

Agenda



Agenda

Lower Flint-Ochlockonee Water Council Meeting

November 5, 2021 Albany State University West Campus Student Center & by Videoconference

Objectives:

- 1) Provide orientation on regional water council and planning process
- 2) Review forecasts of water and wastewater demands for region
- 3) Discuss Council's vision statement and goals
- 4) Hear updates on current regional water planning review and revision process
- 5) Learn about several water-related activities in the region

9:45 am – 10:00 am	Registration	
10:00 am – 10:10 am	Welcome & Agenda Review – Mark Masters, GWPPC	
10:10 am – 10:45 am	Introductions – Mark Masters	
10:45 am – 12:00 pm	Orientation to Regional Water Planning – Steve Simpson, B&V	
12:00 pm – 12:45 pm	Lunch	
12:45 pm – 12:55 pm	- 12:55 pm Chair's Report – Chairman Royal	
12:55 pm – 1:05 pm	Report on Thomasville Stormwater Planning Seed Grant Project – Steve Simpson	
1:05 pm – 1:20pm	EPD Report: Planning Schedule and Resource Assessments Jennifer Welte (GAEPD)	
1:20 pm – 1:35 pm	Water and Wastewater Forecasts Overview – Steve Simpson & Jake Dean, Black & Veatch	
1:35 pm – 2:05 pm	Agricultural Water Demand Forecasts – Mark Masters, GWPPC	
2:05 pm – 2:35 pm	Vision and Goals Discussion	
2:35 pm – 2:45 pm	Public Comment	
2:45 pm – 3:00 pm	Next Steps and Adjourn	





Meeting Agenda



Council Member Orientation



LFO Regular Meeting



Public Comments



Next Steps



Adjourn

Introductions

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Policy Statement

"Georgia manages water resources in a sustainable manner to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens."



2004 Comprehensive Statewide Water Management Planning Act

Two Decades of Water Planning



Regional Water Plans adopted

2017 Revised regional water plans adopted by Regional Water Councils and Metro District.



Metro Water District revised plans

Regional Water Planning Councils formed.



2008

2009

State Water Plan adopted



Comprehensive State-wide Water Planning Act

2004

2003

Metro Water District adopted three regional water plans.

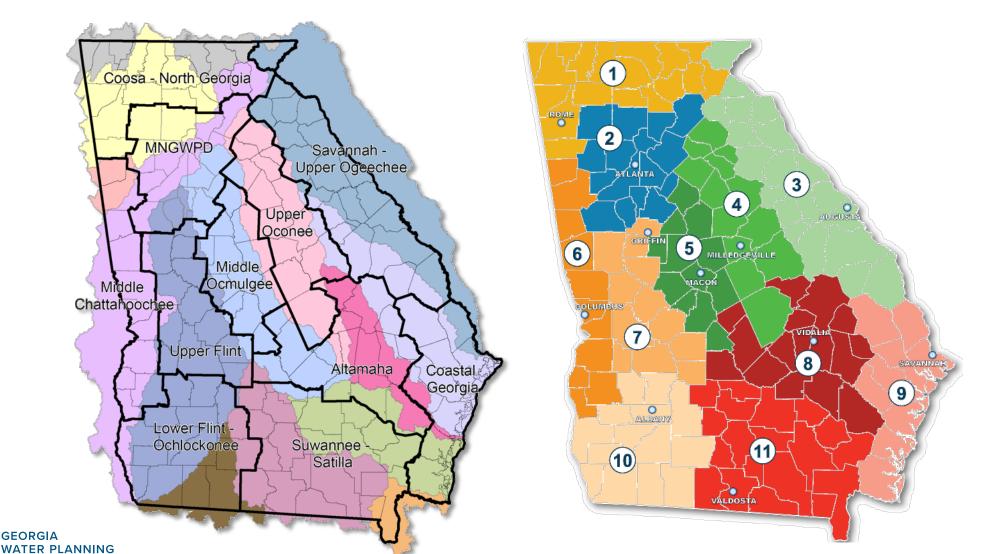
2001

Metropolitan North Georgia Water Planning Act passed, creating Metro Water District



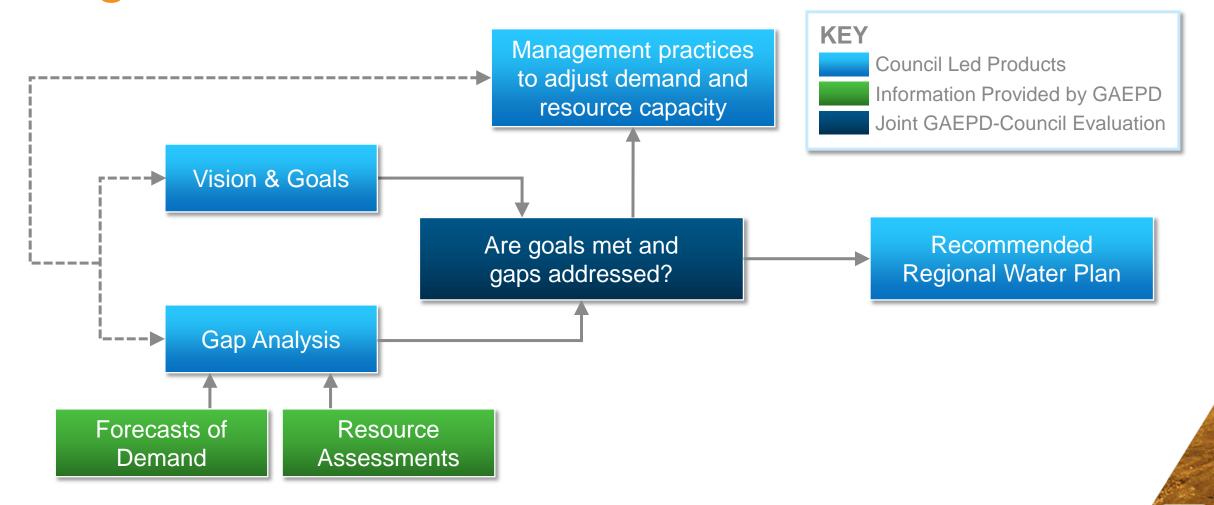


Regional Water Planning Councils



- (1) COOSA-NORTH GEORGIA
- (2) METRO WATER DISTRICT
- (3) SAVANNAH-UPPER OGEECHEE
- 4 UPPER OCONEE
- (5) MIDDLE OCMULGEE
- (6) MIDDLE CHATTAHOOCHEE
- 7 UPPER FLINT
- 8 ALTAMAHA
- (9) COASTAL
- 10 LOWER FLINT-OCHLOCKONEE
- (11) SUWANNEE-SATILLA

Steps in the Development of the Regional Water Plan

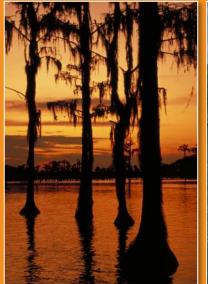


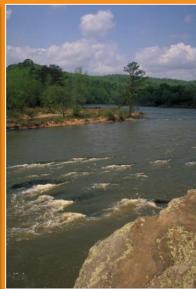


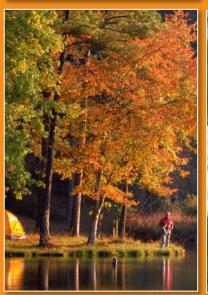
Regional Water Plan Review and Revision Process

The 5-Year Review Process will focus on:

- Updated water demand and wastewater forecasts
- Updated Surface Water and Groundwater Resource Assessments (Quantity)
- Updated Surface Water Quality Resource Assessment
- Review and Refinement (if needed) of Management
 Practices and Recommendations to the State
- Review of Council's vision and goals











Regional Water Plan Update

Regional Water Plan Review and Revision Schedule

Meeting One
4th Quarter 2021

Meeting Two1st Quarter 2022

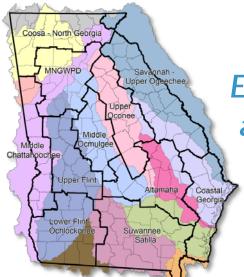
Meeting Three
2nd Quarter 2022

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





Stakeholder Roles and Responsibilities

- Regional water planning councils guide the development of the Regional Water Plans including selection of management practices to assess progress toward the regional vision and goals and the purpose of the State Water Plan.
- Regional planning contractors provide technical and planning support to the councils and prepare the Plans following regional water planning council guidance.
- Local governments, other agencies and the general public provide input during the planning process.
- Other water planning councils coordinate recommendations regarding shared water resources.
- Georgia EPD ensures consistency with the State Water Plan and maintain the schedule and budget for plan development.





Responsibilities of Water Planning Councils

- Follow EPD guidance to revise & adopt an updated Regional Water Plan
- Review, comment and use data and information provided by EPD in updating the Regional Water Plans
- Coordinate with local governments and neighboring councils
- Submit revised plan to EPD by September 2022
- Coordinate with EPD to respond to public comments on the draft plan
- Make revisions based on EPD review and public comments and finalize revised plan by December 2022

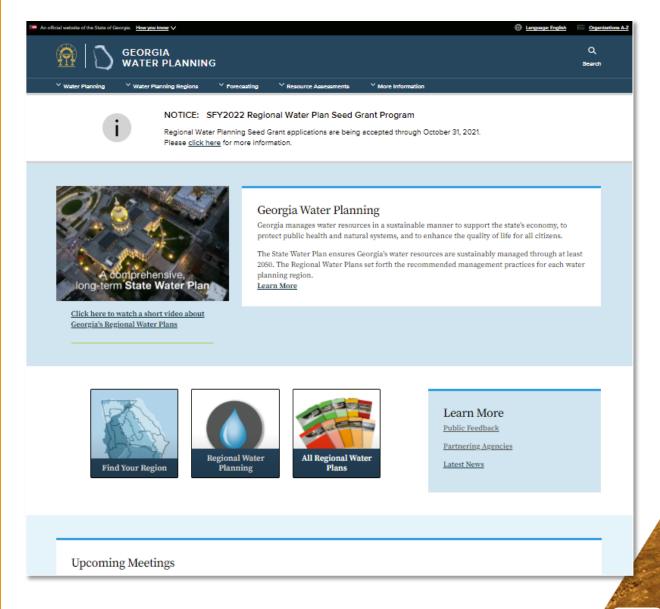




Georgia State Water Plan Website

This website provides New (and existing) Council members with the following documents and data:

- Familiarize themselves with the existing regional water plan
- Review Vision and Goals developed by the Council
- Review Memorandum of Agreement (MOAs) and Operating Procedures, and Rules for Meetings
- Familiarize themselves with forecasts on website (coming soon!)
- Familiarize themselves with resources on Council Website



