

Upper Flint Regional Water Council Virtual Meeting

OCTOBER 19, 2020
1:00 PM



Georgia's State Water Plan

Agenda

Upper Flint Water Council Meeting

October 19, 2020

Videoconference

Objectives:

- 1) Discuss status of next regional water planning cycle (forecasts, resource assessments, schedule)
- 2) Hear report on seed grant proposals
- 3) Review water quality data

12:45 pm – 1:00 pm	Registration
1:00 pm – 1:15 pm	Welcome, Introductions, Chair's Discussion, Review Meeting Summary– Donald Chase, Chair and Kristin Rowles (GWPPC)
1:15 pm – 2:05 pm	Update on Regional Water Planning Process <ul style="list-style-type: none">• Planning Schedule and Resource Assessments – Johanna Smith (GAEPD)• Forecasts – Steve Simpson (B&V), Mark Masters (GWPPC)
2:05 pm – 2:20 pm	Seed Grant Proposal: A Plan to Address Water and Wastewater Issues in Pike County – Ellen Bauske, Mussie Habteselassie (UGA Griffin)
2:20 pm – 2:45 pm	Water Quality Data – Stephanie Whitacre (B&V)
2:45 pm – 2:55 pm	Public Comment
2:55 pm – 3:00 pm	Next Steps and Adjournment

Update on Regional Water Planning Process



Georgia's State Water Plan

Georgia EPD Updates

Johanna Smith, P.E.
Georgia EPD

www.georgiawaterplanning.org

EPD Updates Overview

- Regional Water Planning Process Schedule
- Resource Assessments
- Water Demand Forecasting
 - Municipal
 - Industrial
 - Energy
- FL v GA Litigation Update
- Seed Grants

Regional Water Plan Update Process

- Coordinated with the Metro Water District
- Process began early this year, target for completion is late 2022
- Technical work in process that underlies the Regional Water Plans:
 - Resource Assessments
 - Forecasting
 - Agricultural forecasting complete by March 2021
 - All other forecasting complete by December 2020

Resource Assessments

- Water Quality Resource Assessment
- Groundwater Availability
- Surface Water Availability



Flint River at Sprewell Bluff Park in Thomaston, GA (Upson County)
Source: *TripAdvisor*

Water Demand Forecasting

- 4 Sectors of Water Demand Forecasts
 - Municipal
 - Industrial
 - Energy
 - Agricultural → Albany State/UGA
- Water Demand Forecasts will extend out to 2060

Stakeholder Groups

Municipal Water Demand Forecasting

- Municipal Forecasting Stakeholder Group
 - Includes one representative from each Council & the Metro Water District (Brant Keller represents Upper Flint Council)
 - Stakeholder Meetings held on April 16 and June 3
 - Next meeting to be held later this fall (date TBD)
- Forecast being prepared by Black & Veatch team
- Information from Industrial forecasting efforts will inform this forecast (municipally-supplied industries)

Industrial Water Demand Forecasting

- Industrial Forecasting Stakeholder Group
 - Initial stakeholder meeting held on June 3
 - Developed subgroups by major sectors to further inform data and methodology:
 - Poultry & Food Processing
 - Mining
 - Paper and Forest Products
 - Manufacturing
- Forecast being prepared by CDM Smith team
- Expected completion of draft forecast by November 2020

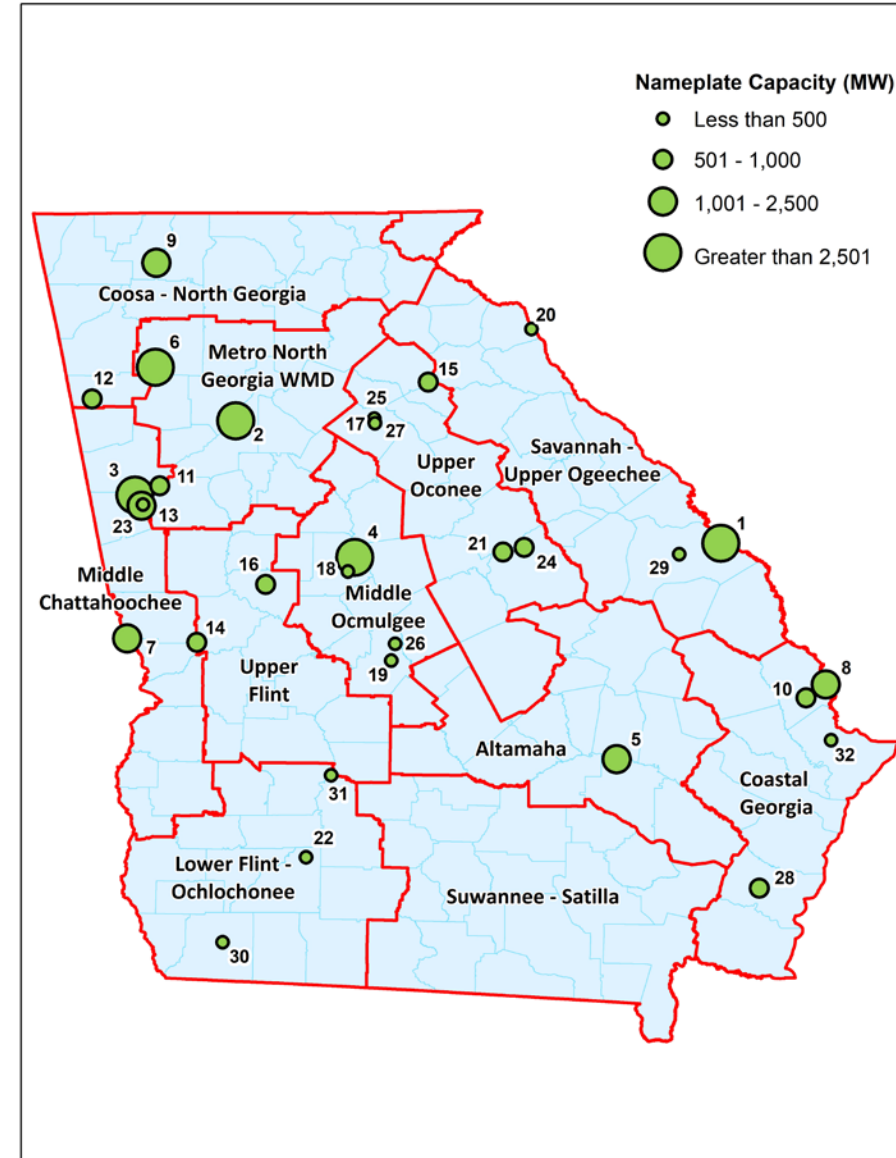
Industrial Water Demand Forecasting (Cont'd)

