

MIDDLE CHATTAHOOCHEE

Middle Chattahoochee Council Meeting

May 11, 2022



**GEORGIA
WATER PLANNING**

waterplanning.georgia.gov

Agenda

Objectives:

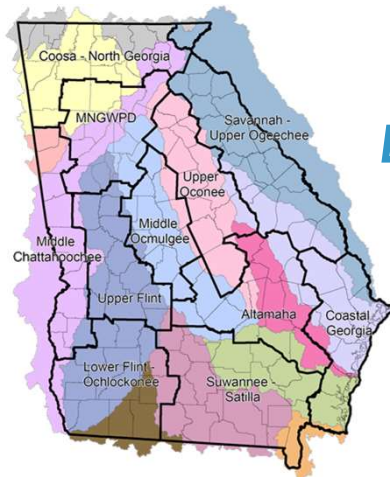
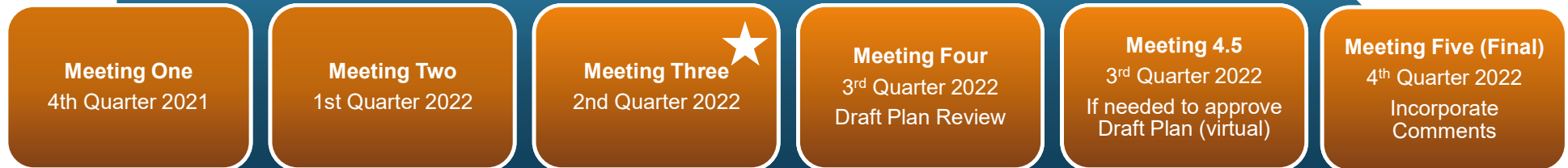
1. Review and discuss additional water resource assessment results
2. Review and discuss management practices and recommendations
3. Consider recommendations from Plan Review & Inter-Council Coordination Committees
4. Learn about recent studies on water system interconnectivity and biosolids management

10:00	Welcome, Agenda Review, Check-In with New Members	2:45	Next Steps in Plan Review and Revision
10:05	Chair's Report	3:00	EPD Report
10:10	Resource Assessment Results	3:10	Information Items: GEFA Study and Biosolids Report
11:15	Management Practices Review	3:40	Public Comment
12:00	Lunch	3:50	Next Steps
12:40	Management Practices Review (cont.)	4:00	Adjourn
1:15	Plan Review Committee Report		
1:35	Inter-Council Coordination Committee Report		
1:55	Recommendations Review		
2:35	Break		



Regional Water Plan Update

Regional Water Plan Review and Revision Schedule



***EPD targeted date of
adoption of revised
Regional Water Plan by
December 2022***



Introductions

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Columbus Water Works

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Middle Chattahoochee Council Members

Name	City	County	Name	City	County
Hannah V. Anderson	Fort Gaines	Clay	Kevin Hayes	Franklin	Heard
John M. Asbell	LaGrange	Troup	Bill Heath	Breman	Haralson
Victoria Barrett	Richland	Stewart	Ken Johnson	Fort Gaines	Clay
Laura Lee Bernstein	Columbus	Muscogee	Harry Lange	Cataula	Harris
Patrick Bowie	LaGrange	Troup	Carvel Lewis	Georgetown	Quitman
Jimmy Bradley	Cuthbert	Randolph	Adolph McLendon	Richland	Stewart
Barbie Crockett	Centralhatchee	Heard	George E. Moon III	West Point	Harris
Steve Davis, Chair	Columbus	Muscogee	Mac Moya	Lumpkin	Stewart
Philip Eidson	Tallapoosa	Haralson	Denney Rogers	Ephesus	Heard
Tony Ellis	Tallapoosa	Haralson	Jim Thornton	LaGrange	Troup
James Emery	LaGrange	Troup	Kenneth M. Van Horn	Cusseta	Chattahoochee
Gardiner Garrard	Columbus	Muscogee	Jason Weeks	Georgetown	Quitman
Dan Gilbert	Columbus	Muscogee	Don Watson (Alternate)	LaGrange	Troup
Joseph Griffith	Buchanan	Haralson	Matt Windom	Bowdon	Carroll
Tim Grizzard	Franklin	Heard	Robert York	Bremen	Carroll
Jimmie L. Hayes	Morris	Quitman			
Senator Jason Anavitarte (Ex-Officio)			Representative Randy Nix (Ex-Officio)		



Chair's Report

Presented by Chairman Davis



Resource Assessment Results

[presenter]



Regional Water Planning Models

Water Planning Model Recap

1.

Groundwater
Availability

2.

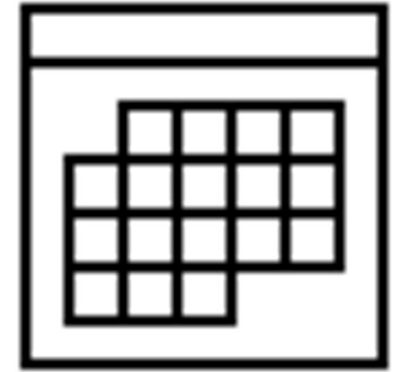
Surface Water
Availability

3.

Surface Water Quality



Regional Water Planning Models



Groundwater Availability

- Results presented at last meeting: March 15, 2022

Surface Water Availability

- Previously we focused on how the model works and how we measure results (***metrics***)
- Results will be shared today

Surface Water Quality

- Some model results were discussed at last meeting and more results will be discussed today



Regional Water Planning Model Results

Metrics are used to evaluate the results relative to outcomes of interest.

Surface Water Availability

Do we have enough water to...

- meet demands?
- assimilate wastewater?
- support recreation?

Groundwater Availability

How does groundwater use affect our aquifers?

Does groundwater use cause adverse impacts?
(to users, aquifers, instream flows)


Sustainable Yield

Surface Water Quality

Is water quality adequate to support uses?
(drinking water, recreation, fishing)

How do wastewater discharges affect water quality (dissolved oxygen)?





Resource Assessment Results: Water Quality and Surface Water Availability

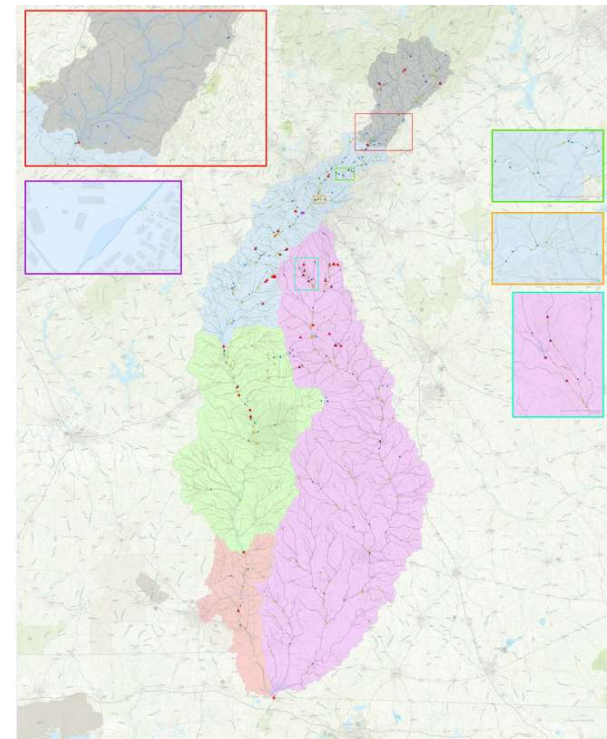
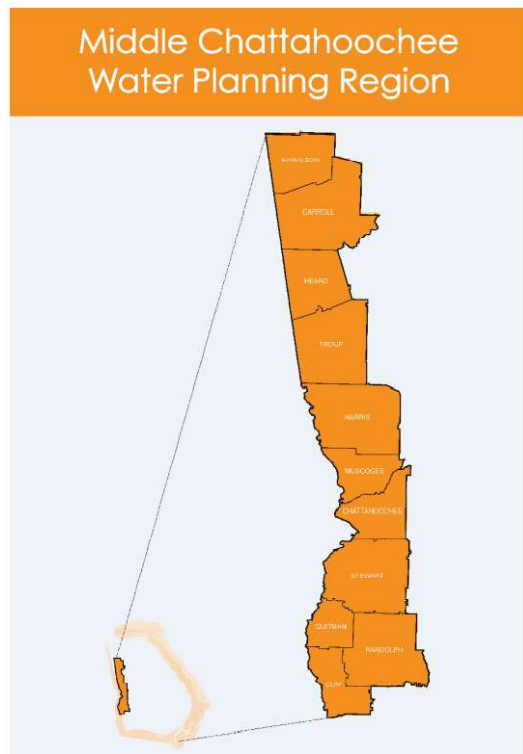
Draft Resource Assessment by ACF BEAM for Middle Chattahoochee Water Planning Region

Georgia EPD
May 11, 2022

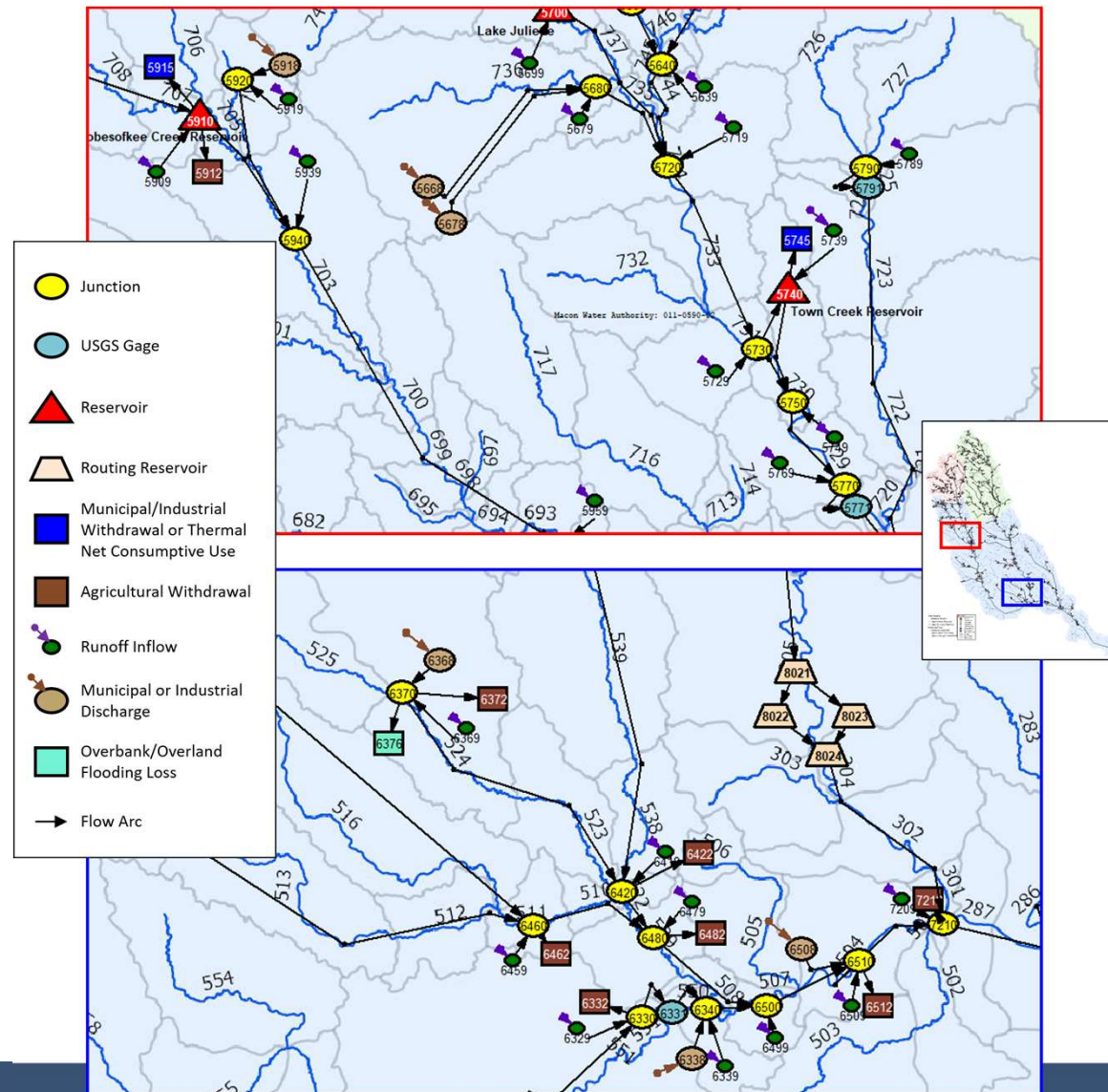
Presentation Outline

- Introduction and Model Settings
- Model Results Baseline Scenarios
 - Water Supply Challenges, Examples (water supply PMs)
 - Carroll County Water Authority
 - Heard County Water Authority
 - PVA Water Association, Inc.
 - Wastewater assimilation Challenges, Example (wastewater assimilation PMs)
 - West Point Elevation
 - Columbus Flow Results
- Additional Performance Measures to consider?

