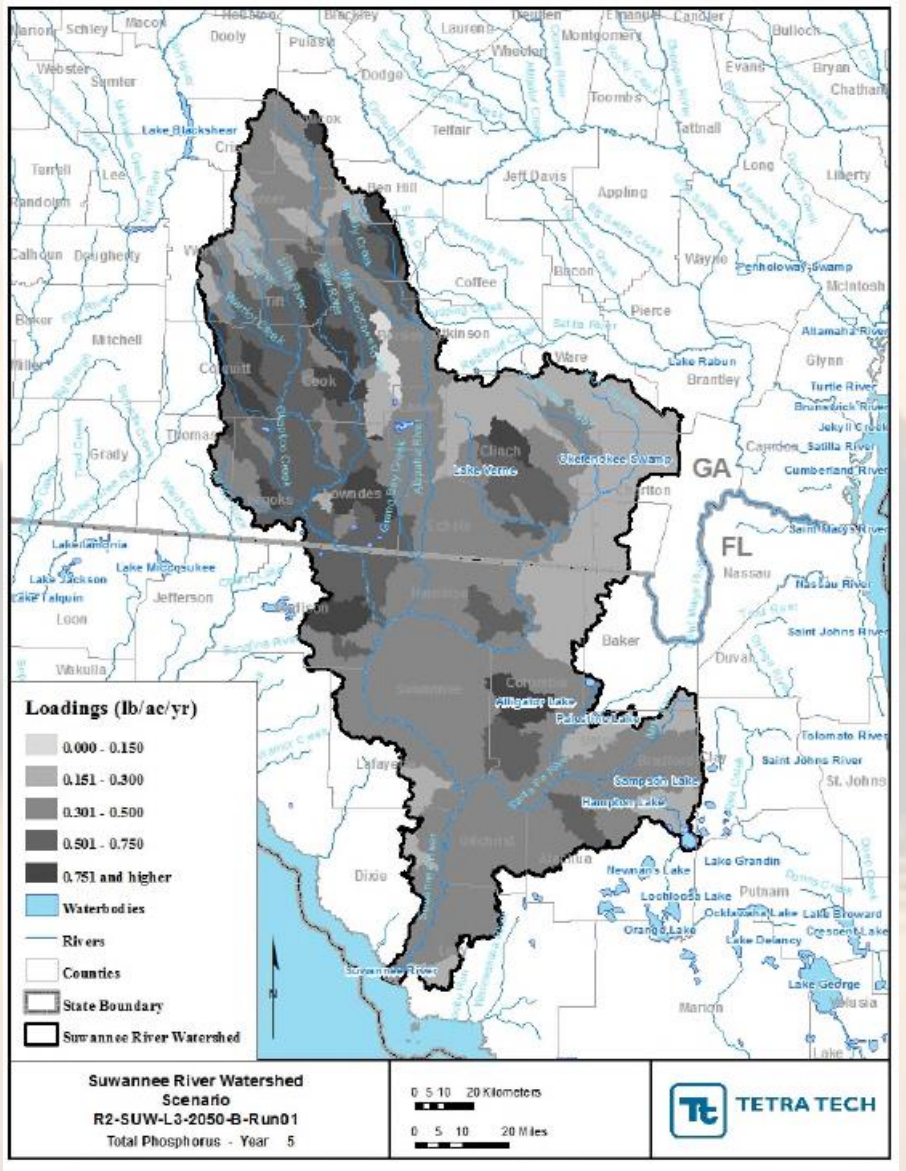


Total P in Suwannee Basin (Wet Year)

