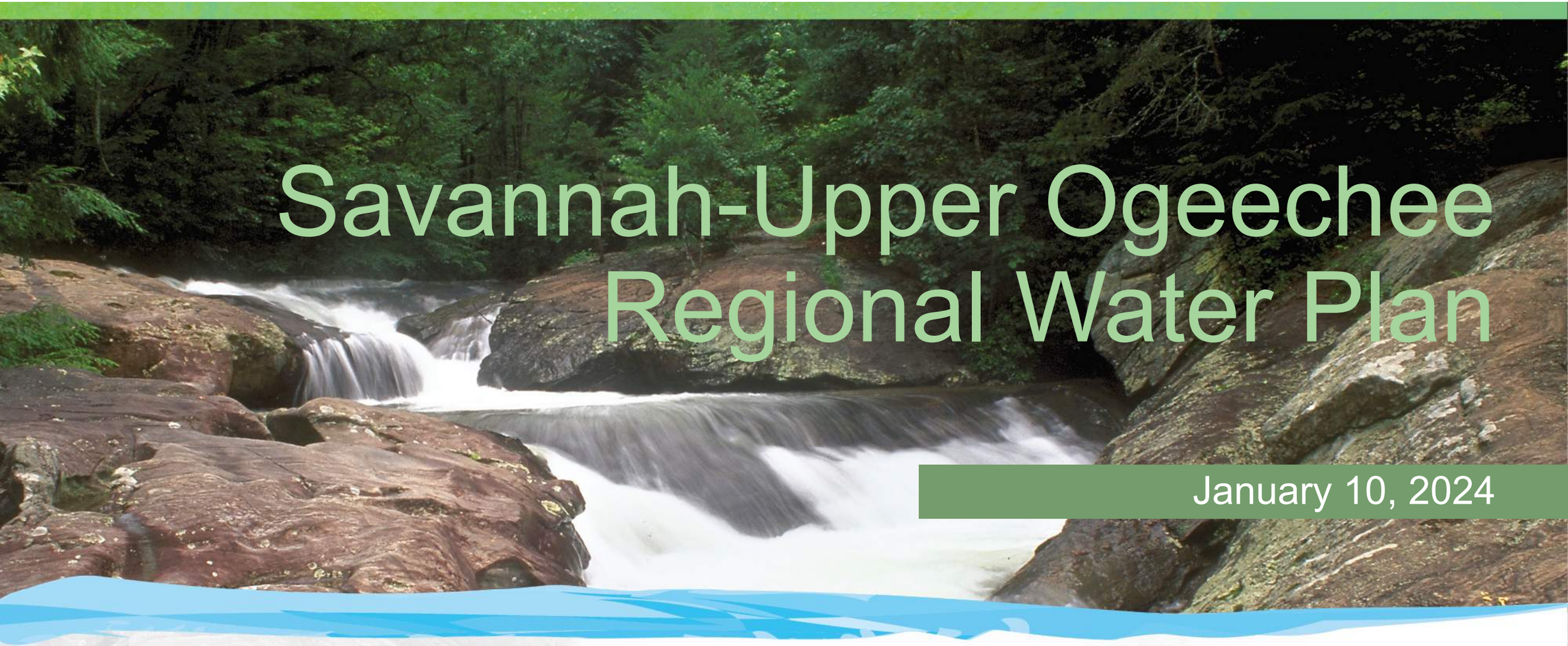


Savannah-Upper Ogeechee Regional Water Plan

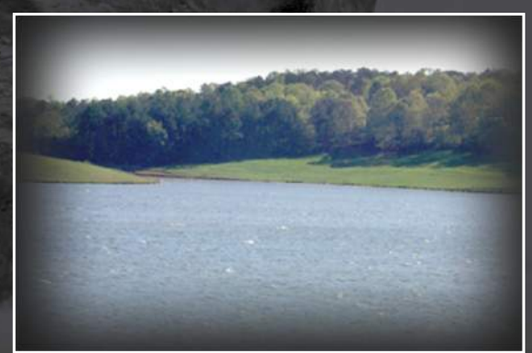
January 10, 2024

GEORGIA WATER PLANNING

waterplanning.georgia.gov