Participating Industrial Stakeholders:

- Industry Trade Groups:
 - Georgia Poultry Federation
 - Georgia Mining Association
 - Georgia Paper and Forest Products Association
 - Georgia Association of Manufacturers
 - Georgia Chemistry Council
- Governor's Office of Planning and Budget
- Georgia Department of Economic Development
- Georgia Tech Research Institute
- Representatives from a cross-section of industries, including:
 - International Paper
 - Mohawk Industries
 - Gulfstream
 - BASF
 - KIA Motors
 - Rayonier Performance Fibers
 - Packaging Corp. of America

Energy Water Demand Forecasting

- Stakeholders provide input on the methodology to estimate future water demand for thermoelectric power generation and statewide energy generation
- Factors evaluated:
 - List of thermoelectric facilities
 - Forecasts for water withdrawal and consumption by facility
 - Other available data



Energy Water Demand Forecasting (Cont'd)

Stakeholder group includes representatives from:

- Georgia Power / Southern Company
- Municipal Electric Authority of Georgia (MEAG)
- Oglethorpe Power Corporation
- Dalton Utilities
- Georgia Public Service Commission
- Georgia Environmental Finance Authority

FL vs. GA Supreme Court Case Updates

- **October 2013:** Florida files complaint with Supreme Court
- **January 2018:** Oral arguments
- **June 2018:** Supreme Court remands case back to Special Master
- **August 2018:** Honorable Paul J. Kelly, Jr. appointed as new Special Master
- **January 2019:** Briefs on “findings of fact and conclusions of law” for both states due to Special Master
- **February 2019:** Response Briefs due to Special Master
- **November 2019:** Hearing with oral arguments

Supreme Court Case Updates (cont'd)

- **December 2019:** Special Master issued report and recommendation to the Supreme Court
- **January 2020:** Court issued order setting schedule for briefing exceptions to Special Master's report
- **April 2020:** Florida filed exceptions
- **June 2020:** Georgia filed its reply to Florida's filing
- **July 2020:** Florida filed its sur-reply to Georgia's filing <https://www.ca10.uscourts.gov/special-master-142>
- **October 2020:** Supreme Court term begins
- **January – June 2021:** Oral arguments and Court ruling expected

Seed Grants

- Cost-Share: 60%/40%
- 10% Cash Match of Total project
- \$75,000 State limit
- Letter of Endorsement Council Chair

- Pre-application meeting deadline 10/16/2020
- Application Deadline 10/31/2020
- <https://epd.georgia.gov/outreach/grants/regional-water-plan-seed-grant-funds>