Middle Chattahoochee Region and ACF Model Domain



Hazen



ACF BEAM Model Baseline and Future Scenarios Settings

- Simulation Period (various hydrologic conditions): 1939-2018
- Withdrawal and Discharge amount: baseline: 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

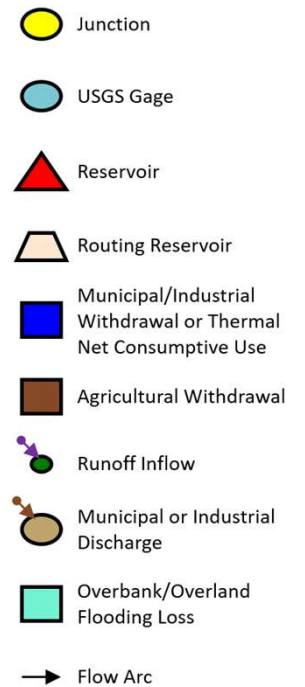
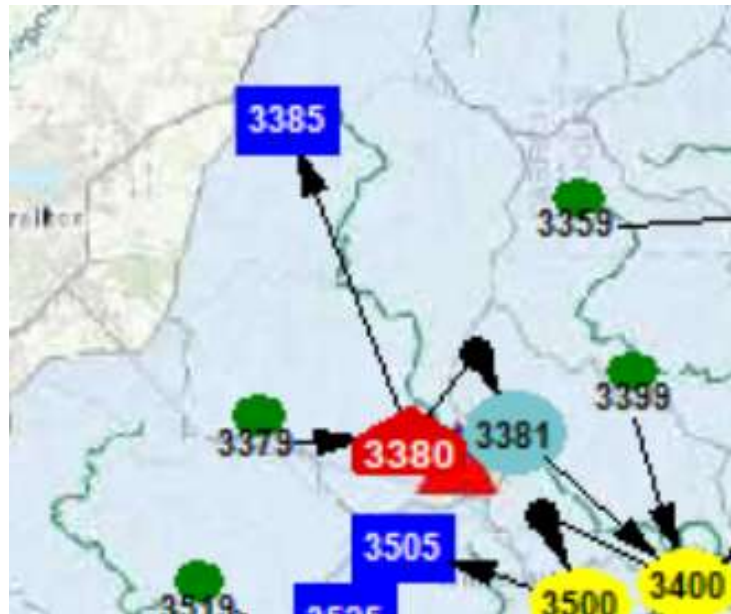
Water Supply Settings: Facilities Analyzed in BEAM Model for Middle Chattahoochee Region

Facility	Total number
Municipal Withdrawal	11
Municipal Discharge	12
Industrial Withdrawal	2
Industrial Discharge	1
Energy Withdrawal	1

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

Example 1: Permit 022-1217-01 BEAM (Node 3385)

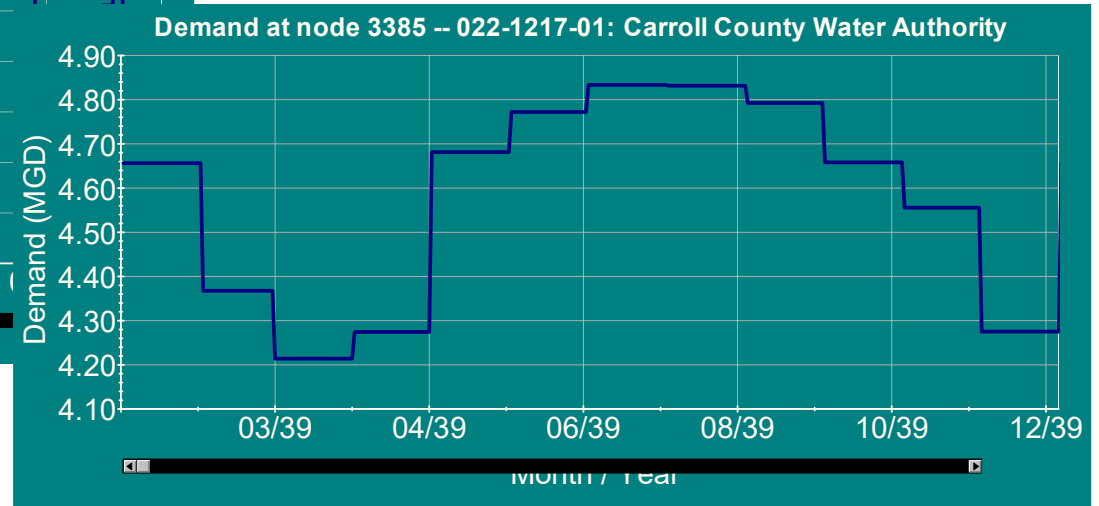
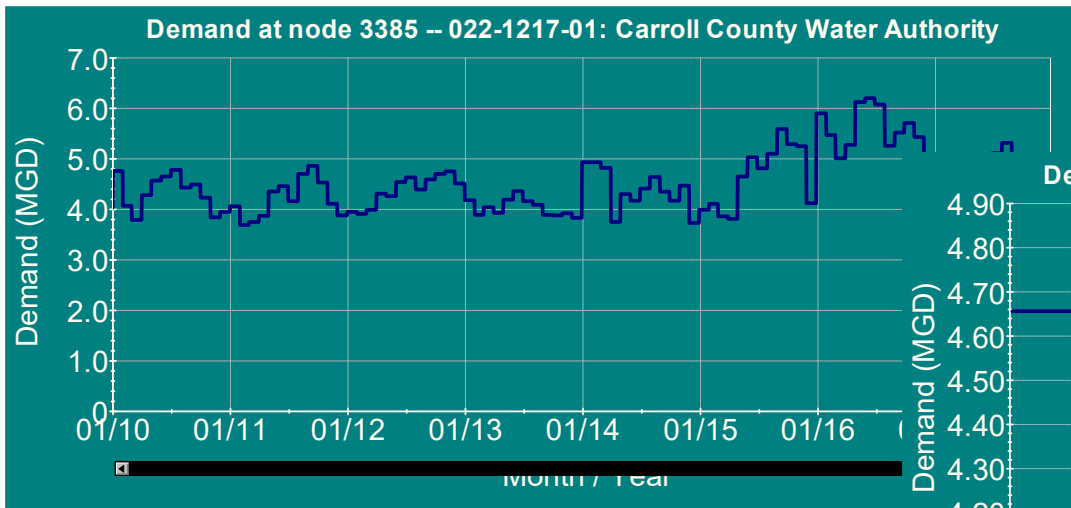
- Permit holder: Carroll County Water Authority
- Withdrawal limit: 13 mgd (daily)/11 mgd (monthly)/8 mgd (annual)
- Min flow requirement: 8.42 cfs or natural flow below Reservoir Dam
-



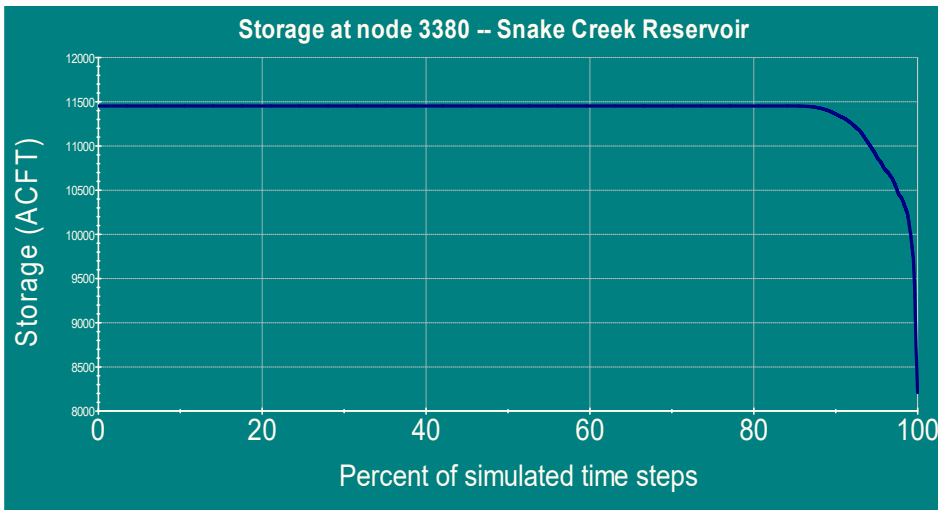
Permit 022-1217-01 Withdrawal Amount Setting- average of 2010-2018

2010 - 2018

Baseline

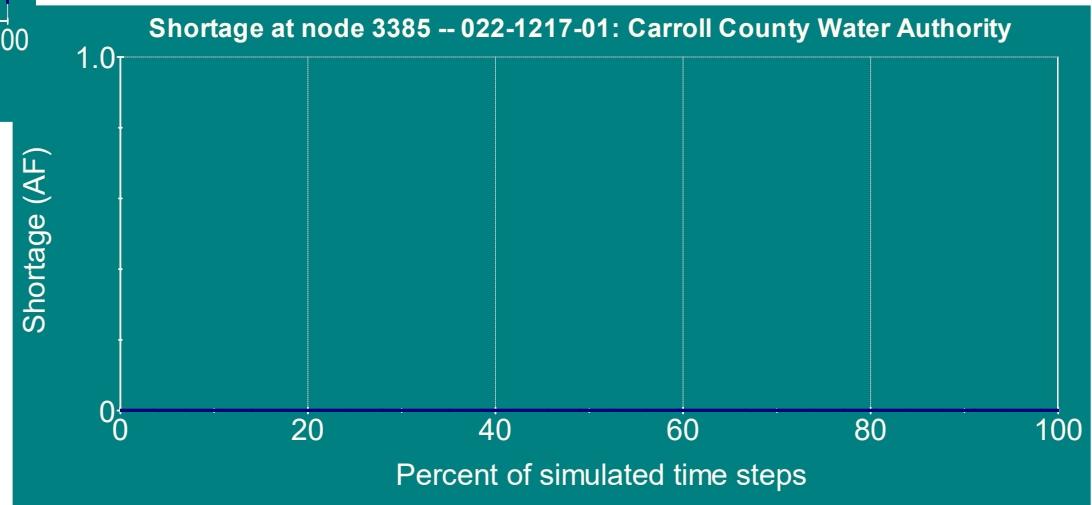


Simulated Reservoir Storage Frequency and Water Supply Challenge Frequency



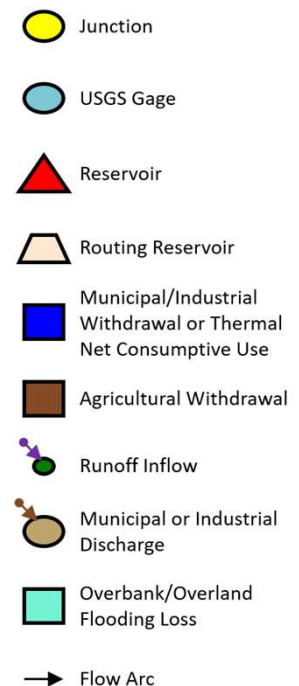
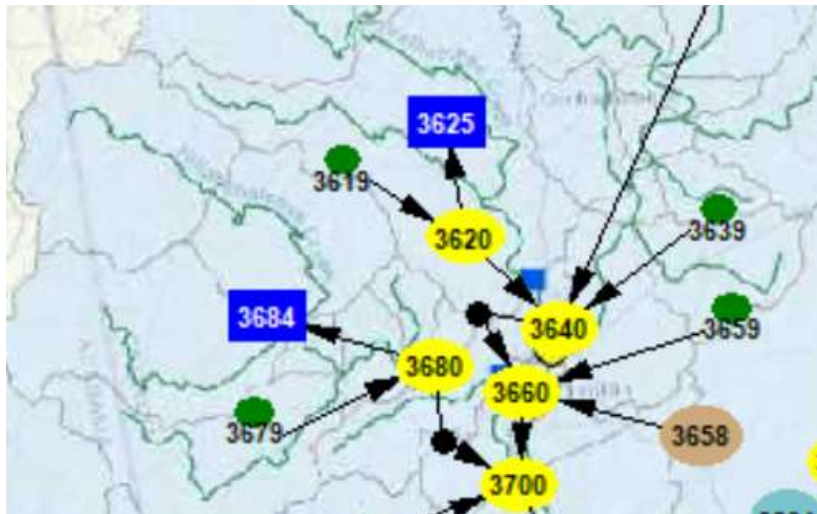
Storage at all times remaining above 4000 acft indicates there is enough storage for water supply

Shortage is zero indicates no challenges encountered.



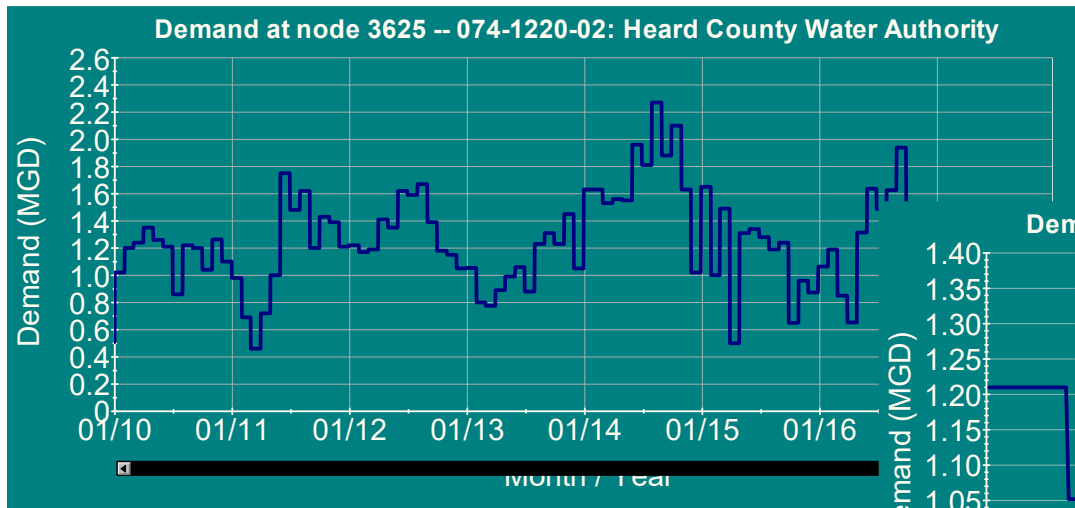
Example 2: Permit 074-1220-02 (BEAM Node 3625)

- Permit holder: Heard County Water Authority
- Withdrawal limits: 4 mgd (daily)/3.1 mgd(monthly)
- Centralhatchee Creek IFPT of 13.0 cfs (8.4 mgd)

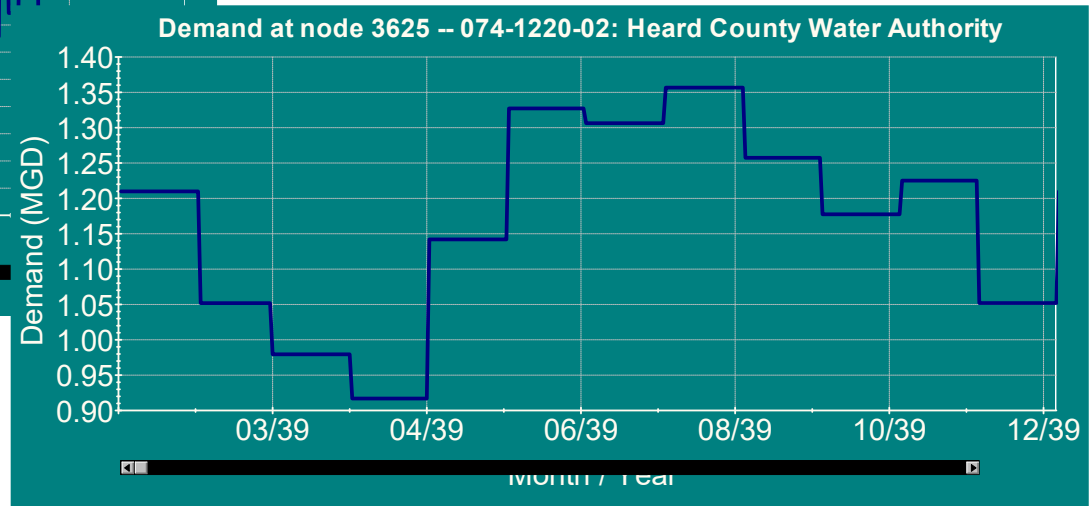


Permit 074-1220-02 Withdrawal Amount Setting- average of 2010-2018 and 2060 projection

