



# Georgia's State Water Plan

Middle Ocmulgee Water Planning Council  
August 4, 2020

[www.georgiawaterplanning.org](http://www.georgiawaterplanning.org)



## Georgia's State Water Plan

Middle Ocmulgee Regional Water Council Meeting  
DRAFT Agenda – August 4, 2020

### Objectives:

- 1) Hear updates from EPD on modeling efforts, population projections and forecasting
- 2) Updates on the PERC licensing process for Lloyd Shoals Dam
- 3) Grant Projects Status Updates and Discuss Upcoming Seed Grants

2:50 – 3:00	Online Check-in and Roll Call	Laura Hartt, Jacobs Michelle Vincent, Jacobs Chairman Richardson
3:00 – 3:10	Welcome and Council Business <ul style="list-style-type: none"><li>• Approve Meeting Summary and Meeting Agenda</li></ul>	
3:10 – 3:40	EPD Modeling Projects Updates <ul style="list-style-type: none"><li>• Alternative Flow Regimes Pilot Study Update</li><li>• BEAM modeling effort</li></ul>	Dr. Wei Zeng, EPD
3:40 – 3:55	Lloyd Shoals Dam/Lake Jackson PERC Licensing Update	Courtenay O'Mara, Southco Company
3:55 – 2:30	Population Projections and Forecasting Update <ul style="list-style-type: none"><li>• Population Projections</li><li>• Water Demand Forecasting</li></ul>	Michelle Vincent, Jacobs Veronica Crow, EPD
2:30 – 2:35	Break	
2:35 – 2:50	Metro District Update <ul style="list-style-type: none"><li>• Plan updates</li><li>• Biosolids Update</li></ul>	Danny Johnson, ARC
2:50 – 3:05	Grant Updates <ul style="list-style-type: none"><li>• Update on current/past grant projects</li><li>• Grant program schedule and future grant projects</li></ul>	Joy Hinkle, EPD
3:05 – 3:15	Wrap Up and Next Steps	Chairman Richardson and Michelle Vincent, Jacobs
3:15 – 3:30	Public Comments/Local Elected Official Comments	
3:30	Adjourn	

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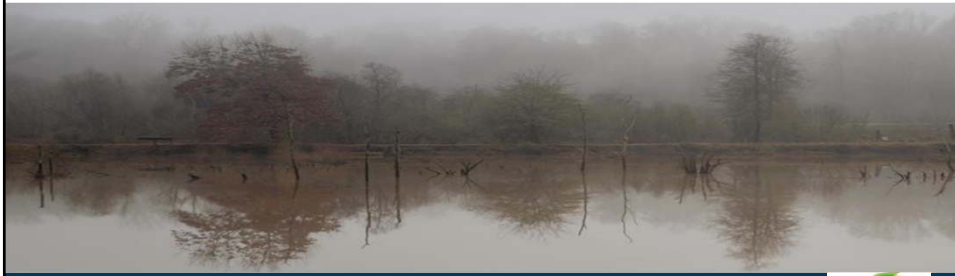
- Welcome and Introductions
- Approve Meeting Summary from last meeting
- Approve Draft Agenda

## Middle Ocmulgee Region Council Meeting

### EPD Modeling Projects Update

- Alternate Flow Regimes Pilot Study Update
- BEAM modeling effort
- Questions and Discussion

- Dr. Wei Zeng, EPD



Ocmulgee National  
Monument Wetlands



## Updates on Instream Flow Study and BEAM Model

Wei Zeng

Water Supply Program, Watershed Protection Branch

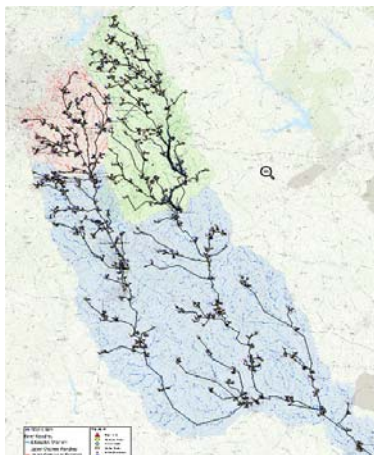
Georgia EPD

August 2020

## Application of Instream Flow Study Elsewhere in the State

- Approaches used in the Middle Ocmulgee River used in two other places leading to rigorous consideration of identified interests, including aquatic resources, recreation, and downstream entities
  - Water withdrawal permit to the Cities of Fairburn, Palmetto, and Union City – identification of fish habitats, recreational opportunities, and impact of potential withdrawal to West Point Reservoir – leading to instream flow protection thresholds that are based on field data
  - Application for Indian Creek Reservoir (both water withdrawal application and CWA 404 (401 Water Quality Certification) application) – aquatic resources concerns identified by Wildlife Resources Division of Georgia DNR and addressed by way of including monthly pumping limits (associated with resource needs)