Municipal Water and Wastewater Forecasting

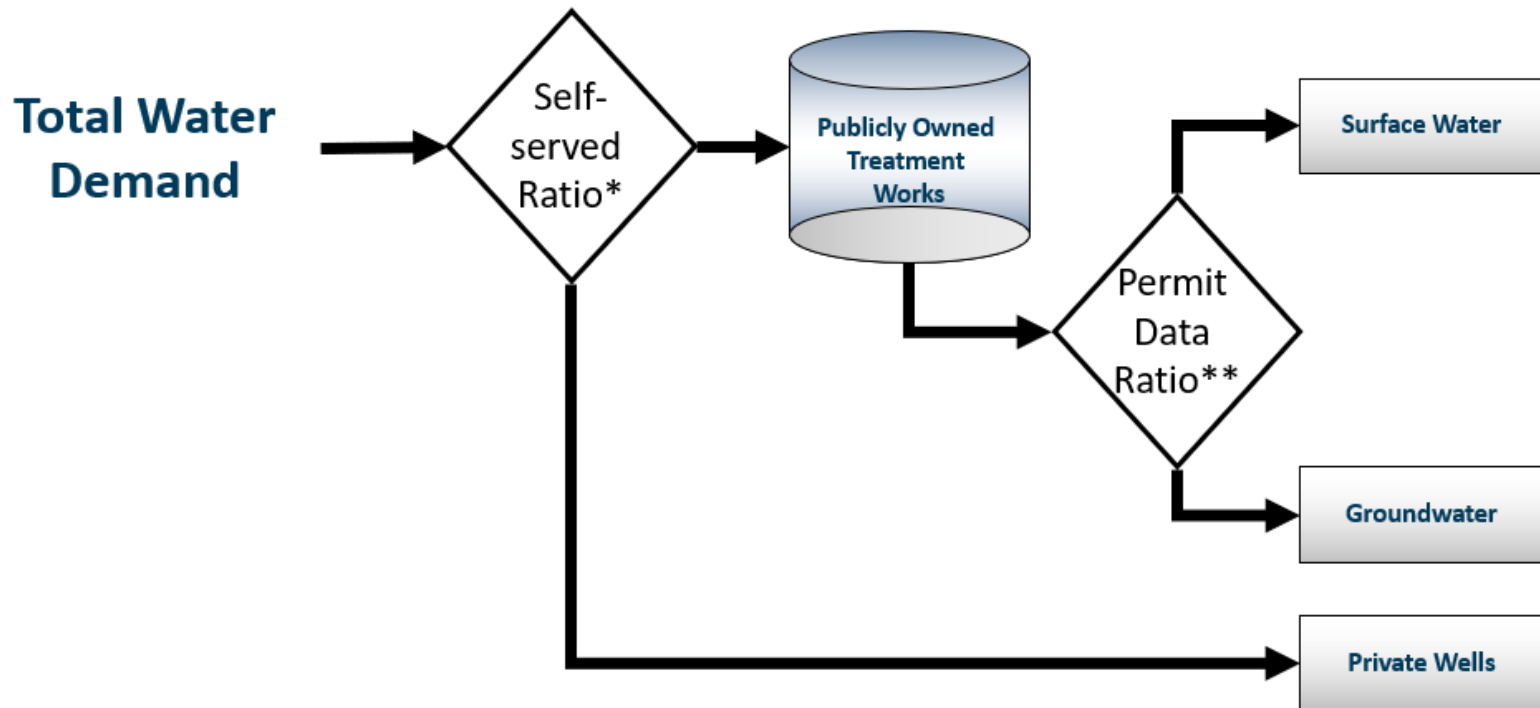
Steve Simpson, Black & Veatch



Water Demand Forecasting – Municipal

- Black & Veatch/Jacobs team preparing water demand forecasts for this sector
- Municipal Forecasting Stakeholder Group
 - Includes one representative from each Council & the Metro Water District (Brant Keller represents Upper Flint Council)
 - Initial Stakeholder Meeting held on April 16
 - Reviewed methodology and initial data collection
 - Second Stakeholder Meeting held on June 3
 - Reviewed draft forecast results
 - Next meeting to be held later this fall
- Information being collected by Industrial forecasting efforts will inform this forecast (municipally-supplied industries)

Municipal Water Demands



*Based on previous USGS estimates

**Based on existing GA EPD permit data

Municipal Water Demands – Self Supplied

- County % population self-supplied water (groundwater wells)
- Self supplied % held constant to 2060 for all counties in Upper Flint

County	2017 Plan Percent Population Self Supplied	Self Supplied Per Capita	Updated Percent Population Self Supplied ¹
Crisp	22%	75	48%
Dooly	34%	75	37%
Macon	80%	75	38%
Marion	28%	75	37%
Meriwether	57%	75	49%
Pike	78%	75	80%
Schley	16%	75	21%
Spalding	19%	75	5%
Sumter	37%	75	39%
Talbot	28%	75	19%
Taylor	47%	75	47%
Upson	56%	75	44%
Webster	46%	75	61%

¹ Ratios as shown in the Estimated Use of Water in Georgia for 2015 and Water Use Trends, 1985-2015 (USGS, 2019).

Municipal Water Demands – Public Supply

- Data collection was focused on 2019 average annual water withdrawals (as reported to EPD)
- 2019 municipal water use:
 - Surface water use: 17.75 mgd
 - Groundwater use: 11.26 mgd
- Forecast (through 2060) will be informed by updated per capita use estimates and population projections

Municipal Water Demands – Per Capita

- Updated per capita demand values based on water audit submissions to EPD (forecasting team reviewing 2019 data)
- Water audits for small systems (less than 3,300 people) unavailable, so water use / population served used

Upper Flint Per Capita Water Demand (gpcd)

County	2011 Plan Per Capita Demand	2017 Plan Per Capita Demand	Updated Per Capita Demand ¹
Crisp	122	118	160
Dooley	163	151	299
Macon	162	166	123
Marion ²	191	188	222
Meriwether	143	131	138
Pike ²	142	153	171
Schley ²	183	189	110
Spalding	163	148	101
Sumter	143	142	147
Talbot	132	128	82
Taylor ²	166	160	146
Upton	233	241	113
Webster ²	137	132	109

NOTES:

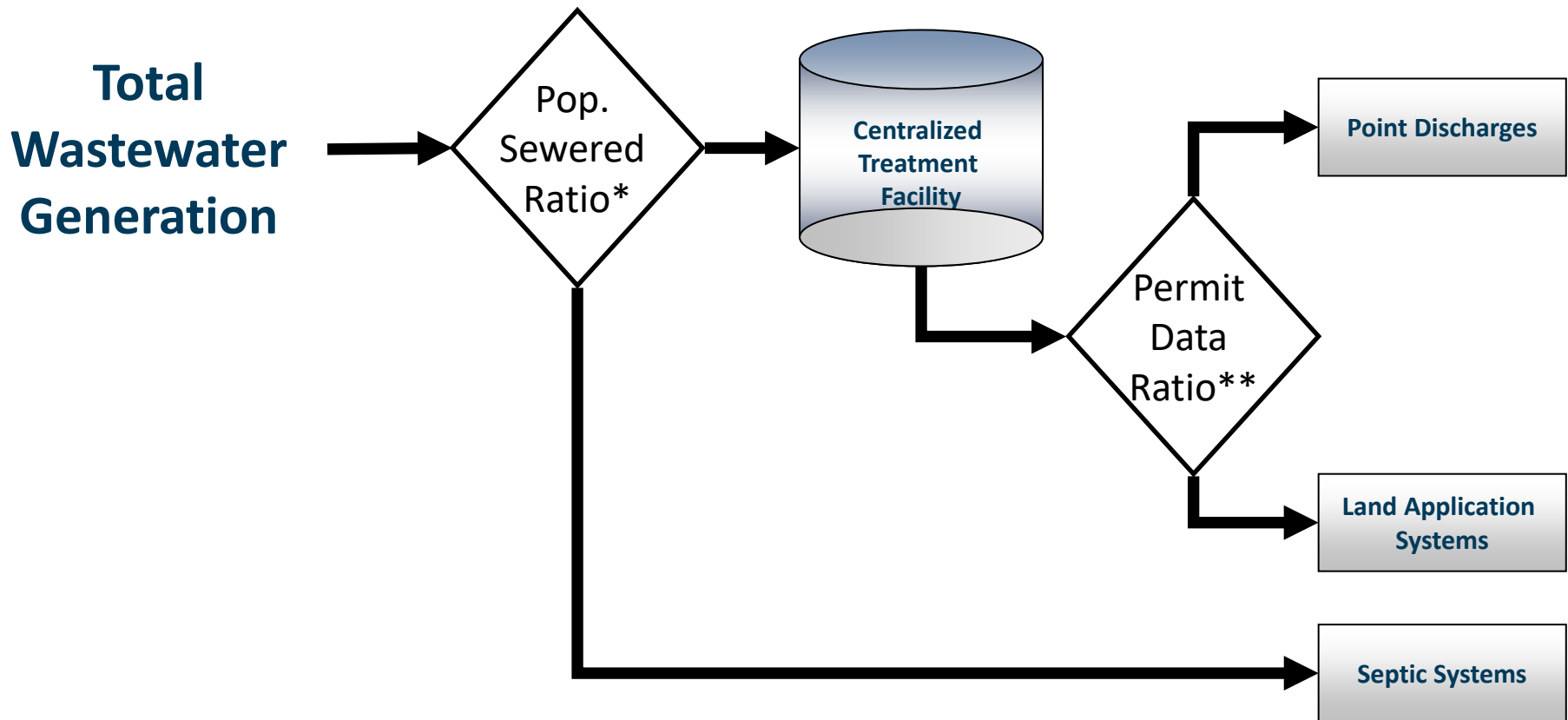
¹ Weighted average per capita calculated using the available 2015-2018 Water Loss Audits.