Water Planning Process





Planning Information Compilation and Evaluation





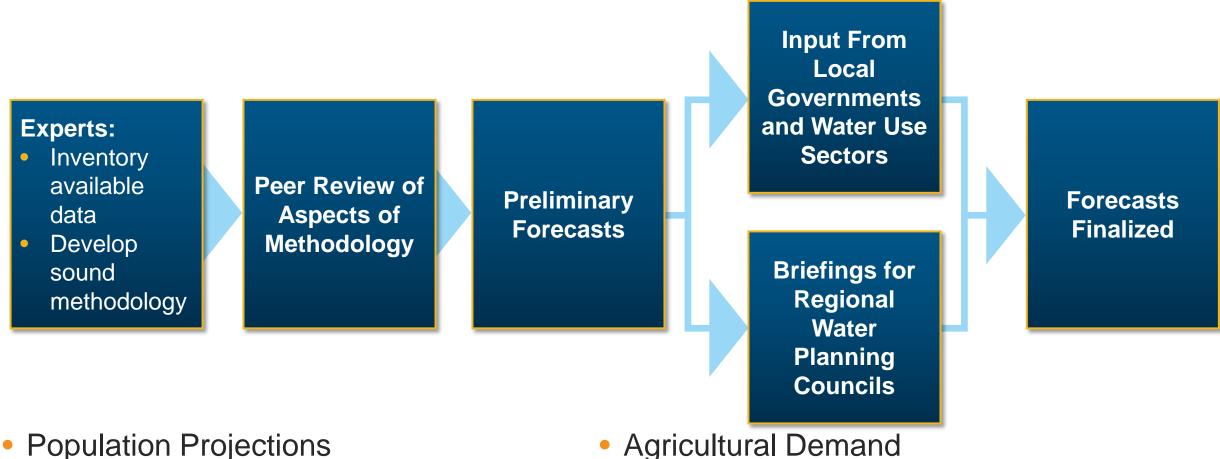


Forecasts

Forecasts describing water and wastewater needs support evaluation of long-term sustainable water management, when considered in parallel with resource assessments. Five forecasts are provided to the regional water planning councils:

- Population Projections
- Municipal Water & Wastewater Demands
- Industrial Water & Wastewater Demands
- Agricultural Demand
- Energy Demand

Development of Forecasts



- Population Projections
- Municipal Water & Wastewater Demands
 Energy Demand
- Industrial Water & Wastewater Demands

Updated Demand Forecasts

As a reminder, we encourage council members to review the forecasts presented at Council meetings and available on the website.*

New updates have been completed for:

- Municipal Water & Wastewater Demands (incorporates population projections)
- Industrial Water & Wastewater Demands
- Water Use Associated with Energy Demand

Updates are being finalized now for:

Agricultural Demands





Planning Information Compilation and Evaluation







Water Resource Assessments

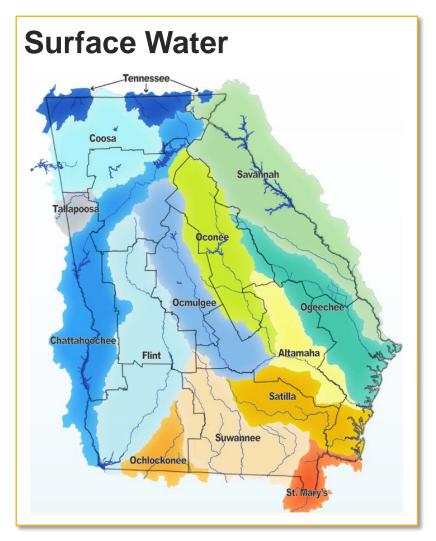
Resource assessments along with the forecasts form the scientific basis for the Regional Water Plans. Three resource assessments will be provided to the regional water planning councils:

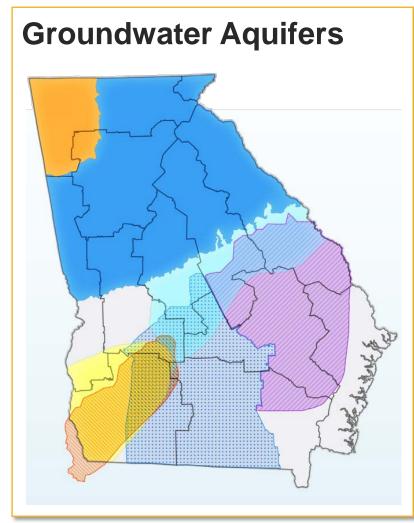
- Groundwater Availability
- Surface Water Availability
- Surface Water Quality

Assessments are completed based on the boundaries of the resource, not the water planning region.



Water Resources in Georgia





AQUIFER LEGEND

Paleozoic-rock Aquifer

Crystalline-rock Aquifer

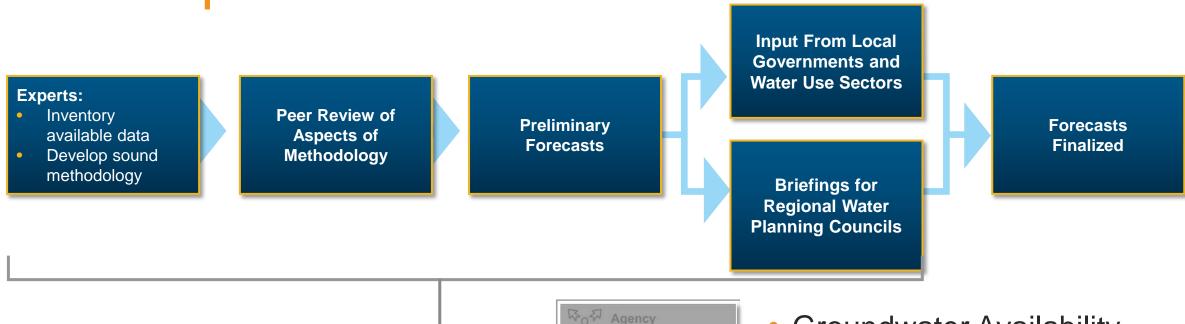
Cretaceous Aquifer in Georgia's Coastal Plain

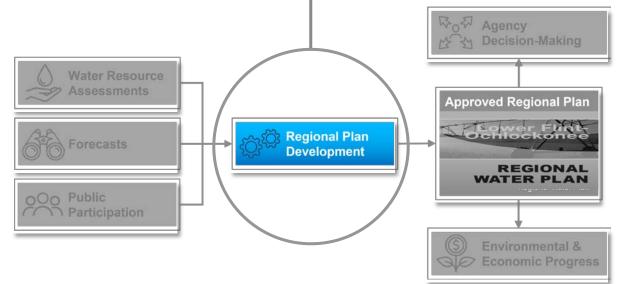
Claiborne Aquifer in Georgia's Coastal Plain

South Central Georgia Floridan Aquifer Area

Dougherty Plain Upper Floridan Aquifer Area

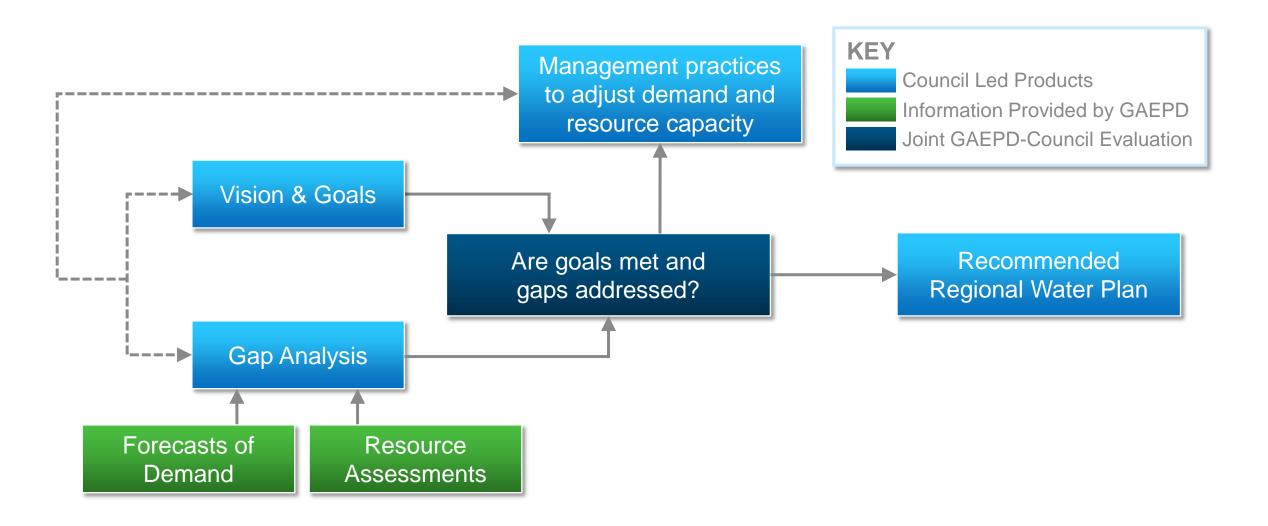
Eastern Coastal Plain Floridan Aquifer Area Development of Resource Assessments





- Groundwater Availability
- Surface Water Availability
- Surface Water Quality

Path Forward: Information Flow/Products



Final Product

Approved Regional Plan

The Director of EPD is charged with the review and approval of recommended Regional Water Plans as outlined in the State Water Plan.

The Director will either:

- Adopt the recommended Regional Water Plan as submitted;
- Advise the regional water planning council of necessary changes to make the plan approvable; or
- Adopt a recommended Regional Water Plan with conditions





Planning Information Compilation and Evaluation







Public Participation



The Regional Water Plan development process must be open and inclusive, as participation from a diverse audience will result in better implementable decisions and a wide base of support for implementation. The following will be hallmarks of the efficient, effective, transparent regional planning process:

- Open Meetings
- Web-Posted Documents and Reports
- Public Input on the Draft Plan

Regional Water Plan Update

Regional Water Plan Review and Revision Schedule

Meeting One
4th Quarter 2021

Meeting Two
Council Meeting
1st Quarter 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









Lower Flint-Ochlockonee Memorandum of Agreement

- Original signed June 2009 between LFO Council, GA EPD, GA DCA
- Council reviewed the agreement with the 2017 Review and Revision planning
- Agreement was renewed in 2016
- Agreement includes Operating Procedures and Rules for Meetings



Lower Flint-Ochlockonee Water Council Operating Procedures and Rules for Meetings

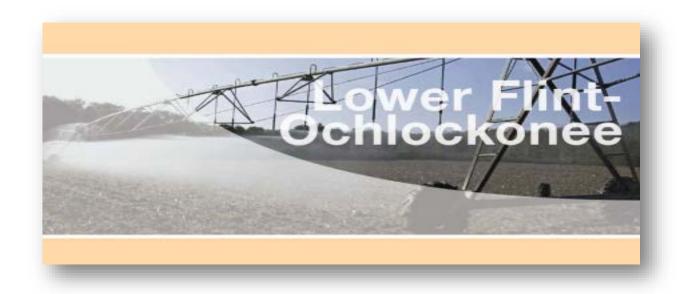
- Council updated the procedures with the 2017 Review and Revision planning
- Key points / updates:
 - Council operates by consensus
 - Fallback on decision-making is simple majority
 - Quorum is defined as 50 percent plus one of the active Council members (inactive members have missed 3 consecutive meetings)
 - Operating Procedures and Rules for Meetings may be amended
 - Chair is authorized to speak for the Council



Lower Flint-Ochlockonee Region

Council's Vision:

The Lower Flint-Ochlockonee Water Planning Council will manage water resources in a sustainable manner to support the region's economy, to protect public health and natural systems, and to enhance the quality of life for the region's citizens.