## BEAM Model and Its Spatial Resolution





## Middle Ocmulgee Region Council Meeting

### Lloyd Shoals Dam FERC Relicensing Update

- Courtney O'Mara, Southern Company



Lloyd Shoals Dam



## Middle Ocmulgee Region Council Meeting

### Population Projections and Forecasting Update

- Population Projections
  - Michelle Vincent, Jacobs
- Water Demand Forecasting
  - Veronica Craw, EPD





## Population Projections

[www.georgiawaterplanning.org](http://www.georgiawaterplanning.org)

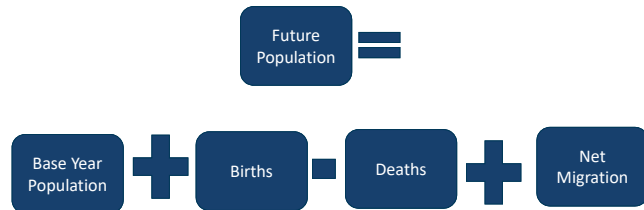


## Updated Population Projections

- State and County population projections are prepared by the Governor's Office of Planning and Budget (OPB)  
<https://opb.georgia.gov/>
- Used consistently by all state agencies for multiple purposes
- Updated population projections will be used in the Plan review and revision process
- Population is dynamic and is an important input to planning



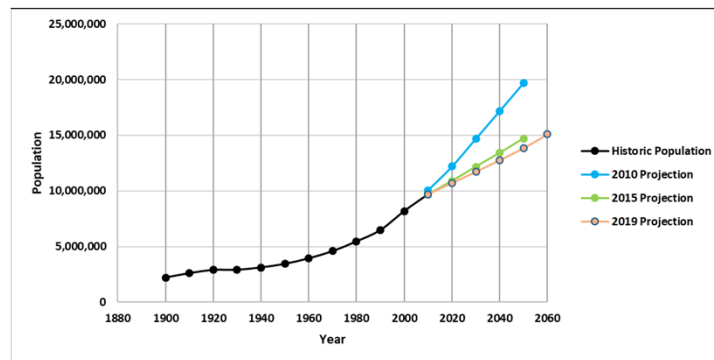
## Basic Approach to Population Projections (The Cohort-Component Method)



- Fertility and death rates updated using 2013 – 2017 county-level data by Carl Vinson Institute
- Migration rates updated using:
  - U.S. Census Bureau's annual population estimates and components of change
  - Data from the U.S. Census Bureau's 2006-2010 American Community Survey

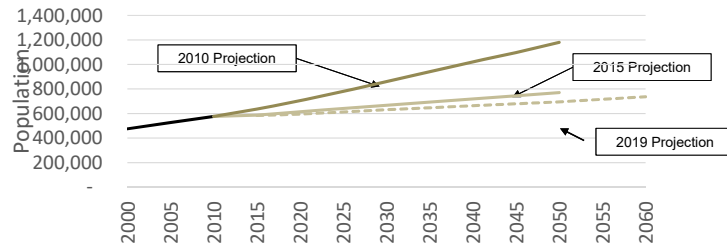


## Population Growth Projections - Statewide



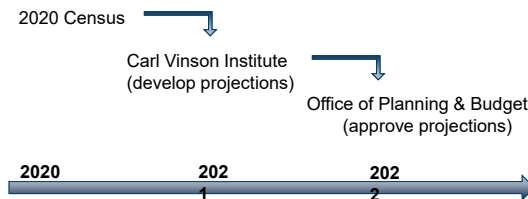
## Population Growth Projections – Middle Ocmulgee

- Population growth was refined for 2015, projected 35% less population by 2050.
- 2019 population projections slightly lower than the 2015 projections for the region.



## Incorporating the 2020 Census

Data from the 2020 Census will be available in late 2021 or 2022; population projections based on 2020 Census data will be incorporated into 2026 Regional Plan update.