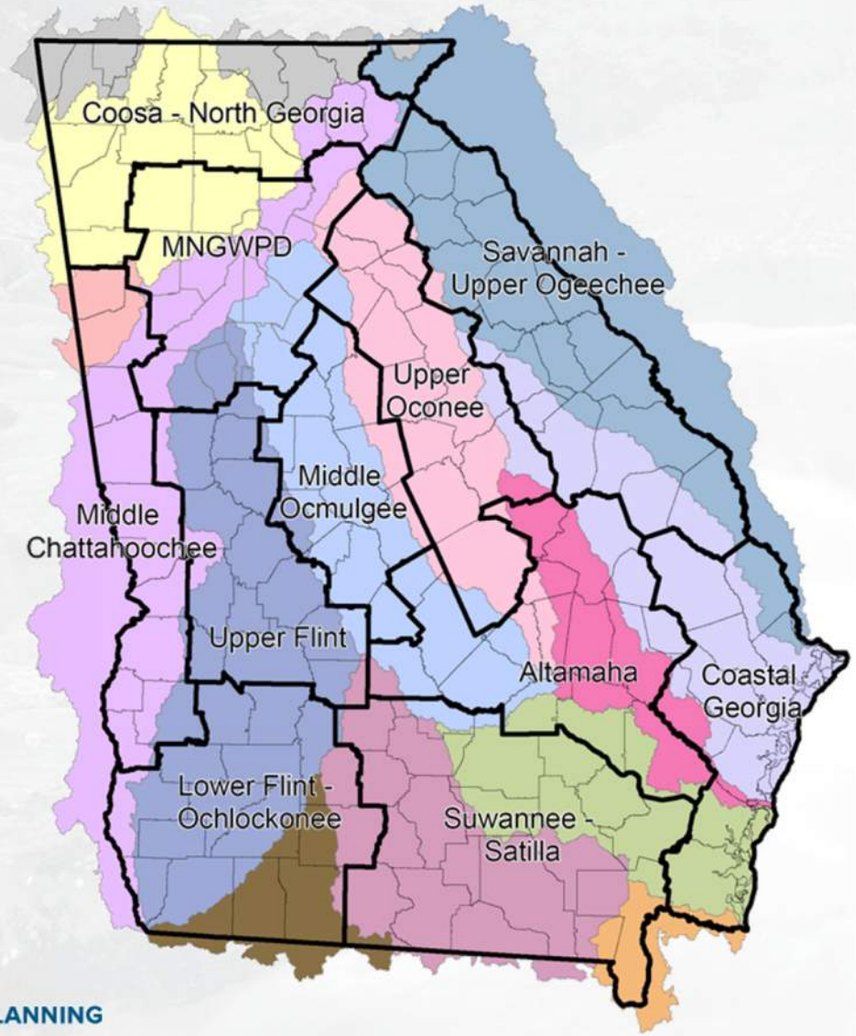
Policy Statement

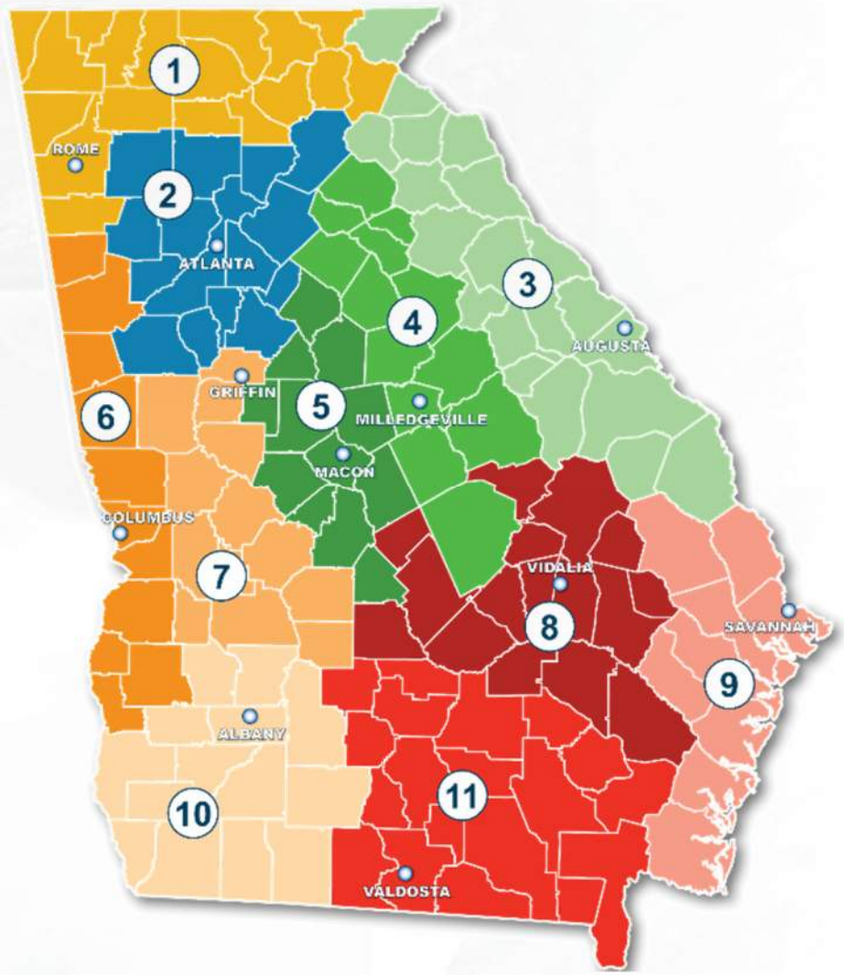
"Georgia manages water resources in a sustainable manner to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens."