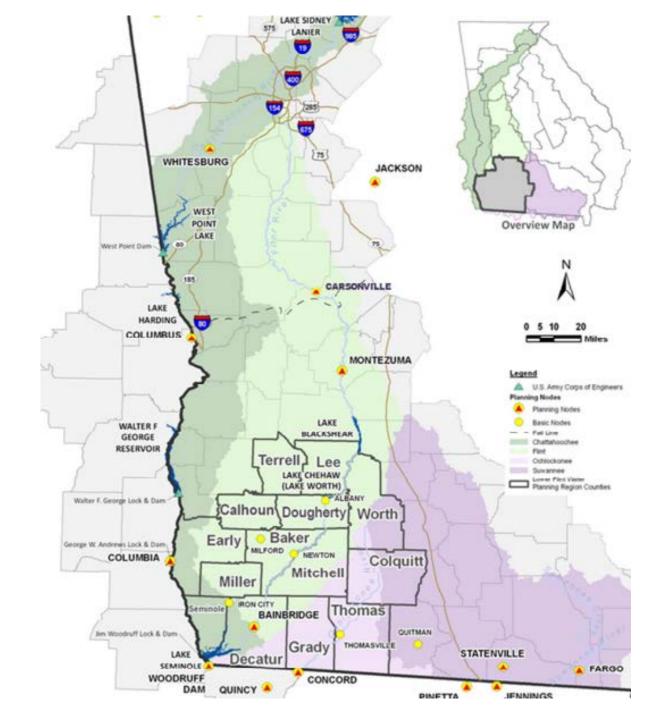


Lower Flint-Ochlockonee Council Goals

- 1. Ensure access to water resources for existing and future water users in the Lower Flint-Ochlockonee Water Planning Region.
- 2. Sustain the region's aquifers, the Floridan, the Claiborne, the Clayton, and the Cretaceous, in a healthy condition that will continue to support the natural systems and economic activities of the Lower Flint-Ochlockonee Water Planning Region.
- 3. Maintain the production-agriculture-based economy of the Lower Flint-Ochlockonee Water Planning Region.
- 4. Support sustainable economic growth in the Lower Flint-Ochlockonee Water Planning Region.



Lower Flint-Ochlockonee Region



Lower Flint-Ochlockonee Regional Water Plan

What is the Regional Water Plan?

- Water and Wastewater Forecasts & Water Resource Assessments
- Water Management Practices to meet water resource needs through 2050
 - Demand Management (6)
 - Water Supply Management (6)
 - Water Quality (5)
- Recommendations to the State and Joint Recommendations (with neighboring councils)
- Use of plan
 - By GA EPD for permit applications and renewals
 - By GEFA for grant and loan applications



Regional Water Plan

tune 2017



Lower Flint-Ochlockonee Regional Water Plan

High Priority Management Practices

1. Demand Management

 Continue to improve agricultural water use efficiency through innovation and technology.

2. Supply Management and Flow Augmentation

- Evaluate reservoir storage options in the Flint River Basin, including better utilization of existing storage, that can provide for flow augmentation in dry periods.
- Replace surface water withdrawals with groundwater withdrawals, where site specific evaluation indicates that this practice is practical and will not harm environmental resources.

3. Water Quality

 Improve enforcement of existing permits and regulations and implementation of existing plans and practices.



Regional Water Plan

June 2017



Lower Flint-Ochlockonee Region

Key Water Resource Issues Being Addressed by the Council in the 2017 Plan

rioy traiter rio	Source issues being Addressed by the t	
Resource Assessment	Summary of Model Results	Council Plan to Address Results
Surface Water Availability	The model identified potential gaps in surface water availability in the Flint River Basin at Bainbridge and in the Ochlockonee River Basin at Quincy and Concord under both current and forecast demands. Potential gaps were also identified by the model at Pinetta in the small part of the Suwannee River Basin that is in this water planning region.	Address the potential gaps with conservation and supply augmentation practices as much as possible, while also collecting better information to support more thorough evaluation of resource capacity and the impacts of potential gaps identified by the assessment models on instream and downstream uses.
Groundwater Availability	Groundwater use is below the sustainable yield range estimated by the model for the Claiborne Aquifer and the Upper Floridan Aquifer in South-Central Georgia. It is above the sustainable yield range estimated by the model for the Upper Floridan Aquifer in the Dougherty Plain. Aquifer use above the estimated sustainable yield range does not necessarily mean the aquifer is likely to be exhausted by use. Instead, management practices may be needed to meet long-term demands.	Use of the Claiborne Aquifer should be further evaluated to develop appropriate management strategies that address geographic and time-based variations in capacity and demands. In the Upper Floridan Aquifer in the Dougherty Plain, the impact of groundwater withdrawals on surface water flows in the Flint River Basin continues to be a determining factor in guiding the location and amount of groundwater use from this aquifer. Collect better and more geographically specific information on groundwater resource capacity, as needed to evaluate specific uses and management practices.
Surface Water Availability	Water quality model results indicated decreasing availability of assimilative capacity in some areas of the Flint River Basin as discharge flows increase in the future. In other areas, expected improvements in wastewater treatment are projected to improve available assimilative capacity under future conditions.	Implement practices targeted especially toward nonpoint sources of pollutants to improve assimilative capacity and reduce nutrient loading in the region's streams and lakes. It is expected that EPD will adjust point source permit limits over time as needed to address assimilative capacity constraints and nutrient criteria. Collect more complete information to confirm model results and to support the targeting of management practices for water quality in the future.

Thank You Lower Flint- Ochlockonee



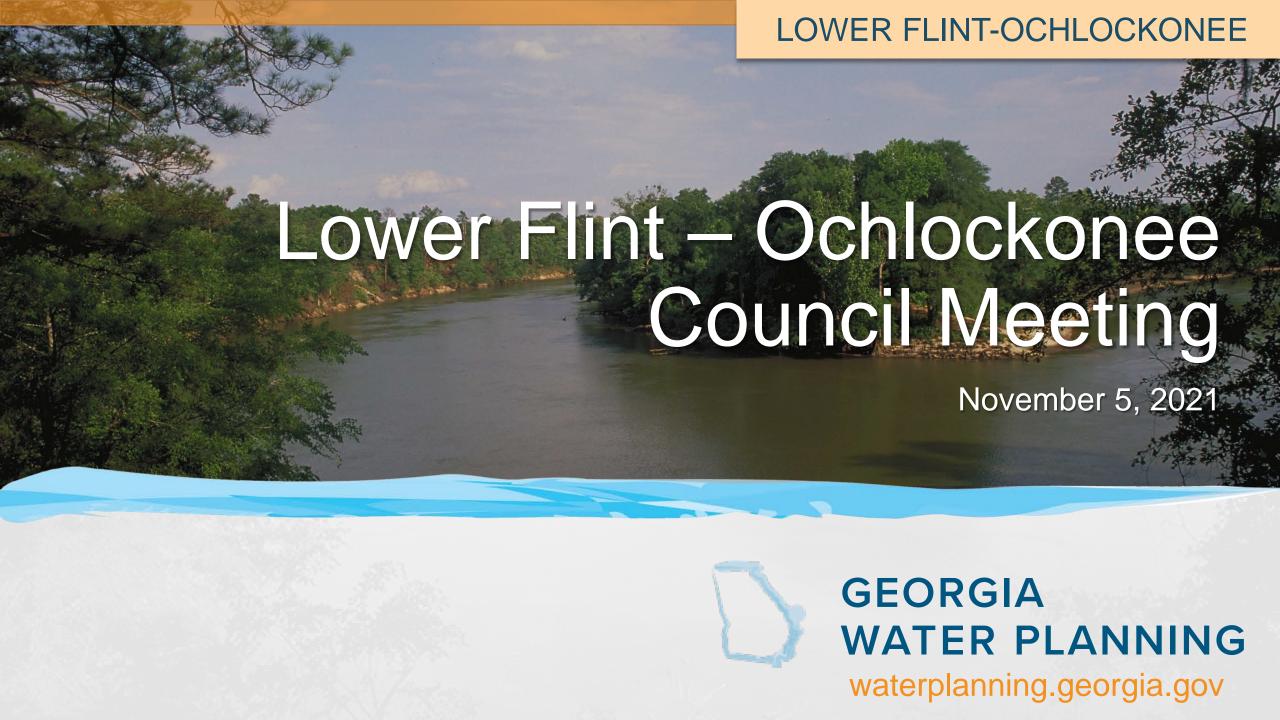








https://waterplanning.georgia.gov/water-planning-regions/lower-flint-ochlockonee-water-planning-region











City of Thomasville Stormwater Data Collection and Assessment FY021 Regional Water Plan Seed Grant Update

Quarterly Progress Report

- Tasks completed (Previous quarter):
 - Hosted Regional watershed workshop 9/14/21 Chairman Royal gave brief remarks
- Tasks in process:
 - Procure qualified consultant for stormwater action plan 90% complete;
 - QA/QC Monitoring Plan (following procurement) 0% complete;
 - Provide Stormwater Education to 4th and 6th graders 10% complete





Brings together scientists and stakeholders to:

- develop new knowledge needed to explore tradeoffs and synergies between the regional agricultural economy and environmental quality;
- understand changes needed to achieve agricultural water security and environmental protection; and
- develop tools, incentives and educational programs for improved decision making









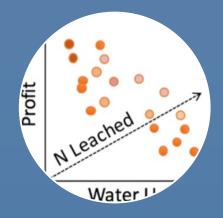


PROJECT ACTIVITIES AND OUTPUTS



BMP Research

- Water use, quality, yield impacts of alternative irrigation & nutrient practices
- Digital decision toolkit



Modeling Platform

- Land use/mgmt. impacts on water quantity/quality, crop/forest production and regional economy
- •BMP supply and demand curves



Stakeholder Engagement

- Baseline & future scenarios
- Tradeoffs & synergies
- •Social Learning
- Communication tools