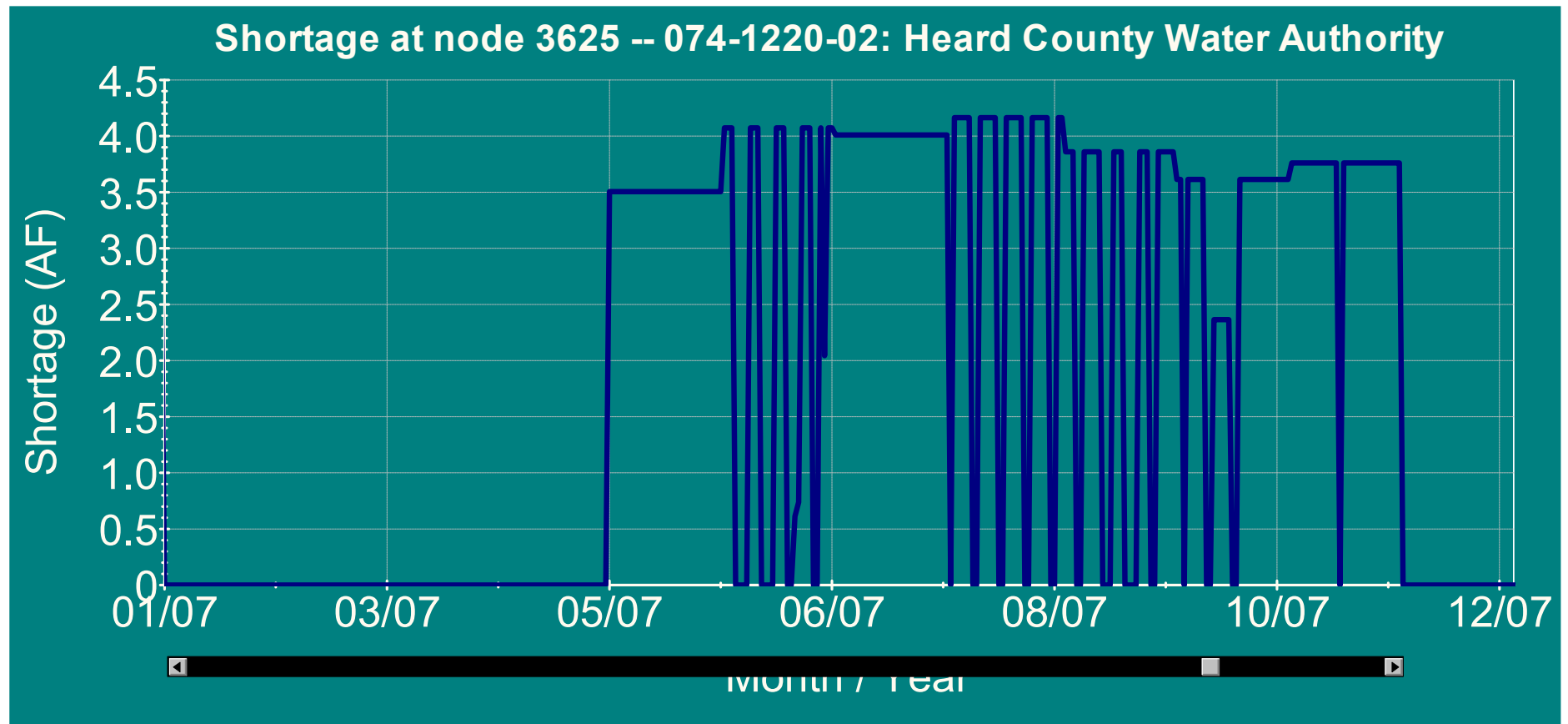
2010 - 2018



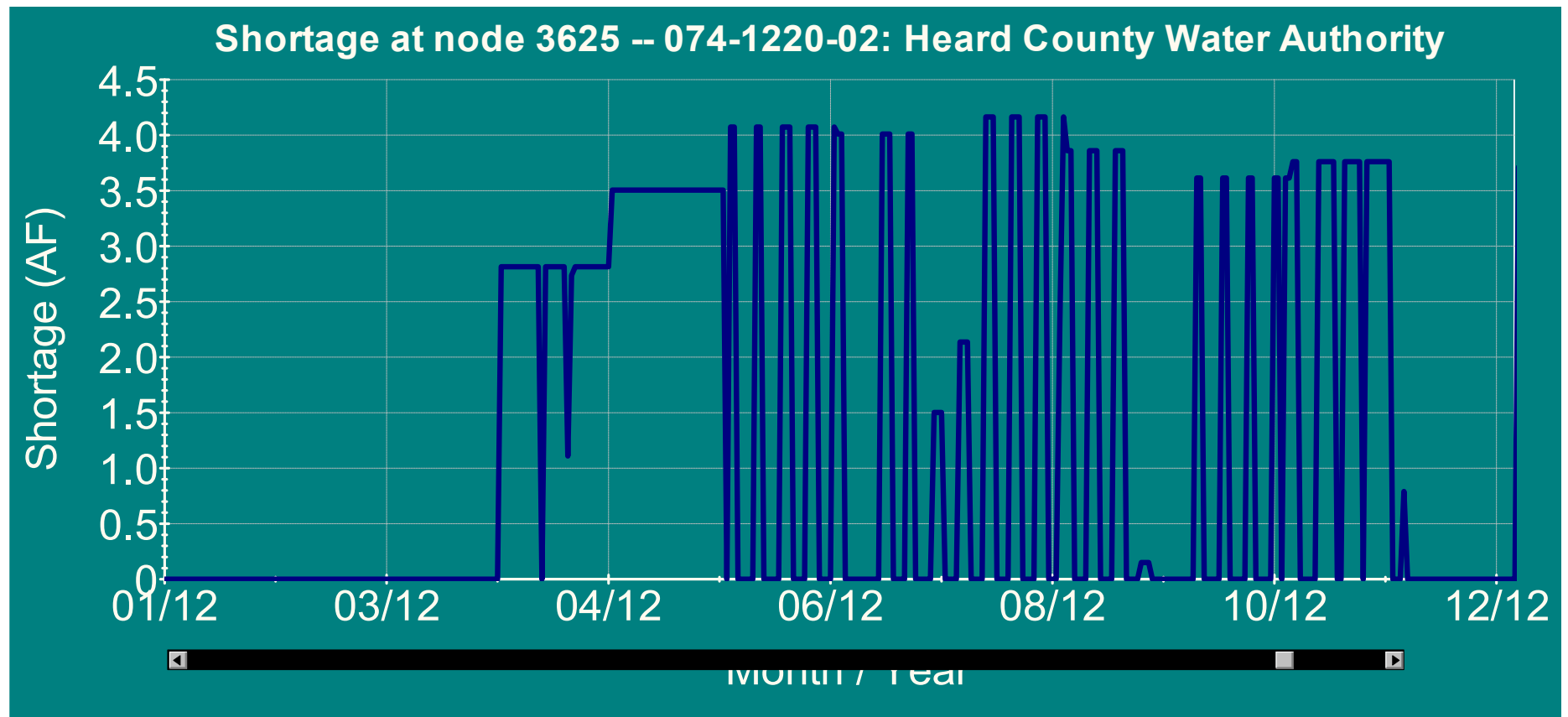
Baseline



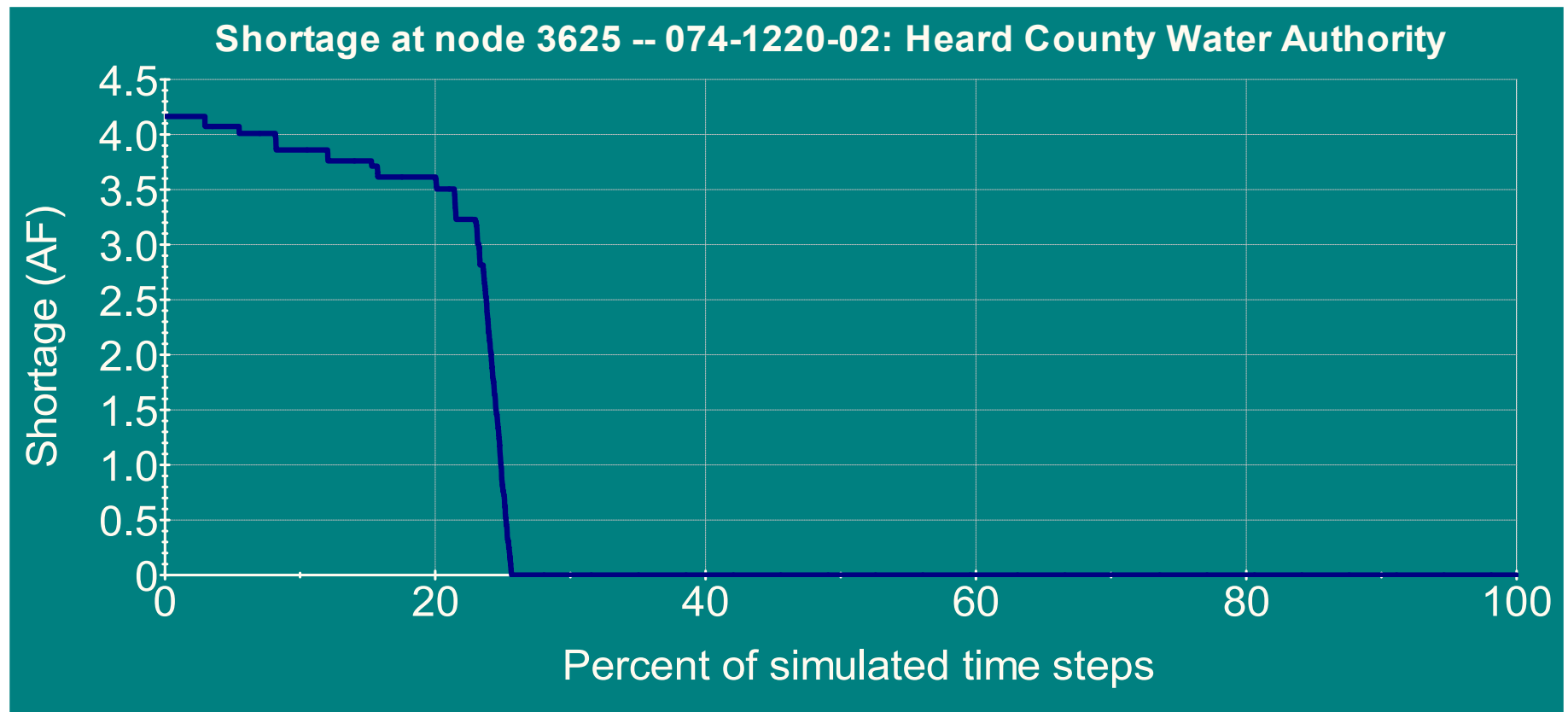
Water Supply Challenge in 2007



Water Supply Challenge in 2012

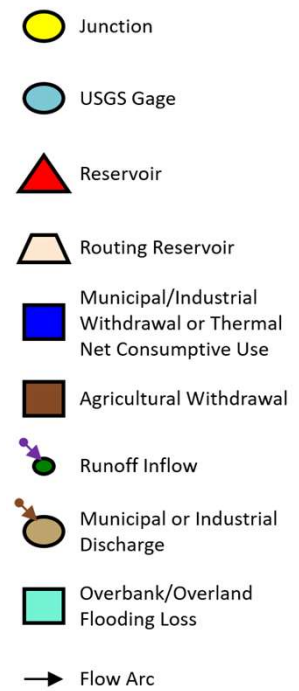
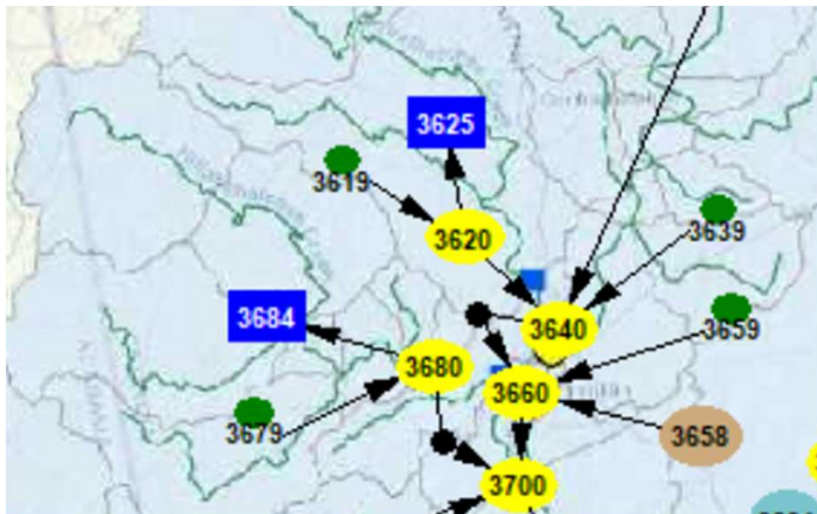


Water Supply Shortage Frequency in 1939-2018



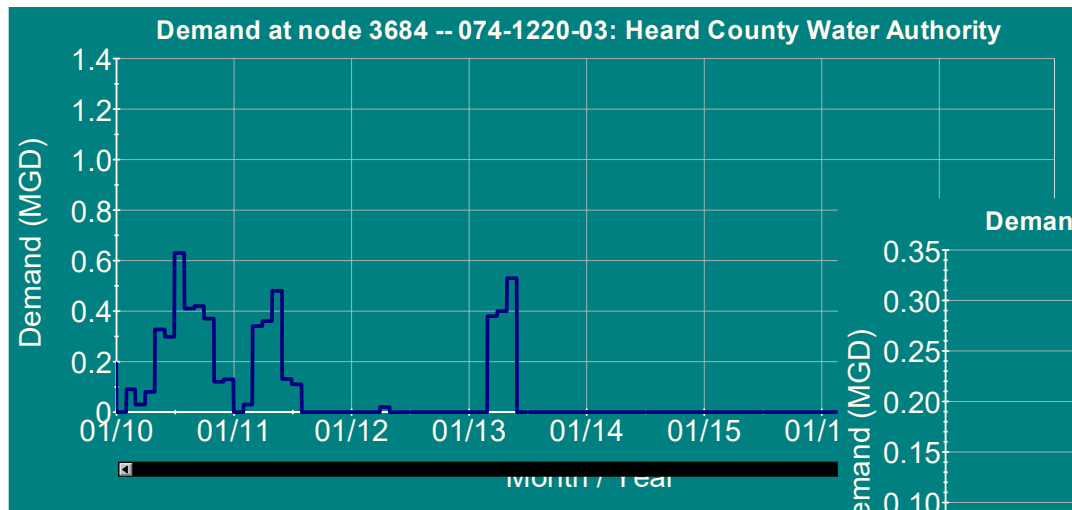
Example 3: Permit 074-1220-03 (BEAM Node 3684)