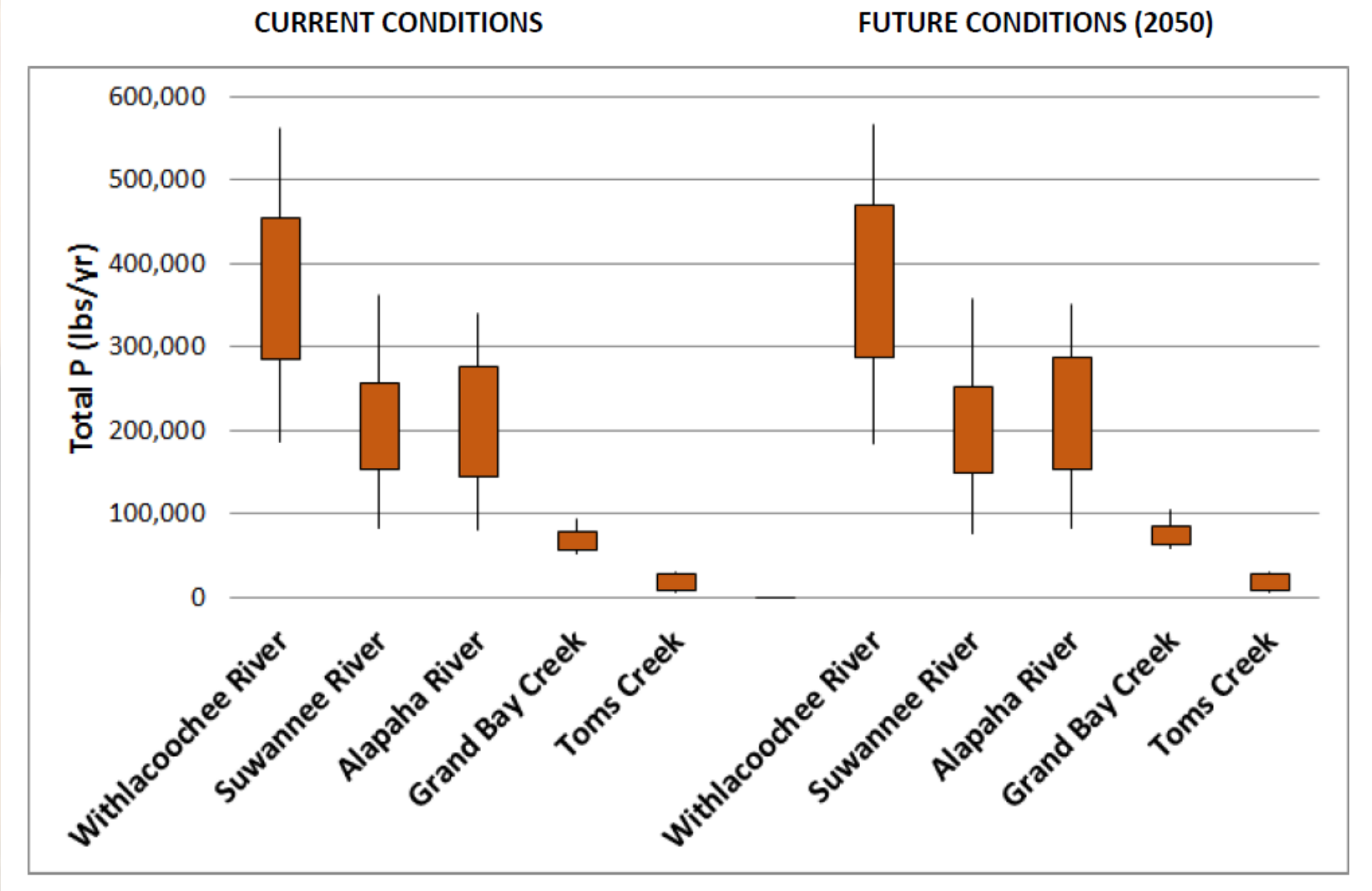
CURRENT



FUTURE

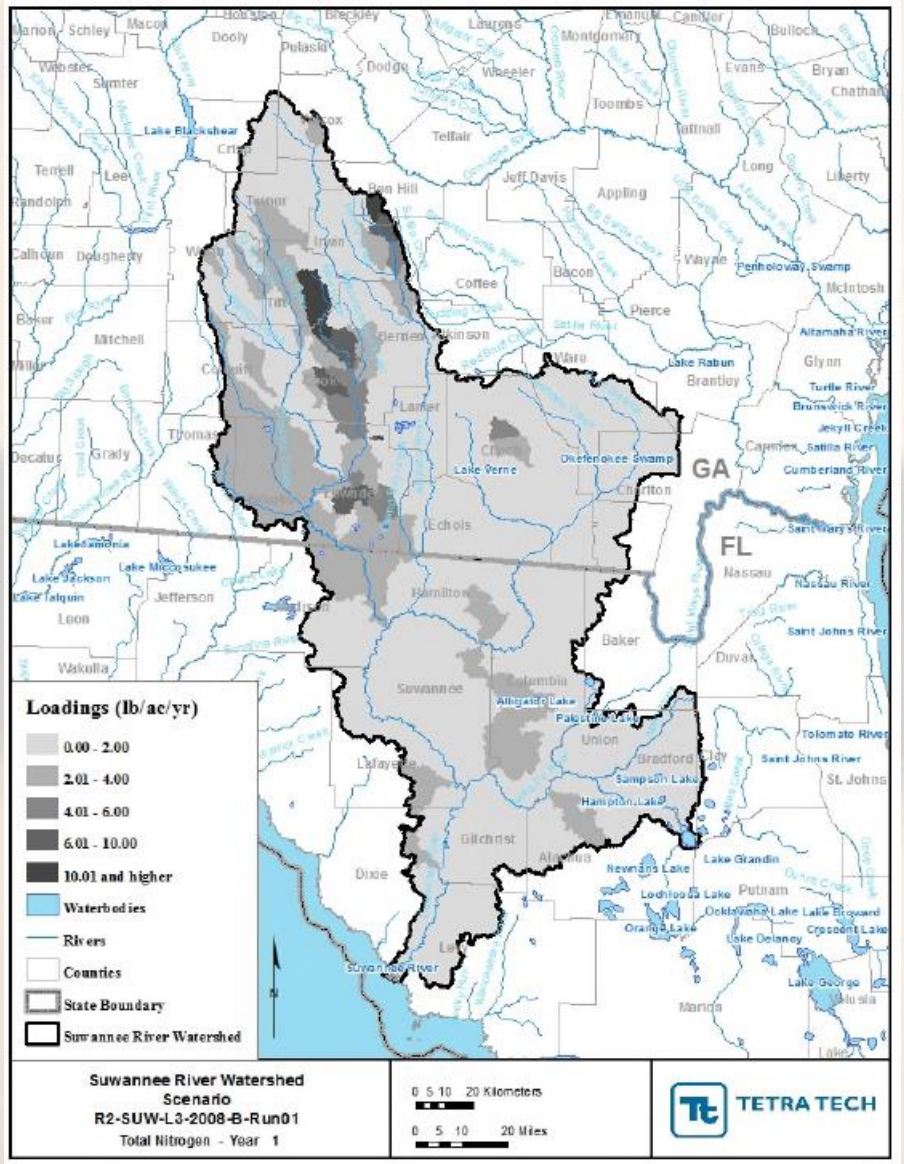


Modeled State Line Total P Loads

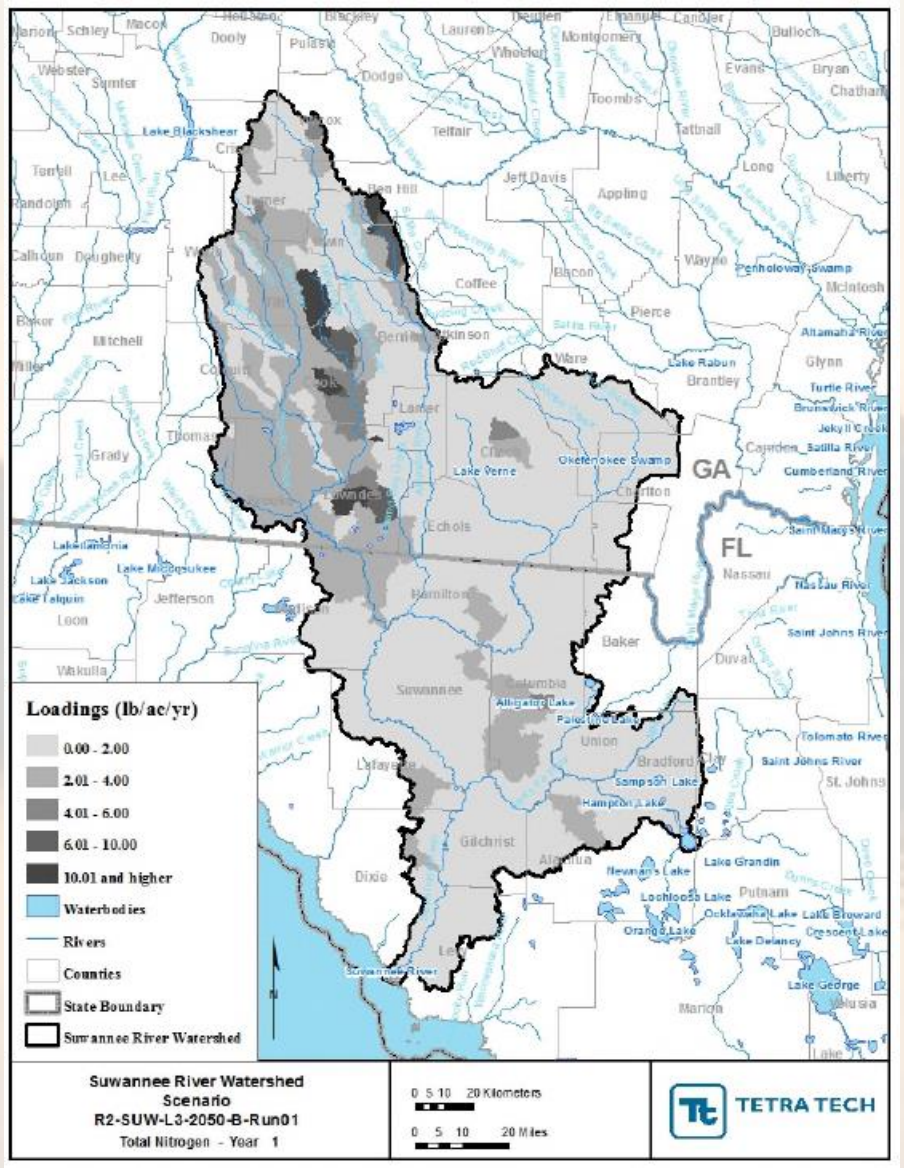


Total N in Suwannee Basin (Dry Year)

CURRENT

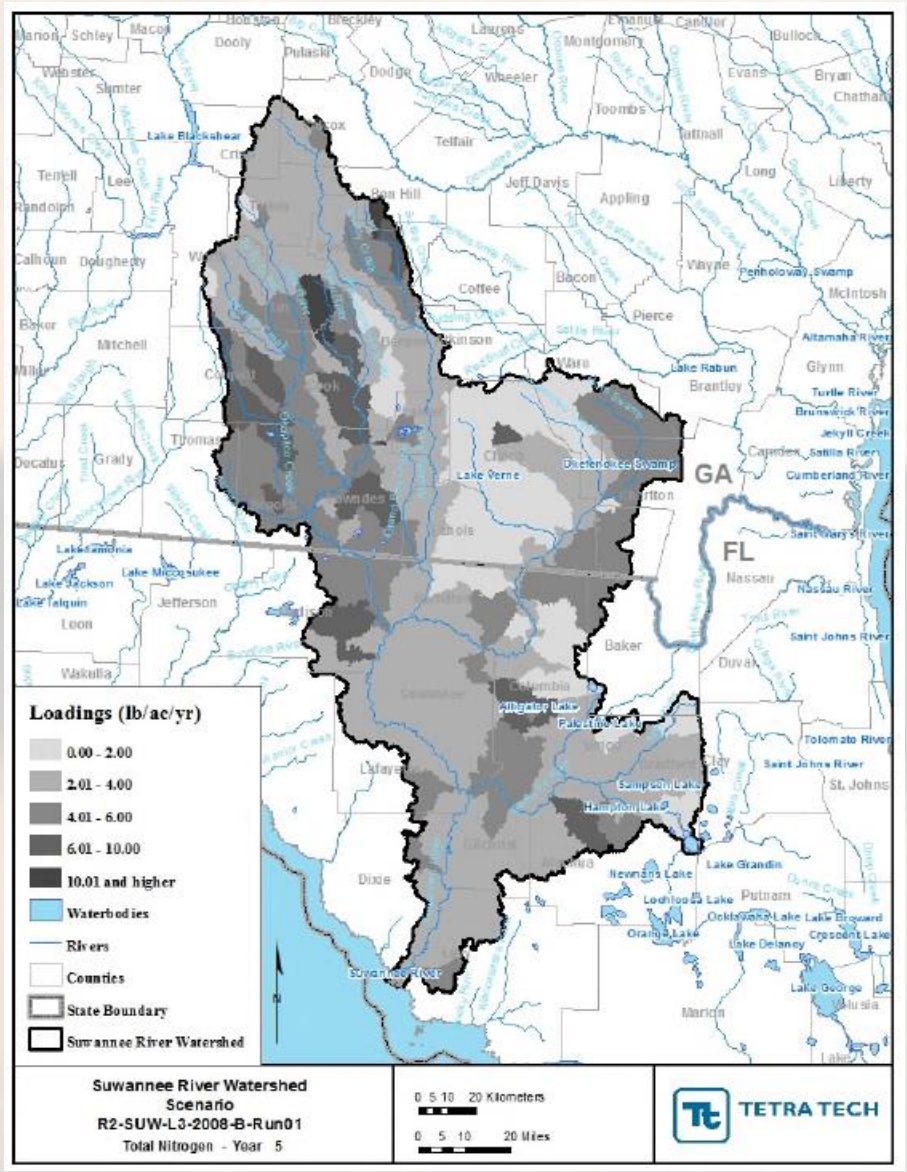


FUTURE

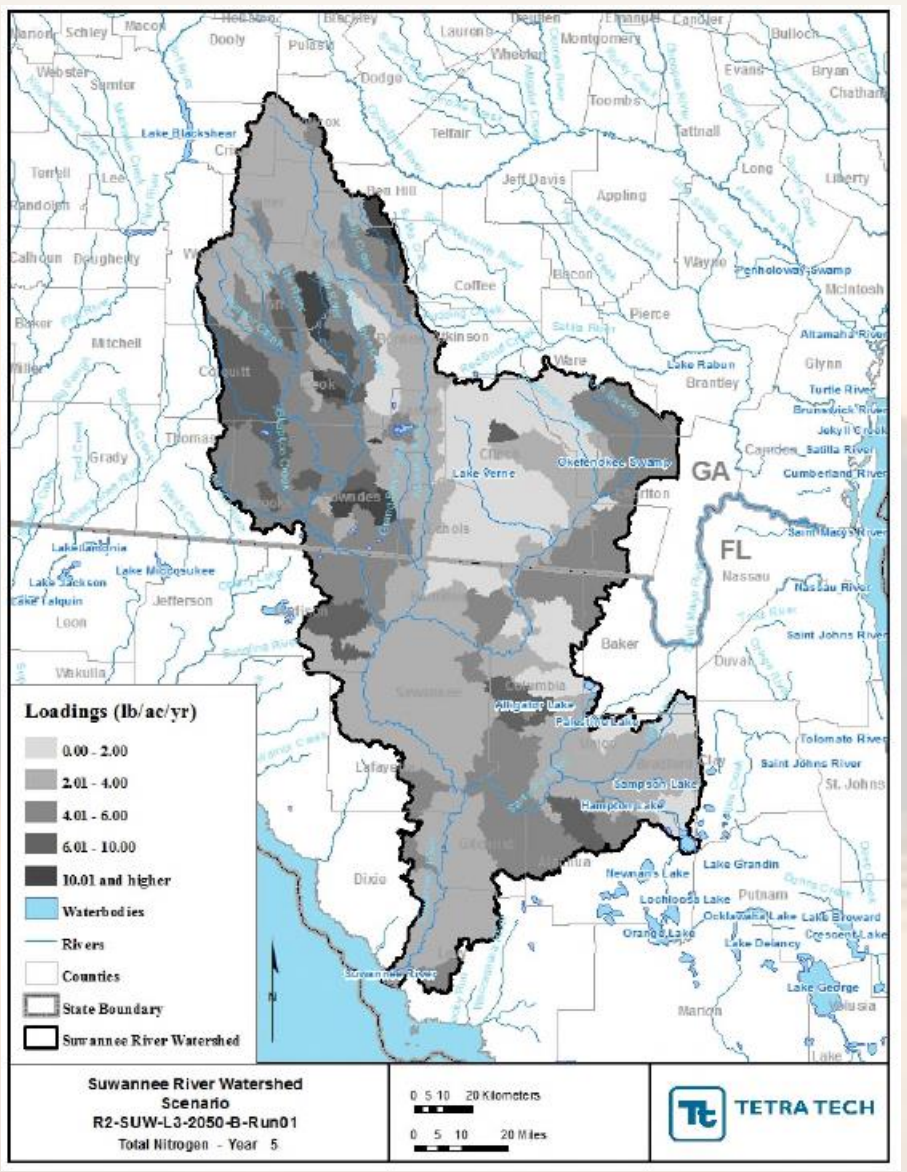


Total N in Suwannee Basin (Wet Year)