2004 Comprehensive Statewide Water Management Planning Act

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

GEORGIA
WATER PLANNING

Georgia Water Planning – Over Two Decades of Planning

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

2011 Regional Water Plans adopted

Metro Water District revised plans

2009 Regional Water Planning Councils formed.

2008 State Water Plan adopted

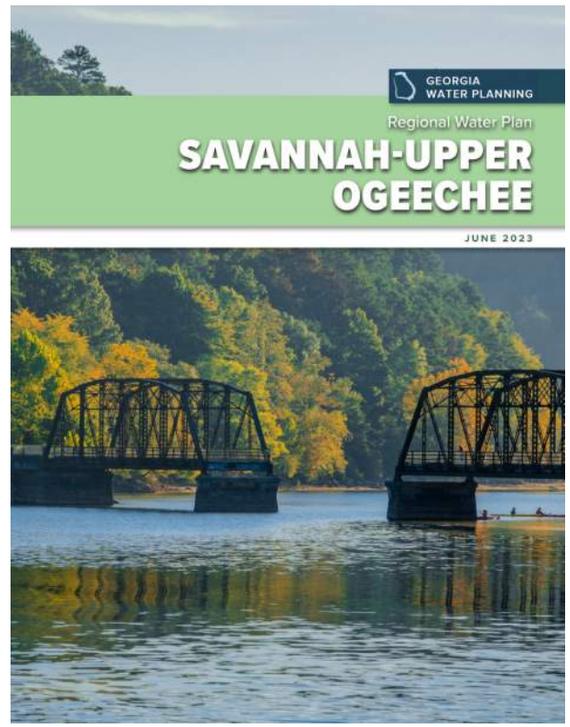
2004 Comprehensive State-wide Water Planning Act

