### MIDDLE CHATTAHOOCHEE

# Middle Chattahoochee Council Meeting

November 10, 2021

### GEORGIA WATER PLANNING waterplanning.georgia.gov

# Agenda



#### Agenda

Middle Chattahoochee Water Council Meeting November 10, 2021 Columbus Water Works Service 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
10:10 am – 10:45 am	Introductions
10:45 am – 10:55 am	Chair's Report – Chairman Davis
10:55 am – 11:10 am	Water and Wastewater Forecasts Overview – Steve Simpson & Jake Dean, Black & Veatch
11:10 am – 11:35 am	Agricultural Water Demand Forecasts – Mark Masters, GWPPC
11:35 am – 11:50 am	EPD Report: Planning Schedule and Resource Assessments – Christine Voudy (GAEPD)
11:50 am – 12:35 pm	Lunch
12:35 pm – 1:50 pm	Orientation to Regional Water Planning
1:50 pm – 2:20 pm	Vision and Goals Discussion
2:20 pm – 2:30 pm	Public Comment
2:30 pm – 2:45 pm	Next Steps and Adjourn



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### MIDDLE CHATTAHOOCHEE

Next Steps

Adjourn

# Meeting Agenda



Middle Chattahoochee Meeting



Member Orientation



GEORGIA WATER PLANNING 11/9/2021

# Introductions

#### **STEVE DAVIS**

**Columbus Water Works** 

Council Chair for: Middle Chattahoochee SDdavis@cwwga.org (706) 649-3430

### CHRISTINE VOUDY

Georgia EPD

Liaison for: Middle Chattahoochee Christine.Voudy@dnr.ga.gov (404) 463-4910

#### KRISTIN ROWLES GWPPC

Council Lead for: Middle Chattahoochee <u>krowles@h2opolicycenter.org</u> (404) 822-2395

#### **STEPHEN SIMPSON**

Black & Veatch

#### Council Advisor for: Middle Chattahoochee simpsonsl@bv.com (770) 521-8105

Council Advisor for: Middle Chattahoochee <u>mmasters@h2opolicycenter.org</u>



MARK MASTERS GWPPC

# Chair's Report

## Presented by Chairman Davis



# Water and Wastewater Forecasts Overview

Steve Simpson and Jake Dean, Black & Veatch



	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





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

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### Middle Chattahoochee 2050 Water Demand Forecast Comparison 2050 Water Demand For



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	2050 Water Demand Forecast Comparison to Previous			
Sector	Forecast Made in 2015	Forecast Made in 2021		
Agriculture	33.05	46.83		
Energy (Withdrawals)	43.91	27.89		
Industrial	3.95	0.17		
Municipal	107.91	66.21		
Total Water Demand (MGD)	188.81	141.10		
iddle Chattahoochee 2010 Water D Forecast for 2050	emand Middle Chattahoo Fore	chee 2021 Water Demand cast for 2050		
nicipal, 91 , 57%	3.05 , 18% Municipal,   Energy, 66.21, 47%   43.91 , 23% Municipal,	Energy, 27.89 , 20%		
	dustrial, 95 , 2% 0.17, 0%	12		

## Middle Chattahoochee Water Demand Forecast Comparison to Previous

2060

0.17

2050

3.95

0.17



2040

3.88

0.17

Year



**Municipal** 



2020

3.80

0.17

2015

2021

2030

3.84

0.17

Middle Chattahoochee Water Demand Forecasts



## Middle Chattahoochee Water Demand Forecast Dashboard



# Agricultural Water Demand Forecasts

## Mark Masters, GWPPC



# **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*





#### **Irrigated Acres**

County	2015	2020
CARROLL	297	297
CLAY	8,437	8,566
HARRIS	0	0
MUSCOGEE	0	0
QUITMAN	684	712
RANDOLPH	28,376	29,399
STEWART	4,126	4,650

# Middle Chattahoochee RWPC

	2015	2020	% Change
Total # of Fields	721	759	+ 5.3%
Total Acreage	41,893	43,624	+ 4.1%
Total GW Acreage	17,230	18,836	+ 9.3%
Total SW Acreage	24,663	24,787	+ 0.5%
<b>Total Center Pivots</b>	614	647	+ 5.4%
Center Pivot Acreage	37,816	39,725	+ 5.0%









## **Baseline Crop Mix by RWPC**



#### Middle Chattahoochee RWPC

Rotation areas assigned use values based on the crop mix percentage in the county. (e.g. the use on this pivot is x% corn, y% peanut, z% cotton, etc...).