² Per capita was calculated using the population stated in SDWIS and the recorded water demands.

Municipal Water Demands – Public Supply

- Transfers of water between municipal systems in different Counties of more than 0.1 mgd will be factored into the forecast
- 2019 Transfers (from EPD records):
 - Over 30 county-to-county transfers
 - 10 are more than 0.1 mgd
 - 1 in the Upper Flint Region
- These will be used for source demands for resource assessment modeling

Municipal Wastewater Discharges



*Based on GA DPH or 1990 US Census Bureau data

**Based on existing GA EPD permit data

Municipal Wastewater – Septic

- County % population on septic systems
 - Will be held constant, unless specific input received
- Values shown in unshaded cells are from Georgia Department of Public Health data (through 2018)
- Values shown in shaded cells are from the 1990 Census housing characteristics for Georgia (used where DPH data appeared to overestimate population served by septic)

County	% Septic Users in 2020
Crisp County	46%
Dooly County	51%
Macon County	54%
Marion County	82%
Meriwether County	62%
Pike County	83%
Schley County	79%
Spalding County	67%
Sumter County	43%
Talbot County	80%
Taylor County	59%
Upson County	58%
Webster County	95%

Municipal Wastewater – Municipally Treated

- Data collection was focused on 2019 average annual wastewater discharges (as reported to EPD)
- 2019 municipal wastewater flows in Upper Flint region:
 - Point source discharges: 10.73 mgd
 - Land application system (LAS): 5.09 mgd
- Forecast (through 2060) will be informed by population projections

Next Steps

- Incorporate final comments from industrial forecasting efforts
- Publish municipal forecast methods report for public comment
- Meet with municipal forecasting stakeholder group to share revised municipal forecasts
- Present final municipal forecasts to Councils

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
 - Presented by basin, county, planning node, etc....
- ▣ **Animal Ag/Nursery**

Seed Grant Proposal from Region:

A Plan to Address Water and Wastewater Issues in Pike County

University of Georgia Griffin Campus, Pike County UGA Extension, Pike County
Water and Sewage Authority