2003 Metro Water District adopted three regional water plans.

2001 Metropolitan North Georgia Water Planning Act passed, creating Metro Water District

GEORGIA WATER PLANNING

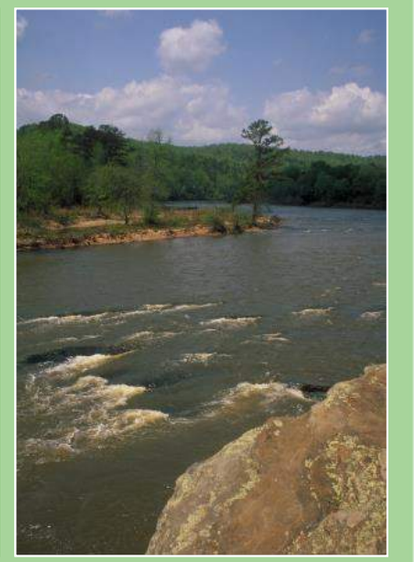
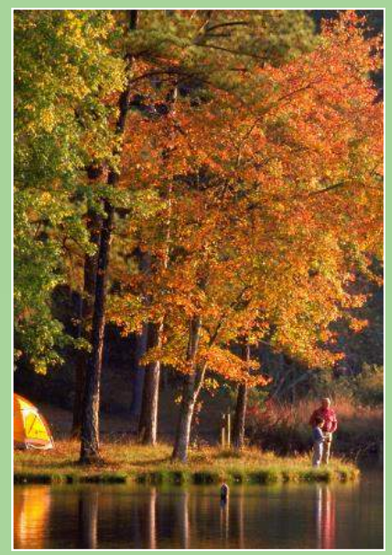
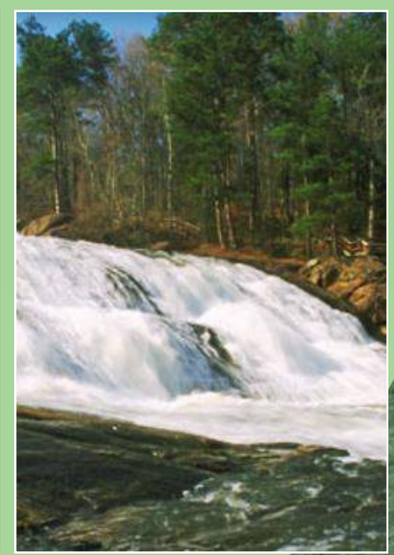
The 2023 Regional Water Plans were adopted by Georgia EPD's Director on June 29, 2023. The plan outlines near-term and long-term strategies to meet water needs through 2060



Regional Water Plan Review and Revision Process

5-Year Review Process Focuses on:

- Updated water demand and wastewater forecasts
- Update Surface Water and Ground Water Availability Resource Assessments (Quantity)
- Updated Surface Water Quality Availability Resource Assessment
- Refine Management Practices, if needed, to address water resource

Georgia Water Planning Process

Water Resource Assessments

Forecasts

Public Participation

Regional Plan Development

Approved Regional Plan

Regional Water Plan

Agency Decision-Making

Environmental & Economic Progress

Savannah-Upper Ogeechee

Council's Vision:

The Savannah and Ogeechee Rivers along with the region's groundwater resources will provide high quality and quantity water supplies for balanced growth while protecting the natural and built environments. The Savannah-Upper Ogeechee Regional Water Planning Council, through collaboration with stakeholders, will formulate river basin policies based on current and developing technologies and conservation methods. Because of the results of our Council and other councils' efforts, Georgia will be recognized across the country as the leader in water resource management.

Savannah-Upper Ogeechee Regional Water Plan Goals

1. Plan for sufficient water supplies to support planned economic development while providing residential, industrial, agricultural, recreational, and utility services in a sustainable manner.

2. Provide support for state laws regulating interbasin transfers in Official Code of Georgia (OCGA) 12-5-584(f) and OCGA 12-5-31 and further described in EPD Rule 391-3-6-.07. Promote the development of a mandatory comprehensive evaluation process that protects donor basins from adverse impacts from proposed interbasin transfers between State Water Planning Districts.

3. Work with EPD to establish ongoing relationships with South Carolina stakeholders and other Water Planning Councils to equitably address water sharing issues.

Savannah-Upper Ogeechee Regional Water Plan Goals

4. Work to enhance the public's understanding of regional water issues and the need for support of new policies to protect future resources.

5. Identify opportunities for water reuse and conservation in the region.

6. Maintain and strive to improve the quality and quantity of the water of the region to protect species and habitat while balancing the needs of humans.

7. Form a permanent Savannah and Ogeechee water planning organization as the conduit for bringing together all stakeholders and assisting the State with implementation of water resource goals in the entire basin. Grandfather one-third of the current Water Planning Council on the permanent organization.

Resource Assessments – Groundwater Availability

This assessment identified the sustainable yield, or a range of groundwater rates of withdrawal, without causing adverse impacts

The primary sources of groundwater in the Savannah-Upper Ogeechee Region are the Cretaceous aquifer, Crystalline Rock aquifer, and Floridan aquifer.

Source4.9	Current Demand	Projected 2060 Demand	Sustainable Yield
Cretaceous aquifer	54 MGD	56 MGD	347 MGD
Crystalline Rock aquifer	2.8 MGD	4.9 MGD	20 MGD (in Blue Ridge region)
Floridan aquifer	39 MGD	48 MGD	868 MGD (in South Central Georgia and Coastal Plain)

Overall, the results from the Groundwater Availability Resource Assessment indicate that on a regional basis, for the prioritized aquifers, there is sufficient groundwater supply to meet current needs.