- Permit holder: Heard County Water Authority
- Withdrawal limits: 4 mgd (daily)/3.1 mgd(monthly)
- Hillabahatchee Creek IFPT of 12.0 cfs (7.8 mgd)

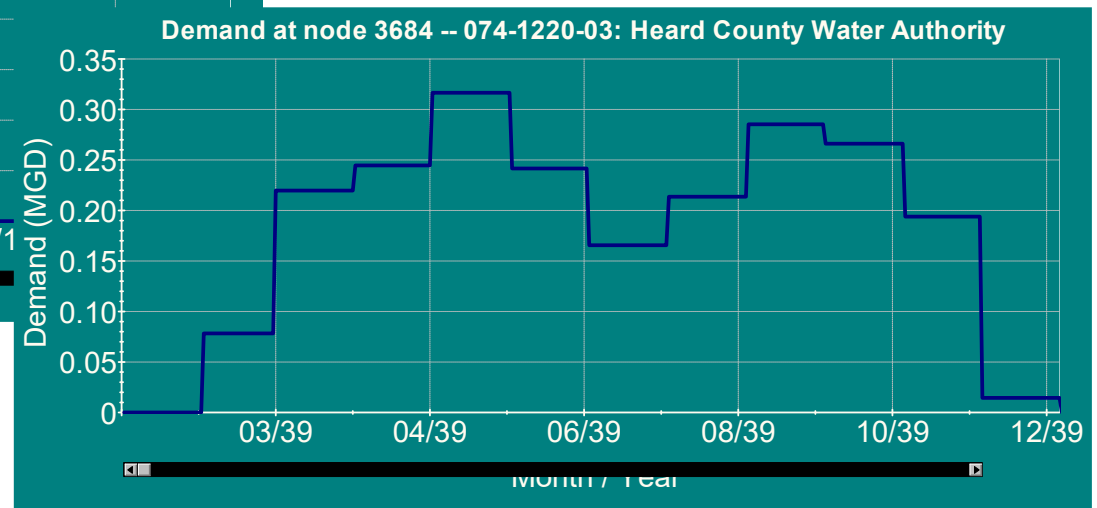


Permit 074-1220-03 Withdrawal Amount Setting- average of 2010-2018 and 2060 projection

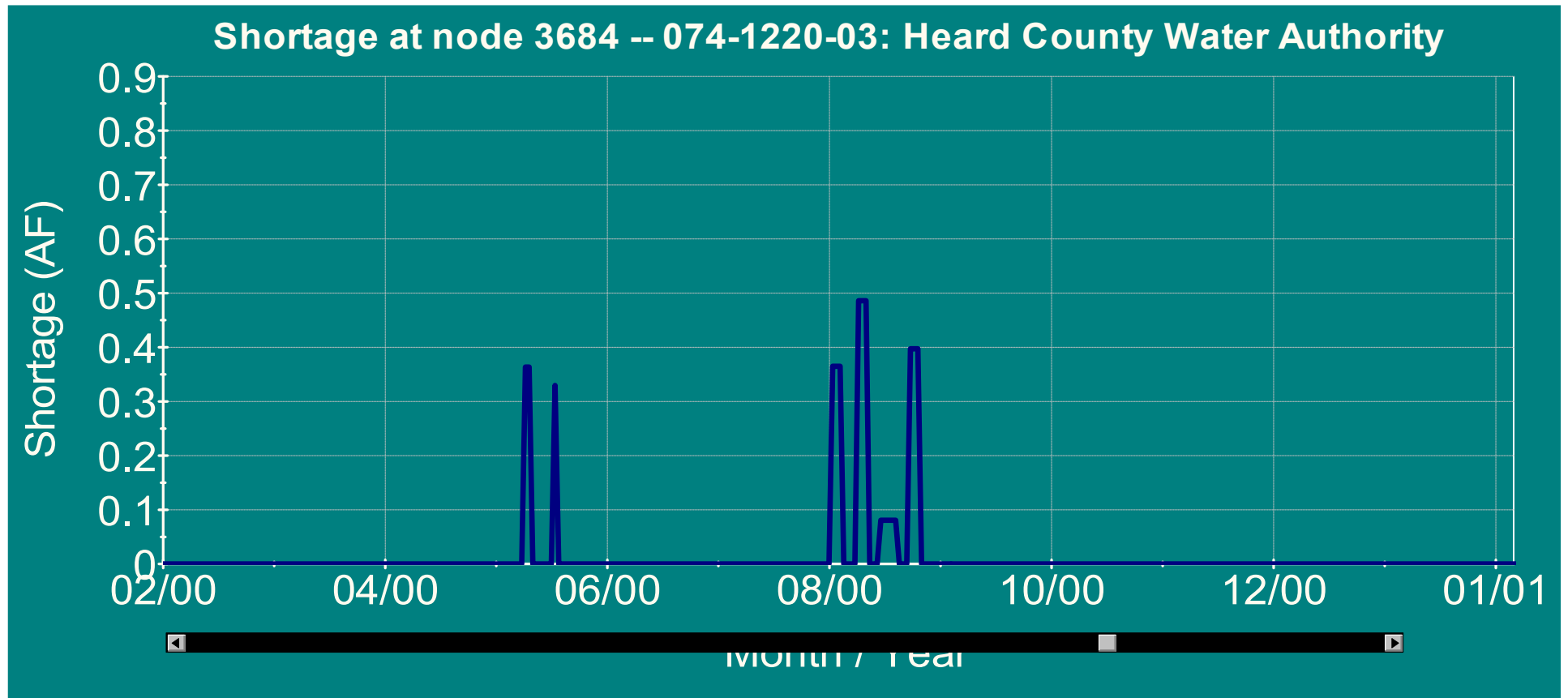
2010 - 2018



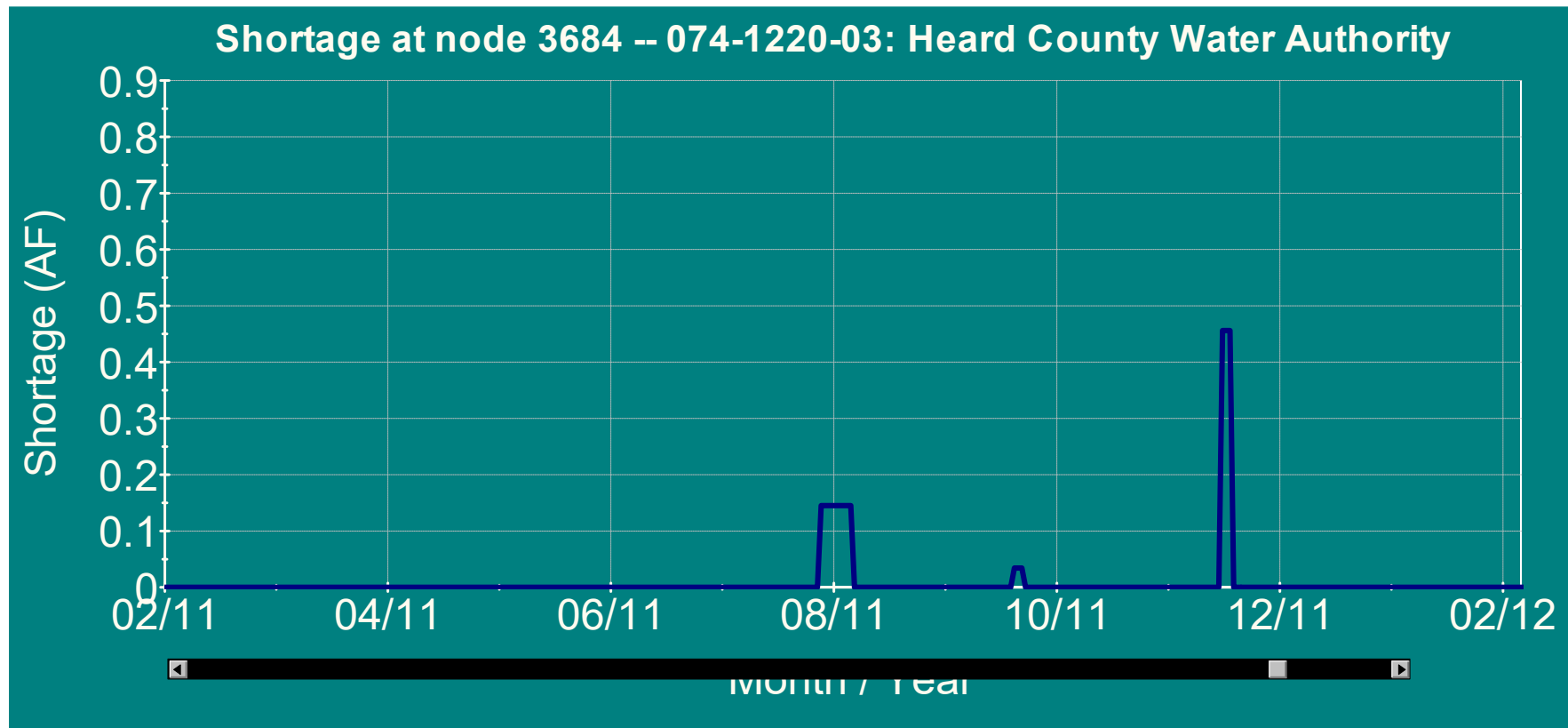
Baseline



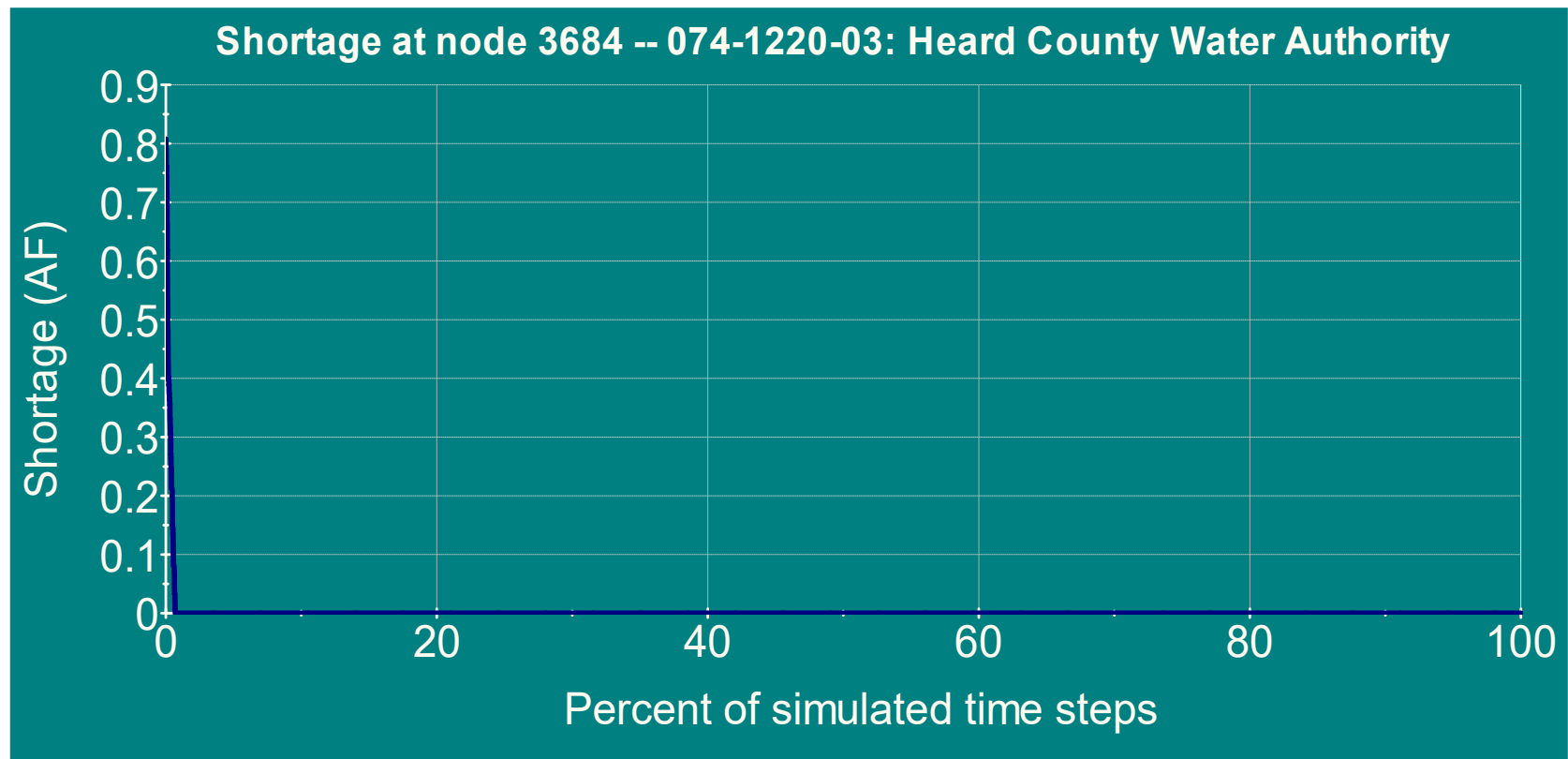
Water Supply Challenge in 2000



Water Supply Challenge in 2011

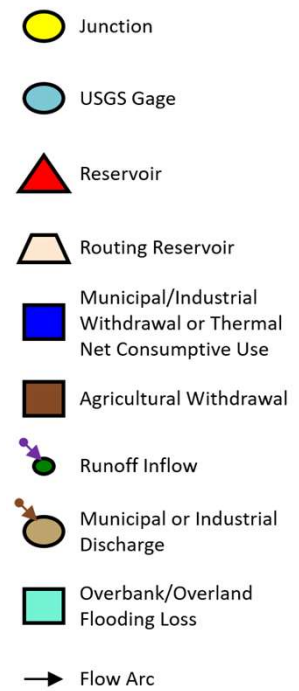
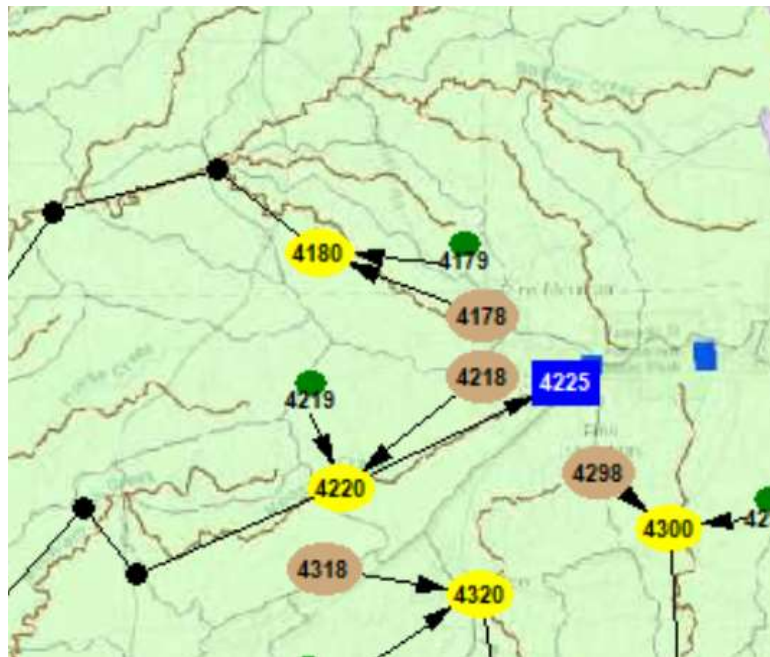