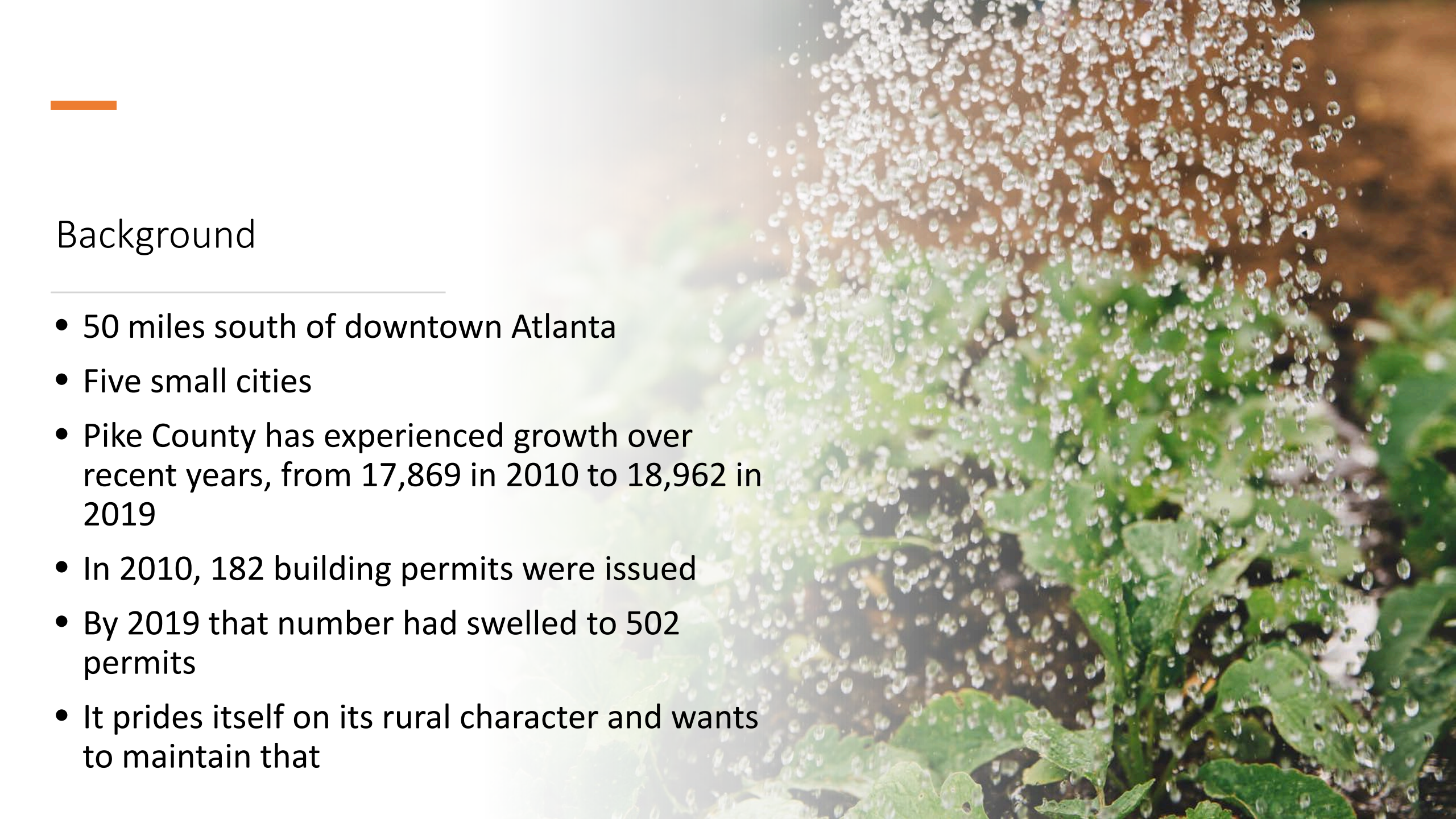


A Plan to Address Water and Wastewater Issues in Pike County

E. Bauske, M. Habteselassie, B. Wassel, and S. Huckaby



Background

- 50 miles south of downtown Atlanta
 - Five small cities
 - Pike County has experienced growth over recent years, from 17,869 in 2010 to 18,962 in 2019
 - In 2010, 182 building permits were issued
 - By 2019 that number had swelled to 502 permits
 - It prides itself on its rural character and wants to maintain that
- 

Water Provider	Customers Served	Sewer or Septic	Notes
PCWSA	530	septic	Out of water, cannot add more
City of Zebulon	720	sewer	Water system constructed in early-1900's; Sewer system constructed in 1968 and expanded in 2005.
City of Meansville	120	septic	Old system with more that 40% water loss and continual infrastructure repair Very limited growth potential
City of Williamson	220	septic	System was built in the 1970 by volunteers Service to the entire city must be interrupted for repairs
City of Molena	200	septic	High levels of radon and uranium must be filtered
City of Concord	400	sewer	Water is adequate but wastewater spills are a regular occurrence



Conclusions

- Approximately 90% are on well water
- Approximately 95% are on septic
- They are growing!
- They need a plan!
- They know they need a plan!
- We can help them make a plan and educate the population in water issues

Objectives

- Develop a 30-year water resources management plan that ensures the water welfare and needs of the county are met in a way that is fully supportive of the Upper Flint Regional Water Plan
- Ensure public understanding of water resources and utilization




Fit with the Upper Flint Regional Water Plan

- DM2- Exploring the potential impact of implementation of non-farm water conservation practices in the Upper Flint Water Planning Region
- SF1 – Evaluating storage options that can provide for supply and flow augmentation in dry periods including potential locations, viability, cost, and implementation
- SF3 -Exploring the possibility of replacing surface water withdrawals with groundwater withdrawals where it is feasible and any potential impacts on groundwater aquifers
- RM1- Maintaining a preference for treatment systems that discharge to surface water over land application of wastewater and support increased return flows to the surface water
- WQ5 – Utilizing technology to improve water quality management information (GIS maps)

A close-up photograph of several autumn leaves floating in a shallow pond. The leaves are in various shades of orange, brown, and yellow, with some showing signs of decay. The water is dark and reflects the surrounding environment. A semi-transparent white circle is overlaid on the right side of the image, containing the text.

The plan must also:

- Take inventory of the existing facilities and their performance
- Project water and wastewater demand, identify alternatives for meeting future needs
- Consider septage handling
- Make recommendations
- Generate initial cost estimates

A close-up photograph of a black faucet with water flowing out. The water is captured in motion, creating a spray of droplets around the main stream. The background is blurred, showing what appears to be a kitchen sink area.

The educational programs
will focus on:

- Improving water quality (WQ3)
- Create a network of citizen water quality monitors (WQ4)

A close-up, high-speed photograph of water splashes, creating a dynamic and textured background of blue and white droplets and ripples.

Questions?

Water Quality in Georgia: 2020 Integrated 305(b)/303(d) Report

Stephanie Whitacre, Black & Veatch



Overview

- Water resources assessment will be included in the Upper Flint Regional Water Plan
 - Surface water and groundwater availability
 - Water demands and wastewater flow forecasts
 - Assimilative capacity
 - Surface Water Quality/Impairments
 - 305(b)/303(d) List



3. Current Assessment of Water Resources of the Upper Flint Region

REGIONAL WATER PLAN

Georgia 305(b)/303(d) Integrated Report

- Report updated biennial, following state-wide water quality data collection and assessment
 - Includes description of the nature, extent, and causes of documented water quality problems
 - Serves as the basis for the integrated 305(b)/303(d) list
- Section 303(d) of Clean Water Act
 - Requires a list of waters not meeting their designated uses
 - Development of a Total Maximum Daily Load (TMDL) for those waters

Water Use Classifications

- Waters are classified as one or more of the following uses:
 - Drinking Water
 - Recreation
 - Fishing
 - Coastal Fishing
 - Wild River
 - Scenic River
- Collected data compared to the EPD Water Quality Standards and stream reaches are categorized:
 - Supporting its designated use (Category 1)
 - Assessment pending (Category 3)
 - Not supporting its designated use (Category 5)

