Georgia's

State Water Plan

Middle Ocmulgee Water Planning Council
January 12, 2022

www.georgiawaterplanning.org

Georgia's
State Water Plan

Middle Ocmulgee Regional Water Council Virtual Meeting
Agenda – January 12, 2022

Objectives:
1. **Review and approve Vision and Goals for next round of planning**
2. **Surface Water Quality Update**
3. **Surface Water Availability – Discuss appropriate BEAM metrics for Plan**
4. **Update on Trash/Litter Efforts in the Region**

9:45 – 10:00	Check-in (on Teams)	Michelle Vincent, Jacobs
10:00 – 10:10	Welcome and Council Business • Approve Meeting Summary and Meeting Agenda	Chairman Richardson
10:10 – 10:25	EPD Updates • Appointments Updates • Planning Schedule for 2022	Veronica Craw, EPD
10:25 – 10:55	*Regional Plan Components Review and Approval* • Vision and Goals	Michelle Vincent, Jacobs
10:55 – 11:00	Break	
11:00 – 11:15	Metro District Update	Danny Johnson, ARC
11:15 – 11:55	Surface Water Availability • Discussion of BEAM Model Metrics for MOC Regional Plan • Choose and approve Metrics for this round of planning • Future Metrics/Recommendations for Additional Research	Wei Zeng, EPD
11:55 – 12:00	Break	
12:00 – 12:30	Surface Water Quality • Methodology • Results for Current Conditions	Liz Booth, EPD
12:30 – 12:50	Trash Trap Installation on South River (DeKalb County)	Jacqueline Echols, South River Watershed Alliance Brent Zern, DeKalb County
12:50 – 12:55	Wrap Up and Next Steps	
12:55 – 1:00	Public Comments/Local Elected Official Comments	
1:00	Adjourn	

www.georgiawaterplanning.org

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

Georgia

Planning Updates from Georgia EPD

Veronica Craw, 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
- Quarterly Council Meetings

Plan Updates Schedule

Regional Water Plan Review and Revision Schedule

Council Meeting	Council Meeting	Council Meeting	Council Meeting	Council Meeting
4th Quarter 2021	1st Quarter 2022	2nd Quarter 2022	3rd Quarter 2022 Draft Plan	4th Quarter 2022 Final Plan

Today's meeting

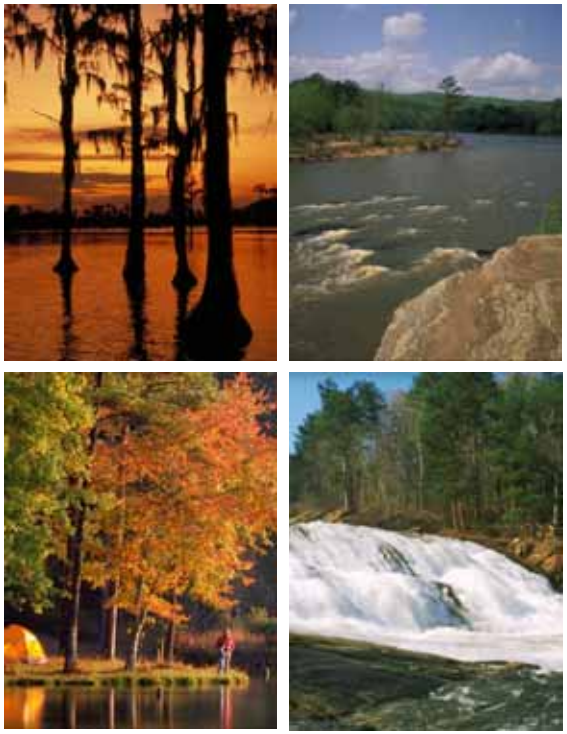
Late March meeting

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

Regional Water Plan Review and Revision Process

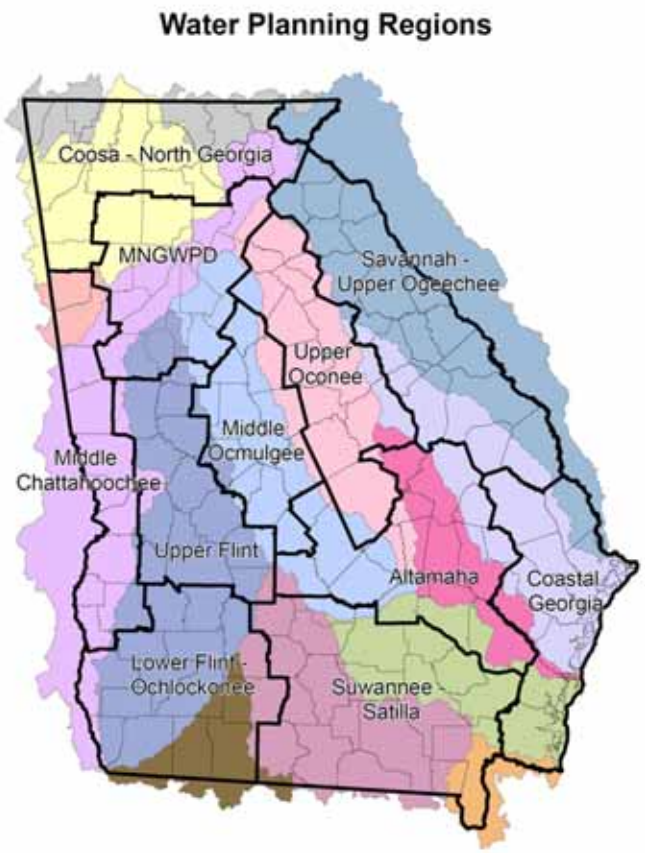
The 5-Year Review Process will focus on:

- 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



Georgia®

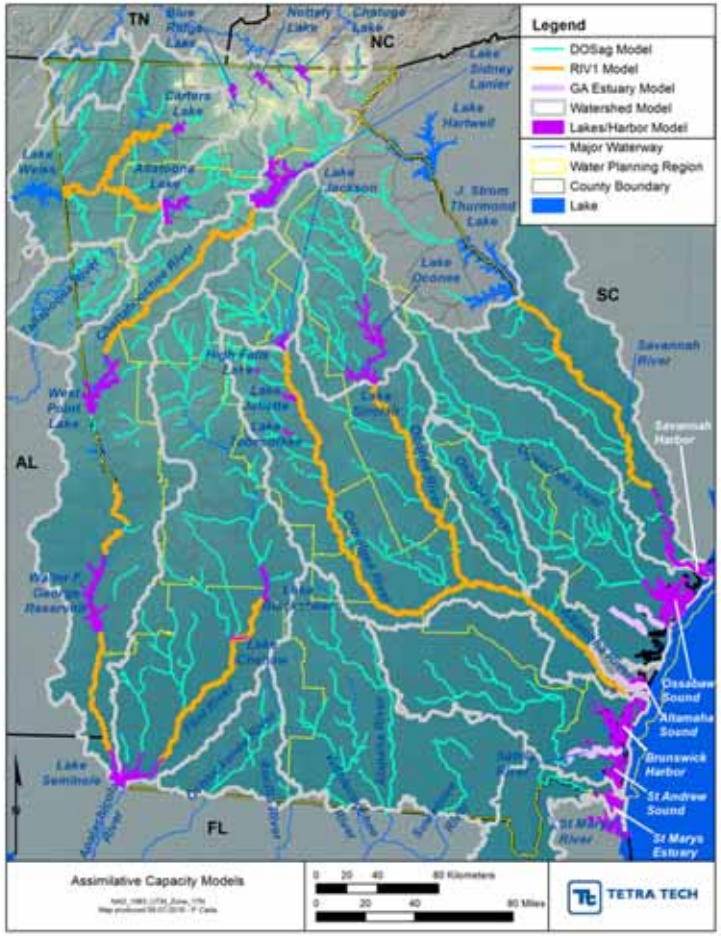
Surface Water Resources in Georgia



Georgia®

Surface Water Quality Resource Assessment

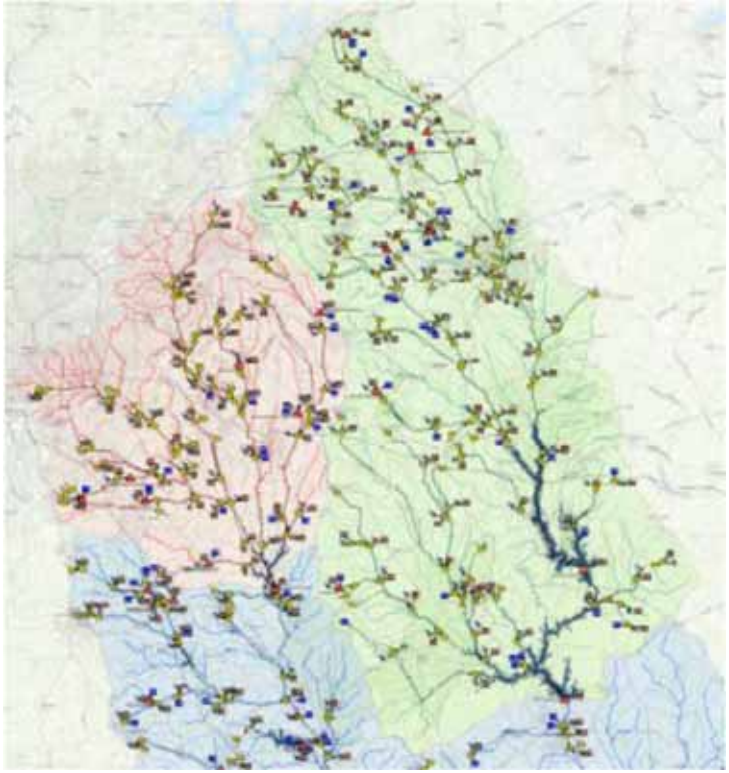
- Updates to Surface Water Quality (Assimilative Capacity) Resource Assessment
  - Updated information & model recalibration
- Parameters being analyzed include instream dissolved oxygen, nutrients (total N, total P) and chlorophyll *a* response in lakes



Georgia®

Surface Water Availability Resource Assessment

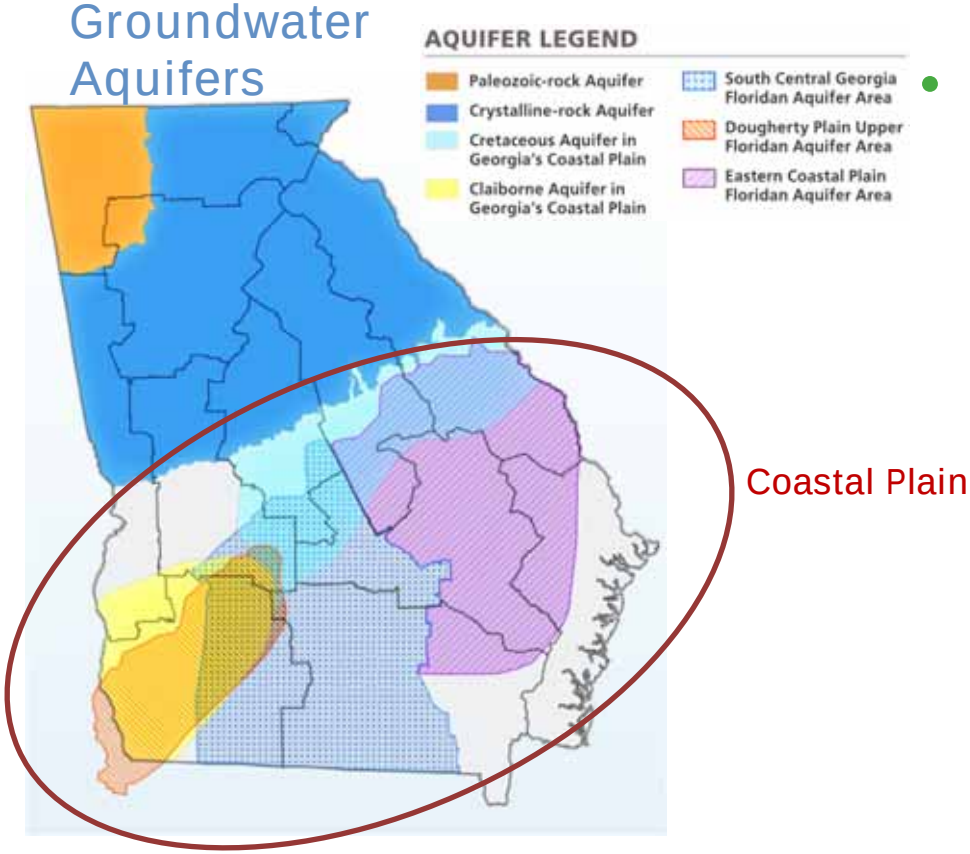
- Updates to Surface Water Availability Resource Assessment
  - New modeling tool: Basin Environmental Assessment Model ("BEAM")
  - Provides analysis at more nodes
  - More measures (aka "metrics") can be analyzed



Georgia®

Groundwater Resources in Georgia

Groundwater Aquifers



- 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

Veronica Craw
Georgia Environmental Protection Division

(470) 938-3384
veronica.craw@dnr.ga.gov

Middle Ocmulgee Water Planning Council: Review and Approve Vision and Goals Plan 2022

Georgia®

MOC VISION

Adopted Vision

as adopted by the Council 9.10.09, and reviewed and affirmed during the 2016 plan update.

The Middle Ocmulgee Water Council will work so that our water resource, both surface and subsurface, is of exceptional quality and quantity for the well being and prosperity of all that will follow. Our plan will consider the resource's natural integrity, wise conservation and prudent management for continuing economic development and enhanced quality of life for all the region's citizens.

- Revisions or Suggestions?

MOC GOALS

Adopted Goals
as adopted by the Council 9.22.10, and reviewed and affirmed during the 2016 plan update.