Water Supply Shortage Frequency in 1939-2018



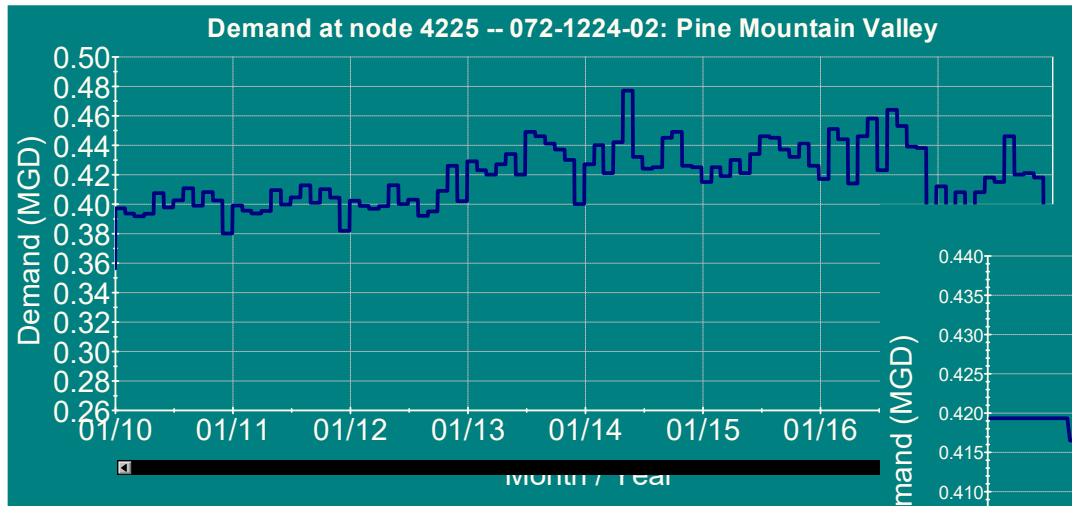
Example 4: Permit 072-1224-02 (BEAM Node 4225)

- Permit holder: Pine Mtn Valley Water Association, Inc.
- Withdrawal limits: 0.55 mgd (daily)/0.50 mgd(monthly)

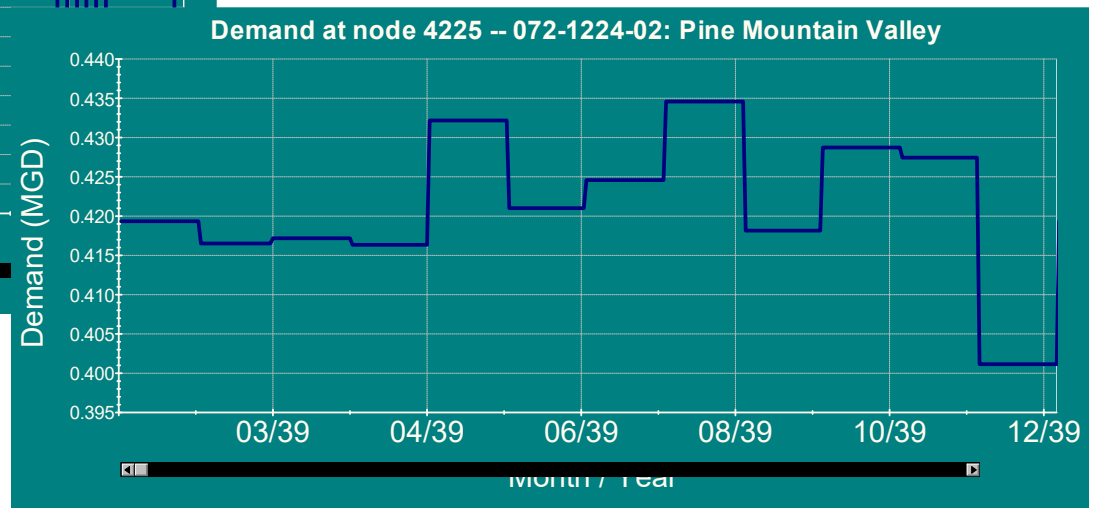


Permit 072-1224-02 Withdrawal Amount Setting- average of 2010-2018 and 2060 projection