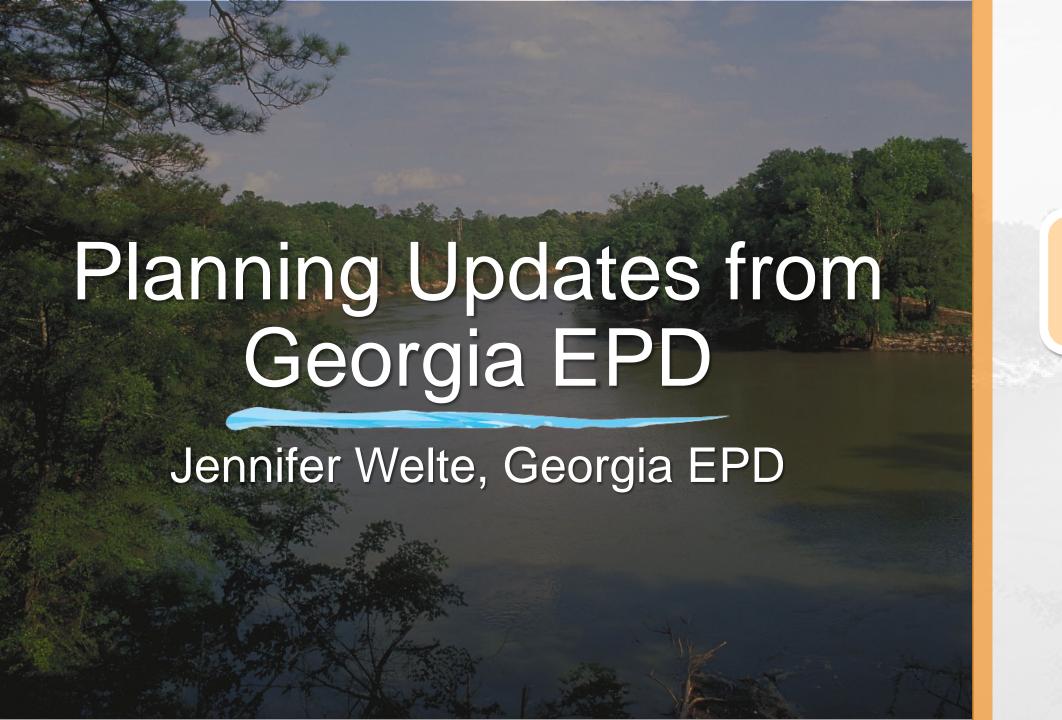
Extension

- •On-farm BMP demos
- •In-Service Training programs
- Water Schools

collaborative research and Extension



- Test innovative approaches in water management and identify new paths forward to water security for agriculture and natural systems in Southwest Georgia
- Provide field-tested data on producer preferences with respect to irrigation suspension via an auction format to inform policy
- Add to the toolbox of drought management policies and incentives
- o Work **collaboratively** to reflect the needs and interests of stakeholders and make policy and management recommendations together (as appropriate)





Regional Water Plan Update Process

- Coordinated with the Metro Water District
- Process began in 2020 with Forecasting work
- Target for updated Plans by end of 2022
 - Draft Plans on public notice by Sept. 30, 2022
 - Updated Plans completed by Dec. 2022
- Technical work completed/ongoing that underlies the Regional Water Plans
- Quarterly Council Meetings



Plan Updates Schedule

Regional Water Plan Review and Revision Schedule

Council Meeting4th Quarter 2021

Council Meeting1st Quarter 2022

Council Meeting2nd Quarter 2022

Council Meeting

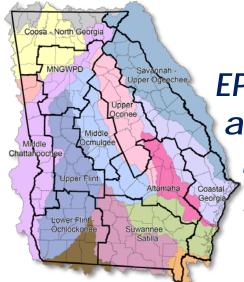
3rd Quarter 2022

Draft Plan

Council Meeting

4th Quarter 2022

Final Plan



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



Regional Water Plan Review and Revision Process

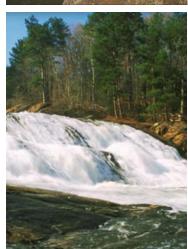
The 5-Year Review Process will focus on:

- Updated water demand and wastewater return forecasts
- •Updated Surface Water and Ground Water Availability Resource Assessments (Quantity)
- Updated Surface Water Quality (Assimilative Capacity) Resource Assessment
- •Refine Management Practices, if needed, to address water resource conditions or Council vision/goals





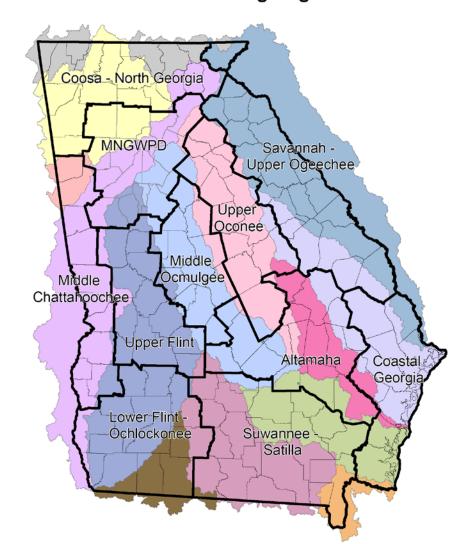


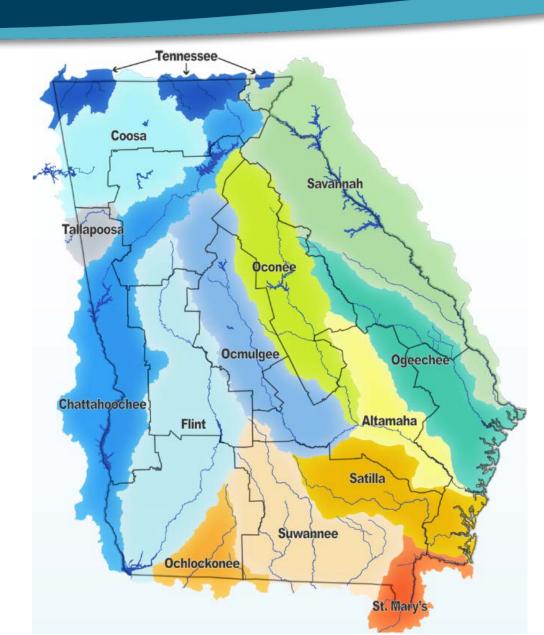




Surface Water Resources in Georgia

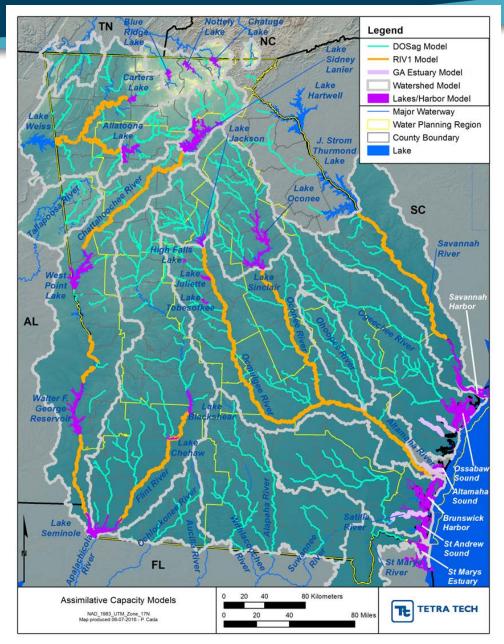
Water Planning Regions





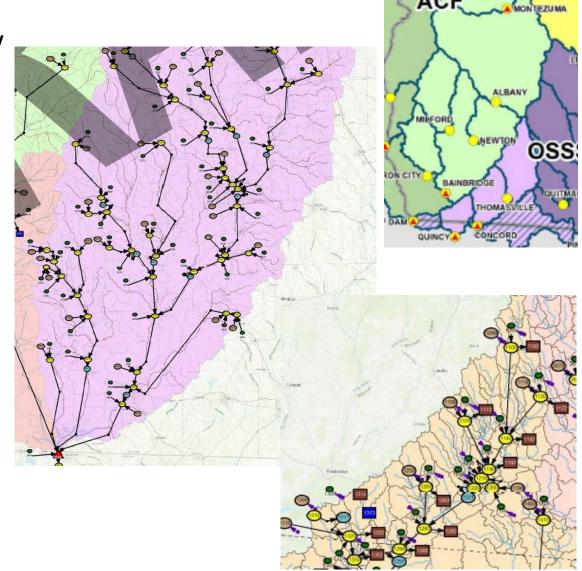
Surface Water Quality Resource Assessment

- Updates to Surface Water Quality (Assimilative Capacity) Resource Assessment
 - Updated information & model recalibration
- Parameters being analyzed include instream dissolved oxygen, nutrients (total N, total P) and chlorophyll a response in lakes



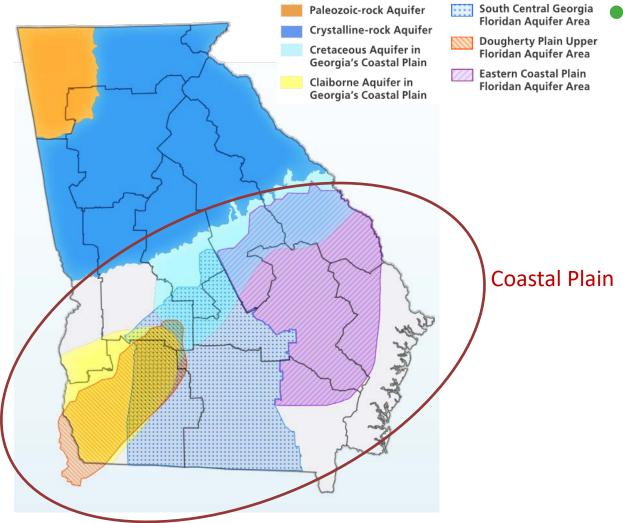
Surface Water Availability Resource Assessment

- Updates to Surface Water Quality (Assimilative Capacity) Resource Assessment
 - Updated information & model recalibration
- Updates to Surface Water Availability Resource Assessment
 - New modeling tool: Basin Environmental Assessment Model ("BEAM")
 - Provides analysis at more nodes



Groundwater Resources in Georgia





Updates to Groundwater Availability Resource Assessment

- Refined groundwater model with smaller grid spacing and transient pumping in the Coastal Plain (multiple aquifer layers)
- Will compare updated forecasts to existing sustainable yield estimates in northern Georgia



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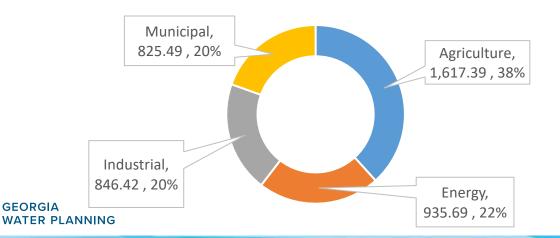




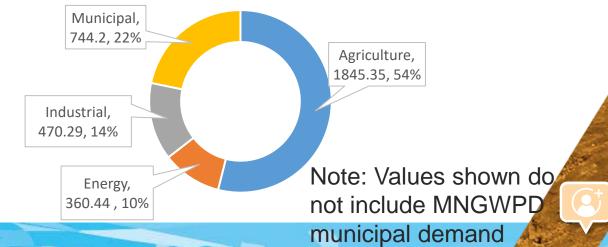


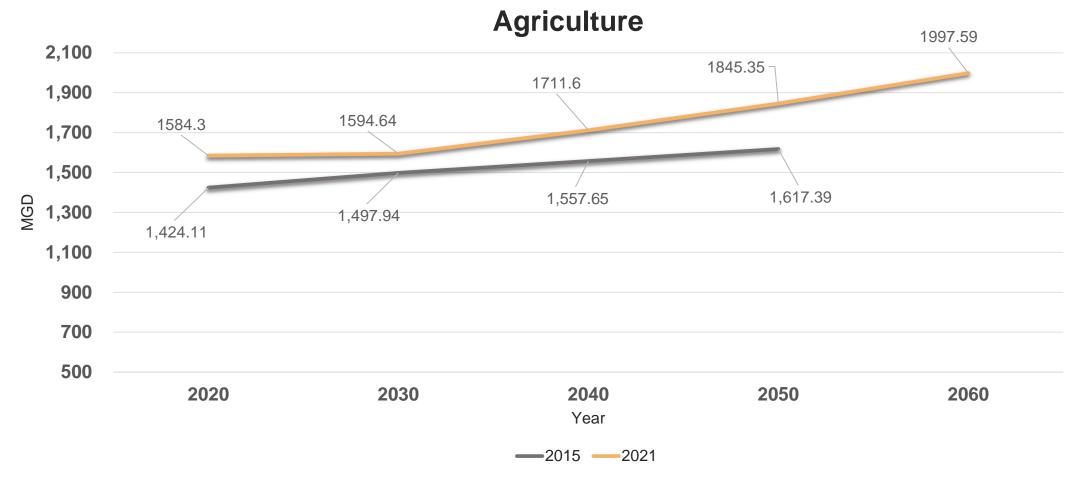
	2020 Water Demand Forecast		2050 Water Demand Forecast	
Sector	Forecast Made in 2015	Forecast Made in 2021	Forecast Made in 2015	Forecast Made in 2021
Agriculture	1424.11	1584.3	1617.39	1845.35
Energy (Withdrawals)	727.64	383.11	935.69	360.44
Industrial	721.25	465.14	846.42	470.29
Municipal	715.35	694.49	825.49	744.20
Total Water Demand (MGD)	3588.35	3127.04	4224.99	3420.28