1. Maximize existing water supply sources to the extent practicable.
2. Support the protection of natural stream integrity and the recreation it provides.
3. Promote sufficient water supply for the region.
4. Promote efficient use of water.

- Revisions or Suggestions?

MOC GOALS

Adopted Goals, continued
as adopted by the Council 9.22.10, and reviewed and affirmed during the 2016 plan update.

5. Promote properly managed wastewater discharges and beneficial reuse.

6. Support the reduction of non-point source pollution by advocating better land management practices.

7. Support planning and management of water resources to maintain a healthy economy and ensure a high quality of life and to protect our natural resources.

- Revisions or Suggestions?

Georgia®

Five Minute Break

Paddle Georgia – Ocmulgee River

Metro North Georgia Water Planning District Update

Danny Johnson, Atlanta Regional Commision

Georgia®

2022 Plan Update Schedule

	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22
Data Collection/Resource Forecasting										
Action Items Review and Update										
Appendix A - River Basin Profiles										
Appendix B - Facility Planning										
Stormwater Forecasting										
Supporting Efforts										
Localized Demands Drought Response Options Menu Watershed Resilience										
Full Draft Plan for Review										
Public Comment										
EPD/Board Approval										

Summary of Proposed Action Item Changes For the 2022 District Plan

For the integrated, wastewater, and watershed sections, no major new or expanded action items are proposed

Five new and expanded water conservation (WSWC) action items, which replace action items from 2017

Changes are being proposed in all action item sections to address things that are out-of-date, have been completed, or that are duplicative of state requirements

Proposal for 5 New / Updated WSWC Action Items

1. New Residential Customer Leak Reduction Programs (WSWC-5)
2. New Plumbing Code Efficiency Requirements (WSWC-8)
3. Updated Landscape Irrigation System Efficiency Requirements (WSWC-10)
4. Updated Drought Response Ordinance Requirement (WSWC-13)
5. Updated Water Loss Control Program (WSWC-15)

Stormwater Forecast Update

- Planning-level estimate of the total potential runoff management volume from development
- Calculated at a Basin Scale
- Using three Post-Construction SW Management Standards
  - Water Quality Volume
  - Channel Protection Volume
  - Overbank Flood Volume
- Four Planning Scenarios
  - predevelopment, 2019, 2030, & 2040

Next Steps

First Quarter 2022 – Additional changes to be presented and reviewed by BACs, TCC, and Board for another round of comments

Second Quarter 2022 – Further revisions and Regional Water Council coordination

Third Quarter 2022 – Final proposals to be included in public comment version of plan

Fourth Quarter 2022 – Board to vote on final plan, including any new and expanded action items

Draft Resource Assessment by OOA BEAM for Middle Ocmulgee Water Planning Region

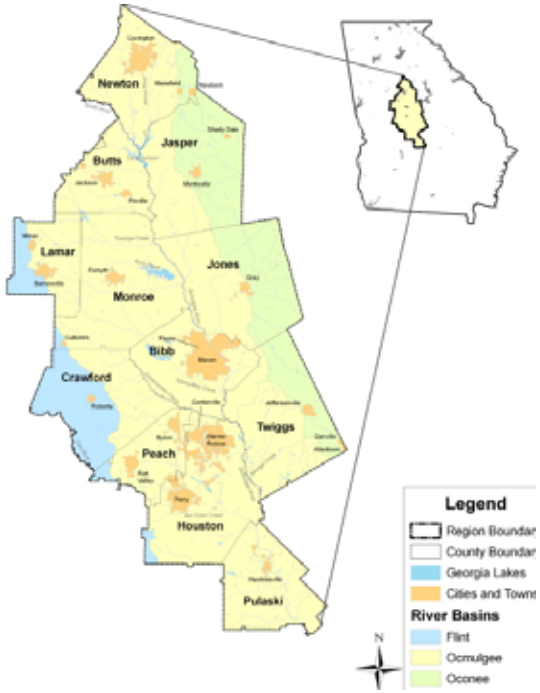
Georgia EPD

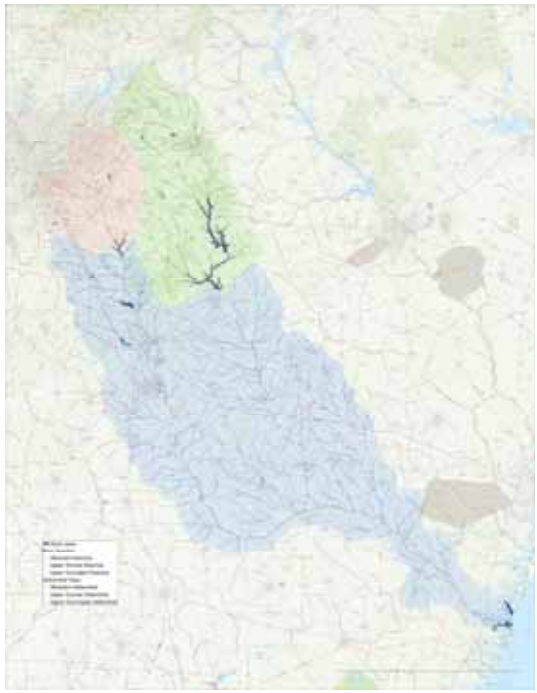
January 2022

Presentation Outline

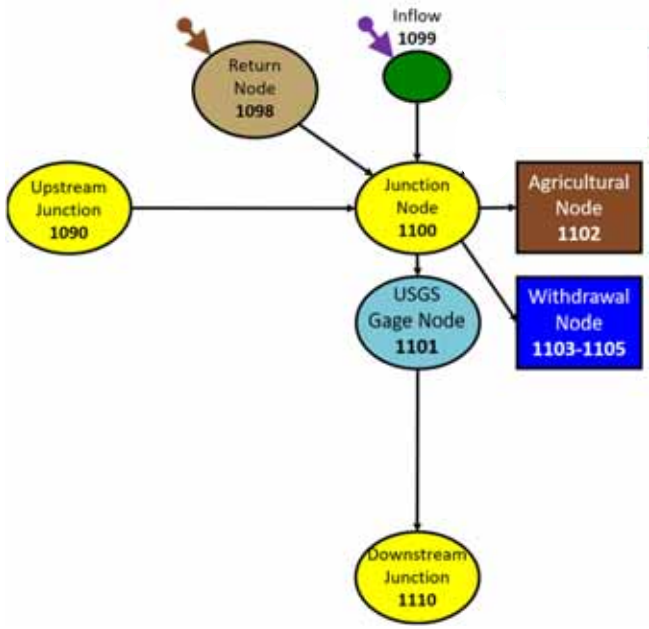
- Introduction and Model Settings
- Model Results Baseline Scenario
  - Water Supply Challenges, Examples (water supply PMs)
    - Macon Water Authority
    - City of Forsyth
    - City of Monticello
  - Lake Jackson Conditions
  - Macon Flow Results
  - Performance Metric at Macon for Boating (recreational PMs)
  - Performance Metrics for Fish Habitat (aquatic biology PMs)
- Additional Performance Measures to consider?

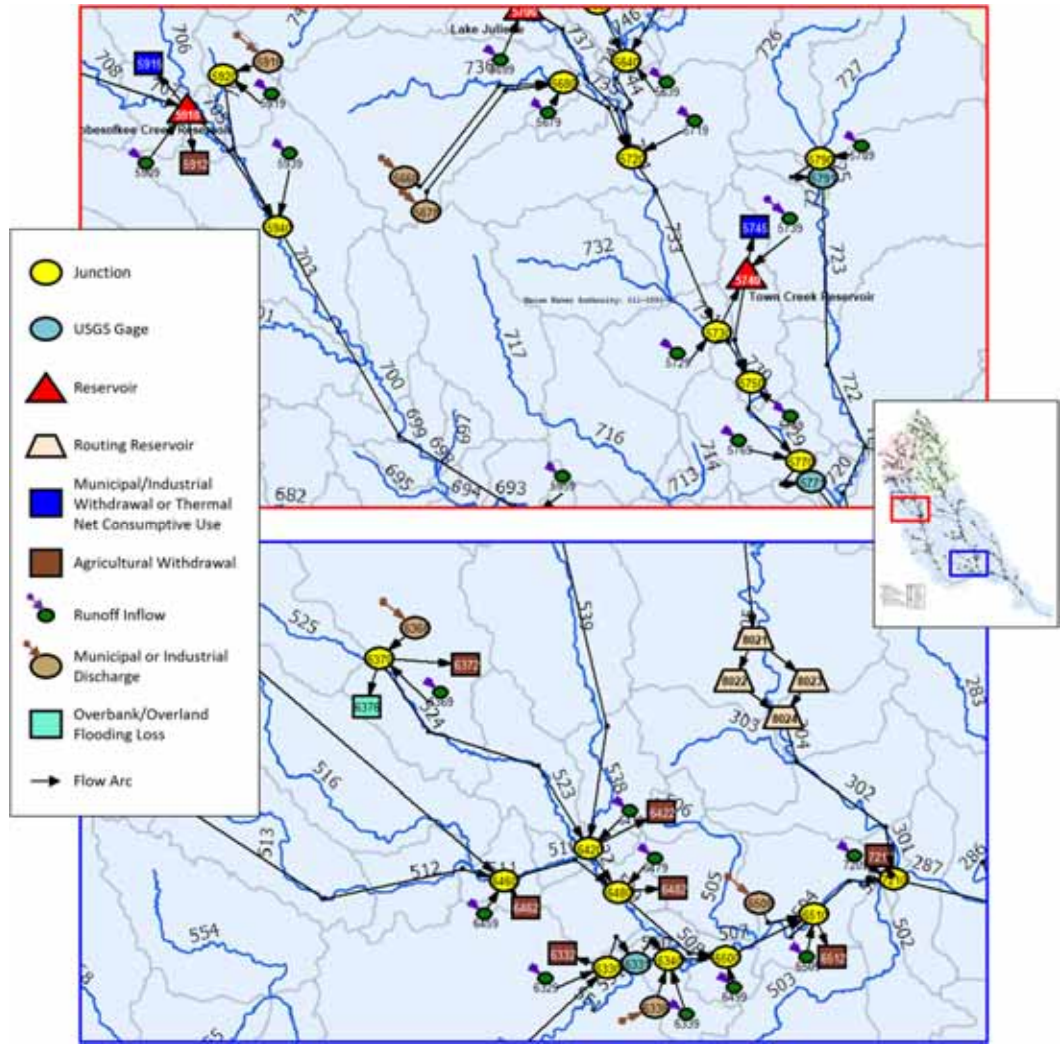
Middle Ocmulgee Region and OOA Model Domain





BEAM Node Types





OOA BEAM Model Baseline Settings

- Simulation Period (Hydrologic Conditions): 1939-2018
- Withdrawal and Discharge amount: average of period 2010-2018 (i.e. marginally dry conditions)
- Instream Flow Protection Thresholds: per permit conditions
- Reservoir physical and operational data: from reservoir owner or EPD

Water Supply Settings: Facilities Analyzed in BEAM Model for Middle Ocmulgee Region

Facility	Total number
Municipal Withdrawal	15
Municipal Discharge	18
Industrial Withdrawal	7
Industrial Discharge	8
Energy Withdrawal	3

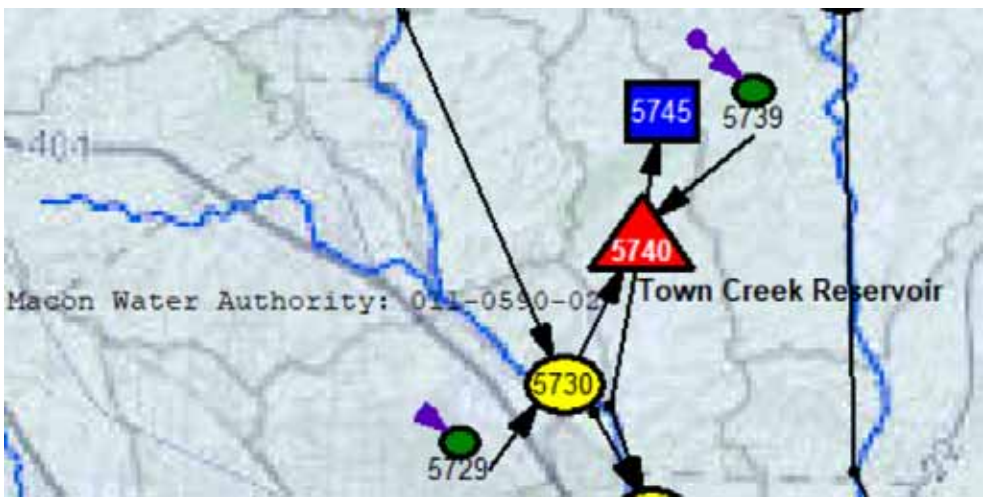
Note: Energy withdrawals are expressed as consumptive uses in modeling.