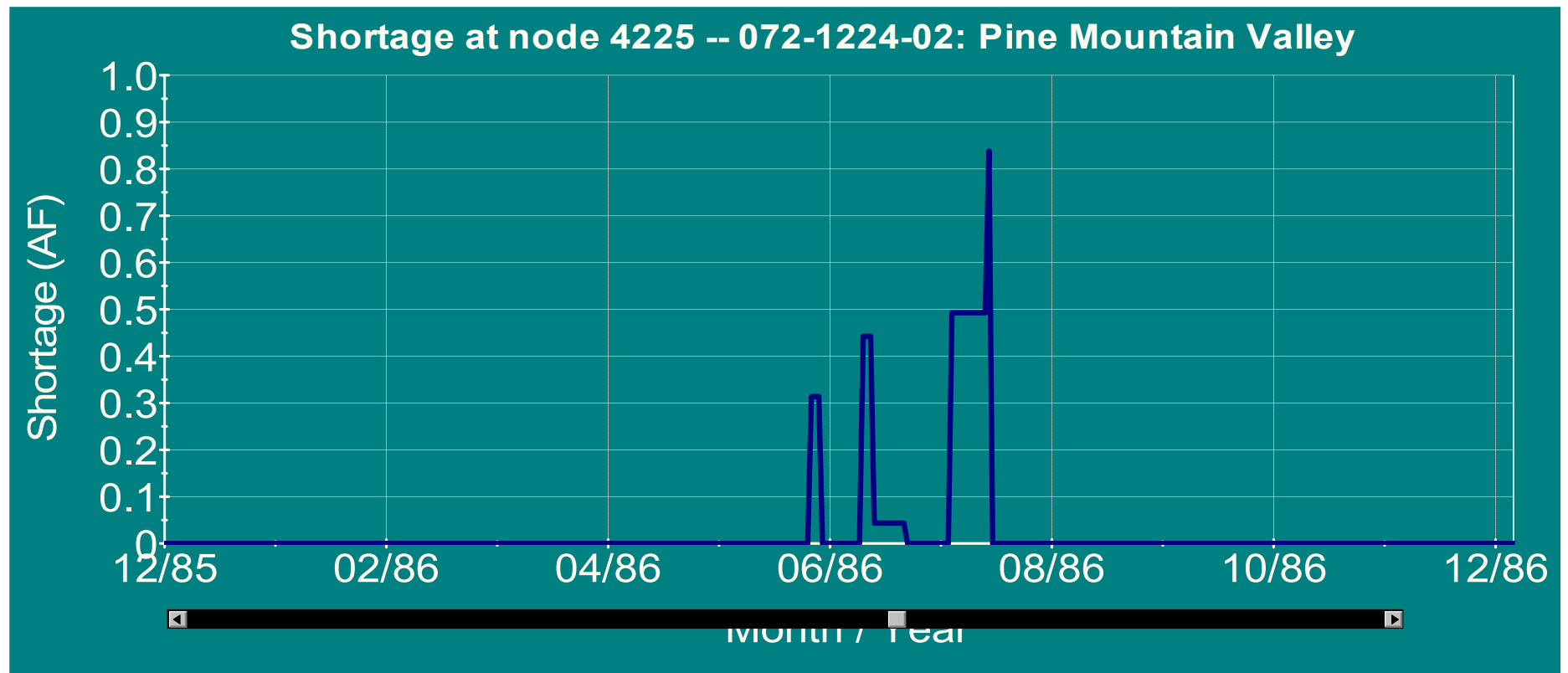
2010 - 2018



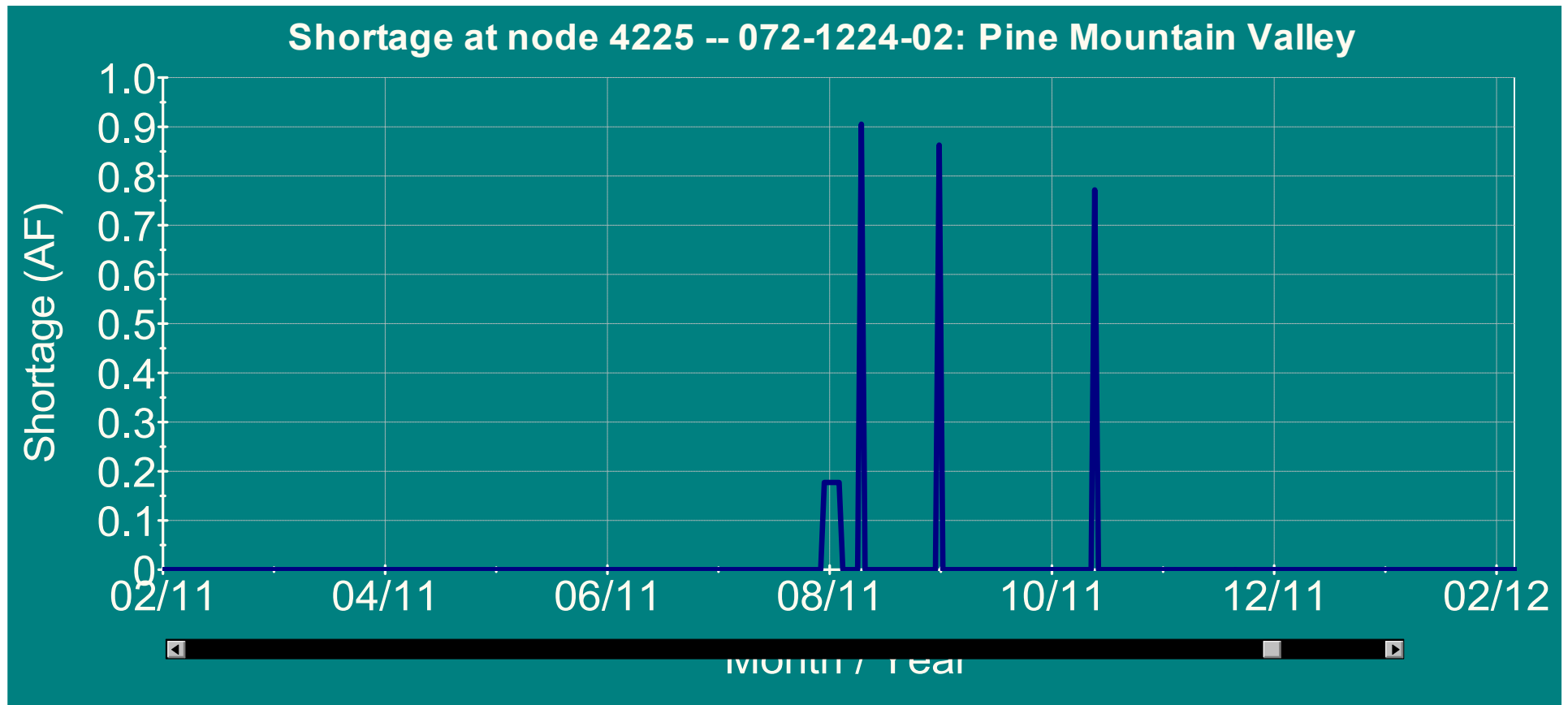
Baseline



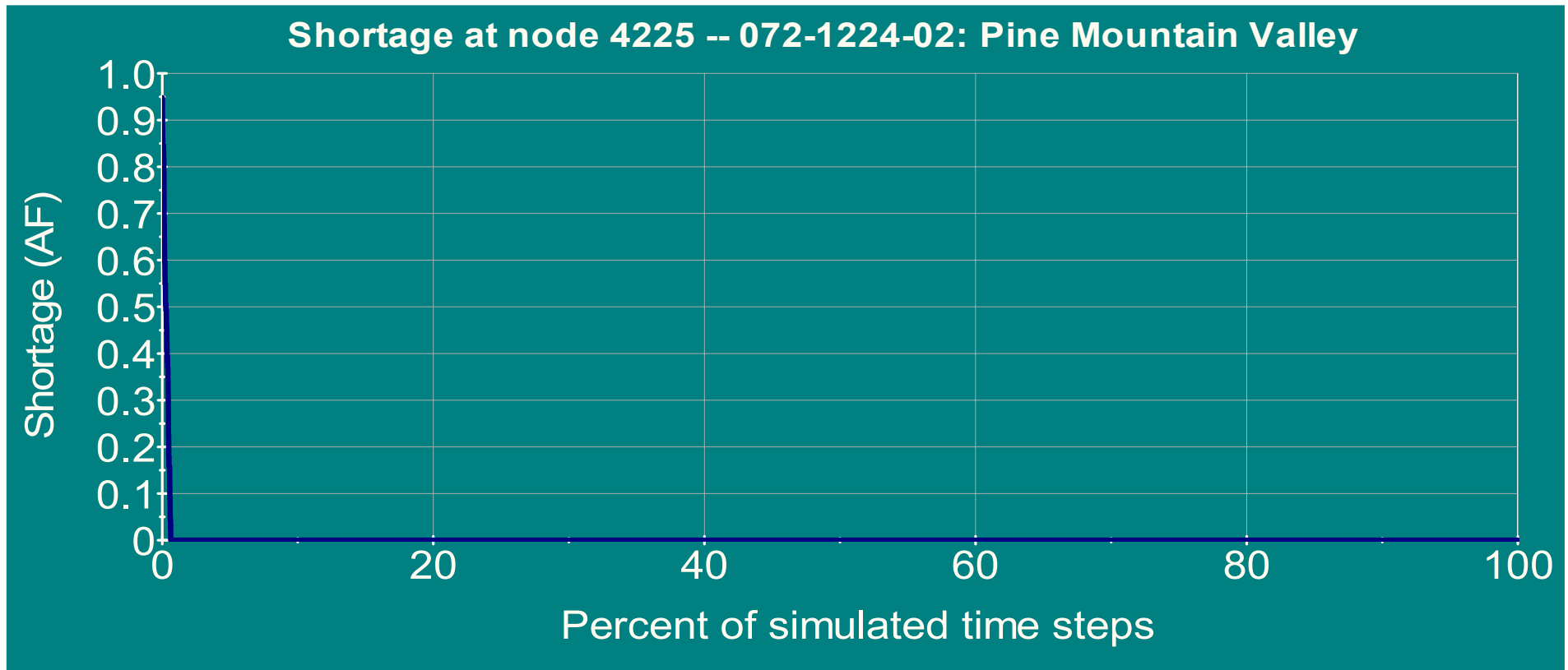
Water Supply Challenge in 1986



Water Supply Challenge in 2011



Water Supply Shortage Frequency in 1939-2018



Pine Mountain Valley Water Association

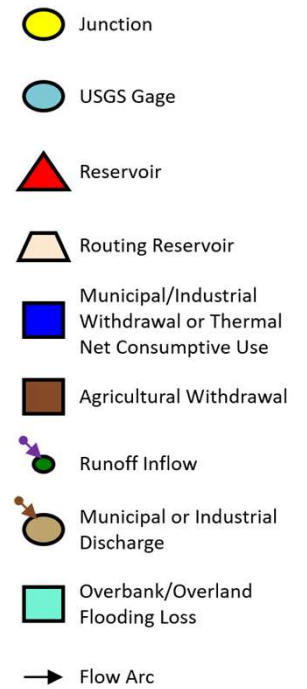
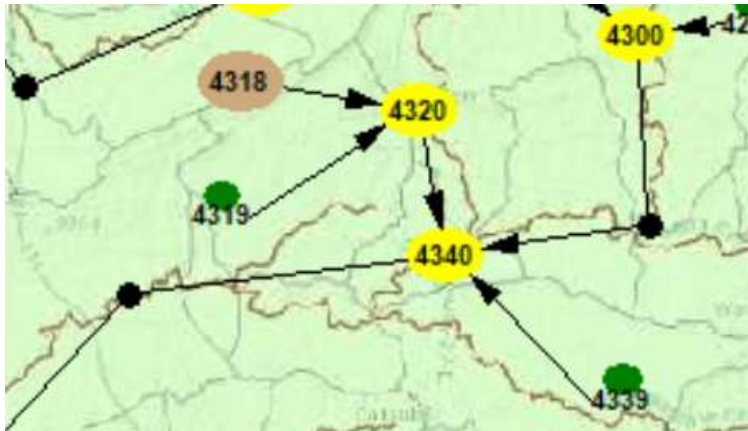
- Water supply intake located at “X Street Springs.”
- Water withdrawal permit does not have an instream flow protection threshold.
- Permittee’s intake has a small drainage area.

Wastewater Assimilation Challenge

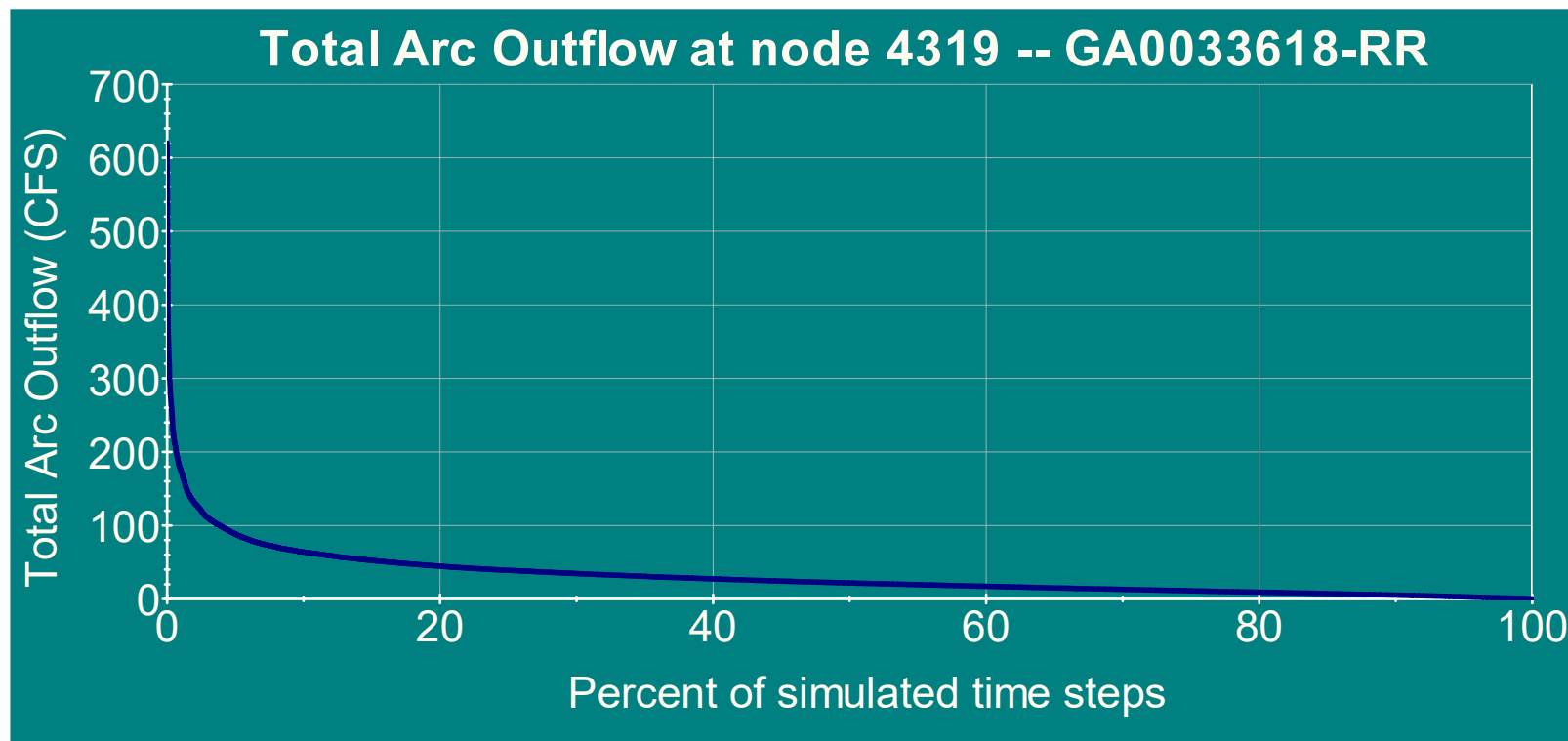
- Wastewater increases with population growth, which may also bring challenge to water resource management.
- Effluent limitation is determined by two factors:
 - Available technology – technology based effluent limitations
 - Water quality standards – upholding water quality standards in the receiving water body - 7Q10 flow is usually used as low flow threshold for determining wastewater assimilation and NPDES permit limitations

Wastewater Assimilation Challenge Example 1: Permit GA 0033618 (BEAM Node 4318)

- Permit holder: City of Hamilton (Hamilton WPCP)
- Permitted monthly discharge flow: 0.2 mgd
- 7Q10 Flow at discharge location: 0.96 cfs