## Water Demand Forecasting Updates

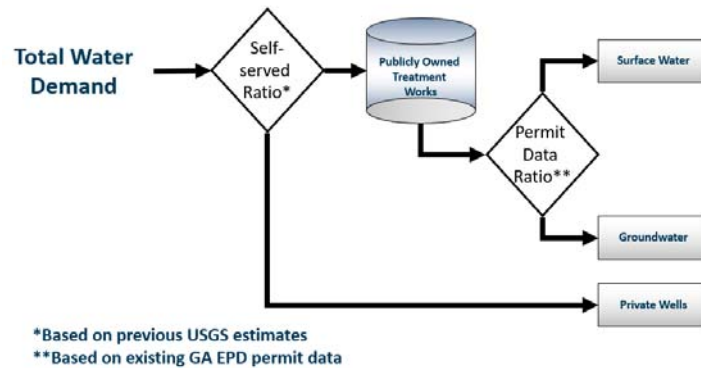
[waterplanning.georgia.gov](http://waterplanning.georgia.gov)



### Water Demand Forecasting – Municipal

- Black & Veatch/Jacobs planning contractor team preparing water demand forecasts for this sector
- Municipal Forecasting Stakeholder Group
  - Includes one representative from each Council & the Metro Water District (Tony Rojas represents Middle Ocmulgee 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 in September
- Information being collected by Industrial forecasting efforts will inform this forecast (municipally-supplied industries)

## Municipal Water Demands



## Municipal Water Demands – Self Supplied

- County % population self-supplied water (groundwater wells)
- Bibb Co. – based on prior input, will decrease % self supplied to 6% by 2060
- Pulaski Co. – based on prior input, will decrease % self supplied to 30% by 2060 (also requested 100 gpcd)

County	2017 Plan Percent Population Self Supplied	Self Supplied Per Capita	Updated Percent Population Self Supplied <sup>1</sup>
Bibb <sup>3</sup>	6%	75	14%
Butts	18%	75	0.3%
Crawford	79%	75	71%
Houston	3%	75	5%
Jasper	66%	75	44%
Jones	54%	75	46%
Lamar	56%	75	57%
Monroe	65%	75	47%
Newton	31%	75	16%
Peach	31%	75	35%
Pulaski <sup>4</sup>	40%	100	53%
Twiggs	77%	75	72%

<sup>1</sup> 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)
- Municipal water use:
  - Surface water use: 72.0 mgd
  - Groundwater use: 35.4 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 (Crawford & Twiggs Counties)

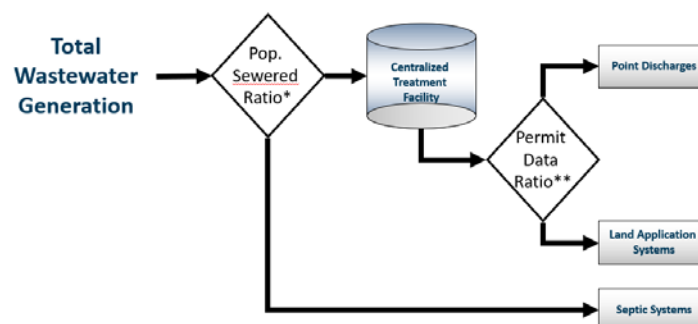
County	2011 Plan Per Capita Demand	2017 Plan Per Capita Demand	Updated Per Capita Demand <sup>1</sup>
Bibb	177	171	163
Butts	117	120	90
Crawford <sup>2</sup>	101	107	96
Houston	168	166	157
Jasper	138	139	121
Jones	90	91	106
Lamar	188	193	263
Monroe	185	191	160
Newton	121	122	144
Peach	126	125	94
Pulaski	140	146	164
Twiggs <sup>2</sup>	125	125	227

## Municipal Water Demands – Public Supply

- Transfers of water between municipal systems in different Counties will be factored into the forecast
- 2019 Transfers (from EPD records):

Selling Entity	Purchasing Entity	2019 Annual Avg.
Macon Water Auth. (Bibb Co.)	Monroe County	0.69 mgd
Butts County W&S Auth.	Monroe County	0.22 mgd
City of Griffin (Spalding Co.)	Lamar County	0.54 mgd

## Municipal Wastewater Demands



\*Based on 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 Dept. of Public Health data (through 2018)
- Values shown in shaded cells are from the 1990 Census housing characteristics for Georgia (used where DPH data was deemed inappropriate for use by forecasting team)