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Areas with a static crop (pecans, orchard, etc...) were assigned water use values specific to that crop.

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## MC Council – Ag Demand – 75<sup>th</sup> Percentile Round 1 (2011), Round 2 (2015) and Round 3 (2020)



## Ag Demand – 75<sup>th</sup> Percentile Round 1 (2011), Round 2 (2015) and Round 3 (2020)



# Middle Chattahoochee RWPC - Monthly



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



MGD (Annual Average)

## **Questions & Discussion**



# Planning Updates from Georgia EPD

Christine Voudy, Georgia EPD



## 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
- Ouarterly Council Meetings



## Plan Updates Schedule

#### **Regional Water Plan Review and Revision Schedule**





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

Coosa - North Georgia MNGWPD Savannah -Upper Ogeechee Upper Oconee Middle Ocmulgee Middle Chattahoochee Upper Flint Altamaha Coastal Georgia Lower Flint Ochlockonee Suwannee Satilla

Water Planning Regions



### Surface Water Resource Assessments

- Updates to Surface
   Water Availability
   Resource Assessment
  - New modeling tool: Basin Environmental Assessment Model ("BEAM")
  - Provides analysis at more nodes





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#### Surface Water Resource Assessments

- Updates to Surface Water Quality (Assimilative Capacity) Resource Assessment
  - Updated information & model recalibration
  - Current Conditions and Future Conditions



### Groundwater Resources in Georgia

#### Groundwater Aqui AQUIFER LEGEND South Central Georgia .... Paleozoic-rock Aquifer Floridan Aquifer Area Crystalline-rock Aquifer **Dougherty Plain Upper** Cretaceous Aquifer in Floridan Aquifer Area Georgia's Coastal Plain Eastern Coastal Plain Claiborne Aquifer in Floridan Aquifer Area Georgia's Coastal Plain **Coastal Plain** The A.M.

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



### Christine Voudy Georgia Environmental Protection Division 404-607-2621 Christine.voudy@dnr.ga.gov



# Council Member Orientation



### **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 Planning Councils**





COOSA-NORTH GEORGIA
 METRO WATER DISTRICT
 SAVANNAH-UPPER OGEECHEE
 UPPER OCONEE
 MIDDLE OCMULGEE
 MIDDLE CHATTAHOOCHEE
 UPPER FLINT
 ALTAMAHA
 COASTAL
 LOWER FLINT-OCHLOCKONEE
 SUWANNEE-SATILLA

## Steps in the Development of the **Regional Water Plan**



### Regional Water Plan Update 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**



### 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 will 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 will provide input during the planning process.
- Other water planning councils will coordinate recommendations regarding shared water resources.
- Georgia EPD will ensure 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



Regional Water Planning Seed Grant applications are being accepted through October 31, 2021.

Please click here for more information



#### Georgia Water Planning

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.

The State Water Plan ensures Georgia's water resources are sustainably managed through at least 2050. The Regional Water Plans set forth the recommended management practices for each water planning region. Learn More

<u>Click here to watch a short video about</u> <u>Georgia's Regional Water Plans</u>



All Regional Water Plans Learn More
Public Feedback
Partnering Agencies

Latest News

Upcoming Meetings

#### waterplanning.georgia.gov



## Planning Information Compilation and Evaluation

Water Resource Assessments

#### **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
- Industrial Water & Wastewater Demands
- Agricultural Demand
- Energy Demand

Councils

**Forecasts** 

Finalized

\*Council members will be notified when forecasts are posted on the website.

## **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

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Additional information can be found at https://waterplanning.georgia.gov/forecasting

## Planning Information Compilation and Evaluation

Water Resource Assessments

OOO Public Participation

#### 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**



### **Development of Resource Assessments**



### 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 Draft Plan



## **Regional Water Plan Update**



# Middle Chattahoochee Region Overview

2021 Council Member Orientation



## Middle Chattahoochee Memorandum of Agreement

- Original signed June 2009 between Middle Chattahoochee 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

### Middle Chattahoochee 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 2/3 majority vote
  - 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



## Middle Chattahoochee Region

### Council's Vision:

Our vision is that our descendants have safe, clean and abundant water to meet their needs in the Middle Chattahoochee Region; seeking to accomplish that through reasonable efforts in cooperation, education, scientific research, best available data, and preservation.



## Middle Chattahoochee Water Council

#### **Council's Goals**

#### 1. Political

Provide the technical basis to help resolve the issues pertaining to water resources management and competing interests.