Draft Resource Assessment Results

- Water Supply Challenges, Examples
  - Macon Water Authority
  - City of Forsyth
  - City of Monticello
- Lake Jackson Conditions
- Macon Flow Results
- Performance Metric at Macon for Boating
- Performance Metrics for Fish Habitat

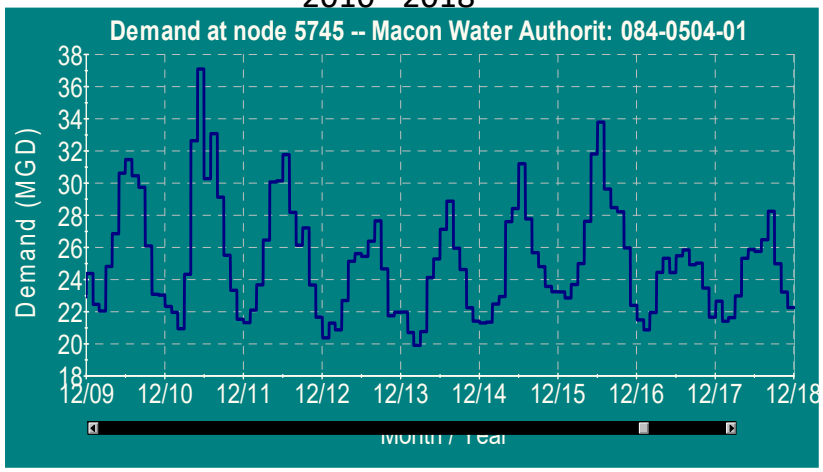
Example 1:Permit 084-0504-01 BEAM (Node 5745)

- Permit holder: Macon Water Authority
- Withdrawal limit: 63 mgd (daily/monthly)
- Min flow requirement: 0.35 cfs below Town Creek Reservoir Dam
- Withdrawal limit: 110 mgd (daily/monthly) from Ocmulgee River (permit 011-0590-02)



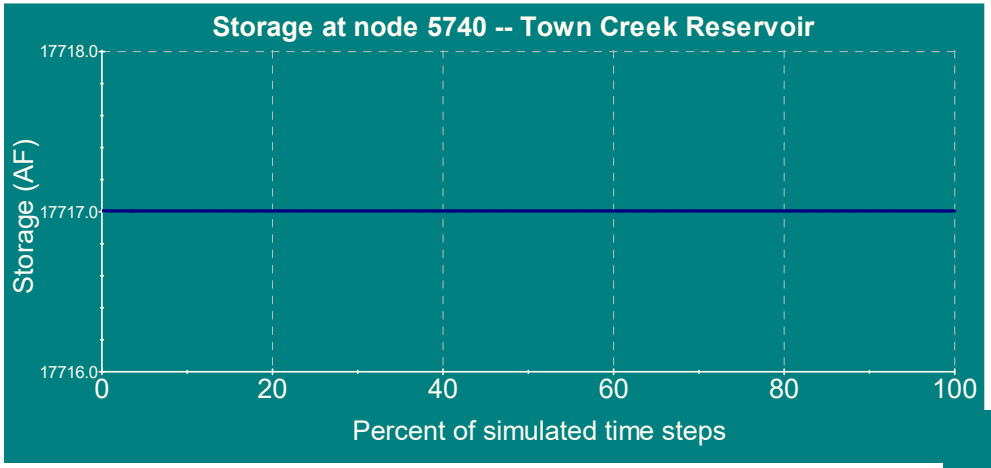
Permit 084-0504-01 Withdrawal Amount Setting- average of 2010-2018

2010 - 2018

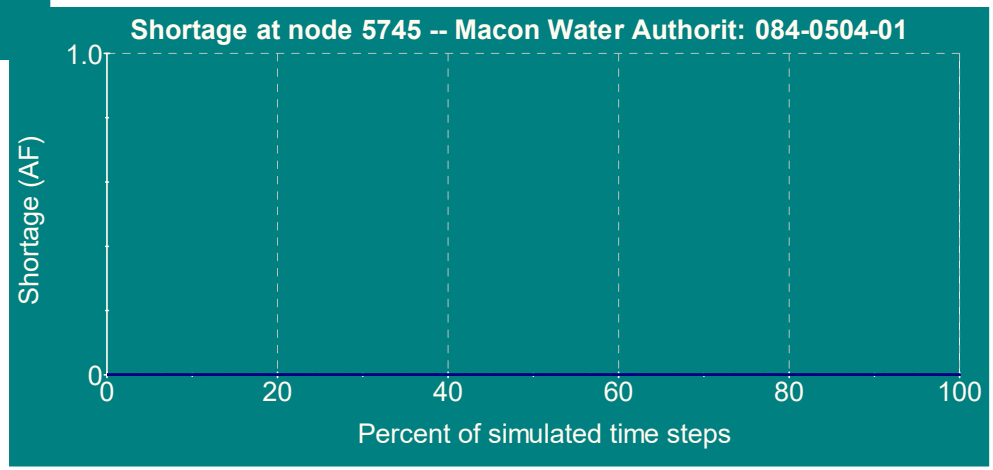


Baseline

Simulated Reservoir Storage Frequency and Water Supply Challenge Frequency



Storage at all times remaining at full pool indicates adequate supply and no/low challenges.



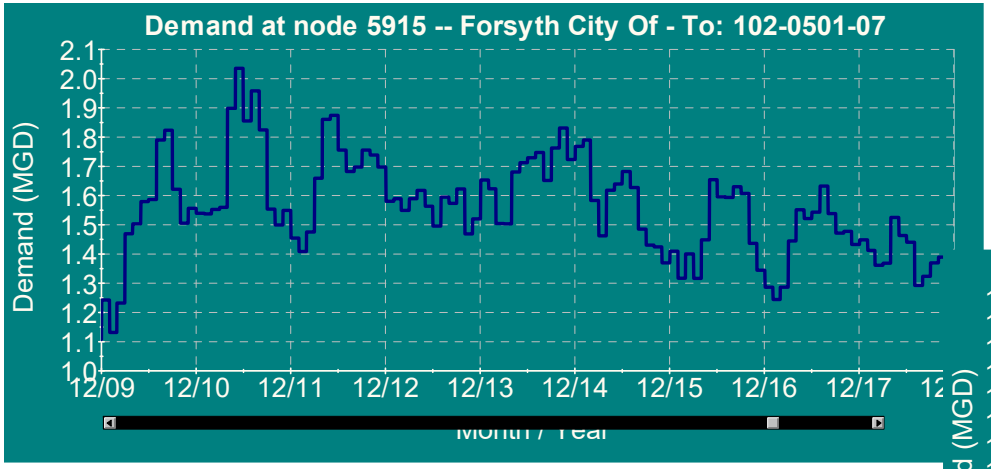
Shortage at all times remaining at zero indicates no challenges encountered.

Example 2: Permit 102-0501-07 (BEAM Node 5915)

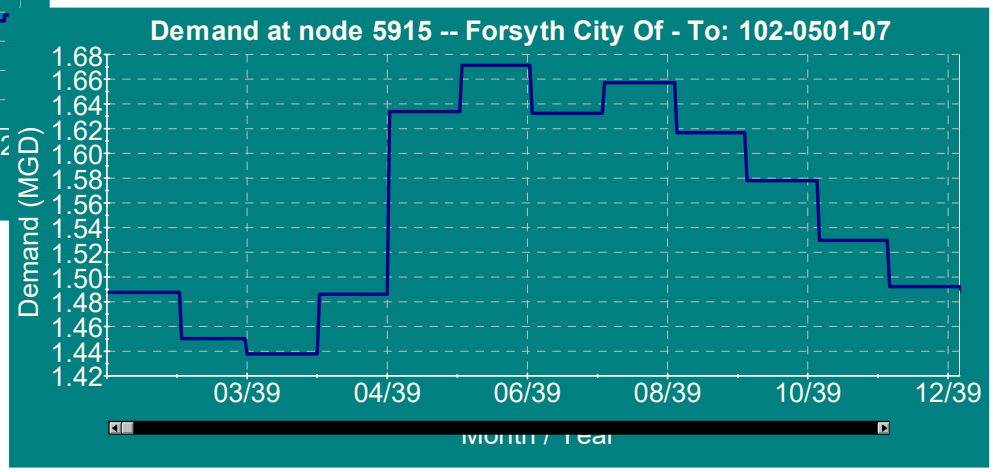
- Permit holder: City of Forsyth
- Withdrawal limits: 4 mgd (daily/monthly)