County	% Septic Users in 2020
Bibb County	20%
Butts County	70%
Crawford County	87%
Houston County	34%
Jasper County	74%
Jones County	77%
Lamar County	84%
Monroe County	70%
Newton County	67%
Peach County	66%
Pulaski County	68%
Twiggs County	86%

## Municipal Wastewater – Municipally Treated

- Data collection was focused on 2019 average annual wastewater discharges (as reported to EPD)
- Municipal wastewater flows in Middle Ocmulgee region:
  - Point source discharges: 56.1 mgd
  - Land application system (LAS): 5.7 mgd
- Forecast (through 2060) will be informed by population projections

## Water Demand Forecasting – Industrial

- CDM Smith planning contractor team preparing water demand forecasts for this sector
- Industrial Forecasting Stakeholder Group
  - Includes broad mix of industry groups (e.g., Ga. Mining Assoc., Ga. Poultry Fed.), industrial facility representatives (incl. Council members), and Georgia Economic Development Authority
  - Initial stakeholder meeting held on June 3
  - Group now split into subgroups by major sectors to further inform data and methodology:
    - Mining
    - Poultry & Food Processing
    - Pulp & Paper
    - Manufacturing
- Expected completion by October

## Water Demand Forecasting – Industrial

- Surface water – permitted users & amounts (12.7 mgd in 2019)

Permit Holder	3-NAICS	Permit Number	County	2019 MGD	10-yr avg MGD
Graphic Packaging International, Inc.	322	011-0591-01	Bibb	12.28	11.49
Cherokee Brick & Tile	327	011-0503-02	Bibb	0.00	0.00
Cherokee Brick & Tile	327	011-0503-01	Bibb	0.00	2.29
Cherokee Brick & Tile	327	011-0503-05	Bibb	0.00	0.77
Cherokee Brick & Tile	327	011-0503-04	Bibb	0.00	2.29
Cherokee Brick & Tile	327	011-0503-03	Bibb	0.03	0.04
Atlanta Sand & Supply Company	327	039-1107-01	Crawford	0.00	0.00
Atlanta Sand & Supply Company	327	039-1107-02	Crawford	0.38	0.38

## Water Demand Forecasting – Industrial

- Groundwater – permitted users & amounts (8.8 mgd in 2019)

Permit Holder	3-NAICS	Permit Number	County	2019 MGD	10-yr avg MGD
Graphic Packaging International, Inc.	322	011-0002	Bibb	0.32	0.35
Pactiv LLC	322	011-0003	Bibb	0.24	0.19
Cherokee Brick & Tile	327	011-0009	Bibb	0.00	0.00
Armstrong World Industries, Inc.	327	011-0001	Bibb	1.23	1.24
YKK (U.S.A.), Inc.	339	011-0007	Bibb	0.00	0.00
Perdue Foods Inc	311	076-0015	Houston	2.91	2.70
CEMEX Southeast, LLC	327	076-0013	Houston	0.15	0.18
Atlanta Sand & Supply Company	327	111-0003	Peach	0.32	0.20
Hollingsworth & Vose Company	322	116-0002	Pulaski	0.50	0.53
KaMin LLC - Plant	327	143-0003	Twiggs	2.75	3.13
KaMin LLC - Twiggs County	327	143-0009	Twiggs	0.33	0.53

## Water Demand Forecasting – Energy

- CDM Smith planning contractor team preparing water demand forecasts for this sector
  - Water demands for thermoelectric energy facilities
- Energy Sector Ad Hoc Advisory Group
  - Consists of representatives of major energy providers in Georgia (Georgia Power, MEAG, Oglethorpe Power, Dalton Utilities) and Georgia Public Service Commission
  - Initial stakeholder meeting held on April 29
- Draft forecast prepared and provided to Advisory Group for review
- Next meeting later in August to review draft report
- Plant Scherer Unit 4 scheduled to close by Jan. 2022

## Water Demand Forecasting – Agricultural

- Georgia Water Planning & Policy Center at Albany State University, along with modeling support from UGA, will be updating this sector forecast
- Forecast includes irrigated land and other agricultural uses
  - Nurseries, animal operations, golf course irrigation
- Estimates of irrigation water use informed by estimates of wetted acreage and irrigation use
  - Wetted acreage informed by aerial surveys and site visits
  - Irrigation use informed by meters and crop types
- Forecasts informed by economic models that look at crop projections