#### 2. Uncertainties

Provide guidance for effective policies and appropriate actions during drought, economic uncertainty, regulatory or political influences, and effects of climate variability.

#### 3. River System

The Apalachicola-Chattahoochee-Flint (ACF) River System is a unique asset of this region. The management of the rivers and their uses (hydropower, navigation, water quality, water supply, flood control, fish and wildlife conservation, recreation, and cooling water for nuclear and coal fired power plants) are vital to the region. The Plan will recommend adjustments to the management directives and uses of the river system in order to achieve a balance in meeting future water requirements in the region.

#### 4. Land Use Changes

Acknowledge the increasing tax value of land and resulting trends: increasing urbanization, fewer natural forests, and decreasing agricultural land. However, the Plan will seek to encourage agricultural land and forest land conservation by providing for their water requirements.



## Middle Chattahoochee Water Council

#### **Council's Goals**

#### 5. Water Balance

Provide a better understanding of water balance and consumptive use and clearly define returns to surface water and the need for storage and provide guidance for the increasing trend in groundwater usage.

#### 6. Population

Address the water needs for an increasing resident population as well as the increased transient population at such locations as Fort Benning.

#### 7. Quantity and Quality

> Establish the necessary goals to achieve water quality and quantity throughout the Middle Chattahoochee Basin.

#### 8. Conservation / Green

Encourage forest, agriculture and open land and habitat preservation. It will also encourage cost effective alternative energy sources, water conservation, and sustained protection of habitat and natural resources.

#### 9. Inter-state Water Planning

Recognize the importance of inter-state coordination in water planning to provide for sustainable management of shared water resources.



#### Middle Chattahoochee Region



## Middle Chattahoochee 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
  - Water Quantity (3)
  - Returns Management (2)
  - Supply Management (6)
  - Instream Use Management (2)
  - Water Quality (7)
- Used by GA EPD for permit applications and renewals
- Used by GEFA for grant and loan applications



## Middle Chattahoochee Regional Water Plan

#### **High Priority Management Practices**

- Support implementation of water conservation activities
- Encourage use of point source discharges for wastewater treatment effluent disposal for major facilities
- Study the development of new and/or enhancement of existing surface water storage reservoirs
- Implement new and/or enhance existing surface water storage as necessary
- Utilize and improve upon reservoir release quantity and timing in the Chattahoochee River to maintain and/or improve water quality in the Chattahoochee River below the Columbus planning node
- Assess the potential to modify Chattahoochee River operations to protect instream uses and increase system conservation storage
- Improve water quality monitoring to provide the data for water quality improvements in the future

### Middle Chattahoochee Region

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

Resource Assessment	Description	Current Results	Future Results
Surface Water Availability	Modeled the ability of surface water resources to meet consumptive water demands and thresholds for streamflow or reservoir storage.	Results in the Chattahoochee River Basin show significant Council-defined gaps (see note) between available water and minimum lake levels, particularly those that support recreation, and desired river flows (see Table 6-2). Potential gaps were also identified in the Tallapoosa and Little Tallapoosa River Basins.	Results in the Chattahoochee River Basin show significant Council-defined gaps (see note) between available water and minimum lake levels, particularly those that support recreation, and desired river flows (see Table 6-2). Potential gaps were also identified in the Tallapoosa and Little Tallapoosa River Basins.
Groundwater Availability	Modeled the estimated range of sustainable yield for prioritized groundwater aquifers.	Results for the Claiborne Aquifer indicate that the existing withdrawals are lower than the estimated sustainable yield range.	Results for the Claiborne Aquifer indicate that future projected withdrawals are lower than the estimated sustainable yield range.
Surface Water Quality	Measures the capacity of Georgia's surface waters to assimilate pollutants without unacceptable degradation of water quality below state water quality standards.	Results found that most of the water planning region has available assimilative capacity in terms of dissolved oxygen. Watershed modeling identified that point sources contribute more to total phosphorus nutrient loading than nonpoint sources in the Chattahoochee River below Lake Lanier. Specific stream segments in this water planning region are listed as impaired for a variety of constituents, primarily for fecal coliform.	For dissolved oxygen, modeling results showed that assimilative capacity can be managed in the future through point source permit effluent limits. Future increases in nutrient loading will come from both point and nonpoint sources, with the largest contributions from point sources.
### Thank You Middle Chattahoochee



https://waterplanning.georgia.gov/water-planningregions/middle-chattahoochee-water-planning-region

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## Vision and Goals Discussion

### Corinne Valentine, Black & Veatch



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## Public Comment

# Next Steps

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### Middle Chattahoochee 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