Resource Assessments – Surface Water Availability

- The model currently used to assess surface water availability is the Basin Environmental Assessment Model (BEAM). This model explicitly represents permitted water withdrawal intakes, water supply reservoirs, refilling pump stations, federal reservoirs, private power generating reservoirs, National Pollution Discharge Elimination System (NPDES) permitted discharging facilities, and long-term USGS gages as nodes or junctions in BEAM. All permitted water withdrawal facilities are incorporated in the BEAM models as junctions where hydrologic information is available.

- There are currently 13 municipal and 4 industrial withdrawal facilities in the region. There are also 25 municipal and 4 industrial discharge facilities in the region.

Resource Assessments – Surface Water Quality (Assimilative Capacity)

Georgia's DO standards are based on stream-specific water use classifications. Most of the region's streams are designated as freshwater fishing, drinking water supplies or recreation. Assessment of the ability to assimilate oxygen-consuming wastes is important because aquatic life is dependent on the amount of residual DO available in the streams. The DO standards for these water use classifications require a daily average of 5 milligrams per litre (mg/L) and no less than 4 mg/L at all times.

Basin	Available Assimilative Capacity (Total Mileage)						Total River Miles Modeled in the Council Area
	Very Good (≥1.0 mg/L)	Good (0.5 to <1.0 mg/L)	Moderate (0.2 to <0.5 mg/L)	Limited (>0.0 to <0.2 mg/L)	None or Exceeded (<0.0 mg/L)	Un-modeled	
Oconee	14	2	0	0	0	0	16
Ogeechee	35	101	150	56	20	17	380
Savannah	387	59	6	7	6	0	464
Tennessee	2	1	0	0	0	1	3

Source: GIS Files from the Dissolved Oxygen Assimilative Capacity Resource Assessment Report; EPD, 2023a.

Notes: Since the 2017 update, additional stream segments were modeled for the Oconee Basin and Savannah River Basin.