Statewide 2015 Water Demand Forecast for 2050



Statewide 2021 Water Demand Forecast for 2050

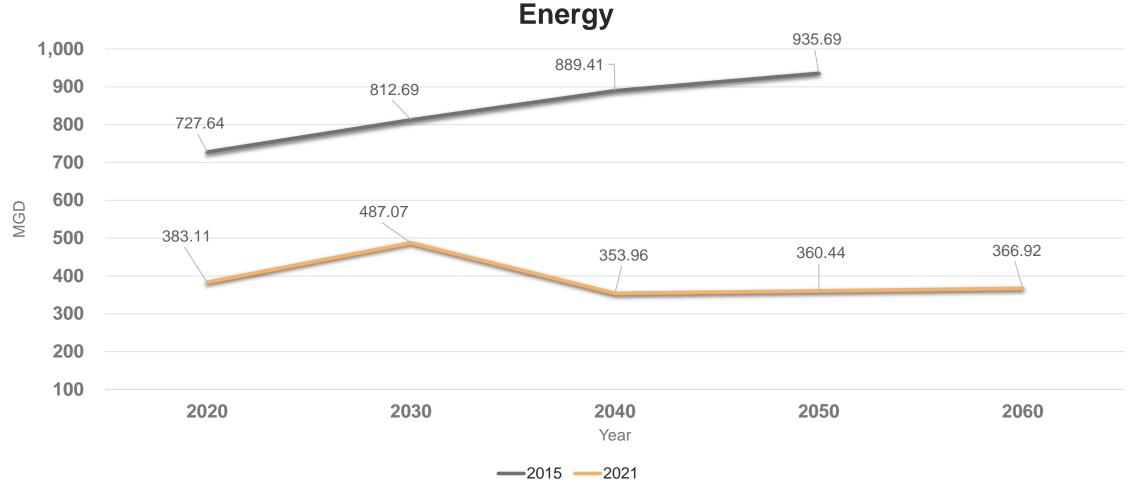






2021 Statewide Agricultural Water Demand Forecast increases in comparison to 2015 Forecast



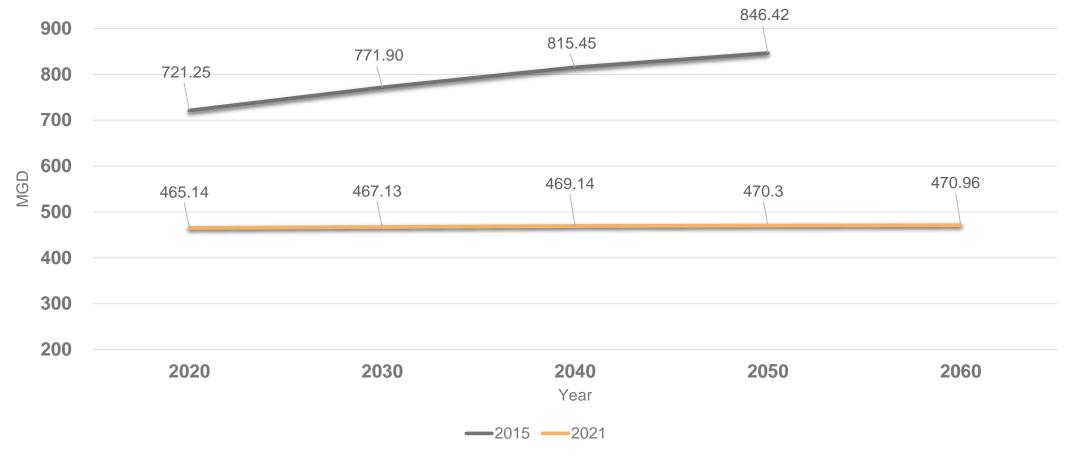




2021 Statewide Energy Demand Forecast (withdrawals) decreases in comparison to 2015 Forecast



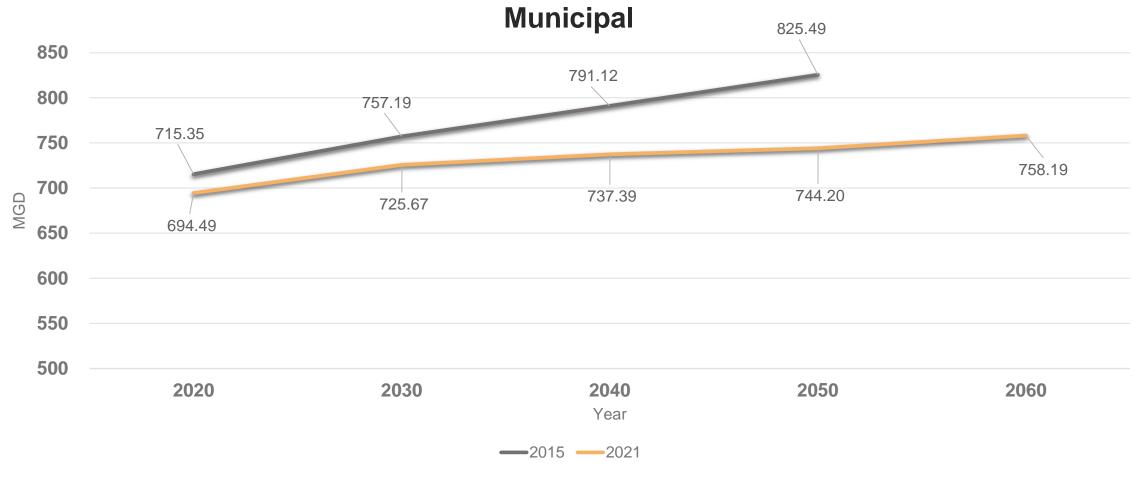




Key Takeaway

2021 Statewide Industrial Water Demand Forecast utilizes stakeholder input to develop forecast







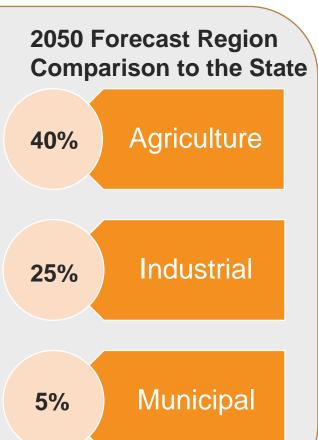
Municipal Water Demand Forecasts reflect lower totals for the 10 regional water planning councils

Note: Values do not include MNGWPD



Lower Flint-Ochlockonee 2050 Water Demand Forecast

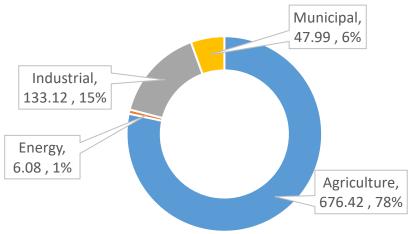
Comparison



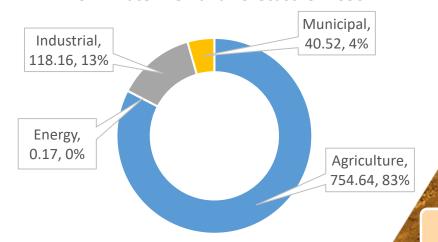
2050 Water Demand Forecast Comparison to Previous

Sector	Forecast Made in 2015	Forecast Made in 2021	
Agriculture	676.42	754.64	
Energy	6.08	0.17	
Industrial	133.12	118.16	
Municipal	47.99	40.52	
Total Water Demand (MGD)	863.60	913.49	

Lower Flint- Ochlockonee
2015 Water Demand Forecast for 2050

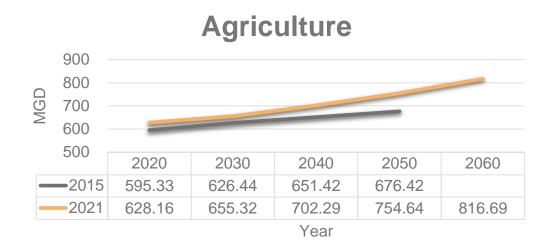


Lower Flint- Ochlockonee
2021 Water Demand Forecast for 2050





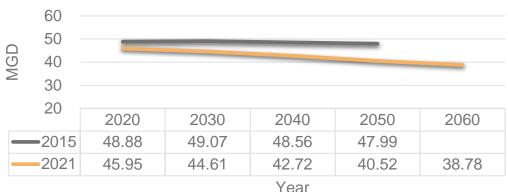
Lower Flint -Ochlockonee Water Demand Forecast Comparison to Previous







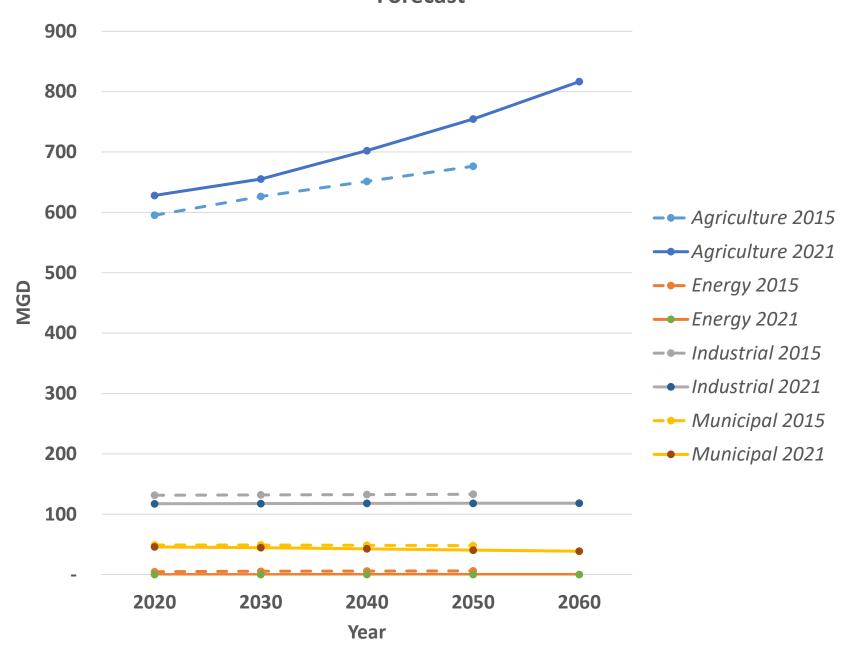






Lower Flint Ochlockonee Water Demand Forecasts

Lower Flint-Ochlockonee 2015 versus 2021 Water Demand Forecast



Lower Flint - Ochlockonee Water Demand Forecast Dashboard







Project Team

- Albany State University Georgia Water Planning and Policy Center (Lead)
- University of Georgia Agricultural and Applied Economics