## Middle Ocmulgee Region Council Meeting

### Five Minute Break



Paddle Georgia –  
Ocmulgee River



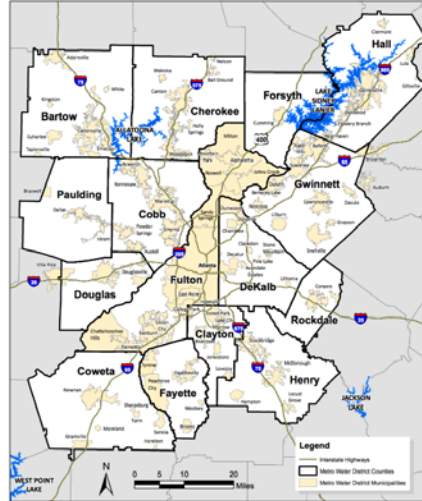


## Middle Ocmulgee Region Council Meeting

### Metro District Update

- Plan Updates
- Biosolids Update

– Danny Johnson, ARC



### Metropolitan North Georgia Water Planning District Update

- Governing Board Approval for Plan Update Contract – August 26, 2020
- Scope of Work for 5-year Plan Update
  - Forecasting
    - Will include biosolids for first time
  - Facility Planning
  - Action Item Assessment and Update
  - Technical Resource Studies
    - Residential water demands
    - Drought response options menu
    - Watershed resilience evaluation
    - Cost-Benefit Analysis
- Schedule

# Highlights from the Statewide Biosolids Management Survey

For full survey results, contact Danny Johnson ([djohnson@atlantaregional.org](mailto:djohnson@atlantaregional.org))



## Biosolids Management in Georgia: Results of the GAWP Statewide Survey



Georgia  
Association of  
Water  
Professionals

**2020 GAWP Virtual Annual Conference**

*Mike Thomas, GAWP & Danny Johnson, MNGWPD*

## Background

Since 2018, the disposal of wastewater biosolids to landfills has become more difficult and costly due to recent slope instabilities:

- 2014 Pine Ridge Landfill
- 2014 Eagle Point Landfill



- 2018 Eagle Point Landfill
- 2017 Greentree Landfill, Pennsylvania



EPD, Presentation to MNGWPD WW TCC, January 24, 2019

## GAWP Biosolids Survey

Data collected for 2018 calendar year

Did not include water plant residuals

Survey sent to all GAWP Utility Members - October 2019

52 communities responded 99 facilities

EPD's Annual Biosolids Reports reviewed

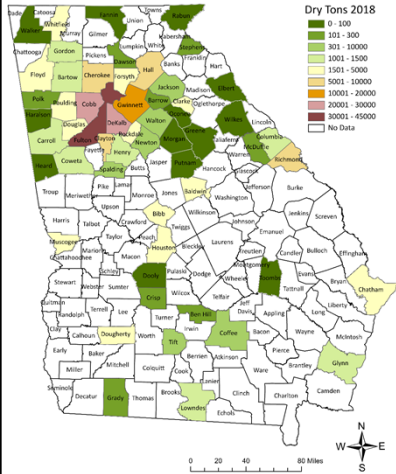
21 communities 28 facilities

**TOTAL**

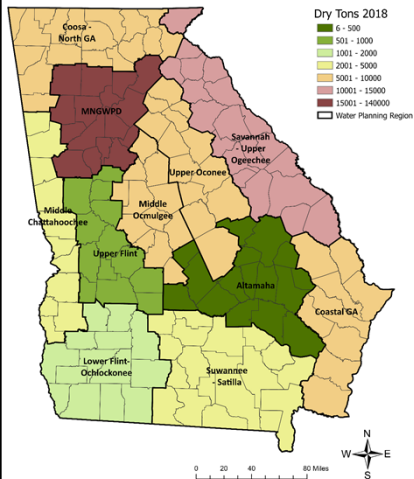
73 communities 127 facilities

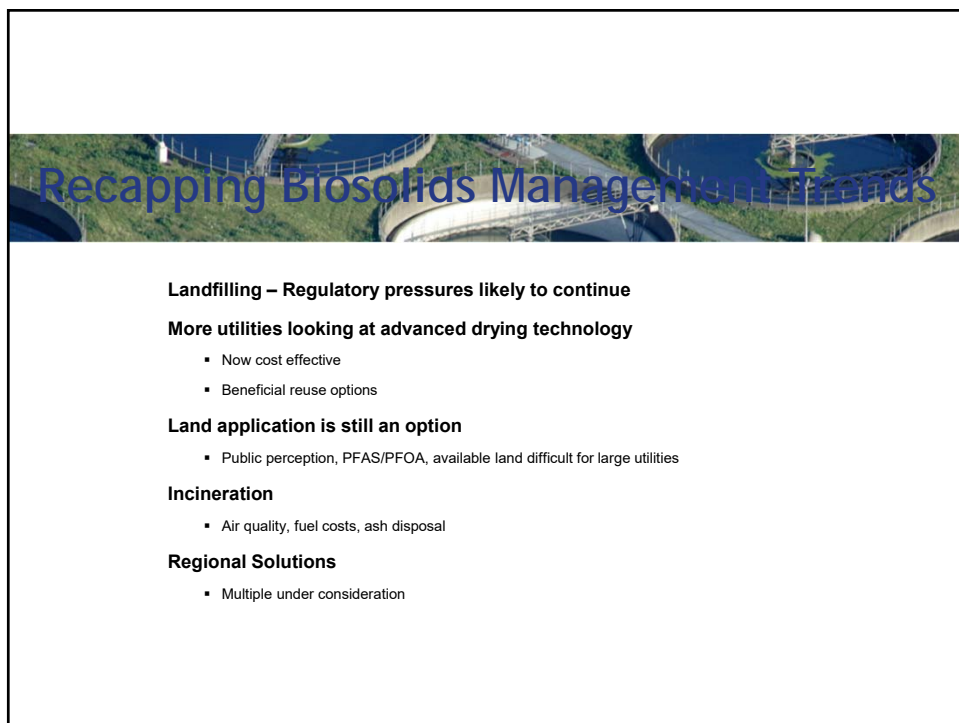
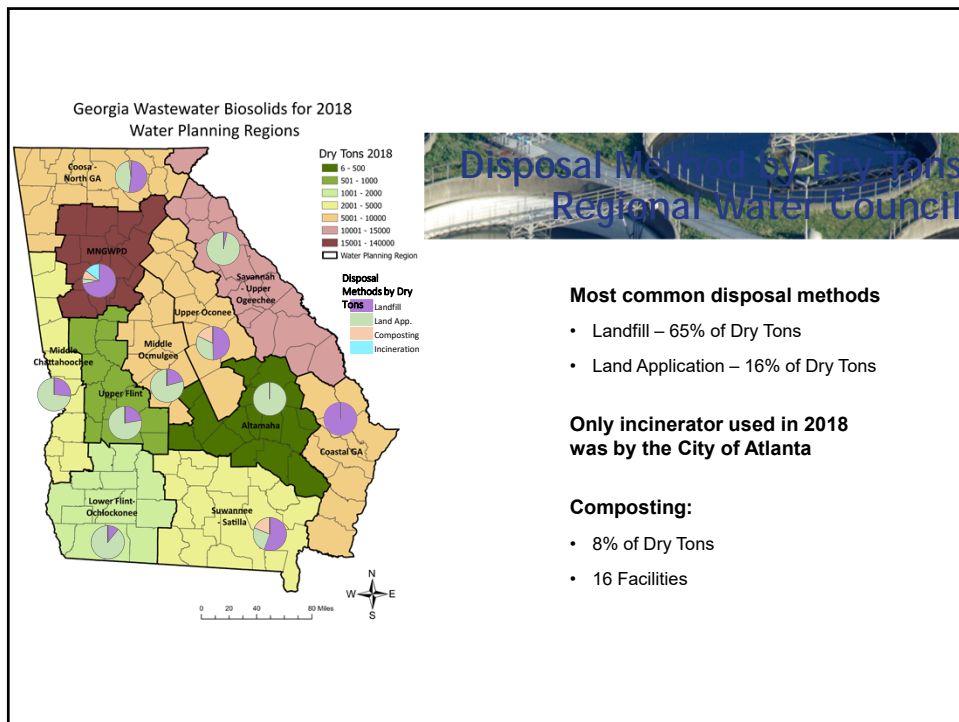


Georgia Wastewater Biosolids for 2018



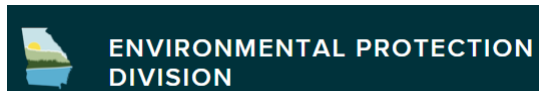
Georgia Wastewater Biosolids for 2018  
Water Planning Regions