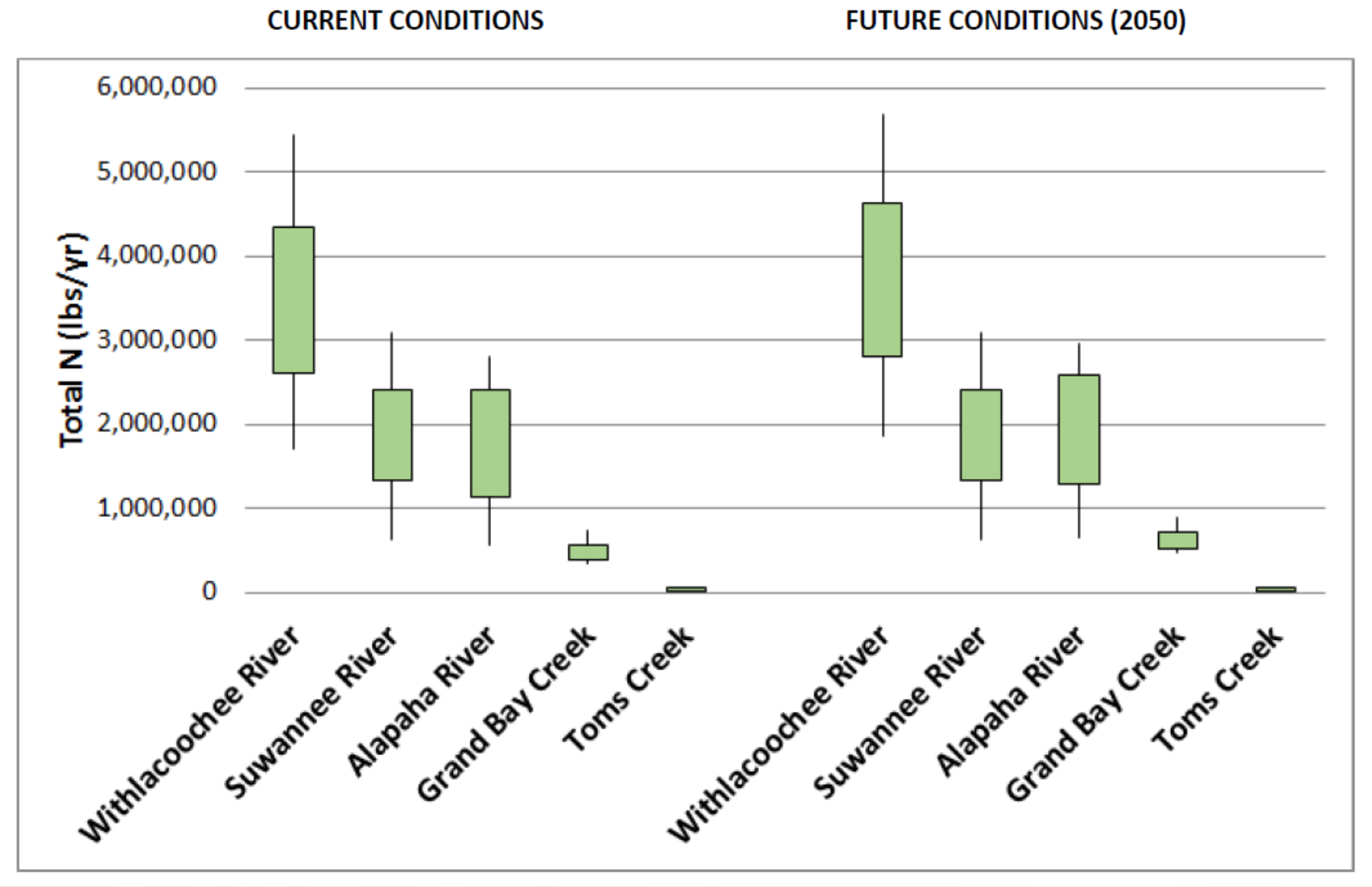
CURRENT



FUTURE

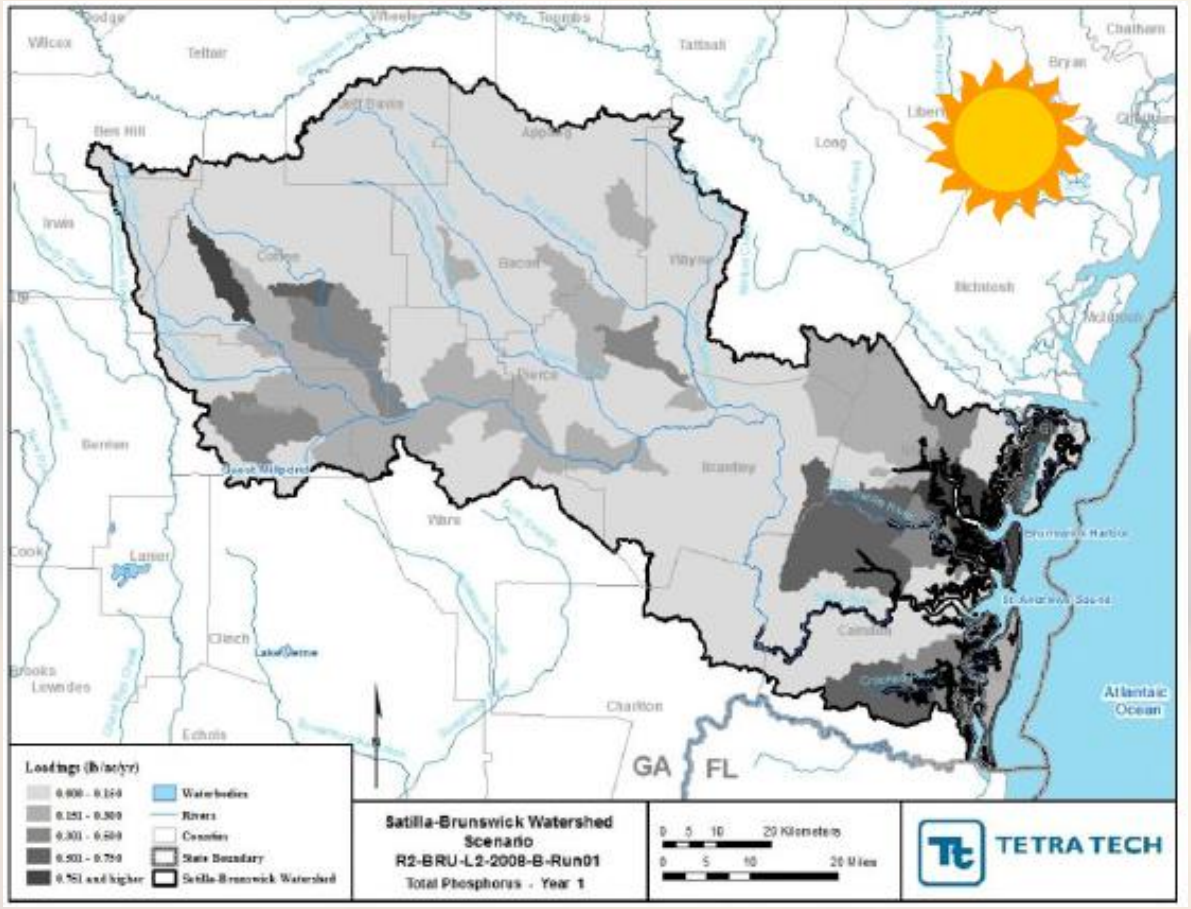


Modeled State Line Total N Loads

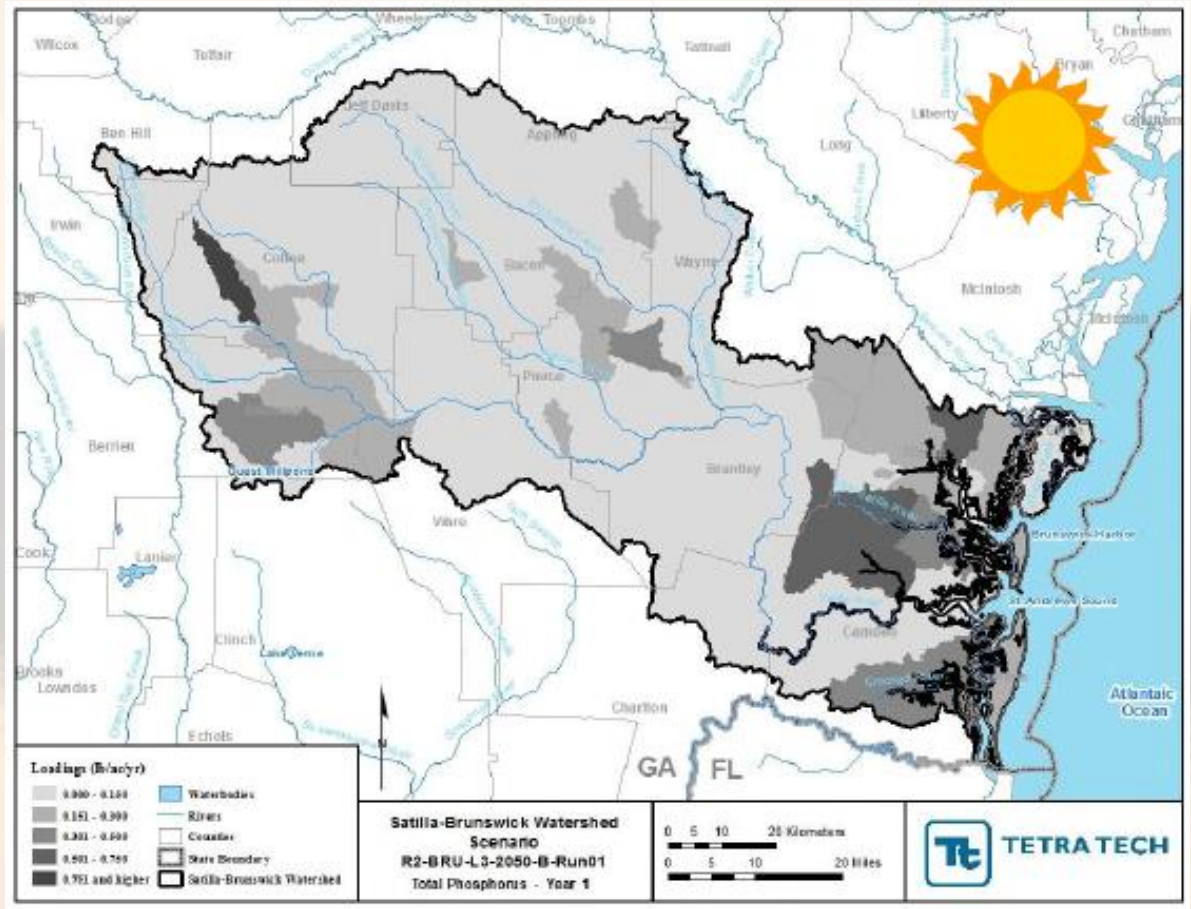


Total P in Satilla Basin (Dry Year)