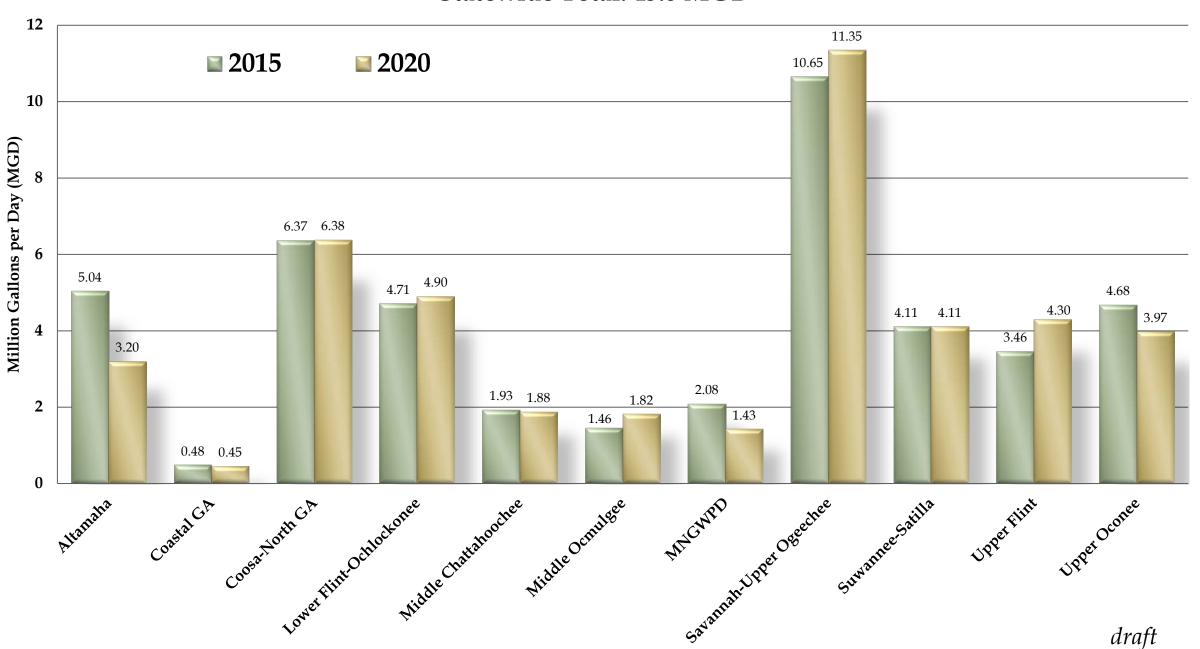




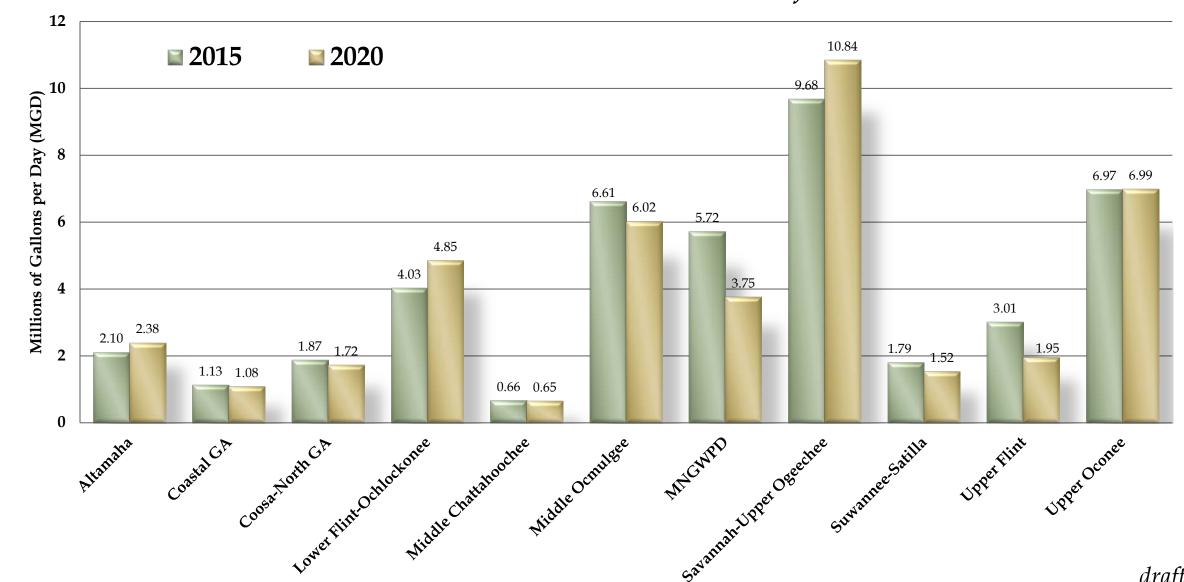
2020-21 Agricultural Water Demand Forecasts - Methods

- Acreage Updated 2020 wetted acreage data
 - Field observation and aerial survey
- Crop projections through 2060 modeled based on multiple data sources:
 - Remote sensing and field data
 - USDA Projections, Southeast Model, Georgia Model, Data Trends
- Crop water needs wet, normal, dry years
 - Expanded use of meter data
 - Review estimates used in 2015-2016 and revise if needed
 - Surface water method revised to remove "70% assumption"
- Animal Ag/Nursery

Animal Agriculture - Daily Water Use by Water Planning Region Statewide Total: 43.8 MGD



Daily Water Use by Horticultural Nurseries (Container, In-Ground, and Greenhouse), Millions of Gallons Per Day Statewide Total: 41.76 MGD - draft



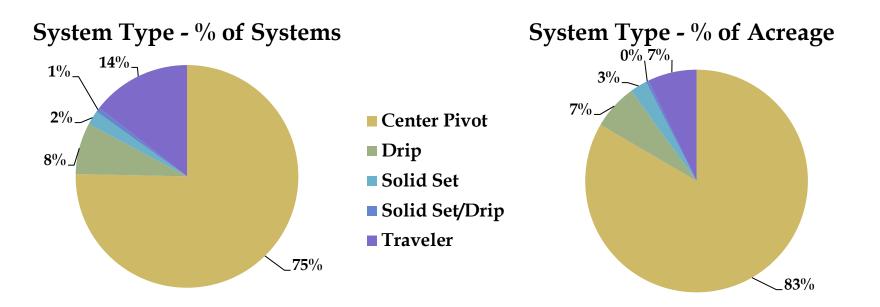
Lower Flint-Ochlockonee Water Planning Region Middle Chattahoochee-Walter F. George Reservoir Crisp Quitman Randolph Brooks Apalachee Bay-St. Marks Legend Irrigated Areas Outside Planning Region Inside Planning Region County 0 5 10 15 20 Lower Flint-Ochlockonee County Seat Sub-Basin