Forecasts - Population

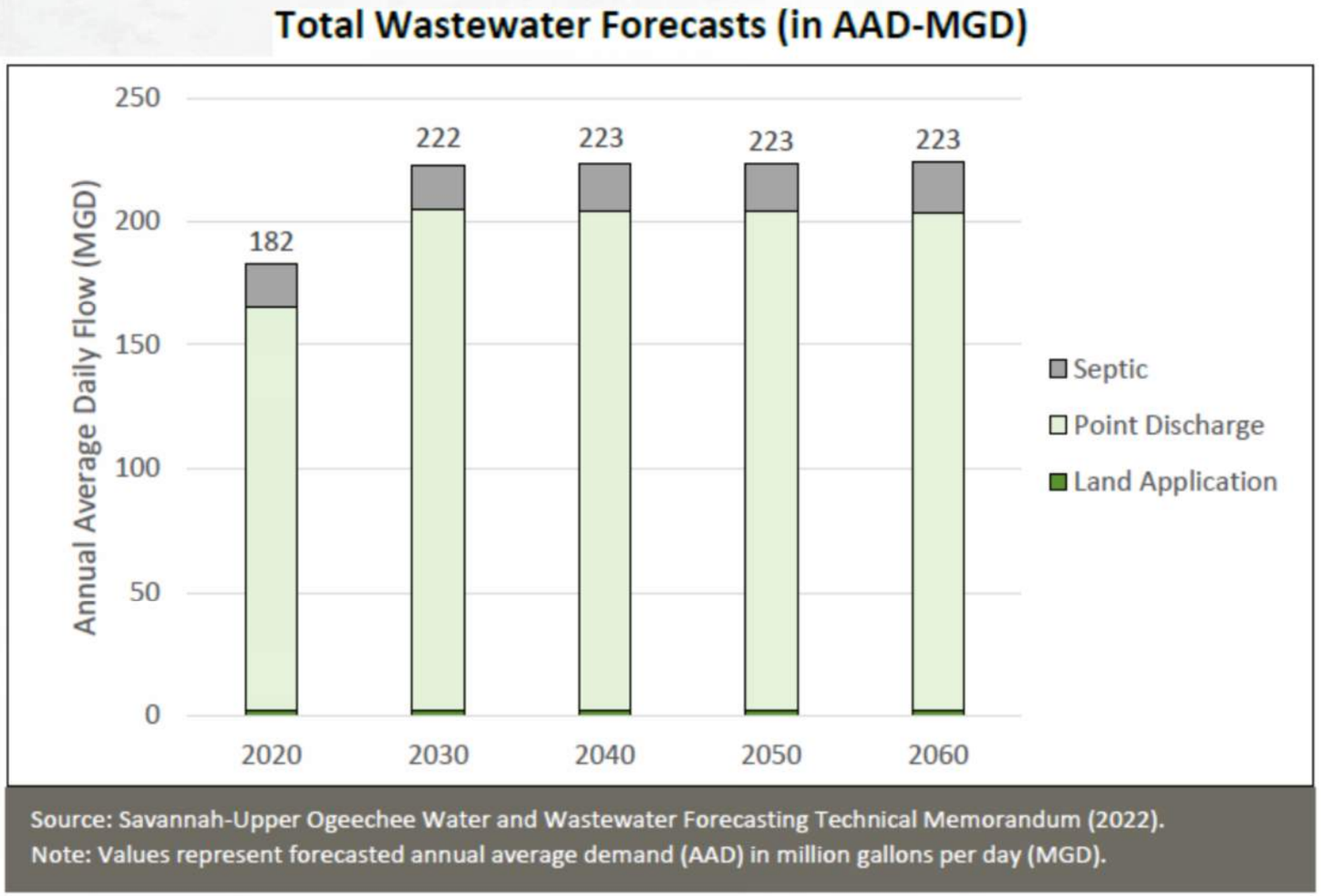
County	2020	2030	2040	2050	2060	Difference (2020 - 2060)	% Increase (2020 - 2060)
Banks	19,982	24,827	28,650	32,701	37,420	17,438	87.3%
Burke	22,342	22,600	22,350	21,841	21,695	-647	-2.9%
Columbia	158,631	177,910	185,922	188,389	187,389	28,758	18.1%
Elbert	18,945	18,581	17,982	17,304	16,913	-2,032	-10.7%
Franklin	23,329	25,652	27,876	30,277	33,246	9,917	42.5%
Glascock	3,025	3,065	2,911	2,628	2,315	-710	-23.5%
Hart	26,107	26,772	27,170	27,657	28,635	2,528	9.7%
Jefferson	15,313	14,828	14,146	13,405	12,909	-2,404	-15.7%
Jenkins	8,576	8,044	7,419	6,838	6,371	-2,205	-25.7%
Lincoln	8,125	8,534	8,086	7,465	7,096	-1,029	-12.7%
McDuffie	30,177	33,121	36,518	40,691	46,076	15,899	52.7%
Madison	21,597	21,951	22,058	22,054	22,403	806	3.7%
Oglethorpe	15,240	16,237	17,242	18,353	19,824	4,584	30.1%
Rabun	16,986	17,641	18,198	19,221	20,867	3,881	22.8%
Richmond	202,240	204,904	202,735	198,965	197,404	-4,836	-2.4%
Screven	13,900	13,558	12,902	12,238	11,860	-2,040	-14.7%
Stephens	26,328	27,927	29,381	31,126	33,544	7,216	27.4%
Taliaferro	1,632	1,609	1,452	1,283	1,143	-489	-30.0%
Warren	5,210	5,002	4,816	4,639	4,601	-609	-11.7%
Wilkes	10,014	10,037	9,302	8,295	7,483	-2,531	-25.3%
Total	647,699	682,800	697,116	705,370	719,194	71,495	11.0%

Source: Governor's Office of Planning and Budget, 2019.