CURRENT

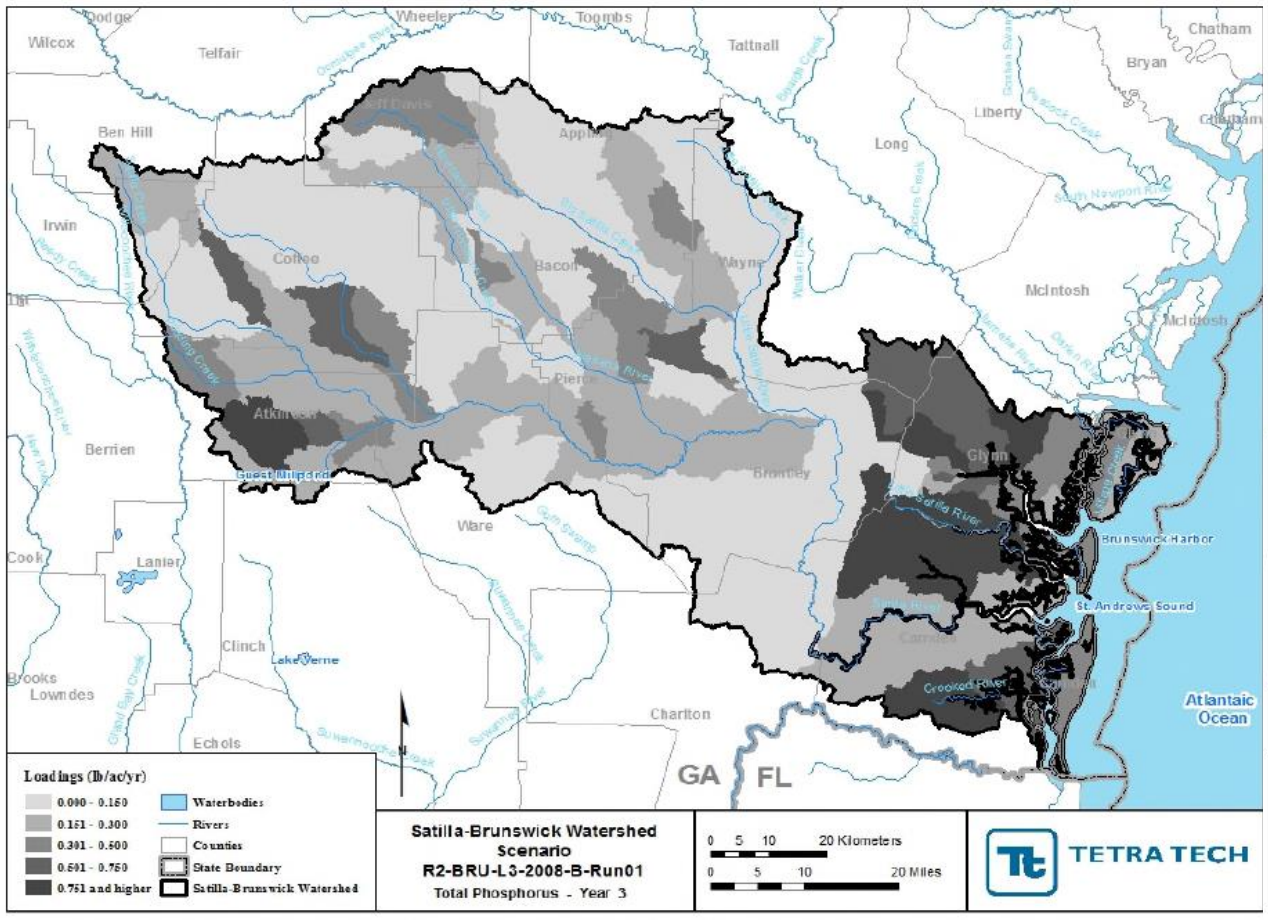


FUTURE

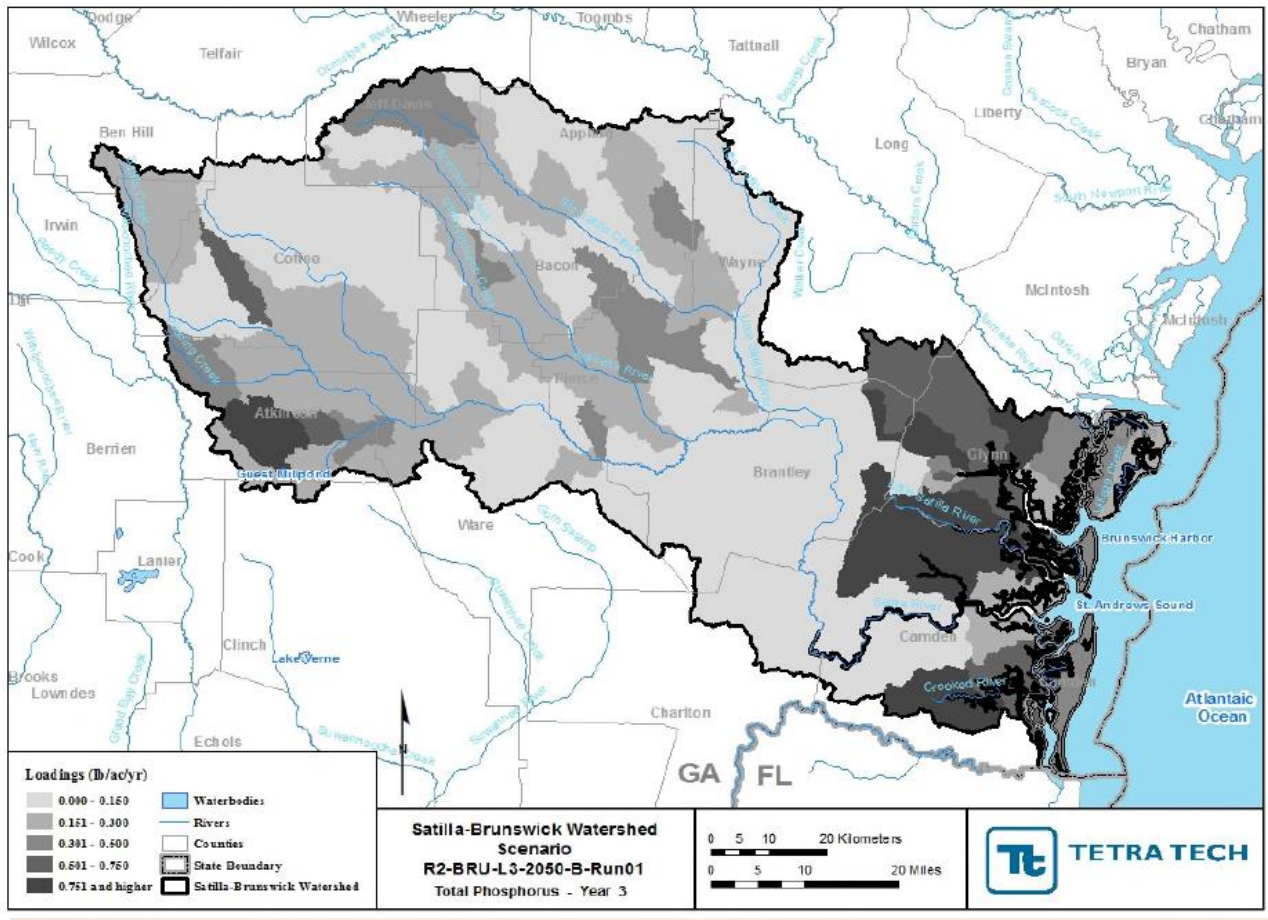


Total P in Satilla Basin (Wet Year)