Permit 102-0501-07 Withdrawal Amount Setting-average of 2010-2018

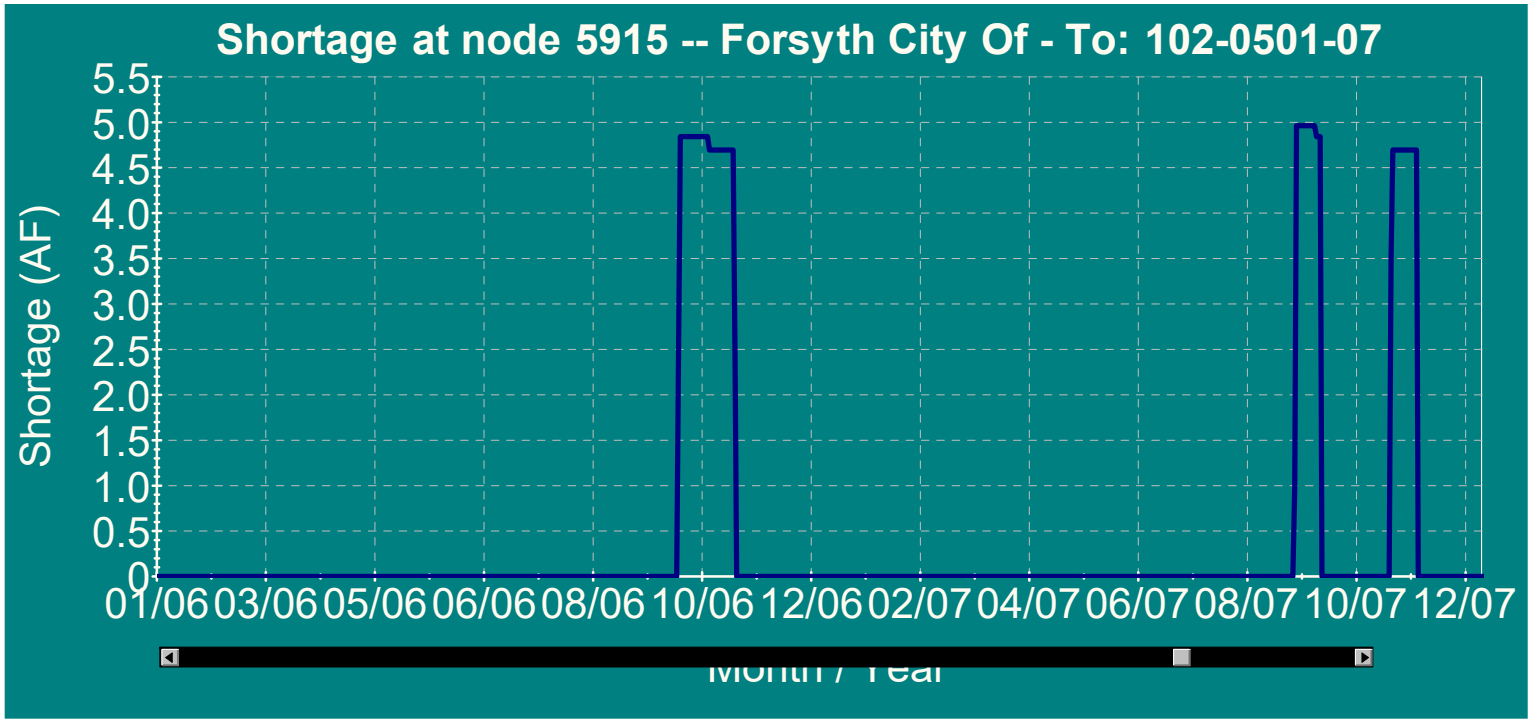
2010 - 2018



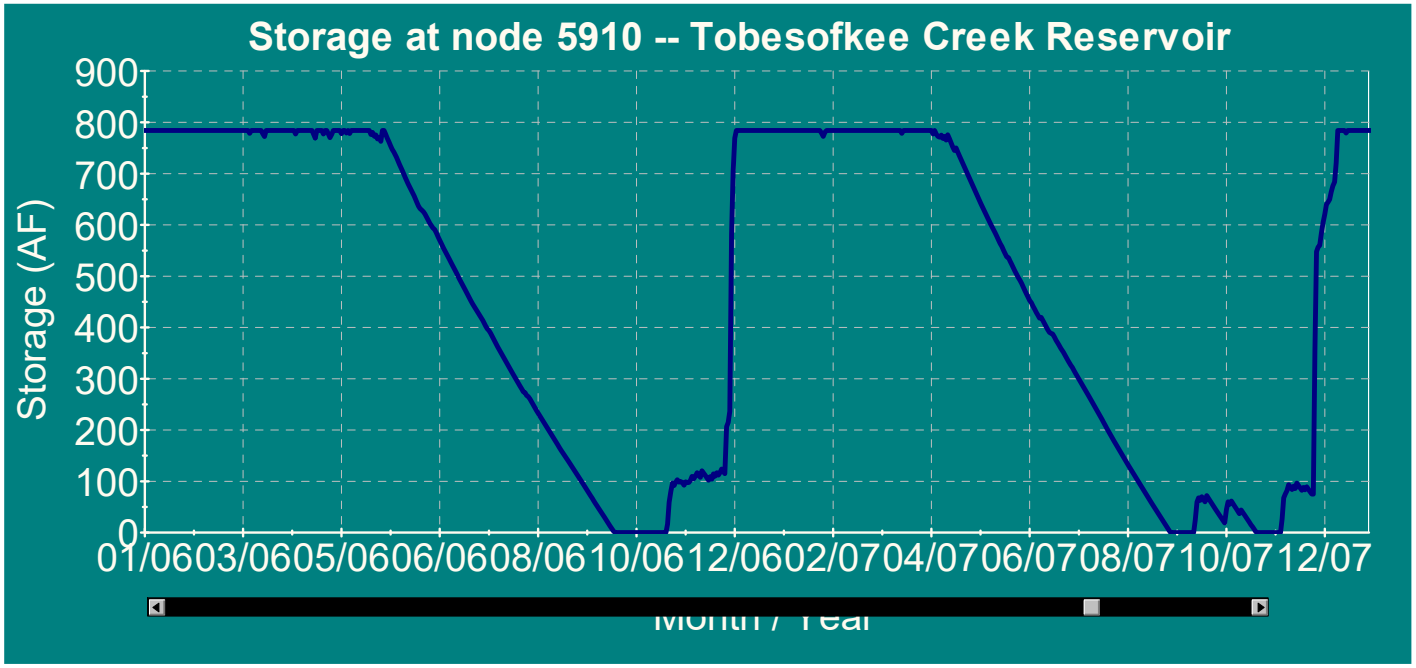
Baseline



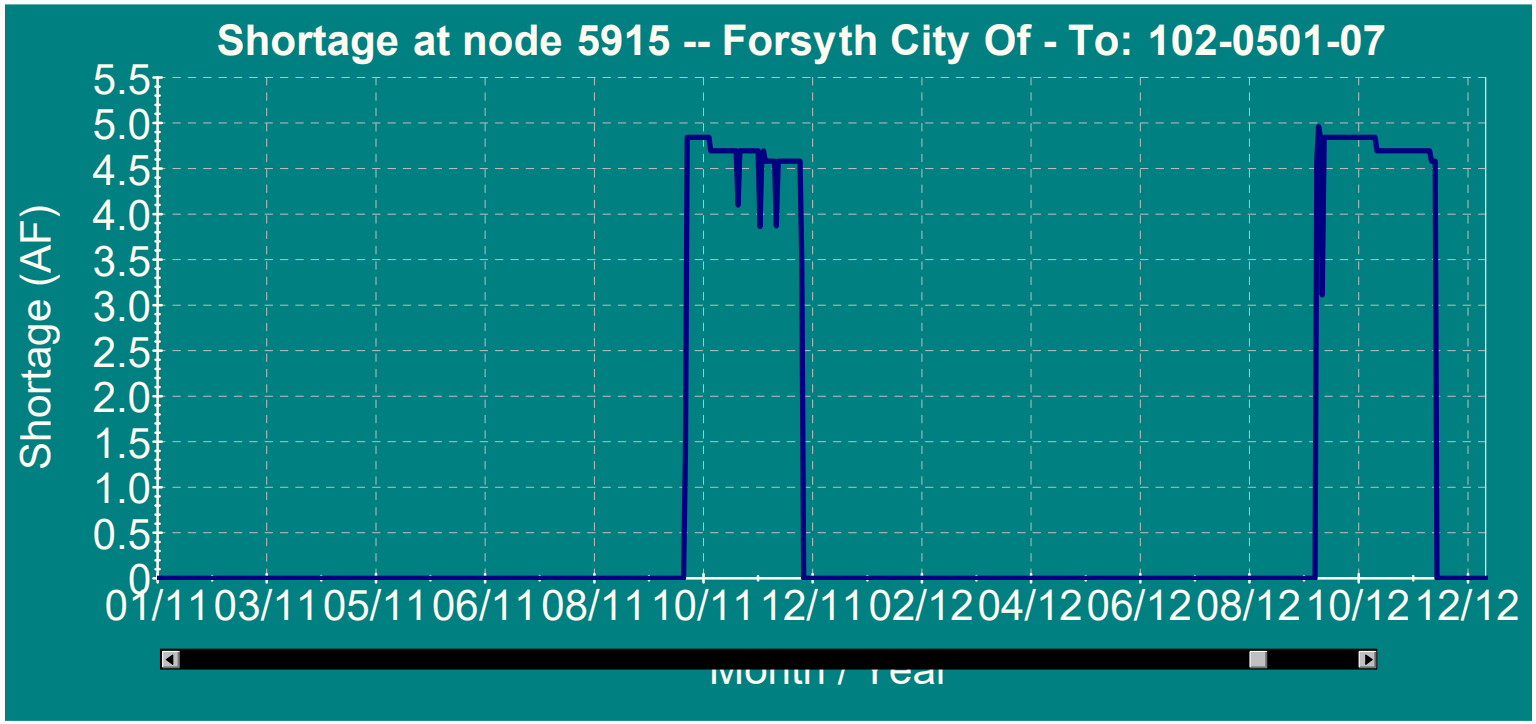
Water Supply Challenge in 2006-2007



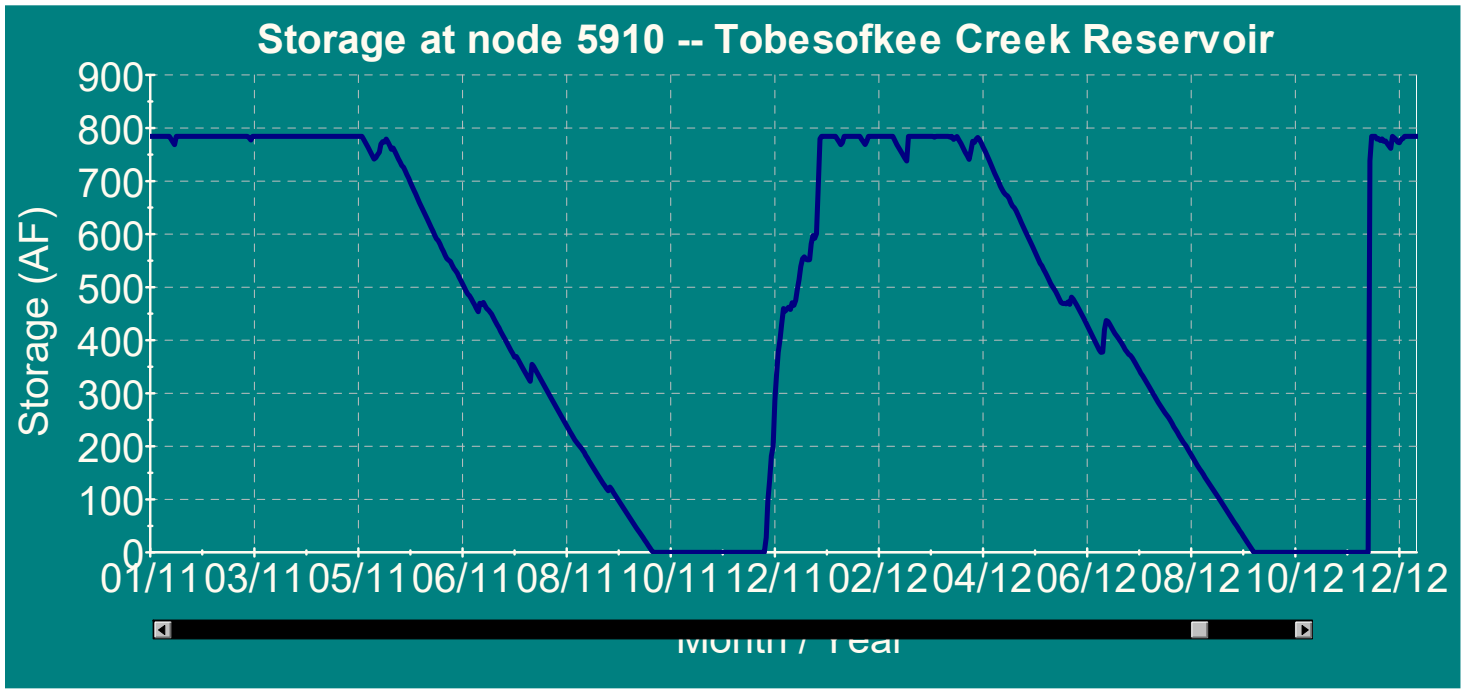
Simulated Useable Storage in 2006-2007



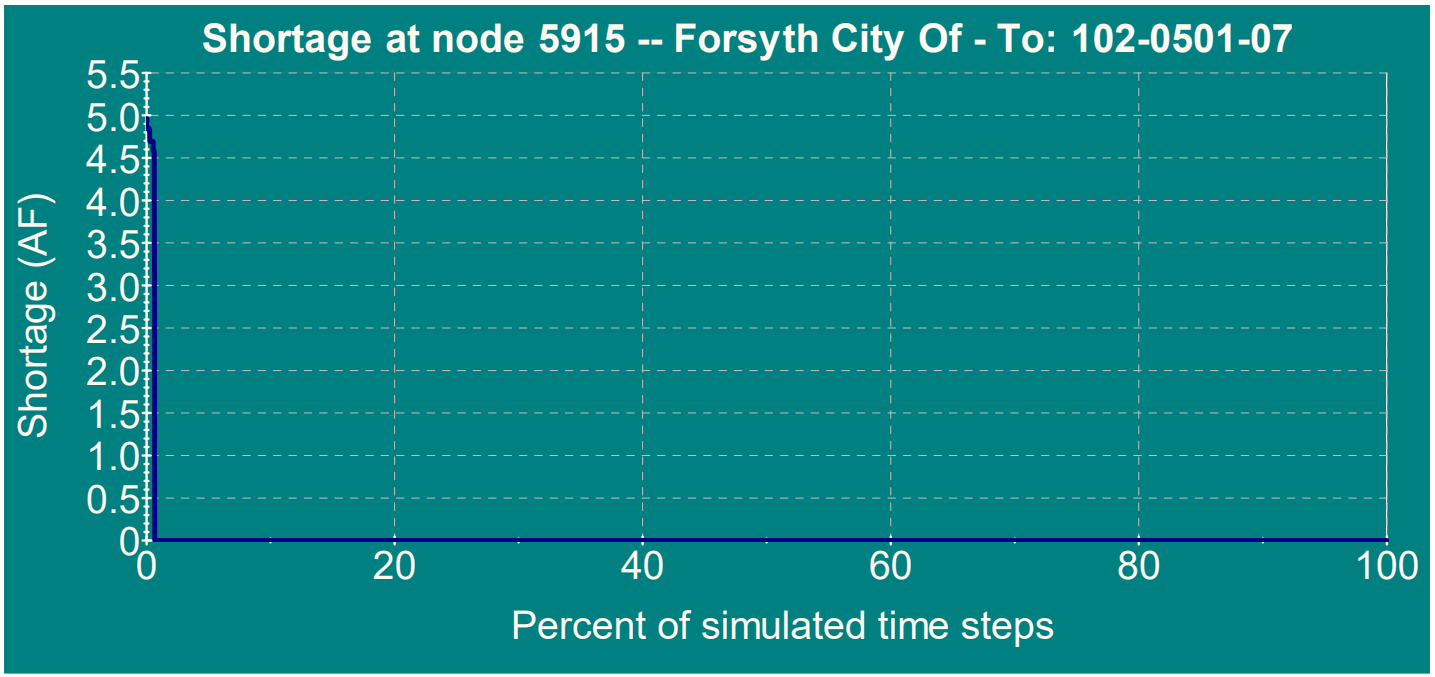
Water Supply Challenge in 2011-2012



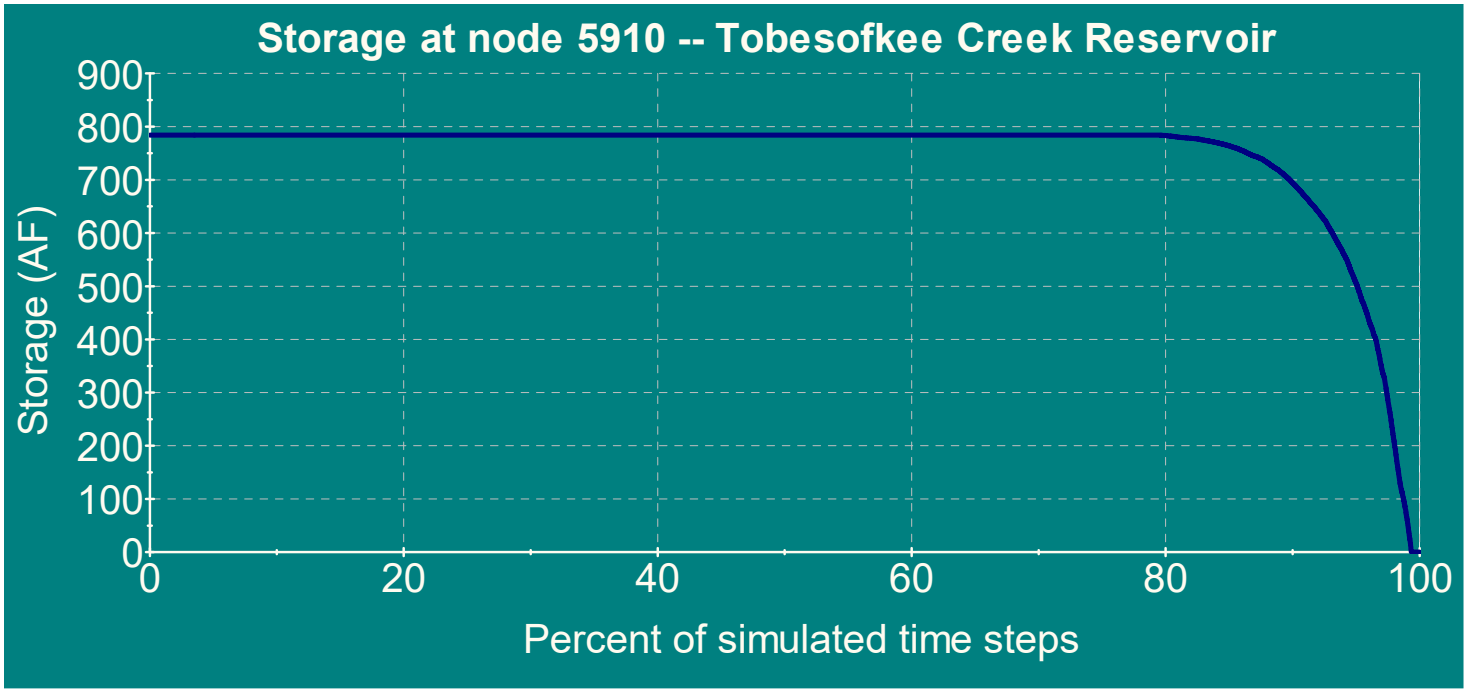
Simulated Useable Storage in 2011-2012



Water Supply Shortage Frequency in 1939-2018



Simulated Useable Storage Frequency



Water Supply Challenge in 2006 & 2007

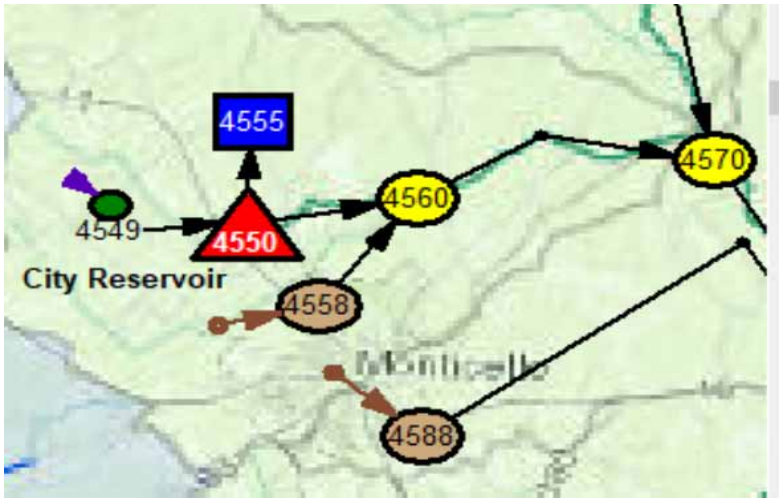
Year	Total days of challenge	Total volume of shortage (acre-feet)
2006	**32**	**155**
2007	**30**	**145**