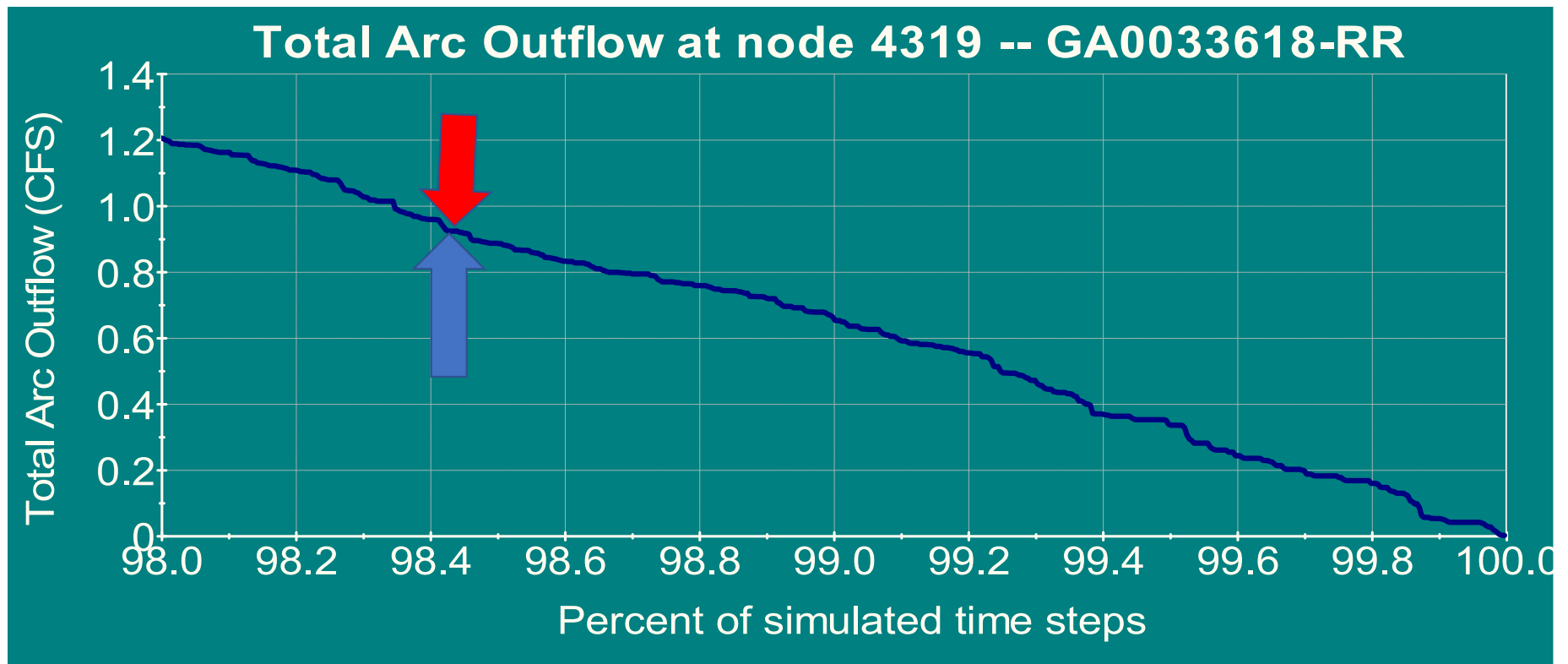


Simulation Results at GA 0033618 Location Flow Frequency

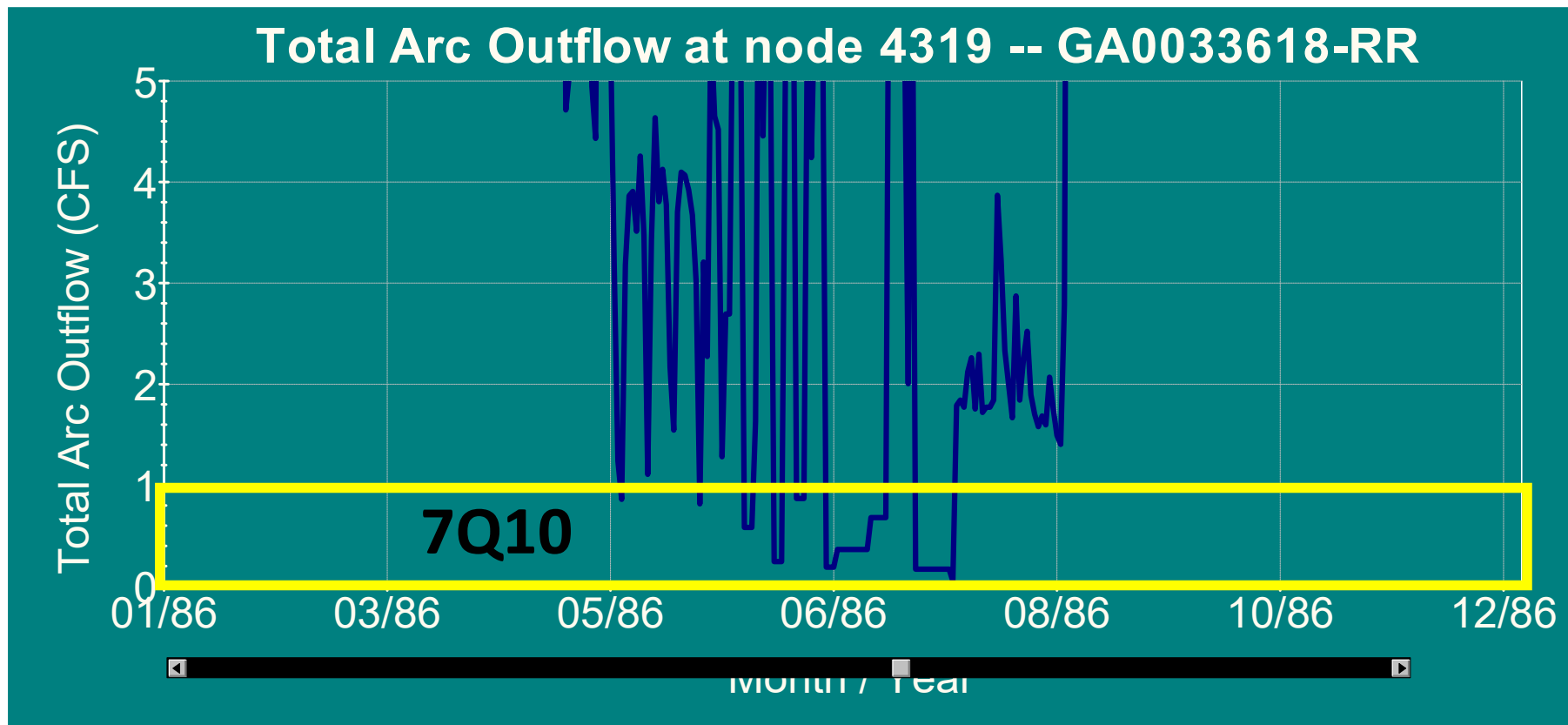


Simulation Results at GA 0033618 Location

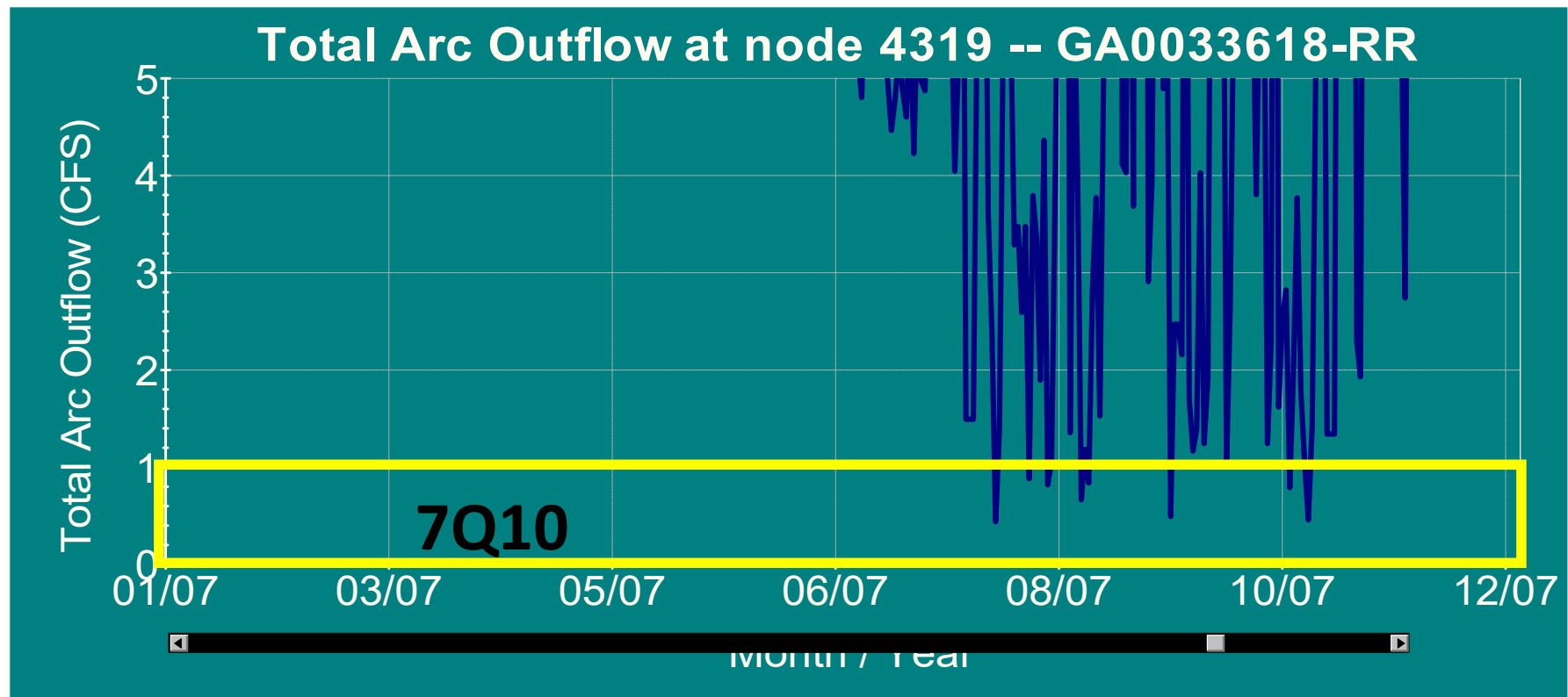
Flow Frequency (low end) (7Q10 = 0.96 cfs)



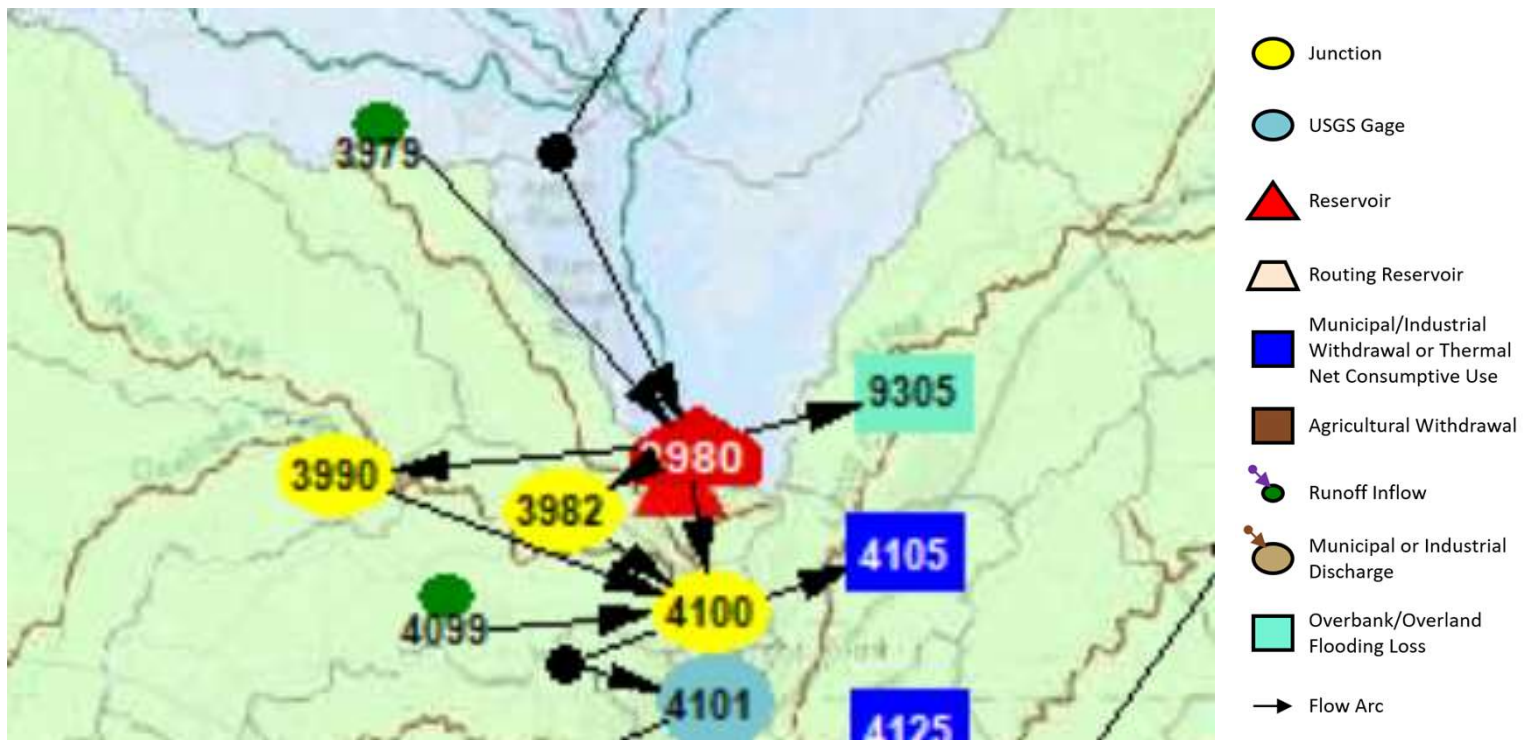
Simulation Results at GA 0033618 Location Flow in 1986



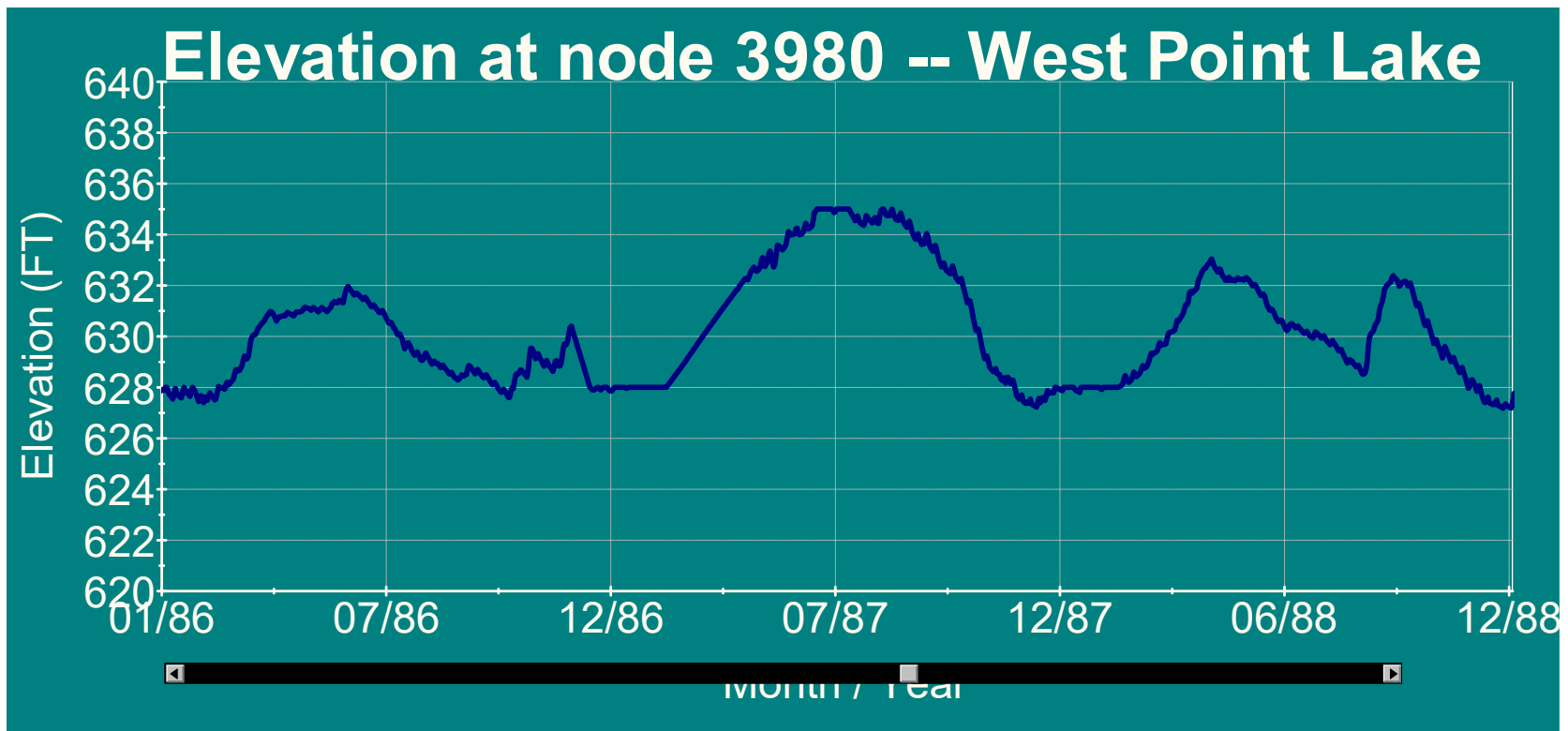
Simulation Results at GA 0033618 Location Flow in 2007



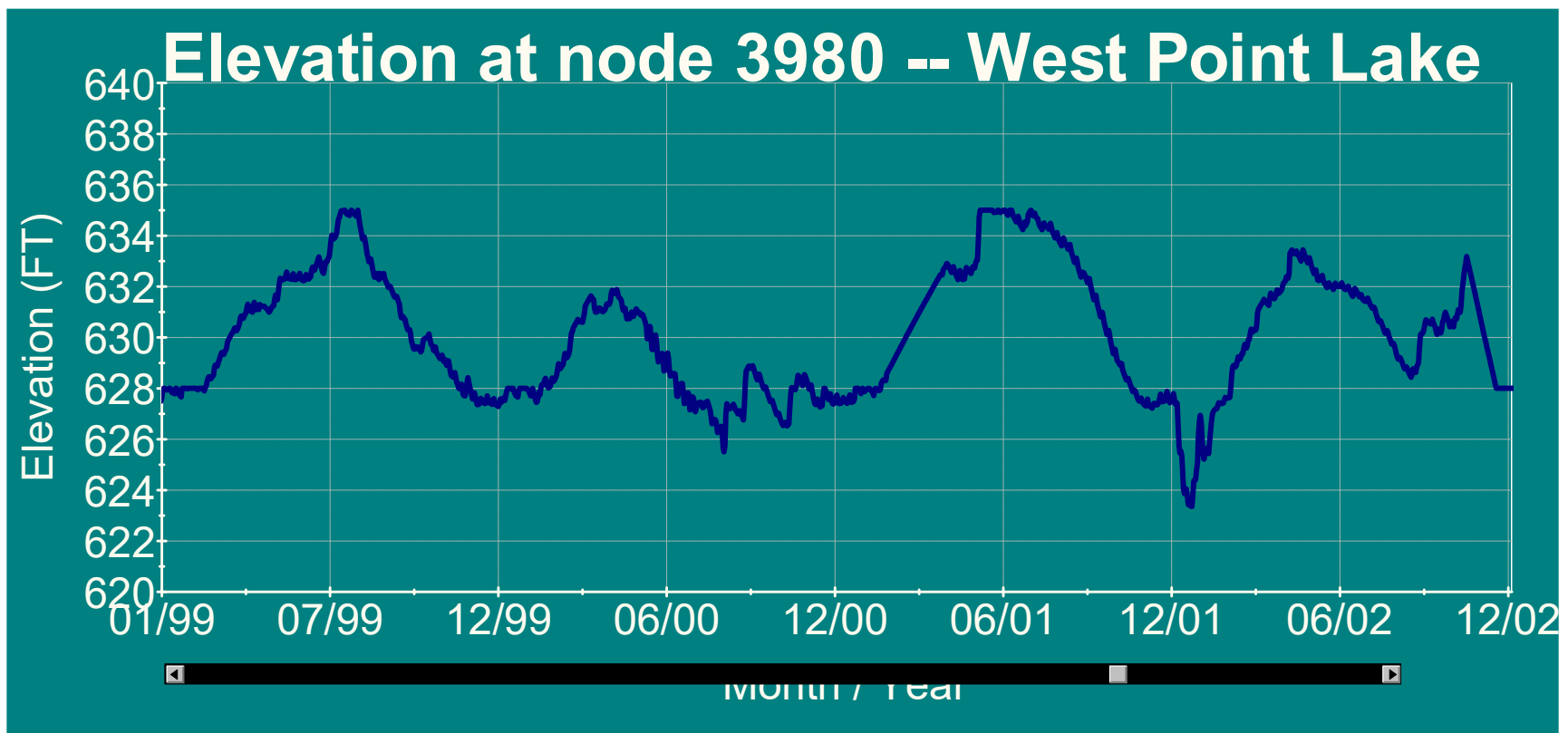
West Point Elevation (BEAM Node 3980)