CURRENT

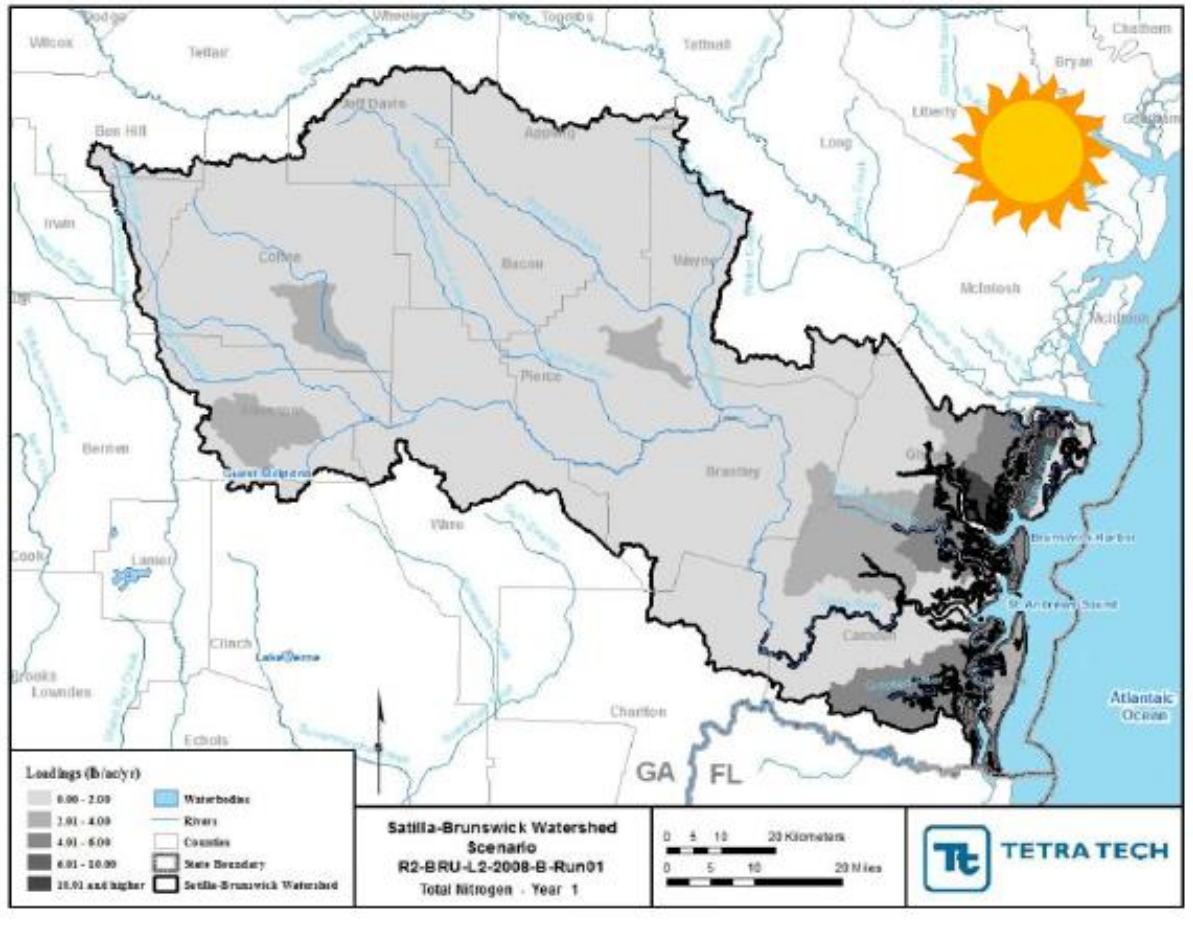


FUTURE

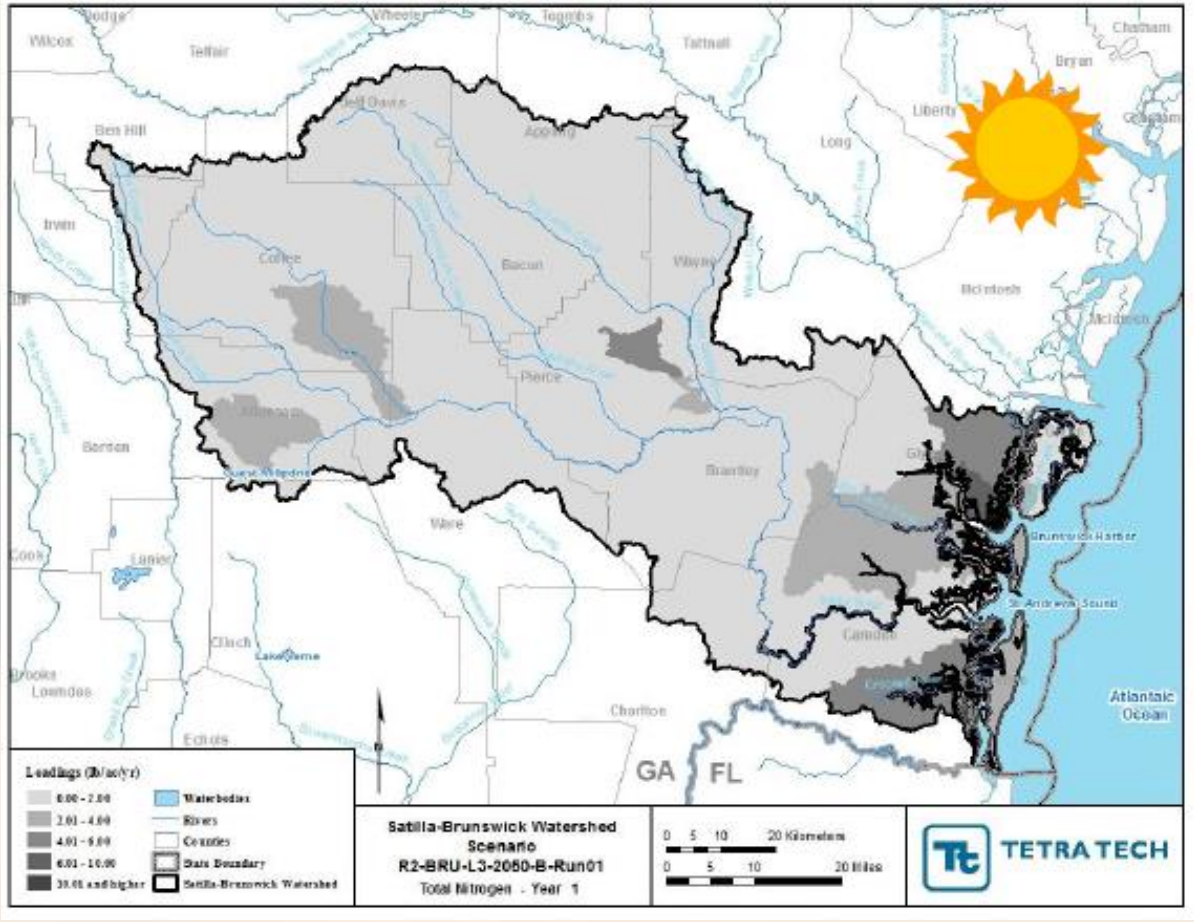


Total N in Satilla Basin (Dry Year)