Water Supply Challenge in 2011 & 2012

Year	Total days of challenge	Total volume of shortage (acre-feet)
2011	**65**	**317**
2012	**66**	**328**

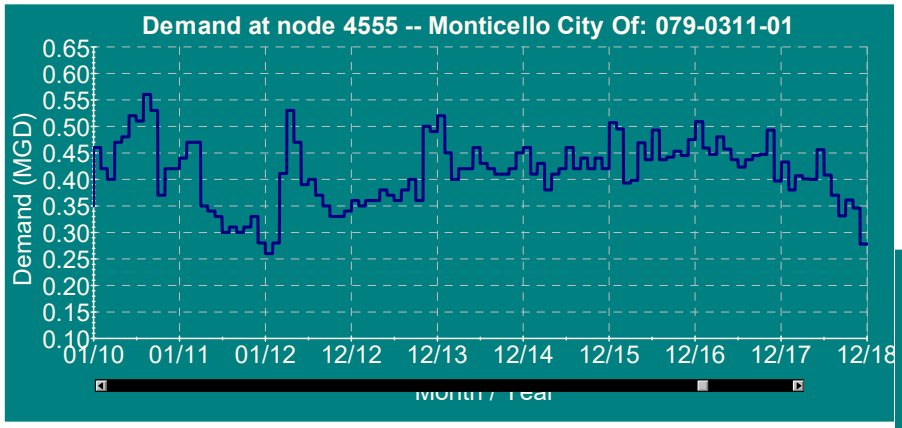
Example 3:Permit 079-0311-01 (BEAM Node 4555)

- Permit Holder: City of Monticello
- Permit limits: 0.75 mgd (daily)/0.50 mgd (monthly)

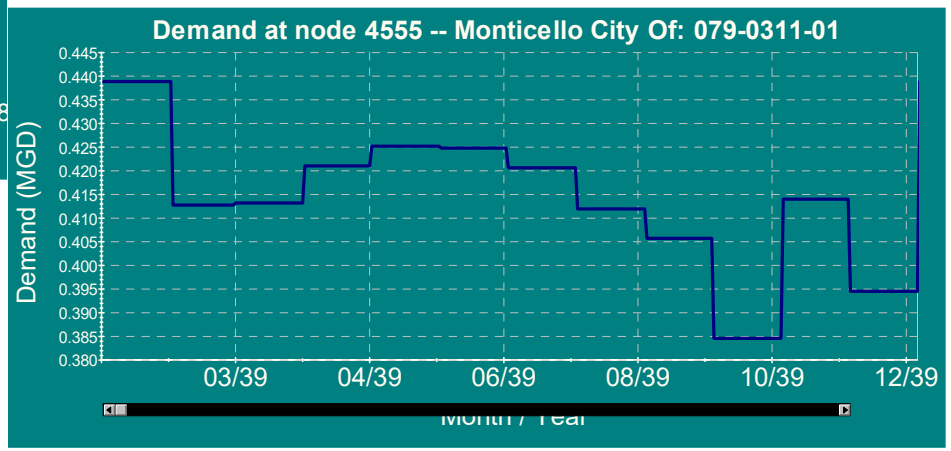


Permit 079-0311-01 Withdrawal Amount Setting-average of 2010-2018

2010 - 2018



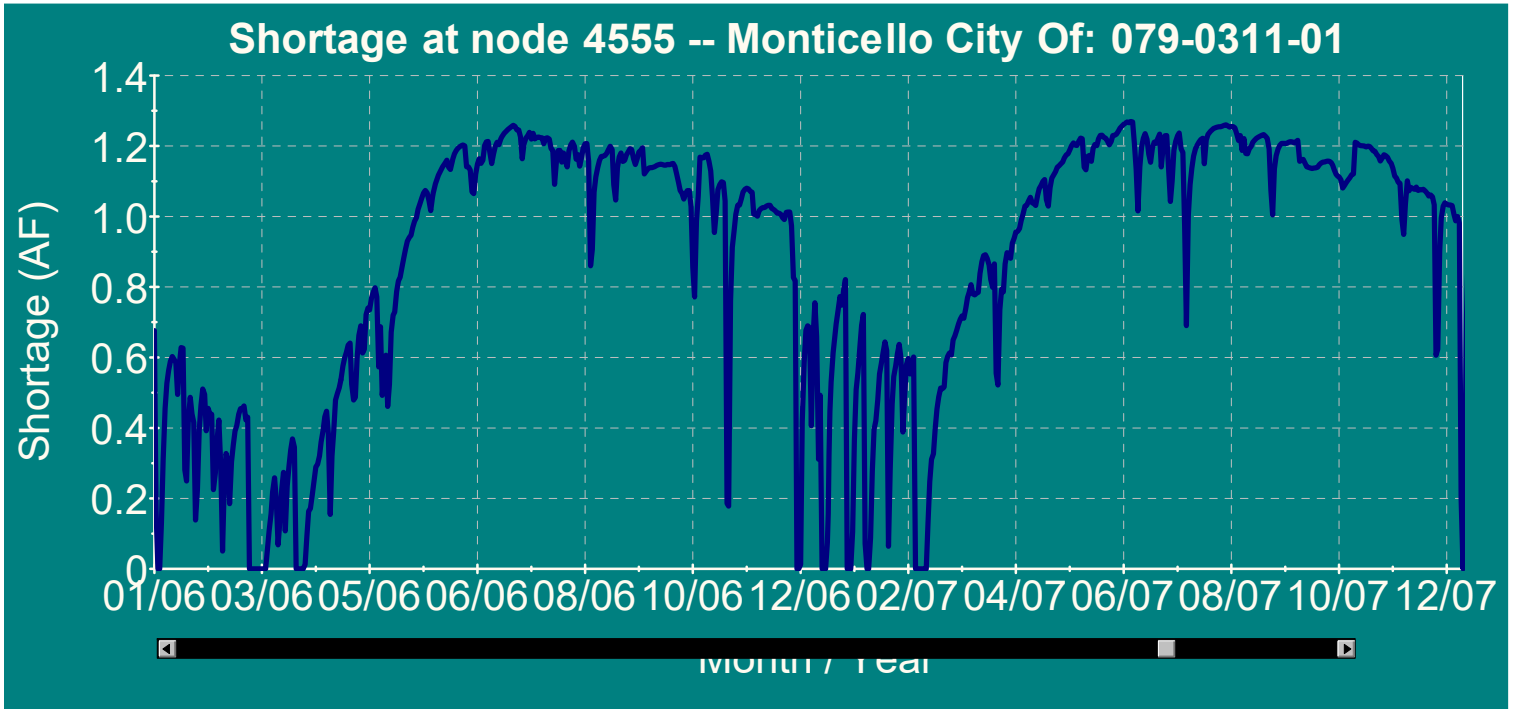
Baseline



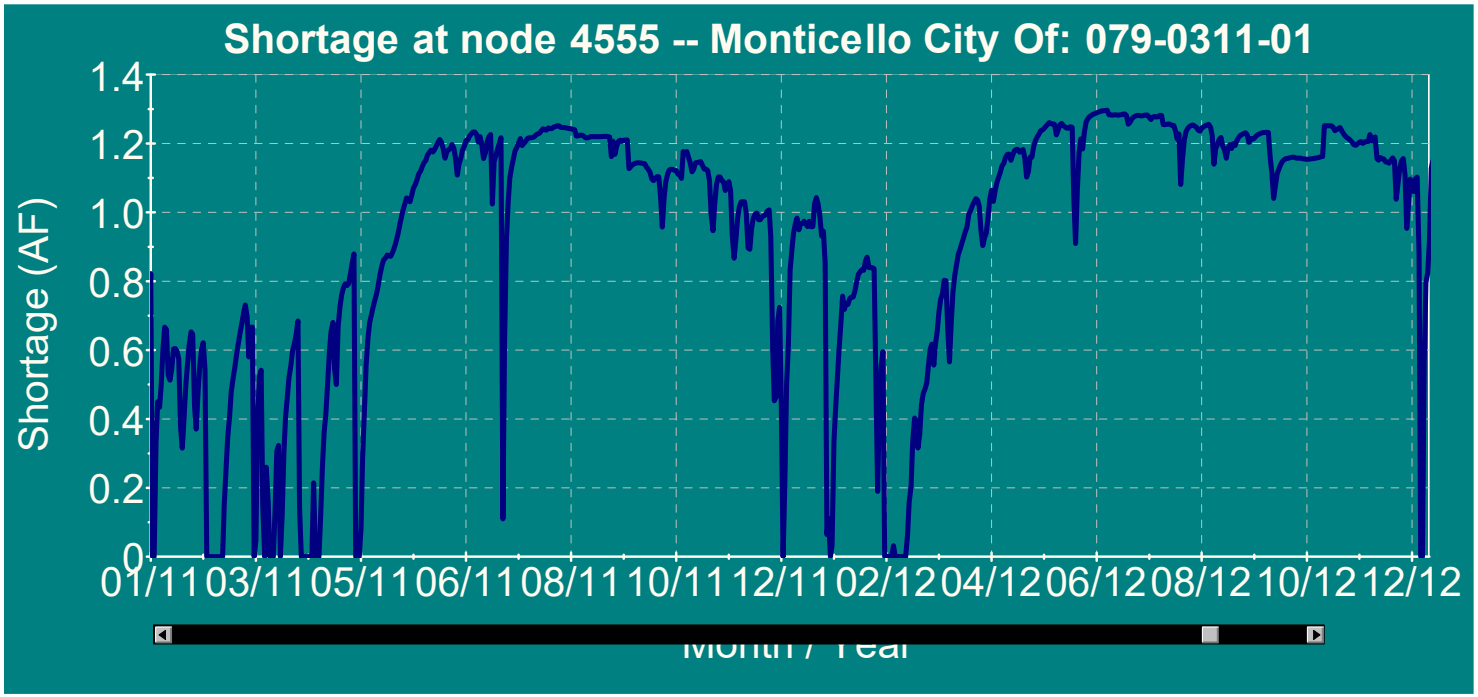
Note

- EPD and Hazen and Sawyer (EPD contractor) reached out to water supply providers asking for their water supply reservoirs' physical and operational data.
- Many water supply providers responded with available information, enabling BEAM to utilize this information in simulating potential scenarios.
- Some either do not have such information or simply did not respond to this inquiry. As a result, EPD modeling team has to make assumptions
  - In this case, an assumption of no storage in the water supply reservoir is made.