Forecasts – Wastewater Returns

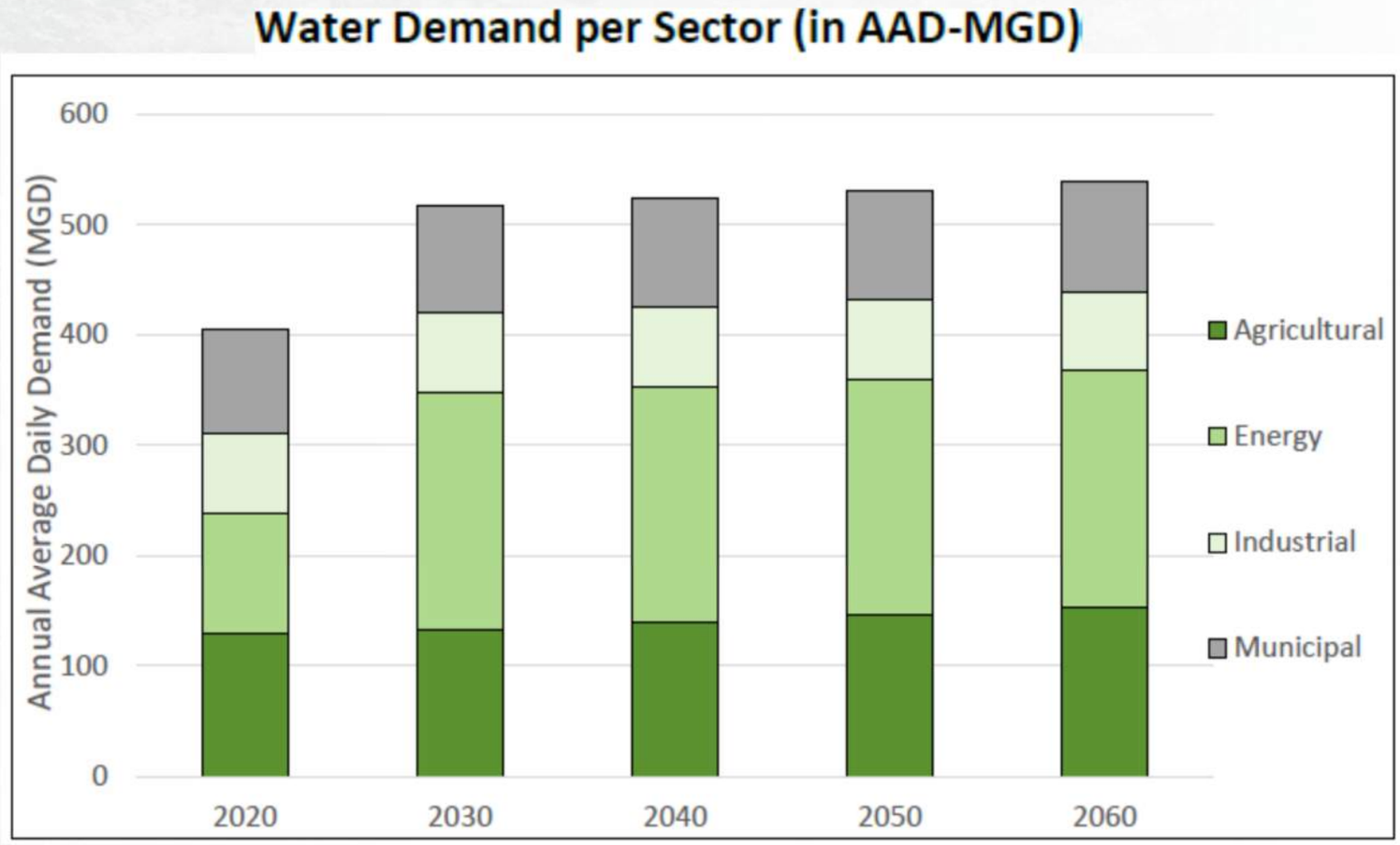
The region's wastewater returns increase from approximately 182 MGD to 223 MGD in the same 40-year planning period

The region's wastewater returns are much lower than its withdrawals because of the consumptive use for the energy production and negligible agricultural returns



Source: Savannah-Upper Ogeechee Water and Wastewater Forecasting Technical Memorandum (2022).
Note: Values represent forecasted annual average demand (AAD) in million gallons per day (MGD).

Forecasts – Water Demand



In total, the water needs of the region increase steadily through the planning period from approximately 404 MGD in 2020 to an estimated 537 MGD in 2060.