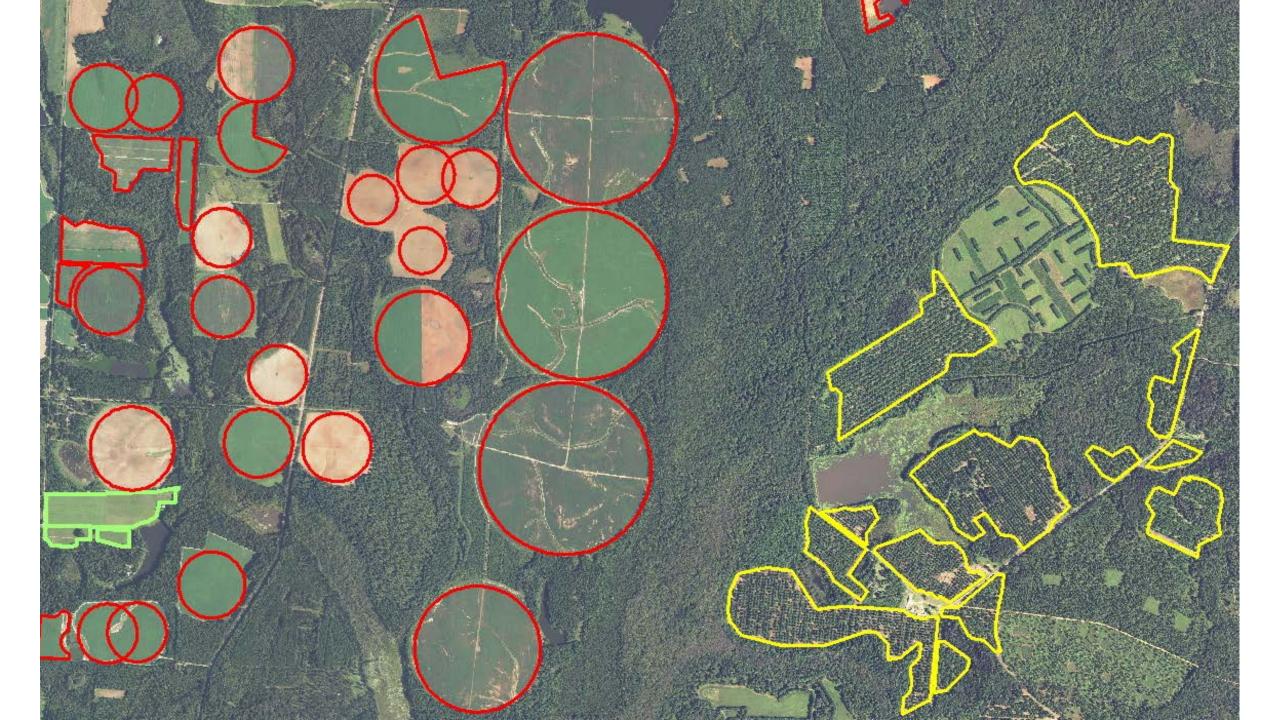
Irrigated Acres

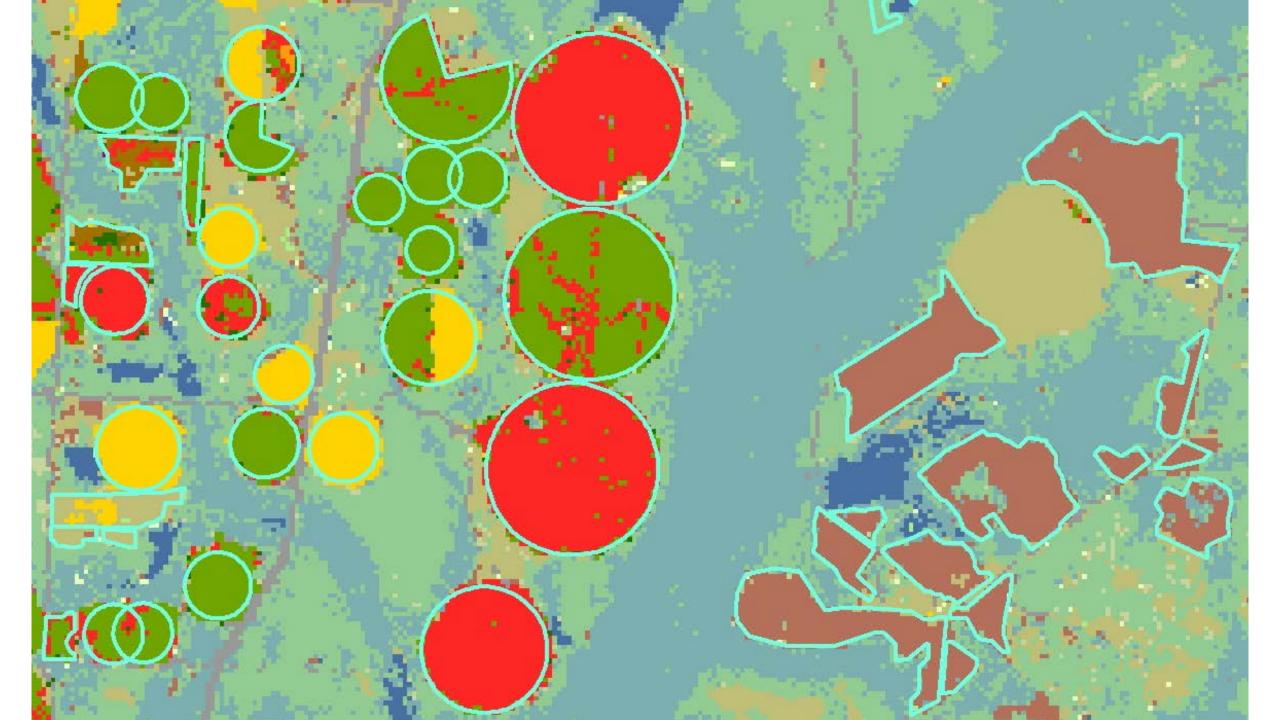
2015	2020	
42,273	42,218	
29,402	29,281	
54,622	56,045	
76,391	77,751	
21,046	20,620	
48,973	49,909	
18,736	19,349	
45,610	46,344	
60,840	61,955	
91,475	91,754	
56,816	57,621	
30,572	32,201	
15,468	16,137	
54,923	56,503	
	42,273 29,402 54,622 76,391 21,046 48,973 18,736 45,610 60,840 91,475 56,816 30,572 15,468	

Lower Flint-Ochlockonee RWPC

	2015	2020	% Change
Total # of Fields	11,742	12,233	+ 4.2%
Total Acreage	647,145	658,229	+ 1.7%
Total GW Acreage	532,569	548,459	+ 3.0%
Total SW Acreage	114,576	109,770	- 4.2%
Total Center Pivots	8,823	9,216	+ 4.5%
Center Pivot Acreage	539,059	549,189	+ 1.9%