## Middle Ocmulgee Region Council Meeting

- **EPD Grant Updates**
  - Updates on current/past grant projects
  - Grant program schedule and future grant projects
- Joy Hinkle, EPD



## Regional Water Plan Seed Grants Update

**Joy Hinkle**  
Grants Unit Manager

**Middle Ocmulgee  
Water Planning  
Council**  
August 4, 2020



## CURRENT MIDDLE OCMULGEE SEED GRANT PROJECT

Bromide Concentrations in Surface Drinking Water Sources for Butts County  
- With Additional Studies into Total Organic Carbon and Microplastic Levels -

**Project Start Date:** August 14, 2017

**Project End Date:** May 31, 2021

**Grant Amount:** \$58,699 51%

**Match Amount:** \$44,095 38%

**Cash Amount:** \$12,420 11%

**Total Project Amount: \$115,214 100%**

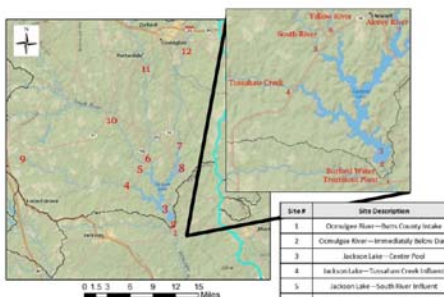


Figure 1: Sampling site map



## SFY21 SEED GRANTS

### AWARD BASICS

State funding available: up to **\$75,000**

Match Required: Minimum 40% total cost, including 10% cash contribution

Grant Funds Requested:	\$75,000
Minimum In-Kind Match Required:	\$37,500
Minimum 10 % Cash Match required:	\$12,500
<b>Total Project Cost:</b>	<b>\$125,000</b>

### WHO CAN APPLY

- Local, regional and state units of government
- Local authorities which operate local government service delivery programs
- Regional commissions
- Resource conservation and development councils
- State colleges and universities
- Local school systems
- State agencies



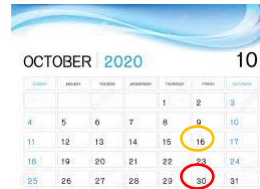


## SFY21 SEED GRANTS

### IMPORTANT DATES

**October 16, 2020:** Pre-application meeting with EPD complete

**October 31, 2020:** Application submitted via email



### MORE INFORMATION

#### On the Internet:

<https://epd.georgia.gov/outreach/grants/regional-water-plan-seed-grant-funds>

#### From a Human:

Contact **Blue Cole** at 404-651-8530 or [blue.cole@dnr.ga.gov](mailto:blue.cole@dnr.ga.gov)



## EPD UPDATES & ANNOUNCEMENTS

**ENVIRONMENTAL PROTECTION DIVISION**

**Subscribe to Watershed Protection Branch Updates**

**Permit related Notices**  
Subscribers will receive email notifications regarding permit related public notices posted to EPD's website on: NPDES wastewater, NPDES stormwater, land application systems, water withdrawals, pretreatment, State Environmental Review Process reviews of GEFA funded projects, and permit related public meetings or hearings.

**State Water Buffer Variance Notices**  
Subscribers will receive email notifications regarding public notices posted to EPD's website on requests for state water buffer variances and coastal marshland buffer variances under the Georgia Erosion and Sedimentation Act.

**Water Quality Standards, TMDLs and Grants**  
Subscribers will receive email notifications regarding notifications posted to EPD's website on water quality standards (including Triennial Review), assessment of state waters (requests for data and Georgia's 305b/303d Integrated Reports), Total Maximum Daily Loads (TMDLs), public meetings or hearings related to those topics, and grant opportunities.

<https://epd.georgia.gov/watershed-protection-branch-public-announcements/subscribe-watershed-protection-branch-updates>



## Middle Ocmulgee Region Council Meeting

- **Wrap Up and Next Steps**

- Seed Grant Applications – Due October 31
  - Contact Michelle or Veronica
- Next Council meeting?
  - General date range
  - Any topics or ideas you would like to see on agenda?
  - Contact Michelle or Laura with input or ideas



## Georgia's State Water Plan

### Public Comment Period

- Please limit comments to 3 minutes total
- Council encourages written submission of comments as well

[www.georgiawaterplanning.org](http://www.georgiawaterplanning.org)

# Thank You!

Questions? Comments? Need  
More Information?

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[Veronica.Craw@dnr.ga.gov](mailto:Veronica.Craw@dnr.ga.gov)