Potential Challenges

County	Surface Water Flow Regime Challenge	Municipal Water Permitted Capacity Need	Wastewater Permitted Capacity Need	Water Quality - Assimilative Capacity Challenge
Source	*Figure 5-2*	*Table 5-5*	*Table 5-6*	*Figure 5-3*
Banks	Yes	Yes		
Burke	Yes			
Columbia	Yes			
Elbert	Yes			
Franklin	Yes			
Glascock		Yes		Yes
Hart				
Jefferson	Yes		Yes	Yes
Jenkins				
Lincoln			Yes	
McDuffie	Yes		Yes	
Madison		Yes		
Oglethorpe	Yes	Yes		
Rabun	Yes		Yes	
Richmond	Yes			
Screven	Yes		Yes	Yes
Stephens	Yes		Yes	
Taliaferro		Yes		
Warren	Yes		Yes	
Wilkes				

Notes: "Yes" indicates a predicted challenge in the indicated county. Permitted capacity need is based on the comparison of permitted municipal capacity versus 2060 forecasted demand.

Potential Challenges

- The Surface Water Availability Resource Assessment predicted that there may be potential challenges where facility withdrawals and discharges are occurring within the region.

- At the regional level, for modeled aquifers, no groundwater resource shortfalls are expected to occur in the Savannah-Upper Ogeechee Region over the planning horizon.

- Additional permitted water withdrawals and treatment capacity may be needed in some counties to meet demands.

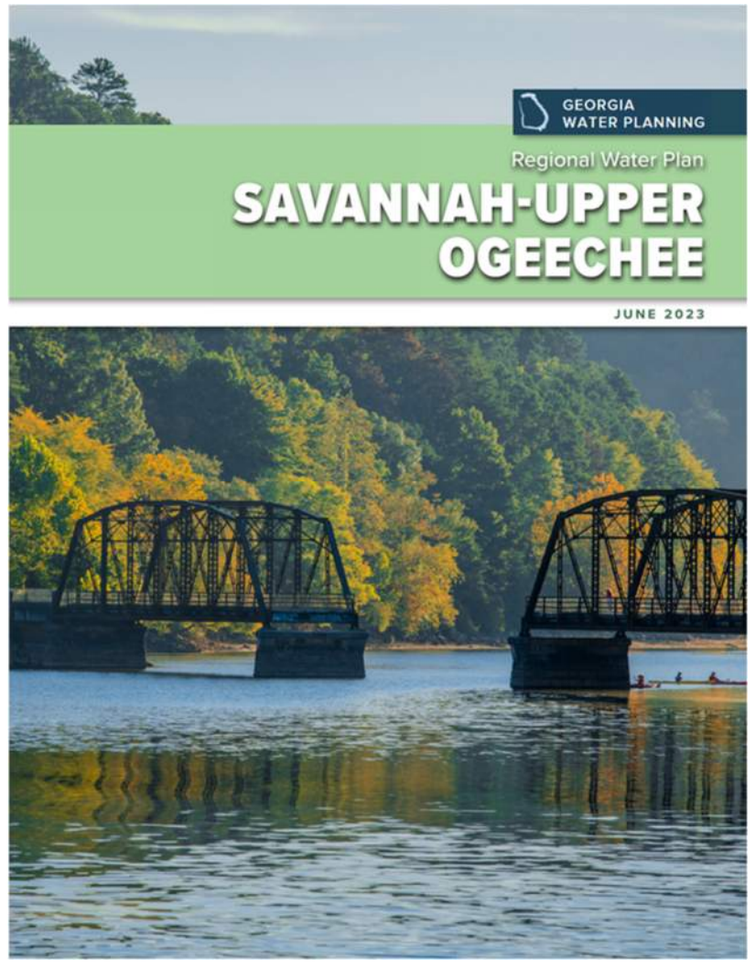
Major future water quality issues for the Savannah-Upper Ogeechee Region include:

- Additional wastewater treatment capacity is needed, especially in fast growing areas such as Columbia County.

- Additional wastewater planning and monitoring is needed to address limited assimilative capacity in several stream segments.

Savannah-Upper Ogeechee Regional Water Plan

- Water and Wastewater Forecasts & Water Resource Assessments
- Water Management Practices to meet water resource needs through 2060
  - Water Conservation (11)
  - Water Supply Management (8)
  - Wastewater Management (8)
  - Water Quality (14)
- Guidance for guide more localized planning and decision making.
- Used by GA EPD for grant applications
- Used by GEFA for grant and loan applications



Thank You

Savannah-Upper Ogeechee

https://waterplanning.georgia.gov/savannah-upper-ogeechee-regional-water-plan

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