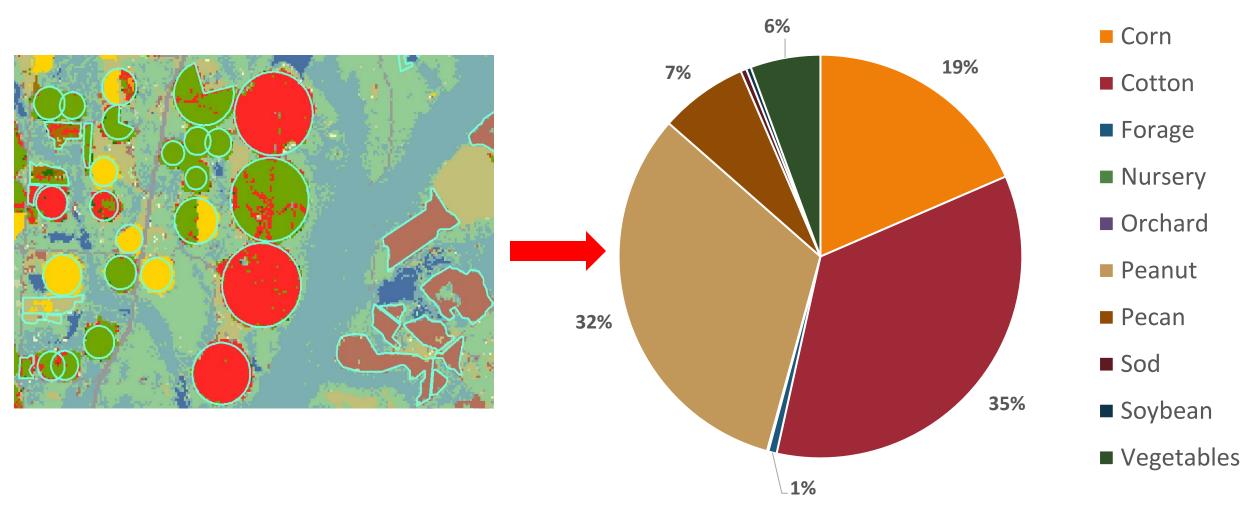


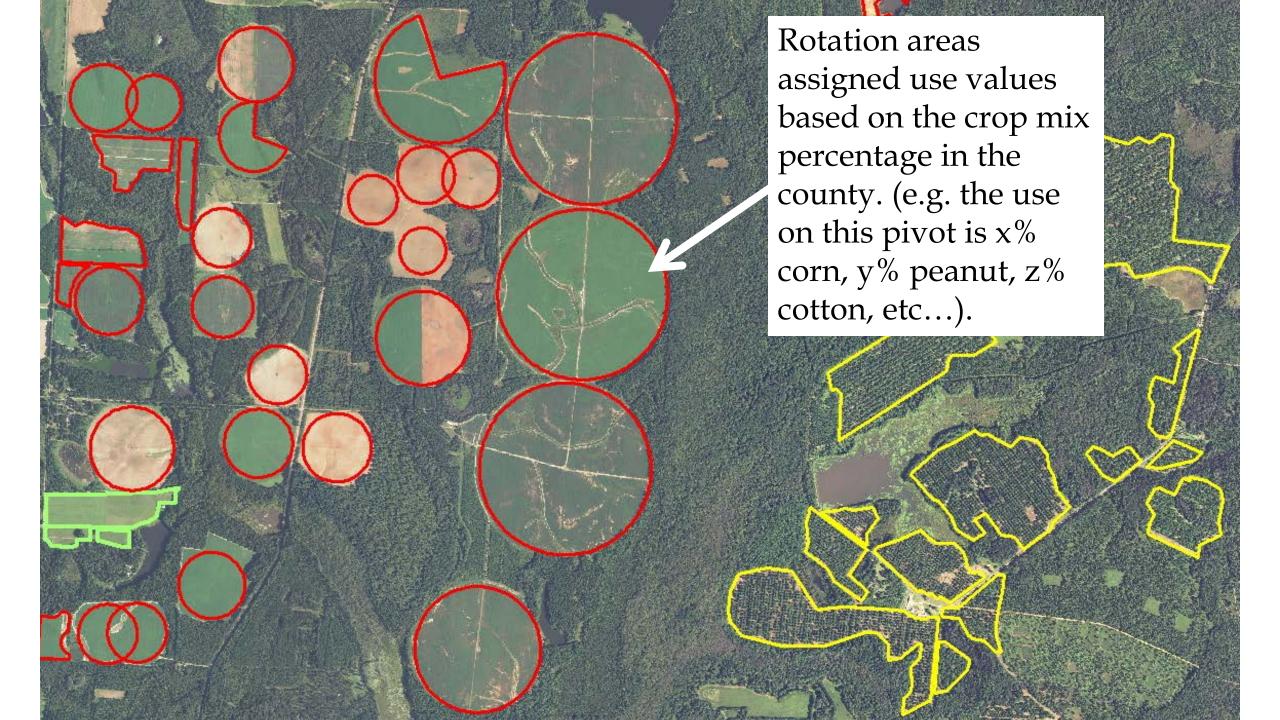


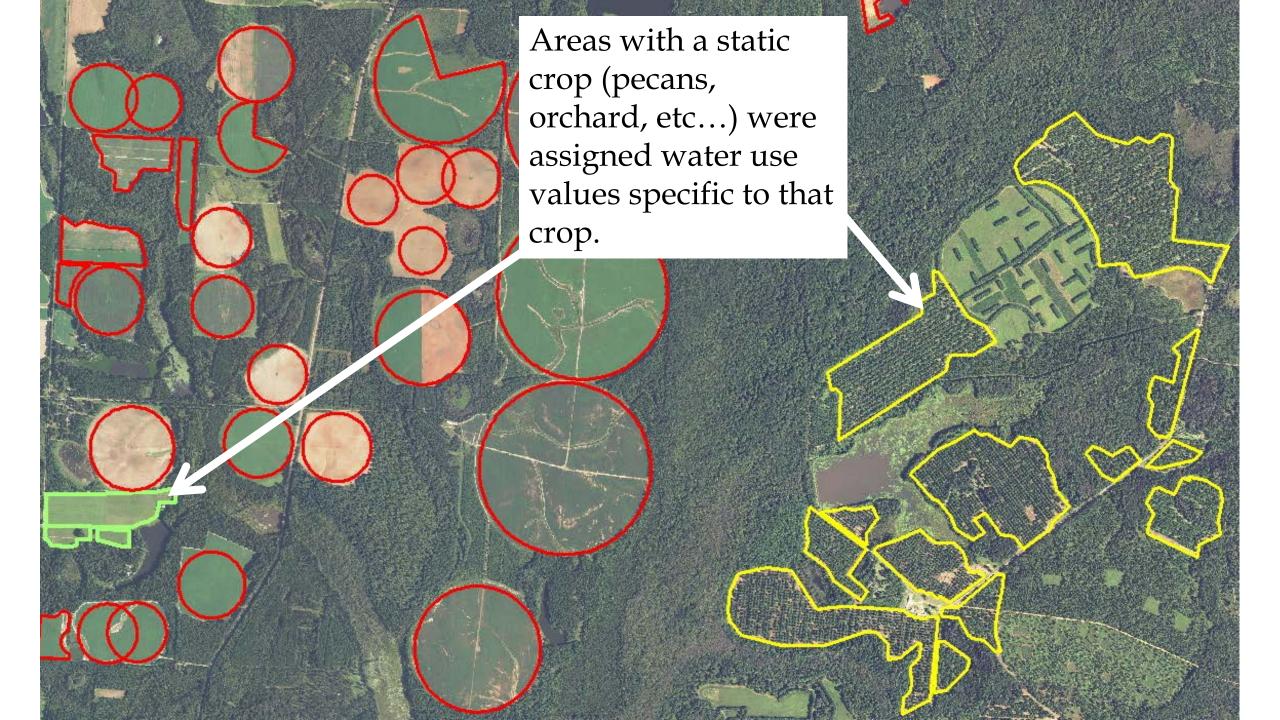


Baseline Crop Mix by RWPC

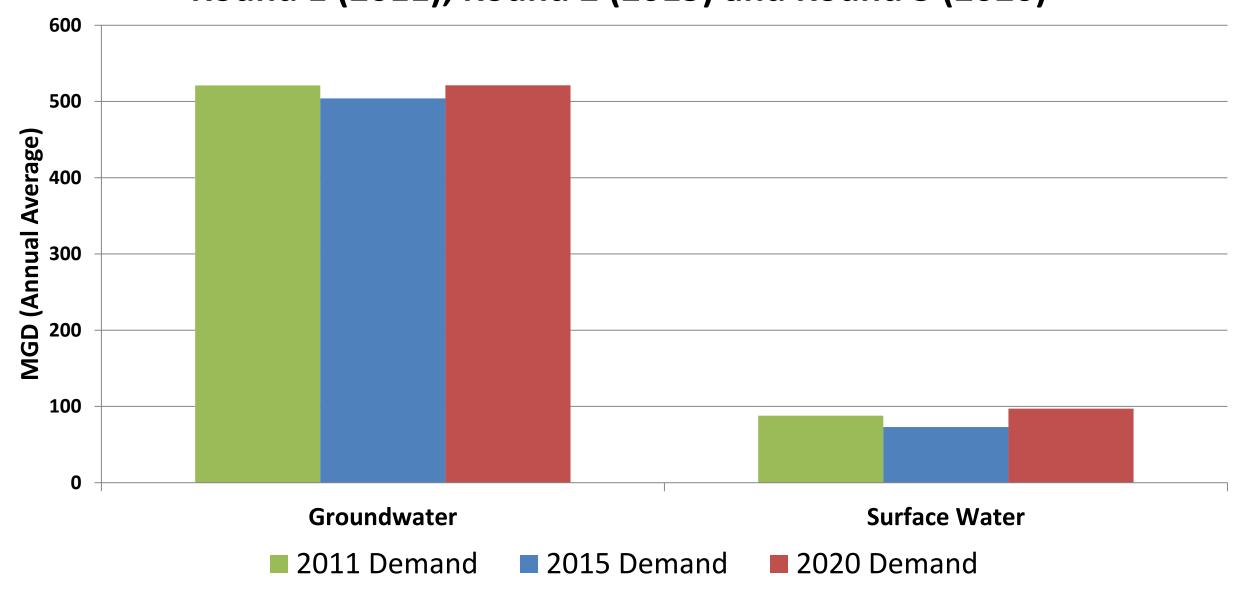




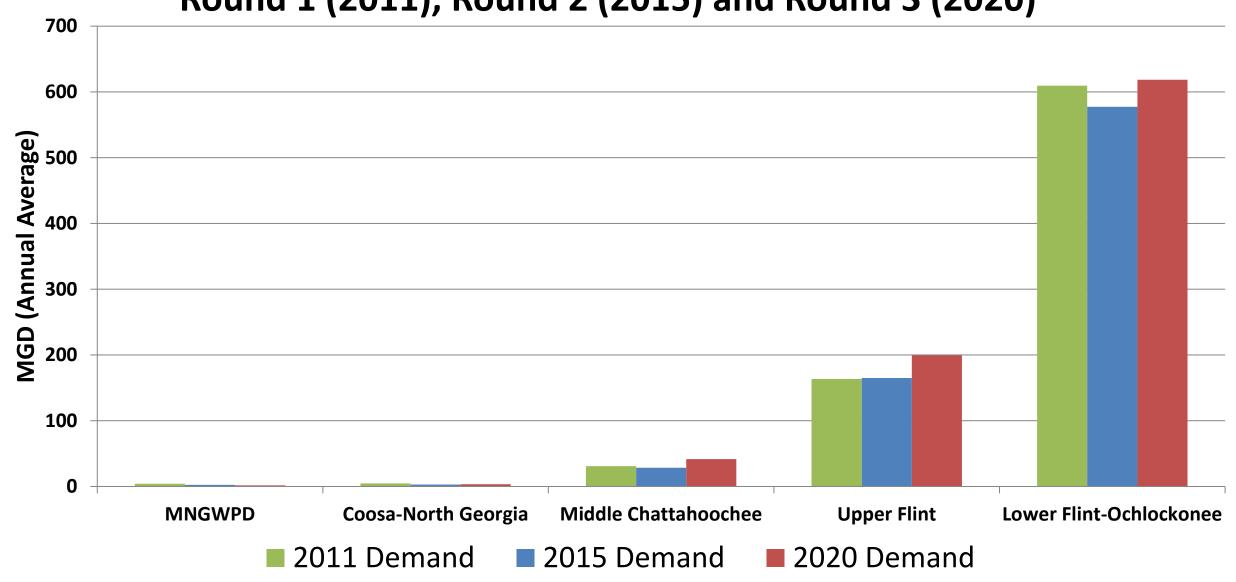




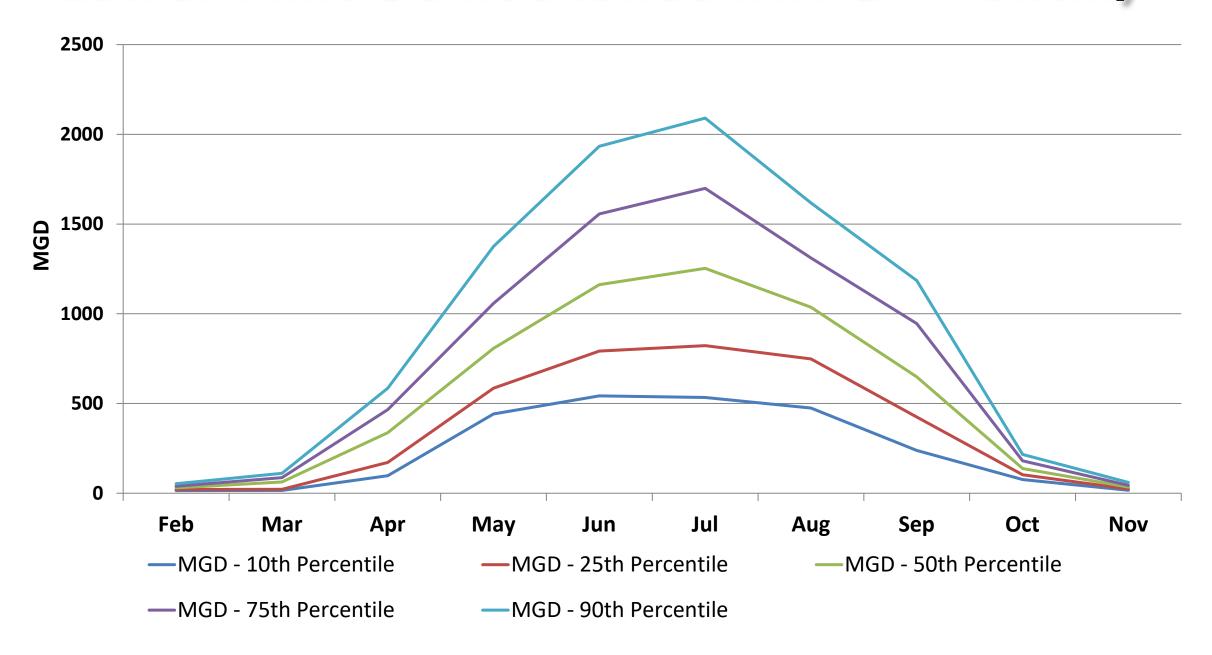
LFO Council – Ag Demand – 75th Percentile Round 1 (2011), Round 2 (2015) and Round 3 (2020)



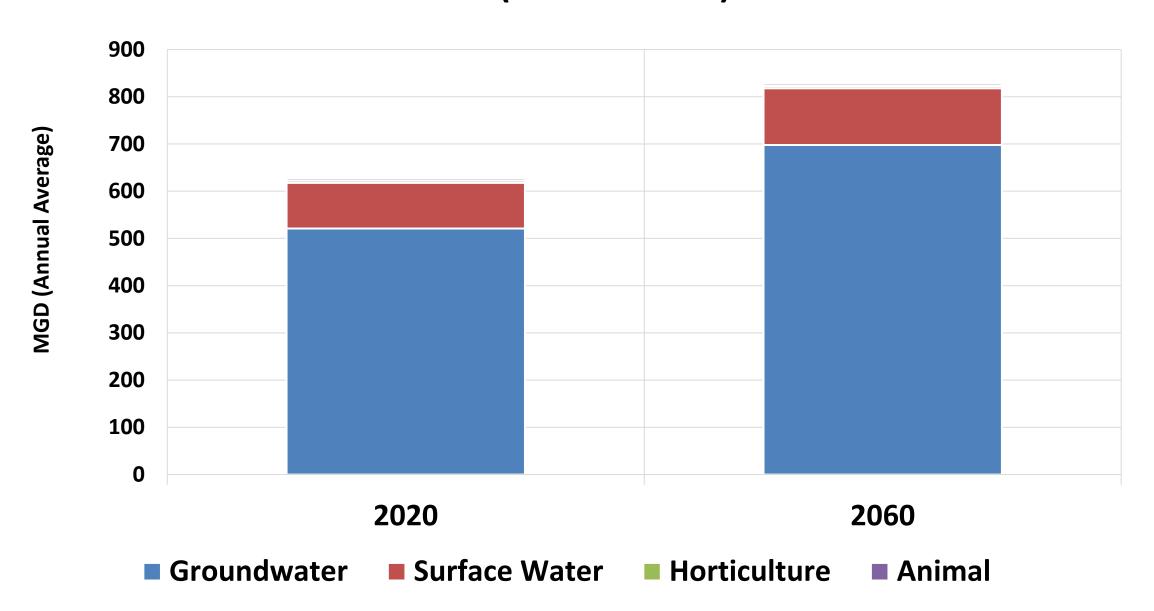
Ag Demand – 75th Percentile Round 1 (2011), Round 2 (2015) and Round 3 (2020)



Lower Flint-Ochlockonee RWPC - Monthly



LFO – Ag Demand – Forecast – 75th Percentile Totals (2020 & 2060)



Questions & Discussion







Lower Flint-Ochlockonee Region

Council's Vision:

The Lower Flint-Ochlockonee Water Planning Council will manage water resources in a sustainable manner to support the region's economy, to protect public health and natural systems, and to enhance the quality of life for the region's citizens.





Lower Flint-Ochlockonee Council Goals

- 1. Ensure access to water resources for existing and future water users in the Lower Flint-Ochlockonee Water Planning Region.
- 2. Sustain the region's aquifers, the Floridan, the Claiborne, the Clayton, and the Cretaceous, in a healthy condition that will continue to support the natural systems and economic activities of the Lower Flint-Ochlockonee Water Planning Region.
- 3. Maintain the production-agriculture-based economy of the Lower Flint-Ochlockonee Water Planning Region.
- 4. Support sustainable economic growth in the Lower Flint-Ochlockonee Water Planning Region.







Lower Flint-Ochlockonee Water Council

- Support team will develop and distribute meeting summary
- Council members are requested to review 2017 plan, updated forecasts (2021), and other council materials
- Support team will be working with council chair to schedule 2022 meetings