CURRENT

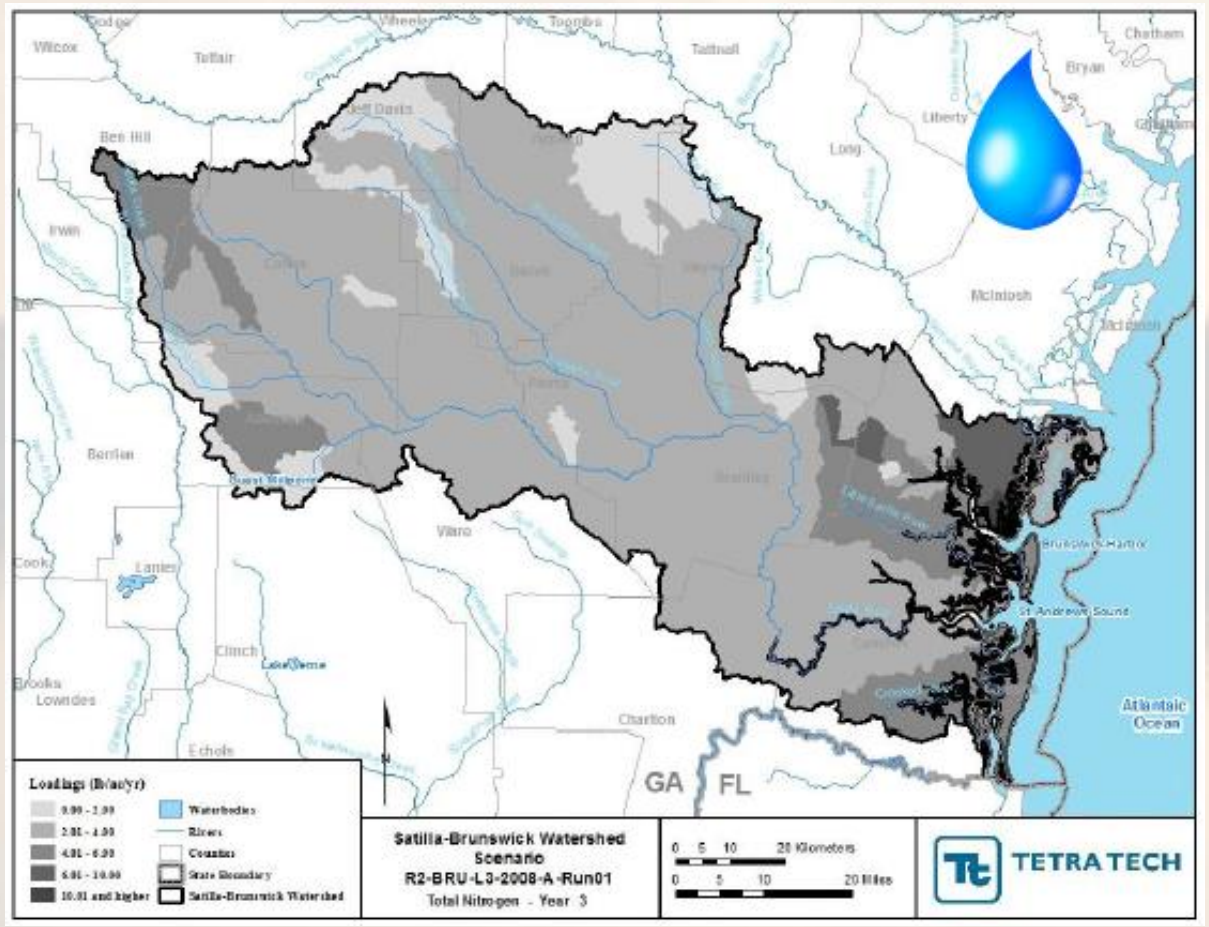


FUTURE

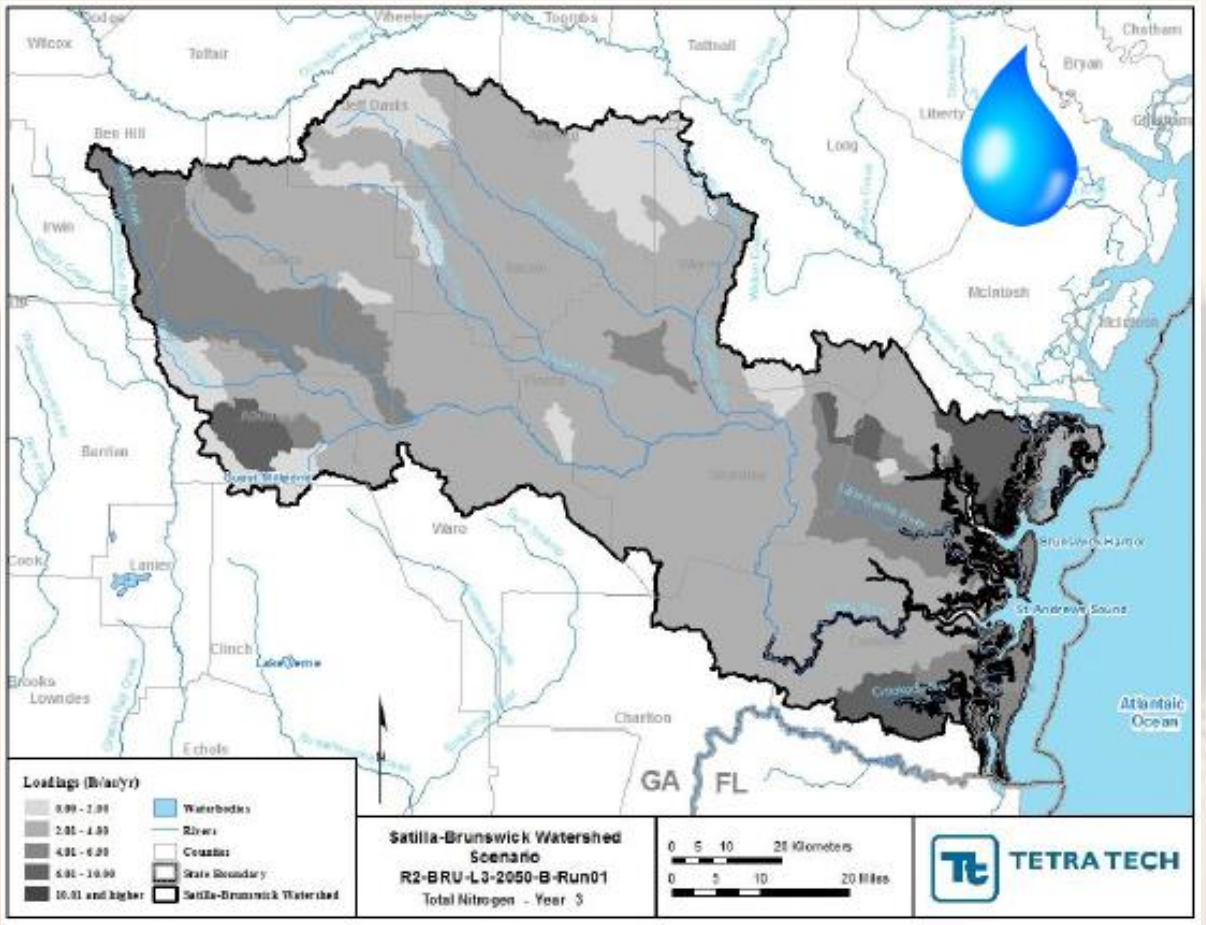


Total N in Satilla Basin (Wet Year)

CURRENT

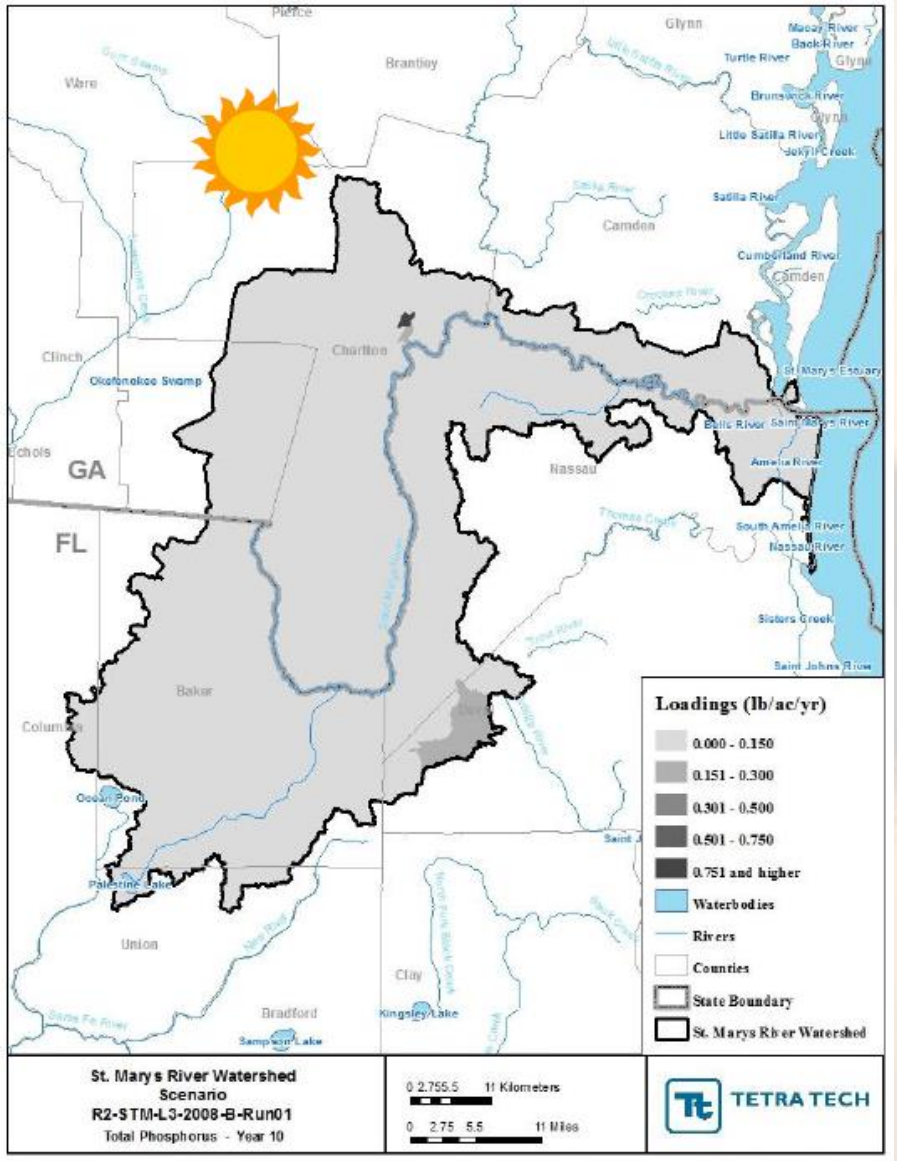


FUTURE

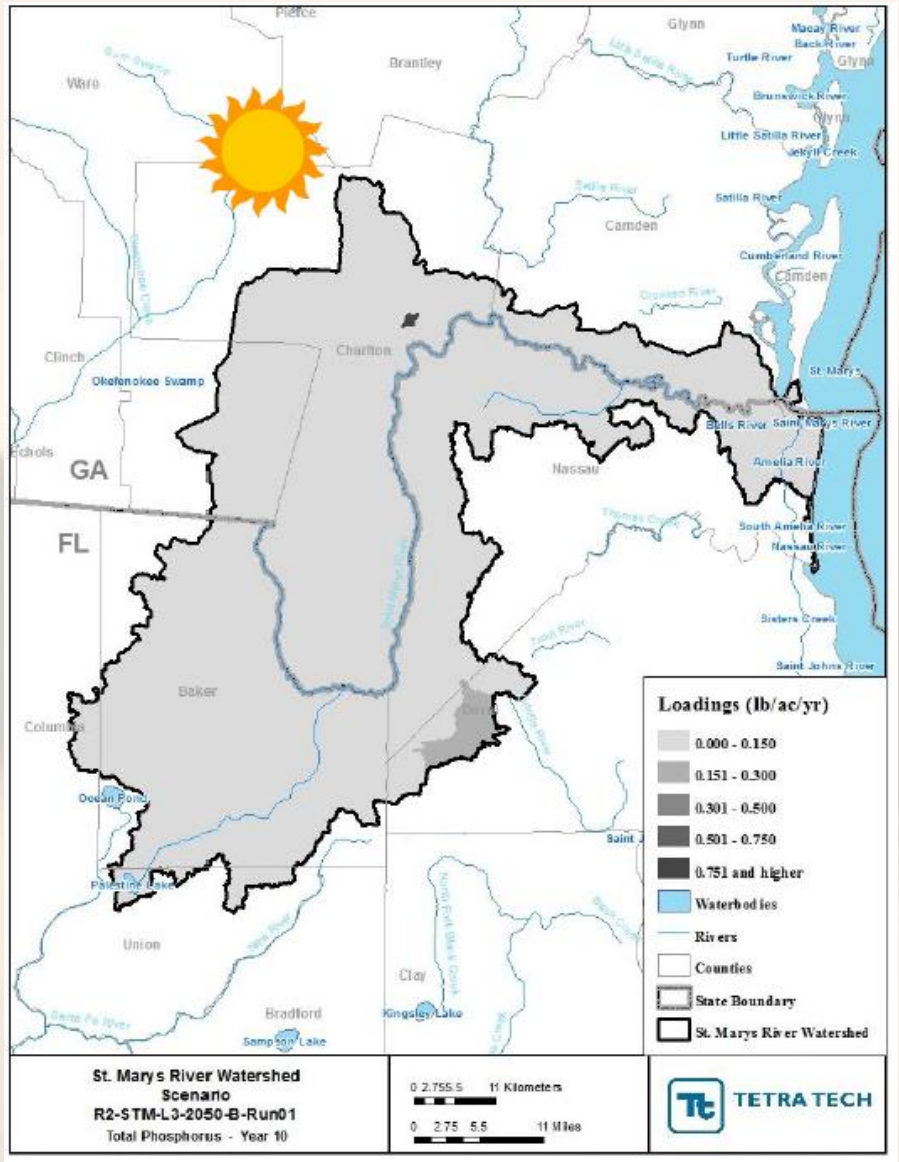


Total P in St. Marys Basin (Dry Year)