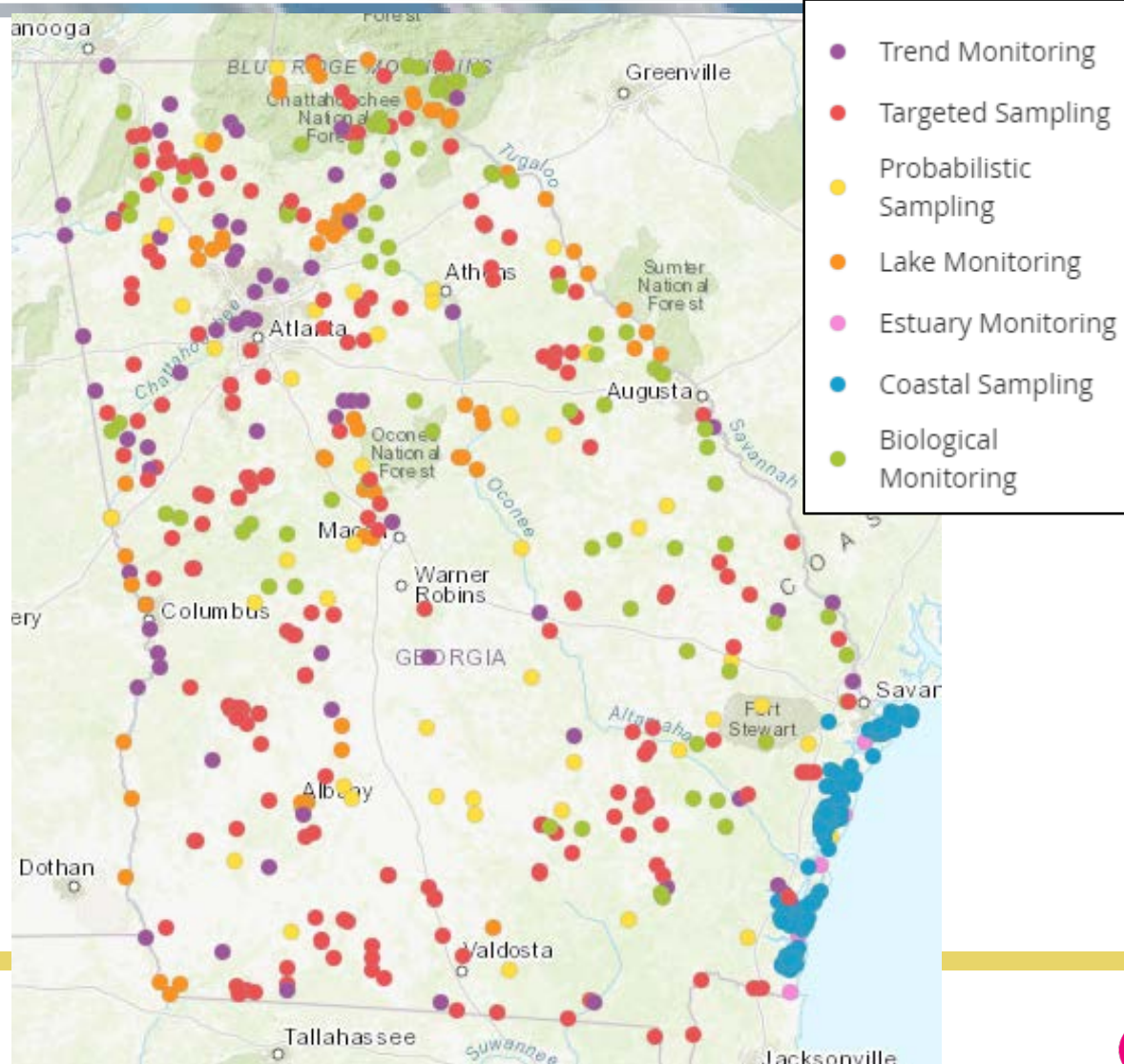
Water Quality Monitoring

- Most data collected by GA EPD, USGS, or third party entities
- Data collected at all sites include:
 - DO
 - Temperature
 - pH
 - Specific conductance
- Samples tested for:
 - Turbidity
 - BOD5
 - Alkalinity
 - Suspended Solids
 - Ammonia
 - Nitrate-nitrite
 - Total Kjeldahl nitrogen
 - Total phosphorus
 - Total organic carbon