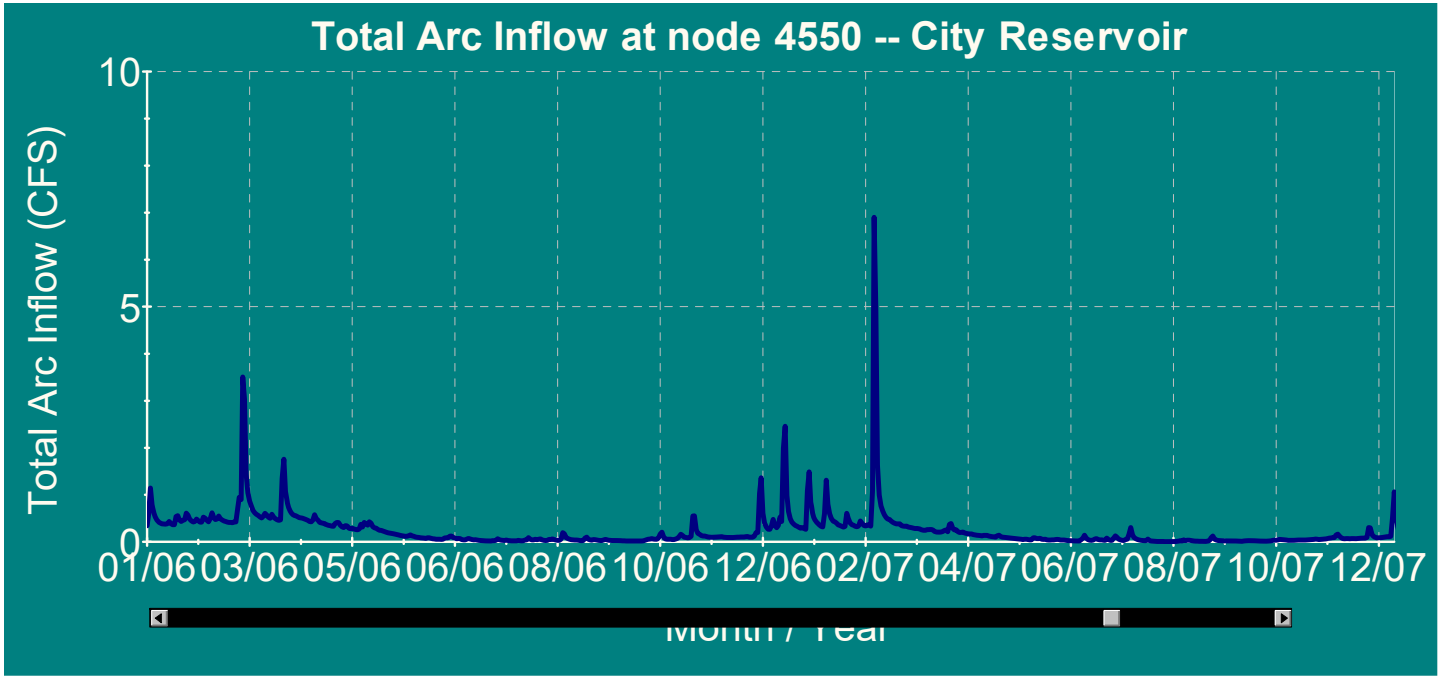
Simulated Shortage in 2006-2007



Simulated Shortage in 2011-2012



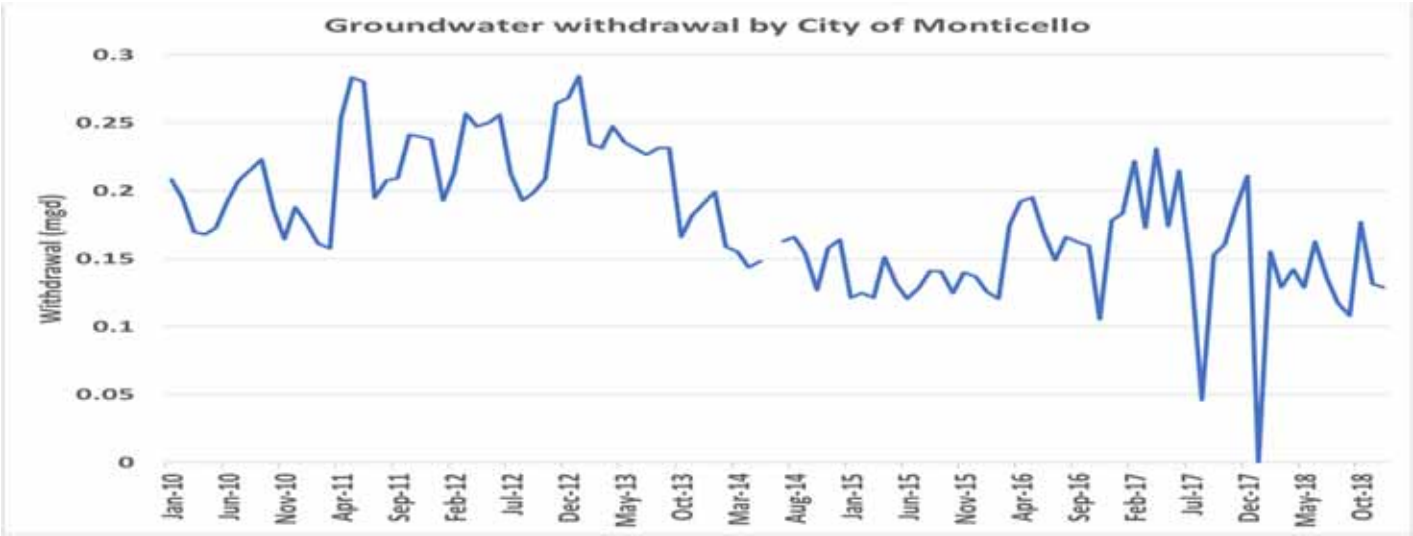
Simulated Stream flow at Withdrawal Location in 2006-2007



Note: The source stream is a headwater stream with a substantial fraction of time with its simulated flow being close to zero.

We Noticed Additional Information…

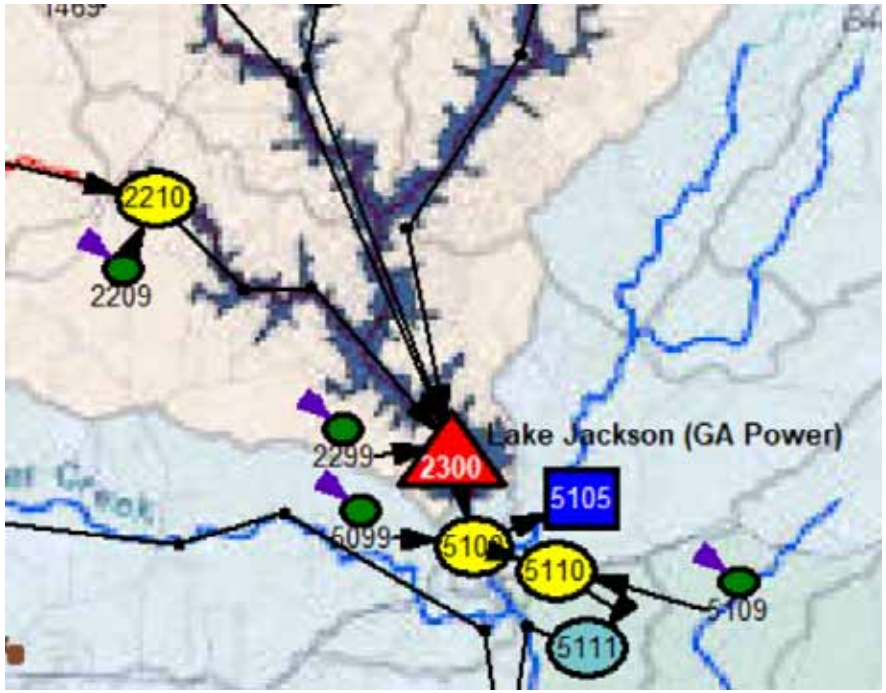
- City of Monticello has groundwater withdrawal permit of 0.375 mgd (monthly/annually)



Discussion

- The other water supply entities did not have water supply challenges under the baseline levels of water use.
- Do you want to adopt this performance metric as part of your plan?
- Future conditions will be included in the next update in Resource Assessment for comparison with the baseline.
- What additional performance measure would you like to see in assessing water supply?

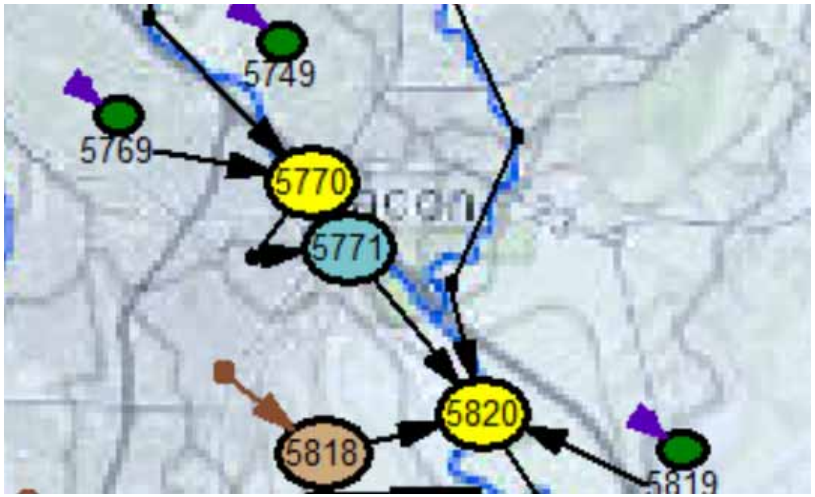
Lake Jackson Condition (BEAM Node 2300)



Available Simulation Results at Lake Jackson

- Direct Results
  - Elevation
  - Inflow
  - Release
- May facilitate the following
  - Lake recreational assessment
  - Downstream recreational assessment
  - Downstream flow evaluation (including for water quality assessment)
  - Downstream habitat quantification

Simulated Flow at USGS Macon Gage (BEAM Node 5771)



Simulation Results at USGS Macon Gage

- Flow time series from January 1, 1939 through December 31, 2018 – an eighty-year period
- May facilitate the following:
  - Recreational assessment
  - Flow evaluation, including for water quality
  - Habitat quantification

Using Flow to Create Boating/Paddling Performance Metric

For Informational Purposes Only

- Convert stream flow to stage

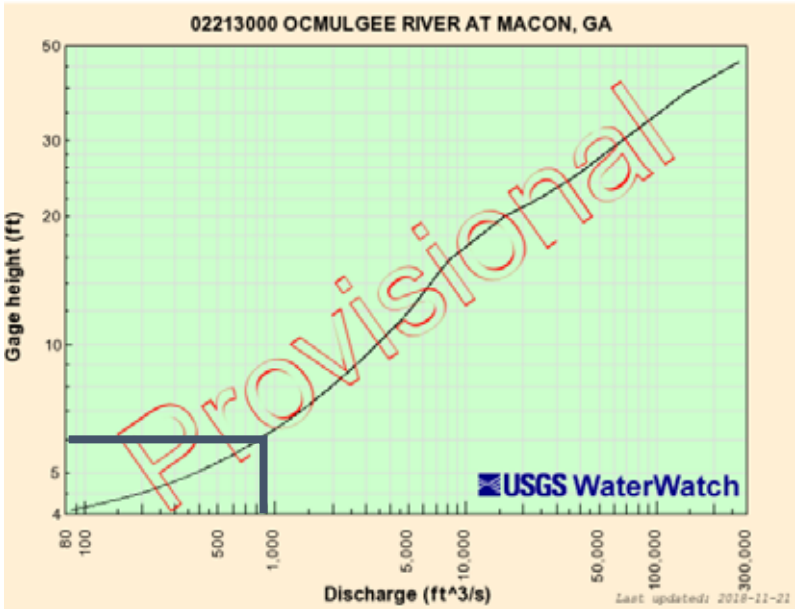
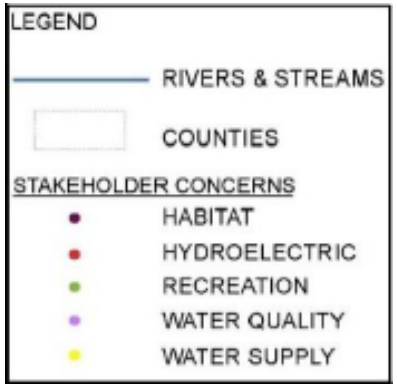


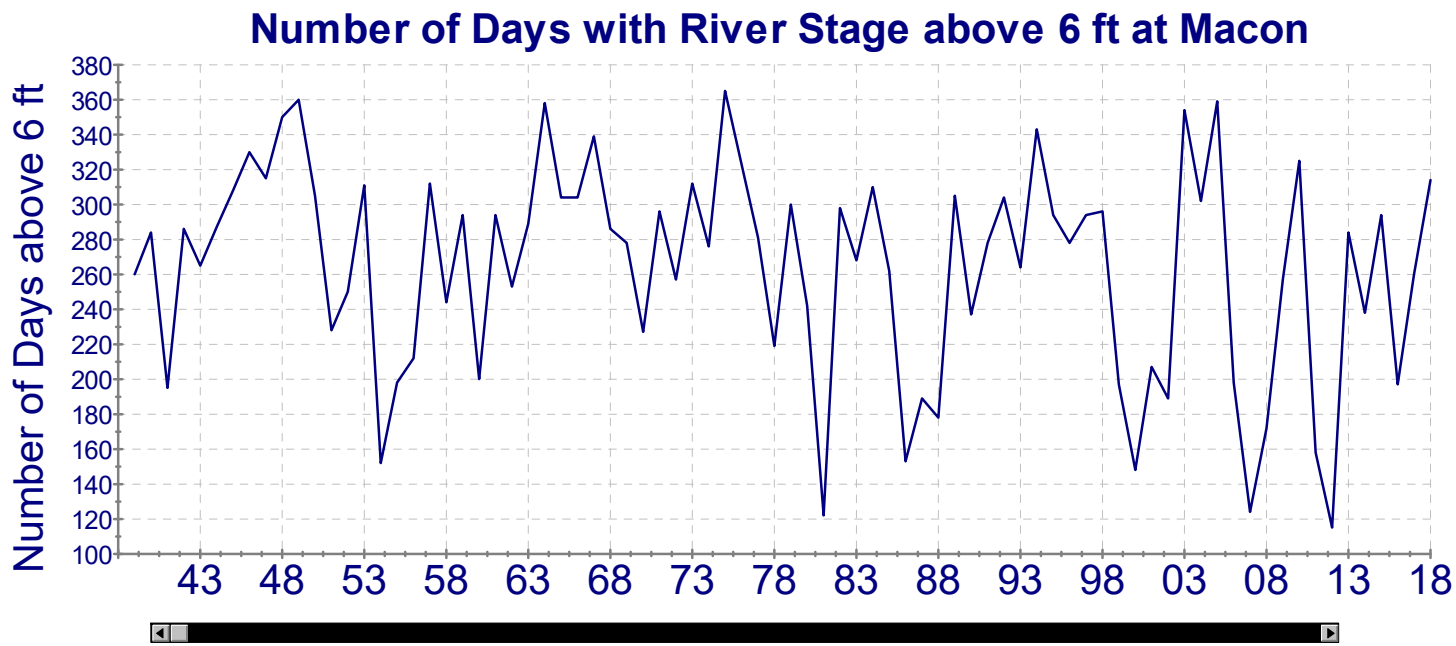
Table 11. Low-flow metrics for Ocmulgee River recreational boating

River Service	Metric	Source
Kayaking/canoeing	Amount of time that kayaking or canoeing is not ideal (i.e., gage height ≤ 6.0 feet) due to low water conditions	Personal communication with Kathleen O' Neal (Ocmulgee Outdoor Expeditions)
Boating	Amount of time that boating is not ideal (i.e., gage height ≤ 7.5 feet) due to low water conditions	Viable stage for kayaking/canoeing + 1.5 feet (average shaft length of short- and long-shaft small engines); (Iboats, 2009)

Locations of Recreational Interests – Stakeholder Input



Performance Metric at Macon, GA for Boating



Better

Discussion

- Do you want to adopt this performance metric as part of your plan?
- Future conditions will be included in the next update in Resource Assessment for comparison with the baseline.
- What additional performance measure would you like to see in assessing river recreation?