CURRENT

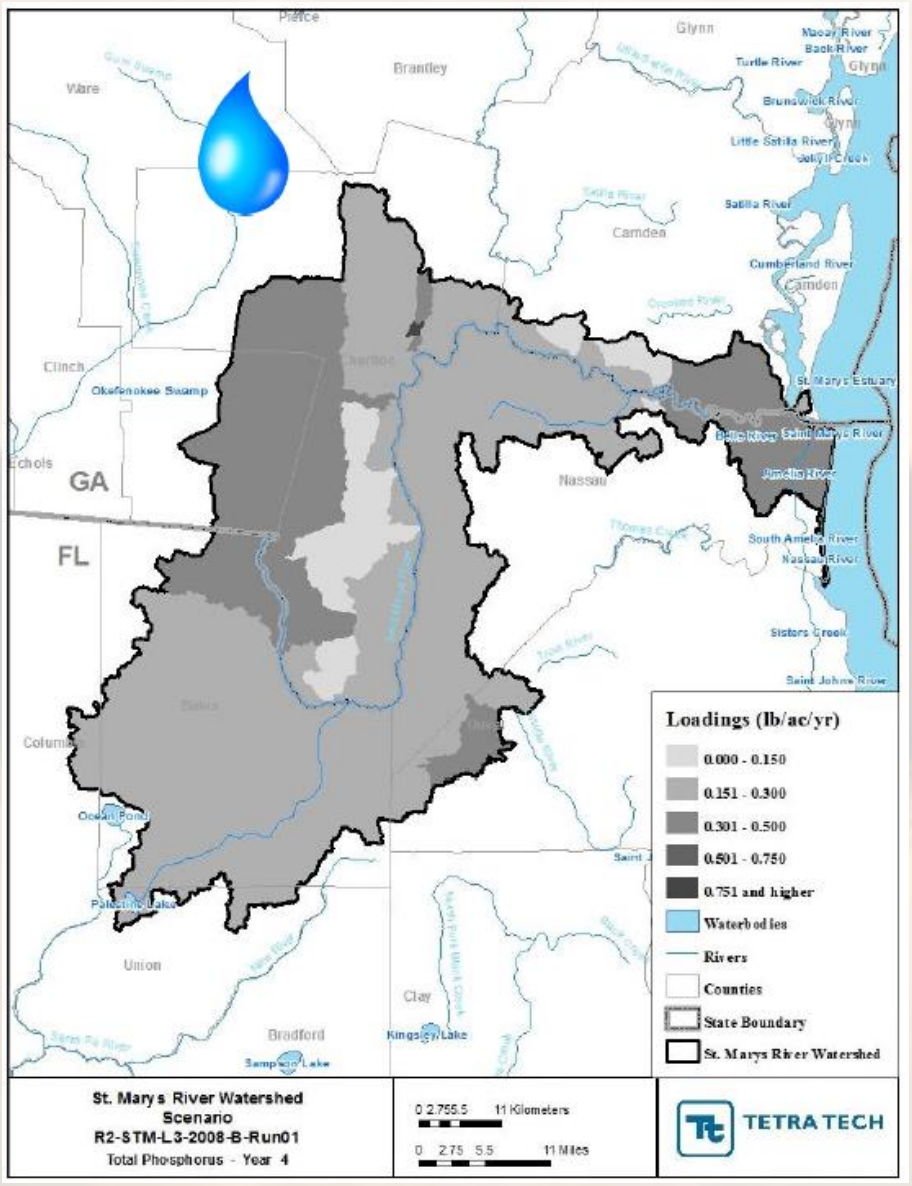


FUTURE

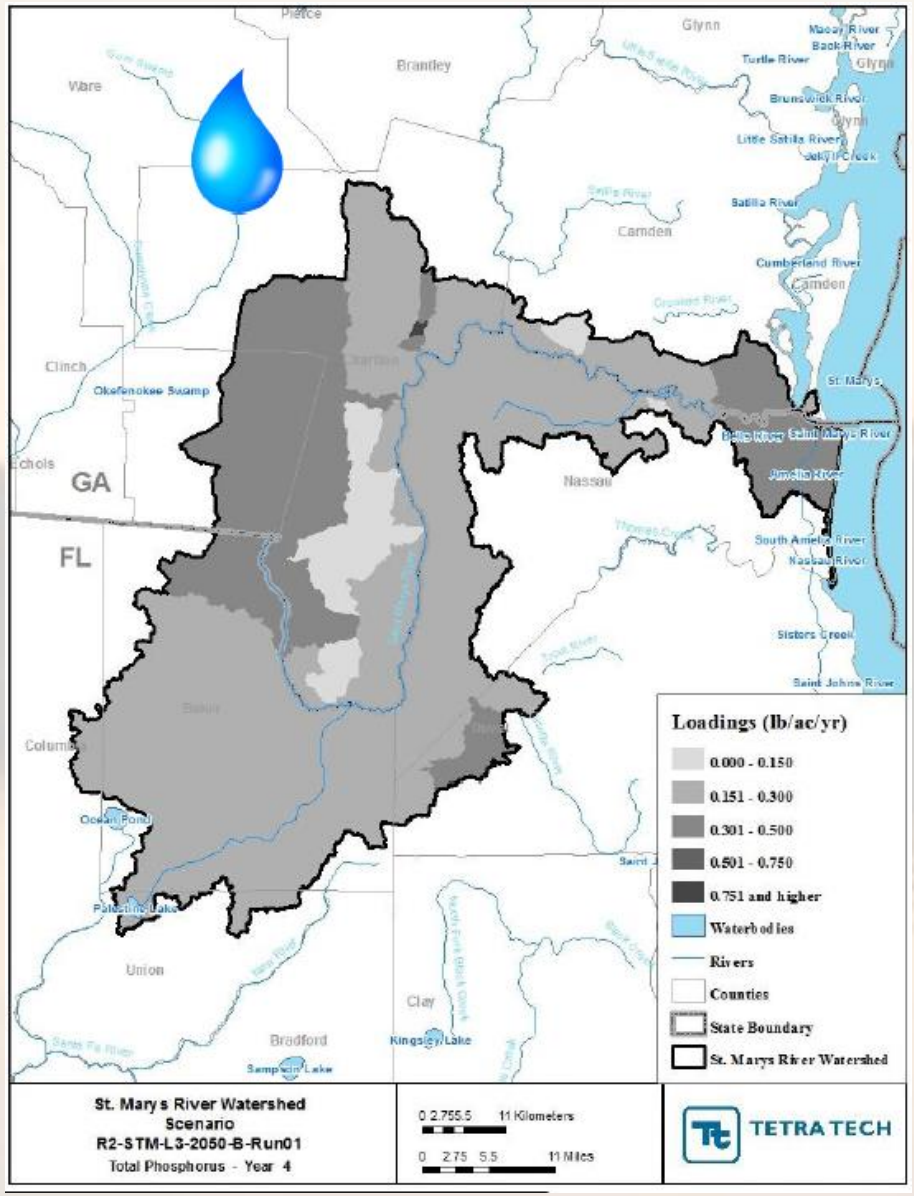


Total P in St. Marys Basin (Wet Year)