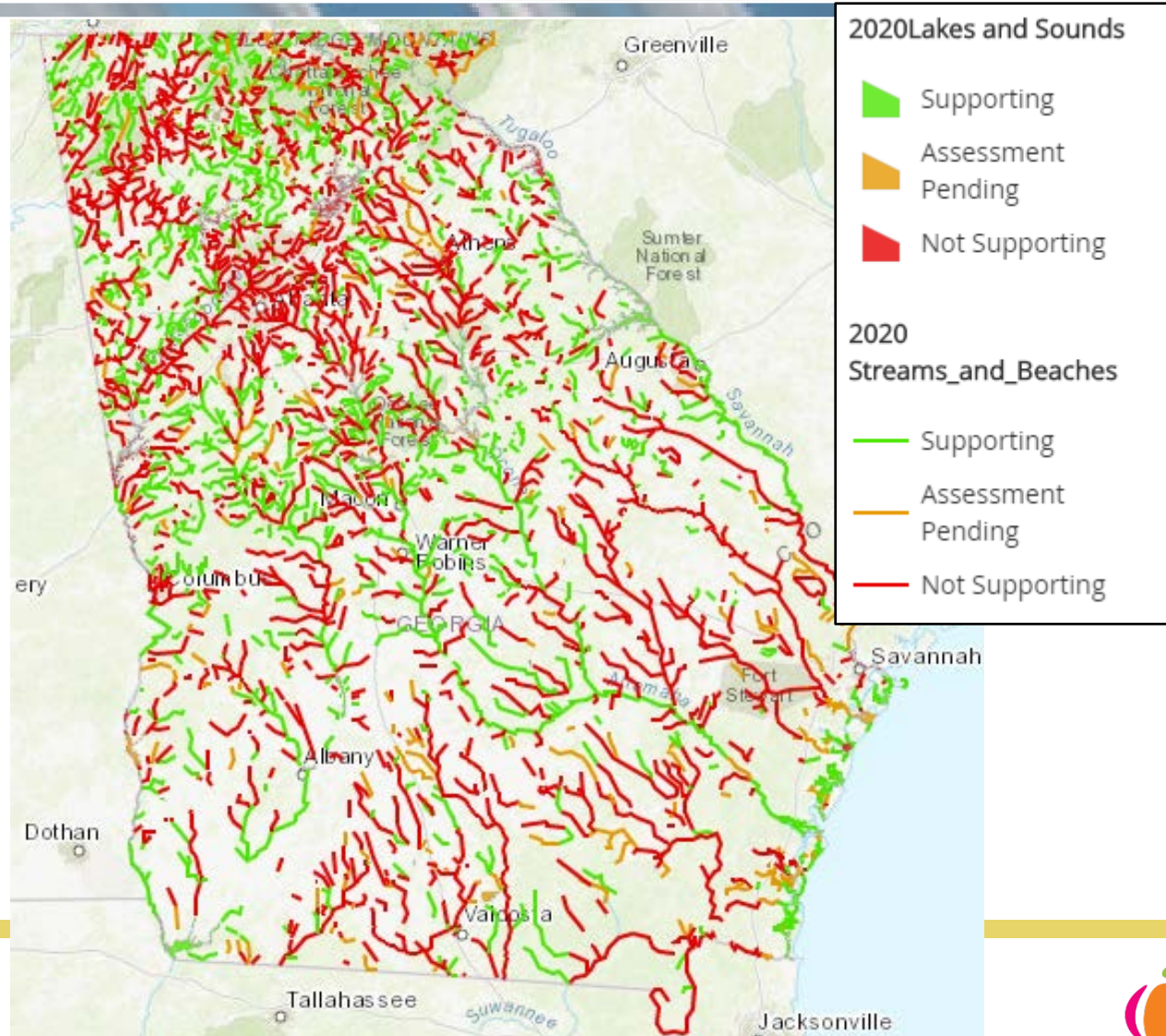
Example Water Quality Criteria

Parameter	Specific Criteria	Water Use Classifications					
		Drinking Water	Recreation	Fishing	Wild River	Scenic River	Coastal Fishing
DO	No Change from Natural				X	X	
	Trout Streams Daily Avg of 6.0 mg/L, Not < 5.0 mg/L	X	X	X			
	Warm Water Species Daily Avg of 5.0 mg/L, Not < 4.0 mg/L	X	X	X			X
	Daily Avg of 5.0 mg/L, Not < 4.0 mg/L. If natural DO is less than these values, then 0.1 mg/L deficit from natural condition is allowable.						X
pH	No change from Natural				X	X	
	6.0-8.5	X	X	X			X
	6.0-9.5						X
Temperature	No change from Natural				X	X	
	Not to exceed 90°F	X	X	X			X
	Primary Trout Streams No increase >0°F	X	X	X			
	Secondary Trout Streams No increase >2°F	X	X	X			
	Warm Water Species - Freshwater No increase >5°F above intake temp	X	X	X			X
	Warm Water Species - Estuarine No increase >1.5°F above intake temp		X	X			X