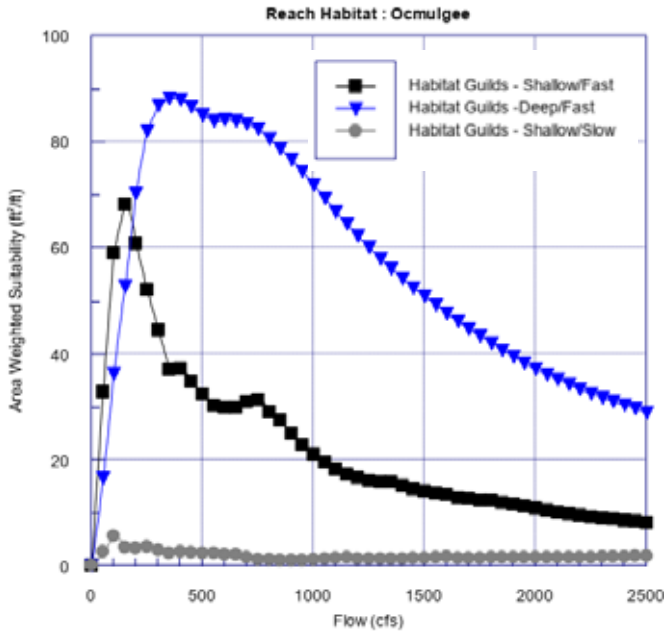
Reach Habitat

- Shallow/Fast
  - Species: Spottail Shiner and Bluehead Chub

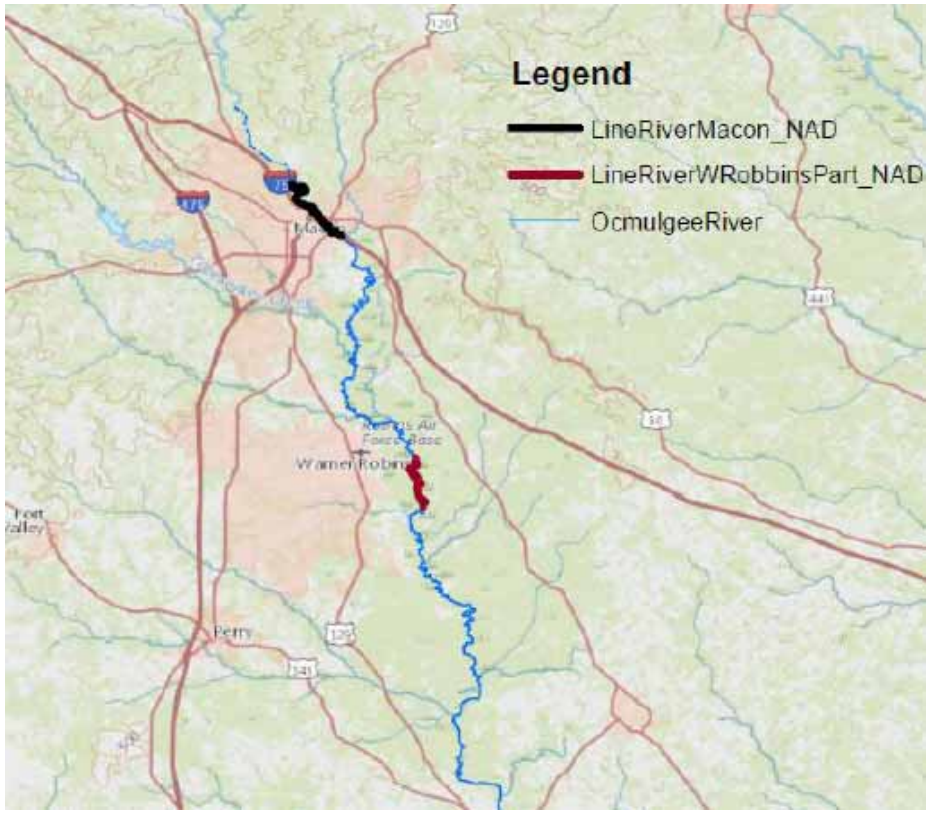
https://www.inaturalist.org/guide_taxa/490641
https://en.wikipedia.org/wiki/Spottail_shiner

- Deep/Fast
  - Species: Largemouth Bass

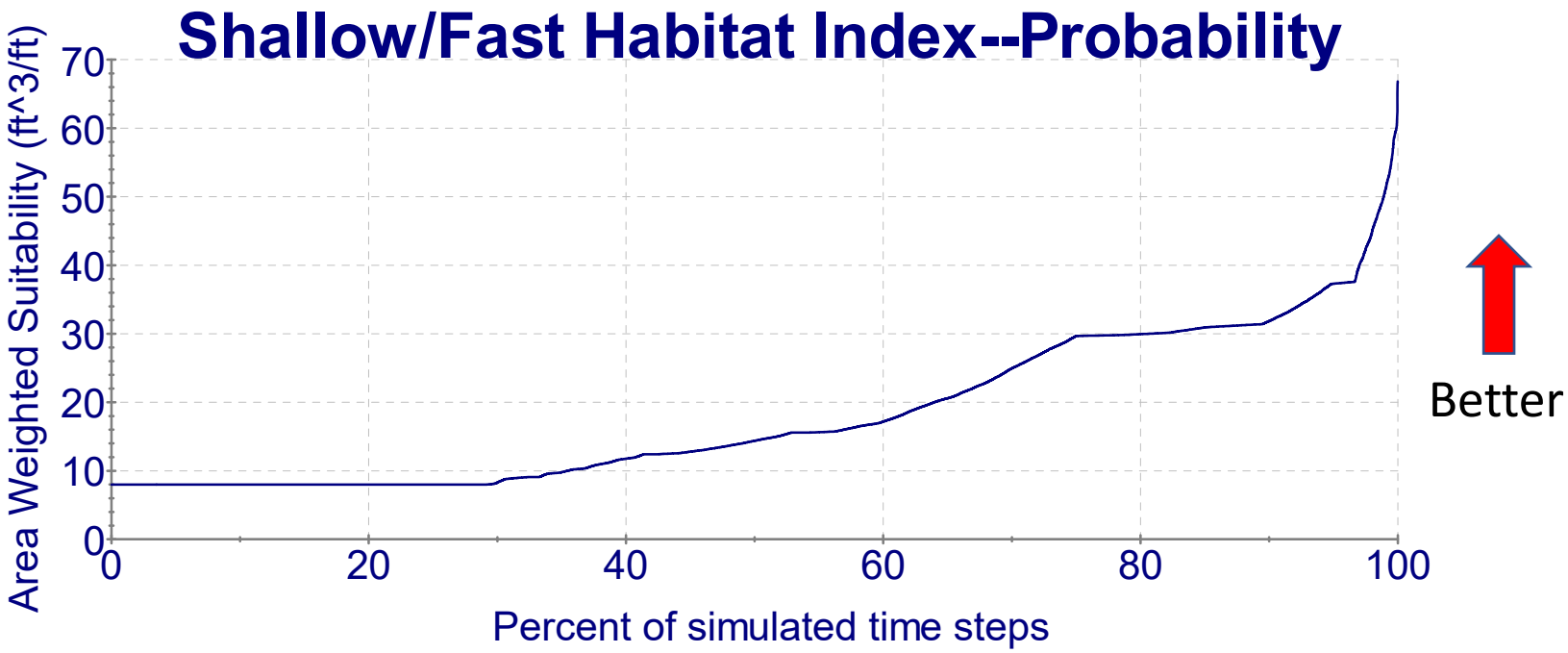
https://www.fws.gov/fisheries/freshwater-fish-of-america/largemouth_bass.html



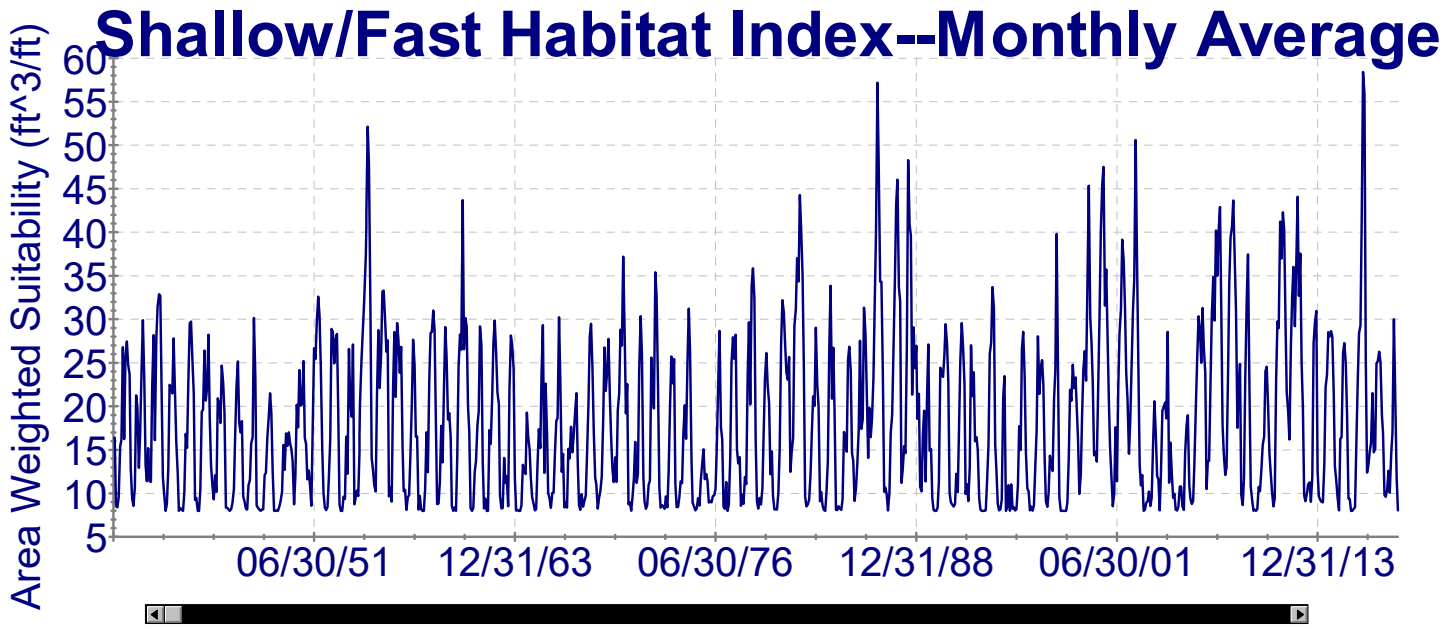
Reaches of the Ocmulgee River Where Bathymetric Data Allow for Habitat Assessment



Performance Metric-Shallow/Fast Habitat Frequency

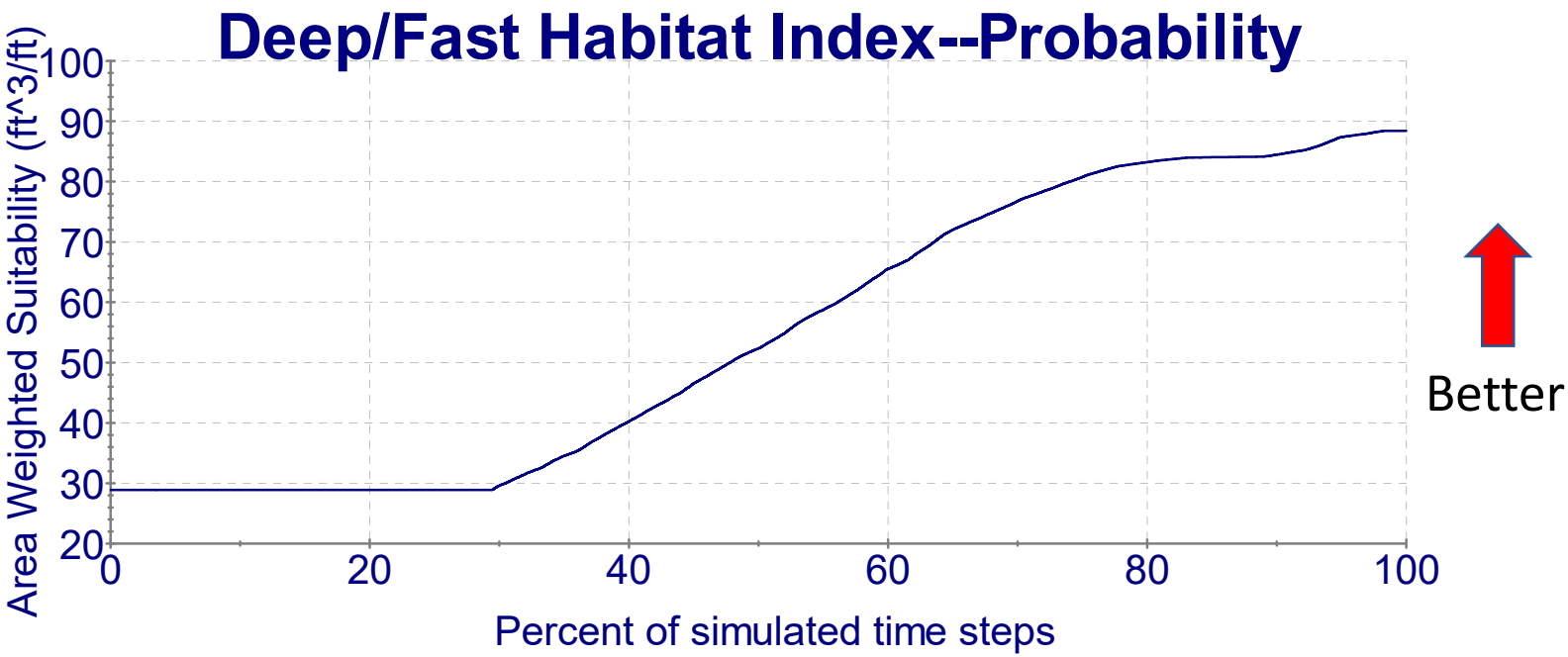


Performance Metric-Shallow/Fast Habitat (Monthly Average)