CURRENT

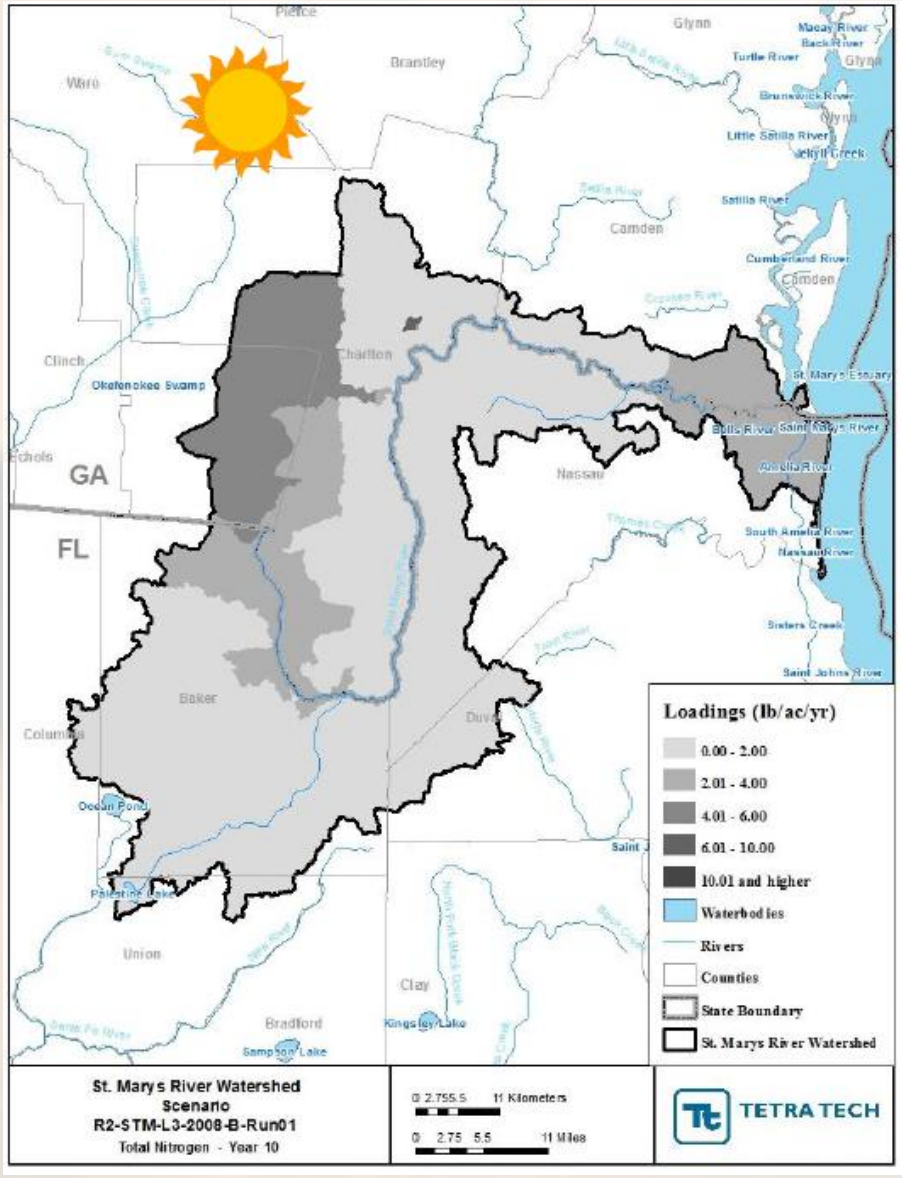


FUTURE

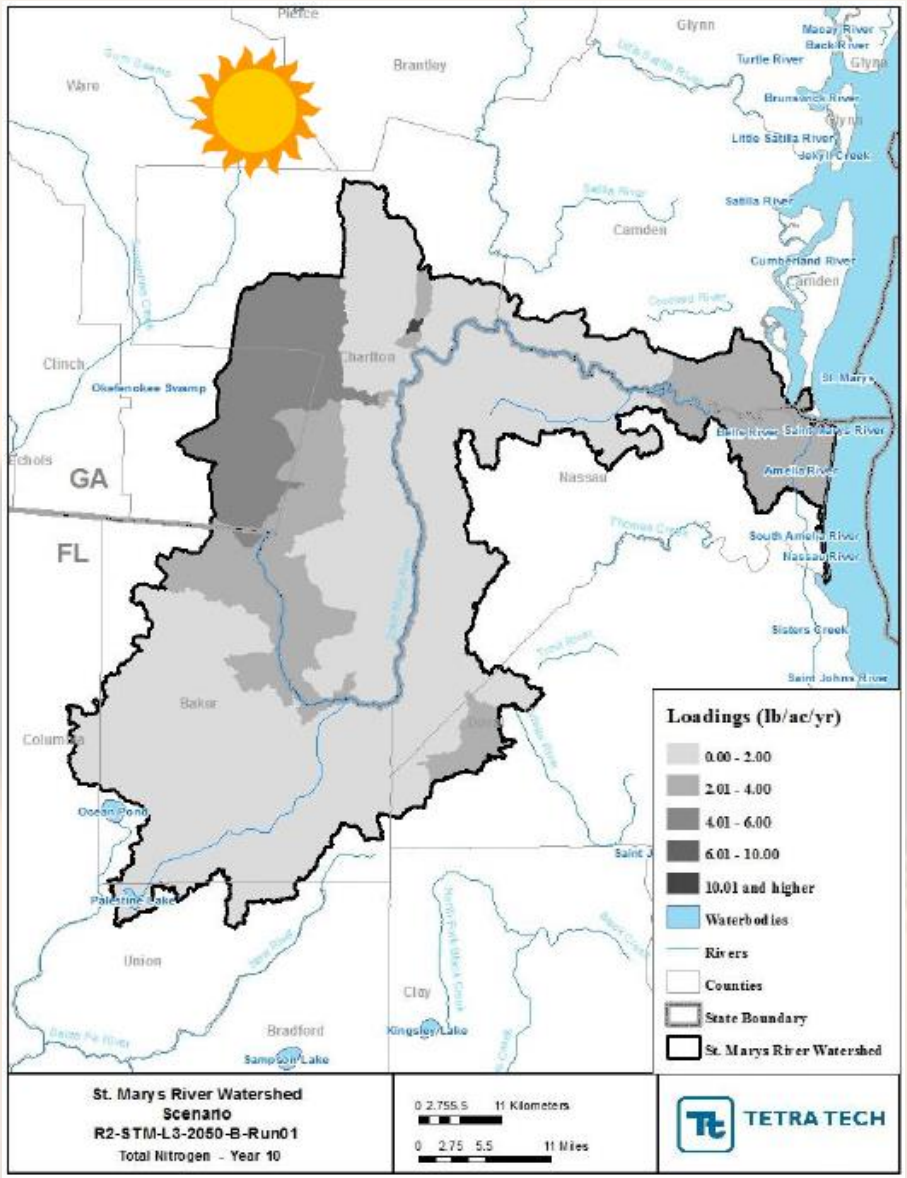


Total N in St. Marys Basin (Dry Year)

CURRENT

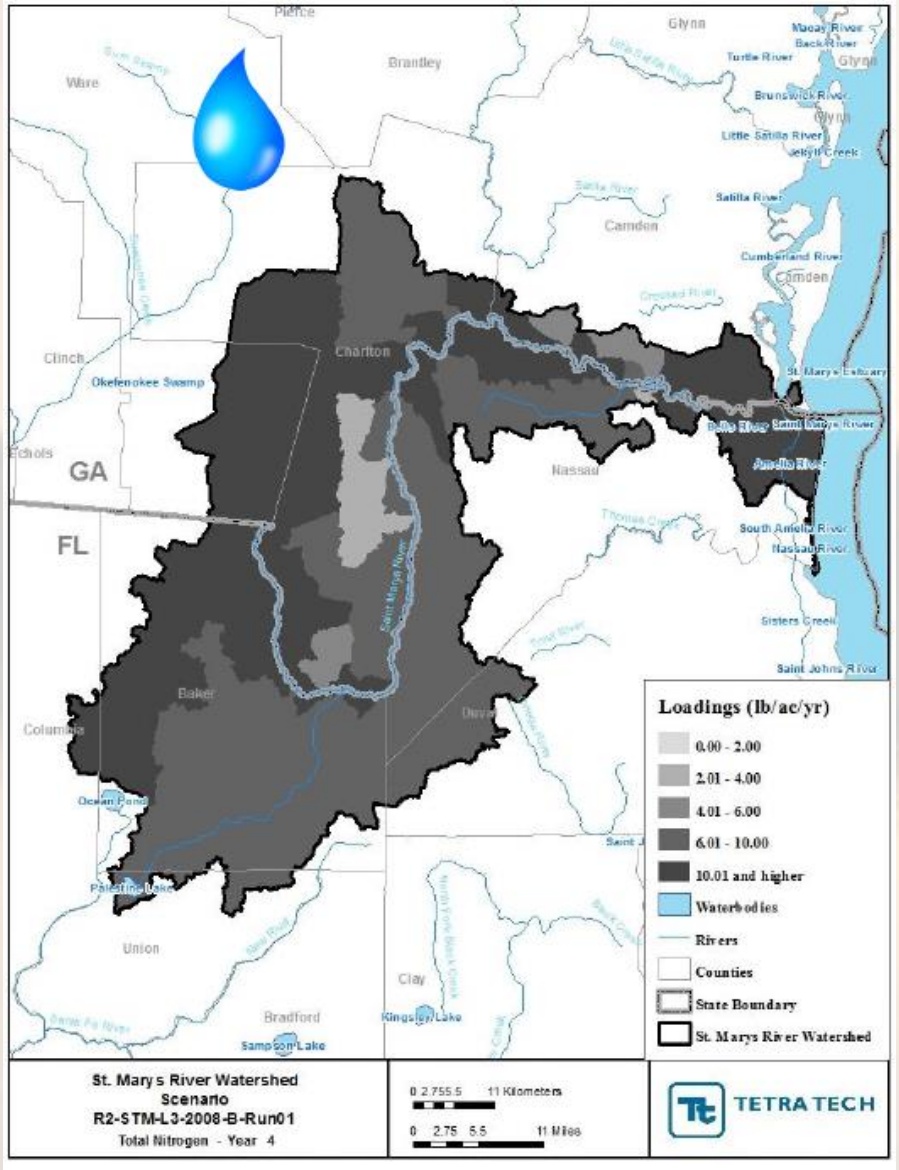


FUTURE

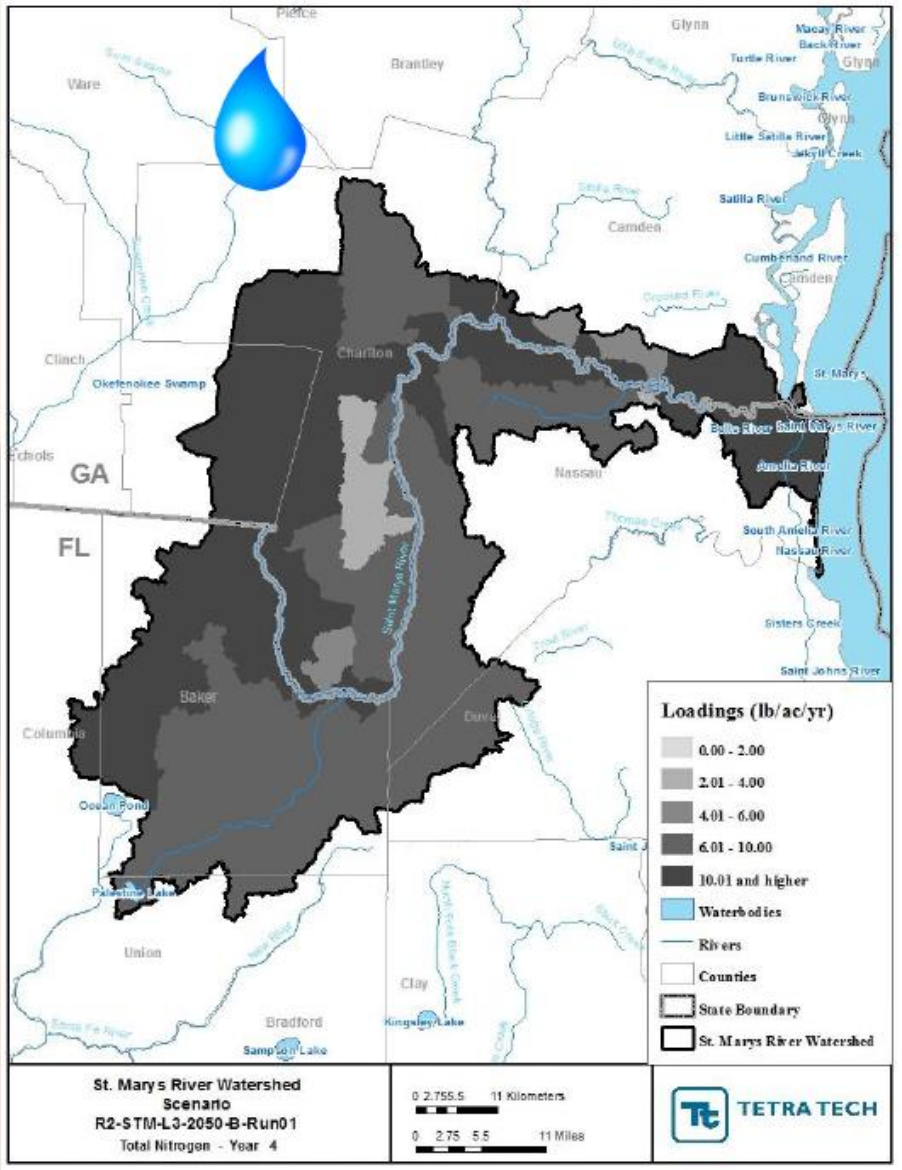


Total N in St. Marys Basin (Wet Year)

CURRENT



FUTURE



Agricultural Water Demand Forecast Update

www.georgiawaterplanning.org

Presentation form Mark Masters w/ follow-up Q&A

- Mark Masters Presentation
- Q&A

Public Comments/Local Elected Official Comments

Discussion/Next Steps

Regional Water Planning Overview & Schedule

Regional Water Plan Review and Revision Schedule

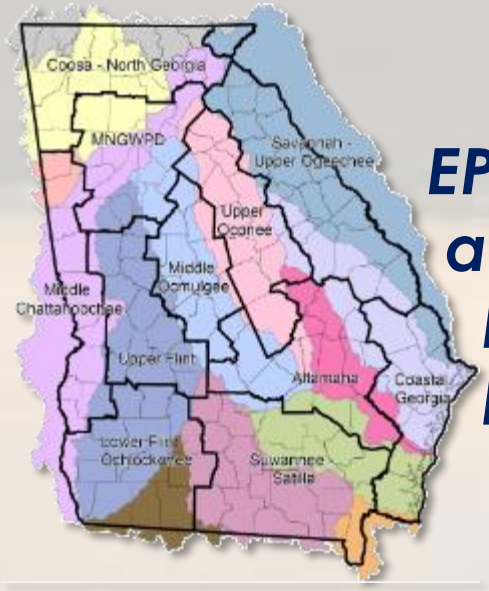
Meeting One
July 2021

Meeting Two
Council Meeting
March 9, 2022

Meeting Three
2nd Quarter 2022

Meeting Four
3rd Quarter 2022
Draft Plan

Meeting Five (Final)
4th Quarter 2022
Incorporate Comments



EPD targeted date of adoption of revised Regional Water Plan by December 2022

Thank You!

Questions? Comments?
Need More Information?

woodsh@cdmsmith.com
cliff.lewis@dnr.ga.gov