Water Quality Monitoring Locations

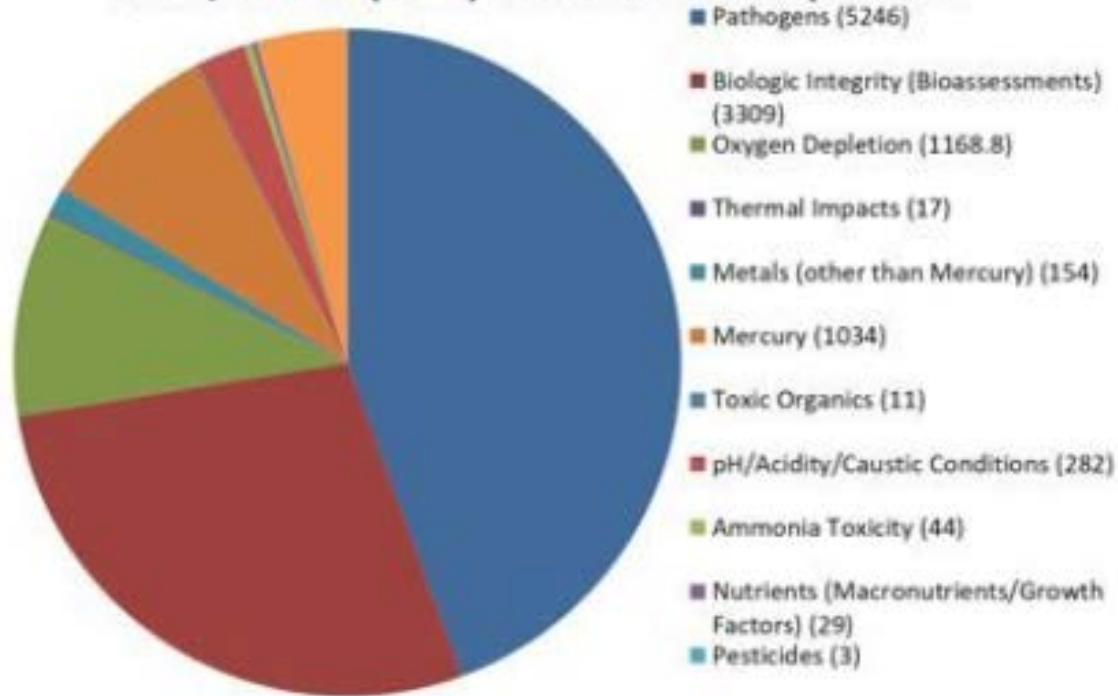


2020 305(b)/303(d) List - Map

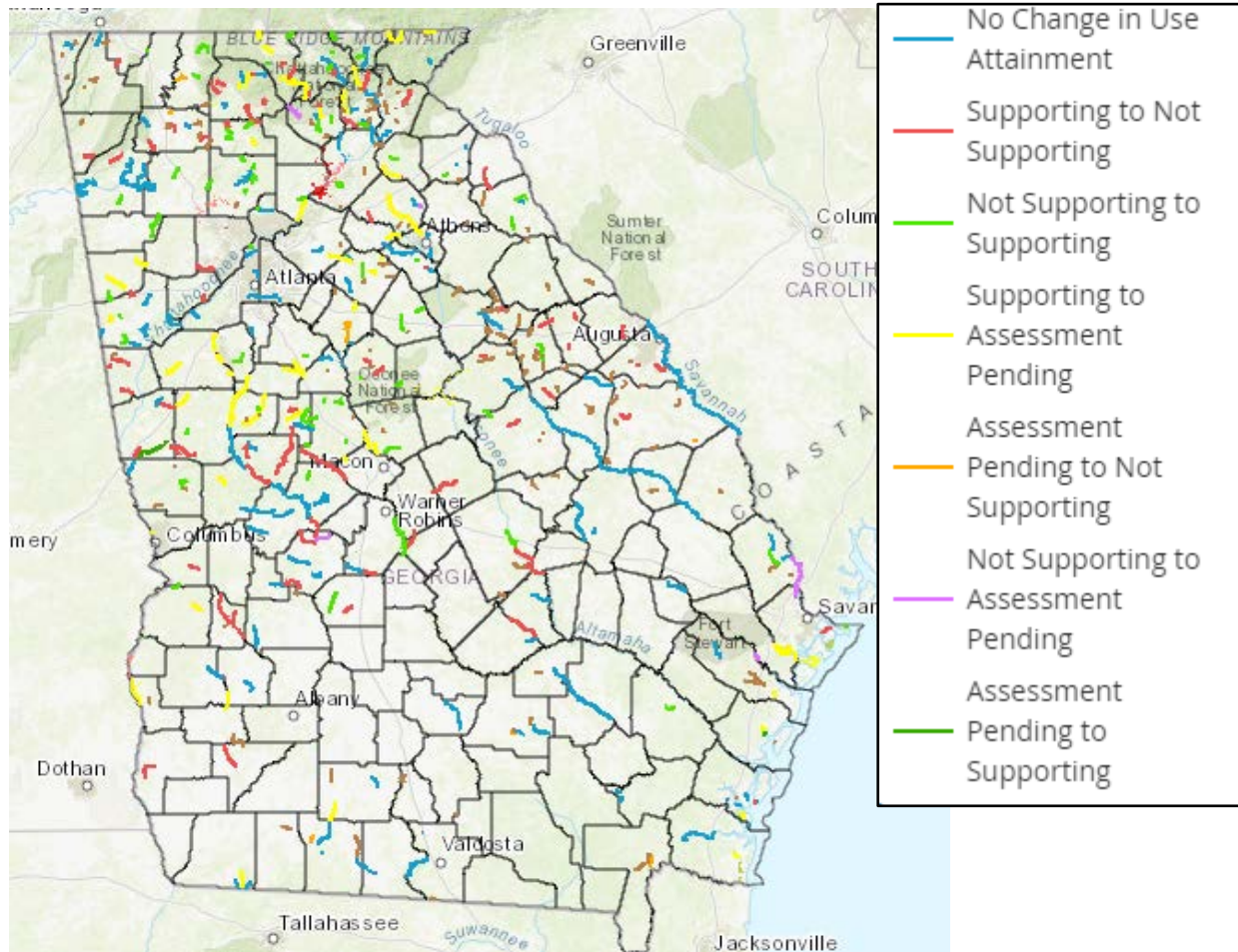


Causes of Non Supporting Uses

Rivers/Streams (miles) Contributions to Impairment



Changes in Designation



<https://gaepd.maps.arcgis.com/apps/MapSeries/index.html?appid=dea4c9c319d4461c8d5cef8e68957b1b>

305(b)/303(d) List Progression

	2020 List	2018 List	2016 List	2014 List
Waters Assessed	2,777	2,616	2,399	2,297
Supporting	1,153 (42%)	1,142 (44%)	1,052 (44%)	1,019 (44%)
Not Supporting	1,373 (49%)	1,301 (50%)	1,226 (51%)	1,175 (51%)
Assessment Pending	251 (9%)	173 (6%)	121 (5%)	103 (5%)

Highlights of 2020 305(b)/303(d) List Changes

- Changes in the chlorophyll *a* listing for many lakes
- Ammonia toxicity was added as a cause of impairment
- Updates were made to waters previously assessed for Biota Impacted (Bio F) based on recalibration of data by Wildlife Resources Division
- Waters were placed in Category 3 due to pH
- Specific causes have been assigned to specific designated uses for water with multiple use
- Cause names have been modified

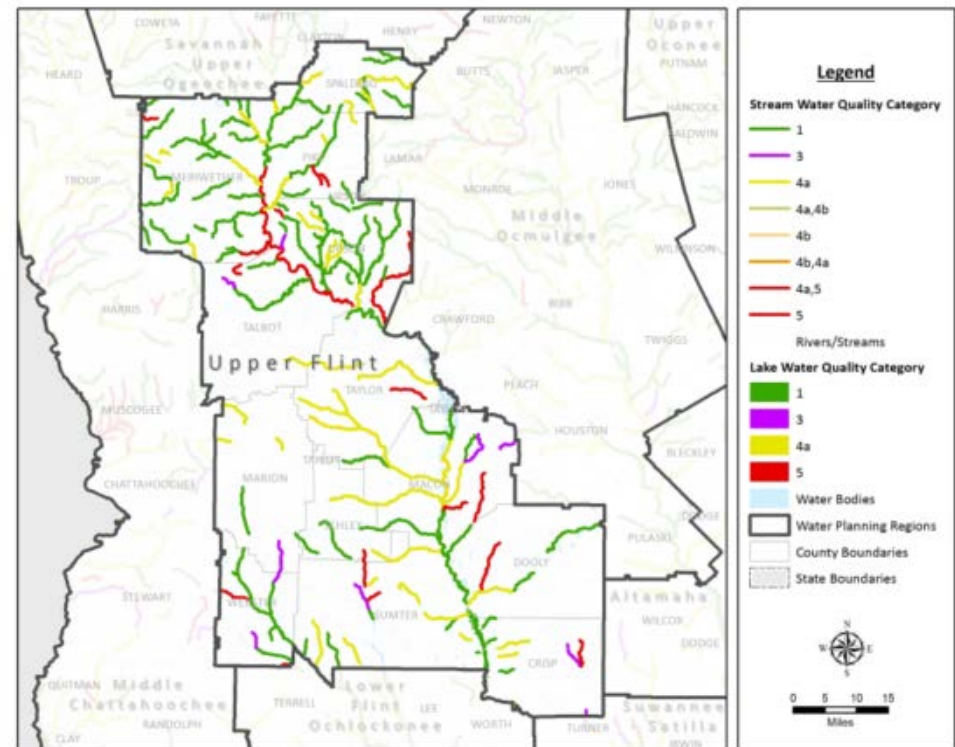
Uses of 305(b)/303(d) List

- Documents the determination of waters supporting or not supporting designated uses
- Documents causes of impairment and priority ranking
- Highlights waters which require TMDL development (those not supporting designated uses)

Uses of 305(b)/303(d) List (cont'd)

- Updates to the Regional Water Plans will reflect data from the 2020 305(b)/303(d) list
 - 2017 Regional Water Plans used the 2014 list
 - Other water quality information will also be highlighted in the Plans

Figure 3-6: Summary of Impaired Waters in the Upper Flint Water Planning Region



Public Comment