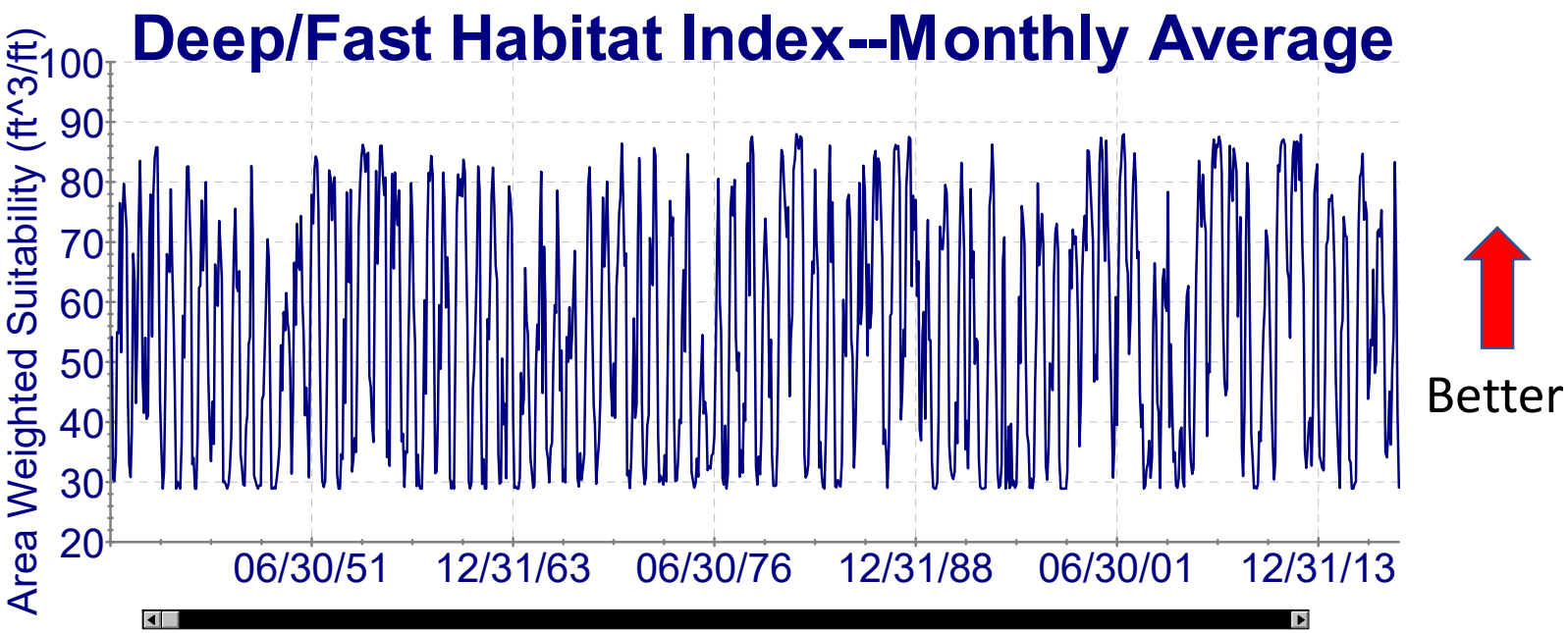


Better

Performance Metric-Deep/Fast Habitat Frequency



Performance Metric-Deep/Fast Habitat (Monthly Average)



Discussion

- Do you want to adopt this performance metric as part of your plan?
- Future conditions will be included in the next update in Resource Assessment for comparison with the baseline.
- What additional performance measure would you like to see in assessing fish habitat availability?

Summary

- Moderate water supply challenges under baseline water use conditions
- Established baseline performance measures for recreational (boating) activities in the Ocmulgee River near Macon
- Established baseline performance measures for assessing habitat availability for certain types of fish
- Will incorporate projected municipal, industrial, thermal energy, and agricultural water use in the future scenario for comparison to better inform the Council
- Council's input in additional Performance Measures?

Questions?

Contact Information:

Wei Zeng, Ph.D., Professional Hydrologist
Manager, Water Supply Program
Watershed Protection Branch, Georgia EPD
470-251-4897 (Zoom Phone) New!
470-898-3891 (Cell)

Wei.Zeng@dnr.ga.gov

Five Minute Break

Paddle Georgia – Ocmulgee River

Surface Water Quality Update

Dr. Liz Booth, EPD

Georgia®

SOUTH RIVER
WATERSHED ALLIANCE

Bandalong Trash Trap Project

Jacqueline Echols, PhD
www.southriverga.org

Jackson Lake

Ubiquitous Trash Atlanta to the Atlantic Ocean

- Big Picture – Owning the Problem of Ubiquitous Trash
- Origin of an Idea
- Cold-Call that Paid Off
- Finding the Perfect Location
- Fundraising
- Obstacles

DeKalb County Government

DeKalb County
GEORGIA
DEPARTMENT OF
WATERSHED MANAGEMENT
4572 Memorial Drive, Decatur Ga 30032

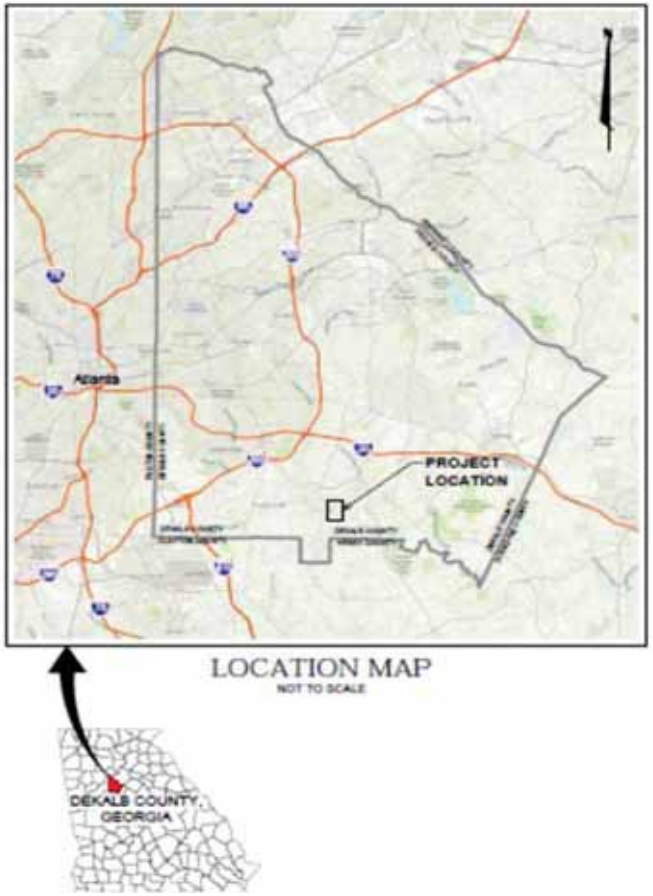
Bandalong Trash Trap Project

Brent Zern, PE
Assistant Director, Watershed Management

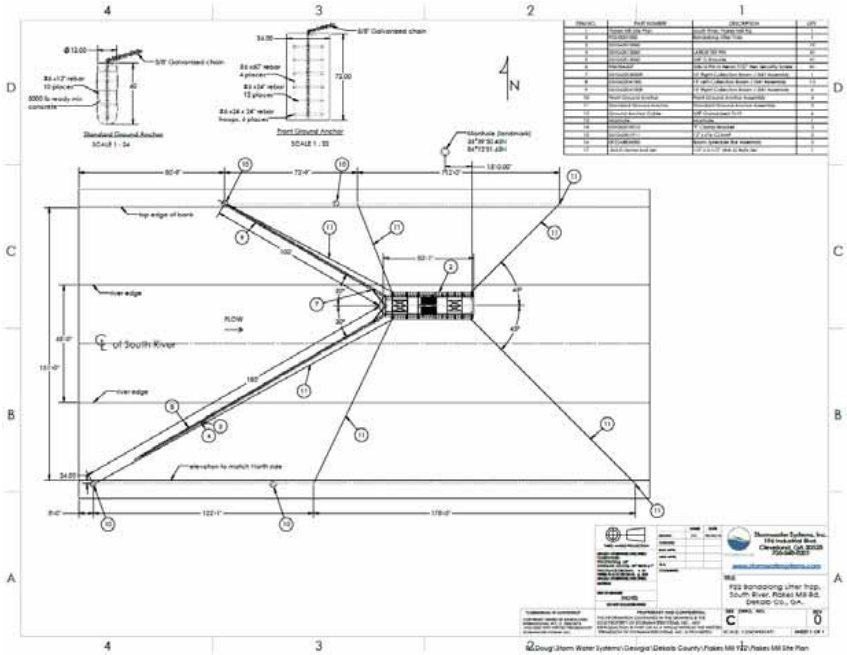
SITE LOCATION: Snapfinger Advanced Water Treatment Facility

4124 Flakes Mill Road

Decatur, GA 30034



Site Layout Plan



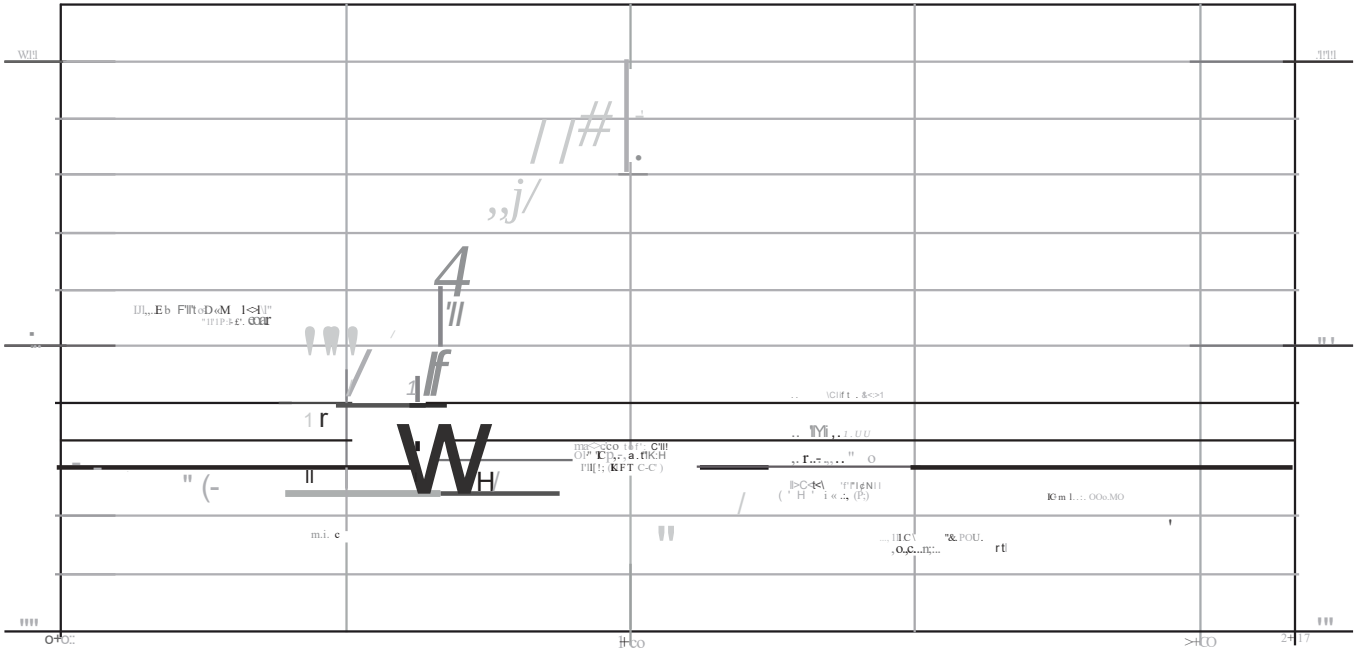
South River Bandalong

Example: Gainesville, GA Litter Trap

Things to Consider

- Planning –
  - Site selection and access
  - Trap maintenance and responsibility
  - Permitting requirements
  - Neighbor considerations

- Implementation –
  - Government processes take time – procurement, Board approval, change orders
  - Permitting processes (can) take even more time – local, state, and likely federal jurisdictions will each have their own requirements



@ 8ANDALONG SITE PROFI
LE

SCALE: HORIZ. 0 10' 20'
VERT. 0 10' 20'

LEGEND:

- - - - - - - - - IGtm..O
I' GI'.:C
- - - - - - - . . 6Ir· t:8.E'n (N.EI

Trap Maintenance & Protection

Questions and Discussion

Ocmulgee National Monument Wetlands

- **Wrap Up and Next Steps**
  - Next Council meeting
    - General date range is mid- to late March
    - Any topics or ideas you would like to see on agenda?
    - Contact Paula Feldman 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

Thank You!

Questions? Comments? Need More Information?

Michelle.Vincent@Jacobs.com
Paula.Feldman@freese.com
Veronica.Craw@dnr.ga.gov

Georgia