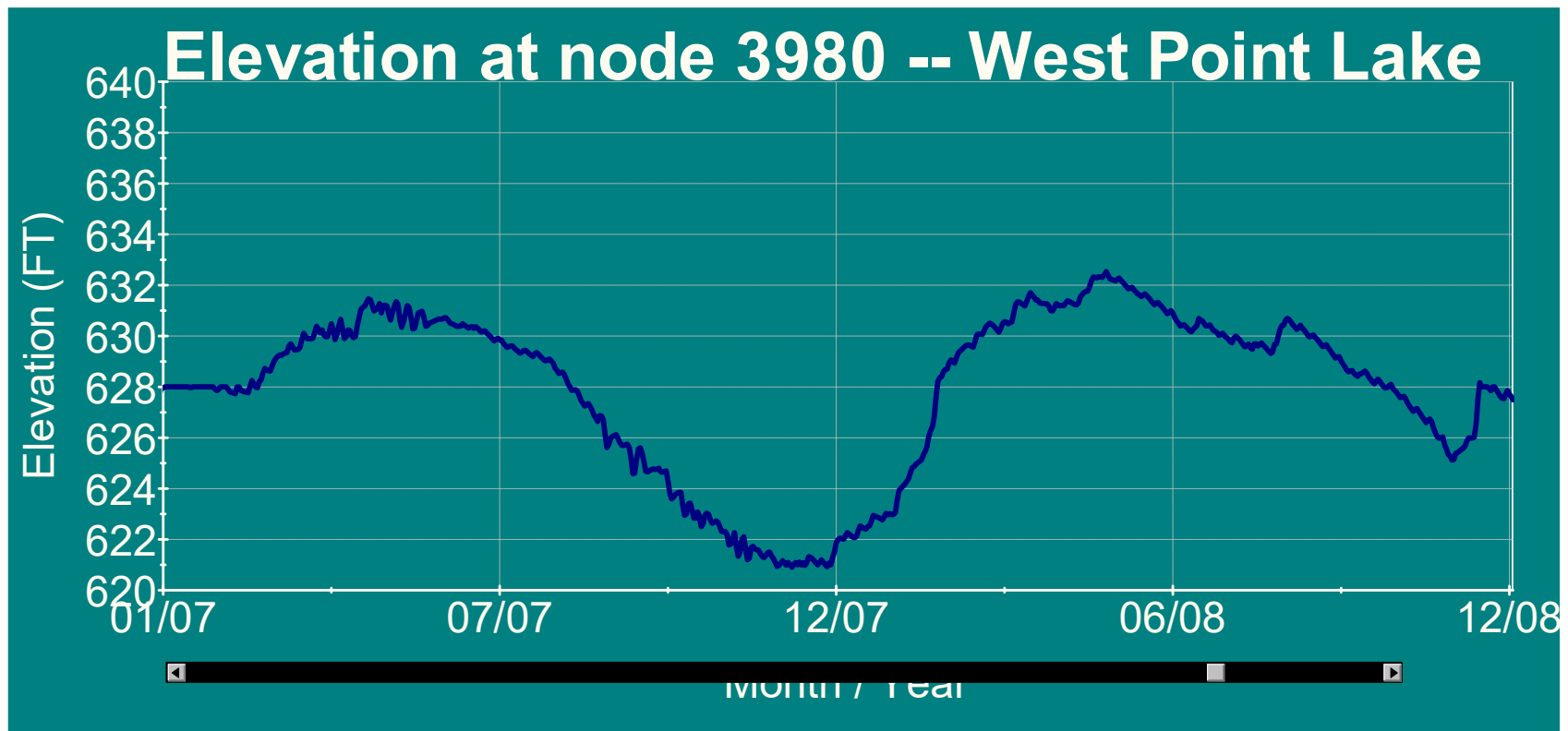
Simulated West Point Elevation in 1986-1988



Simulated West Point Elevation in 1999-2002



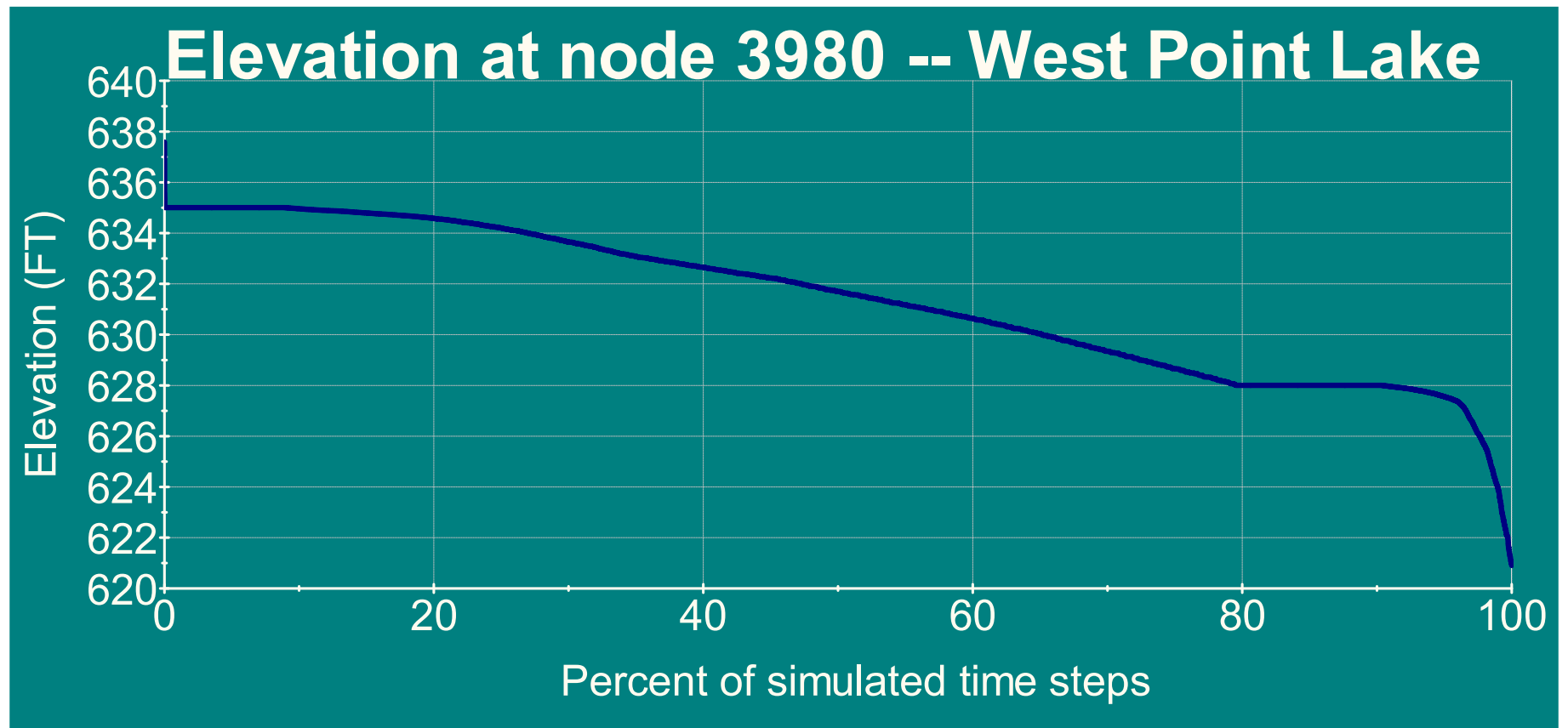
Simulated West Point Elevation in 2007-2008



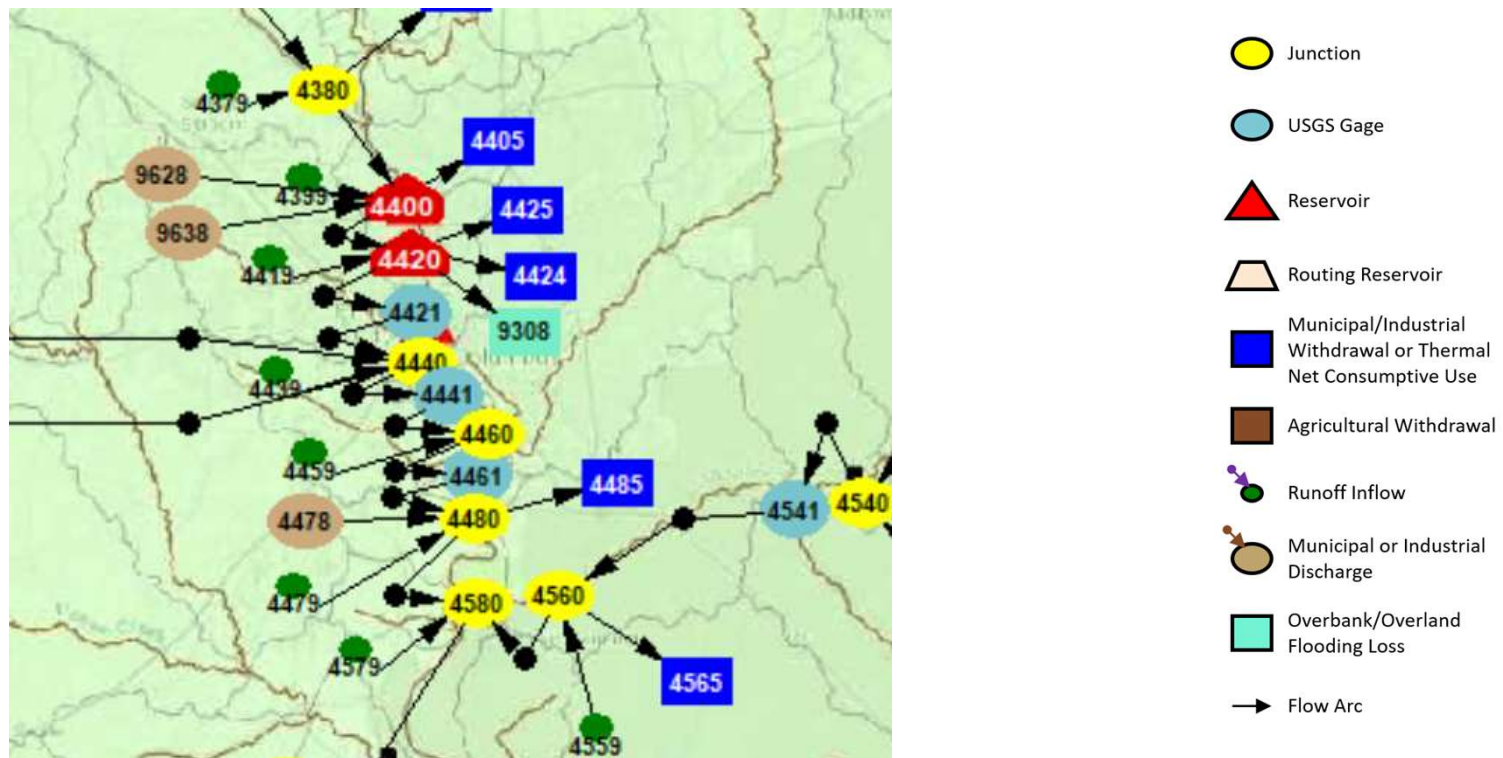
Simulated West Point Elevation in 2011-2012



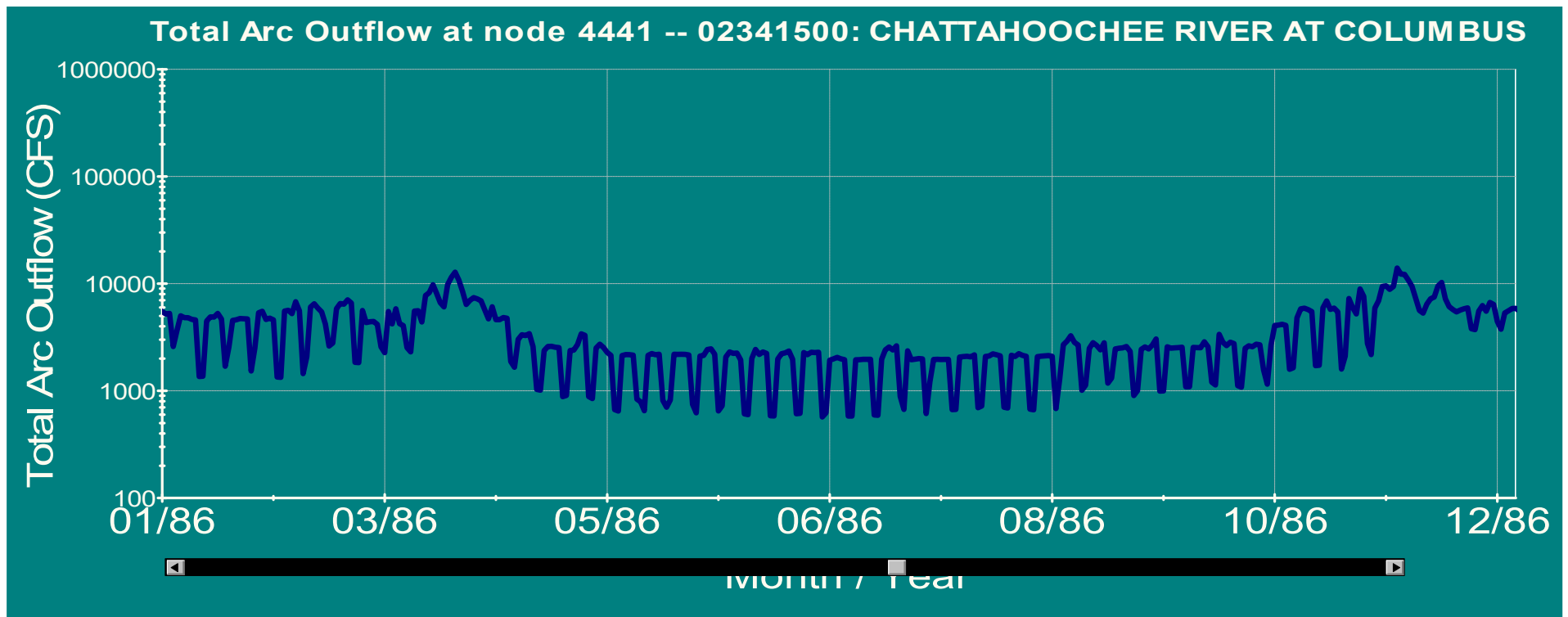
Simulated West Point Elevation Frequency



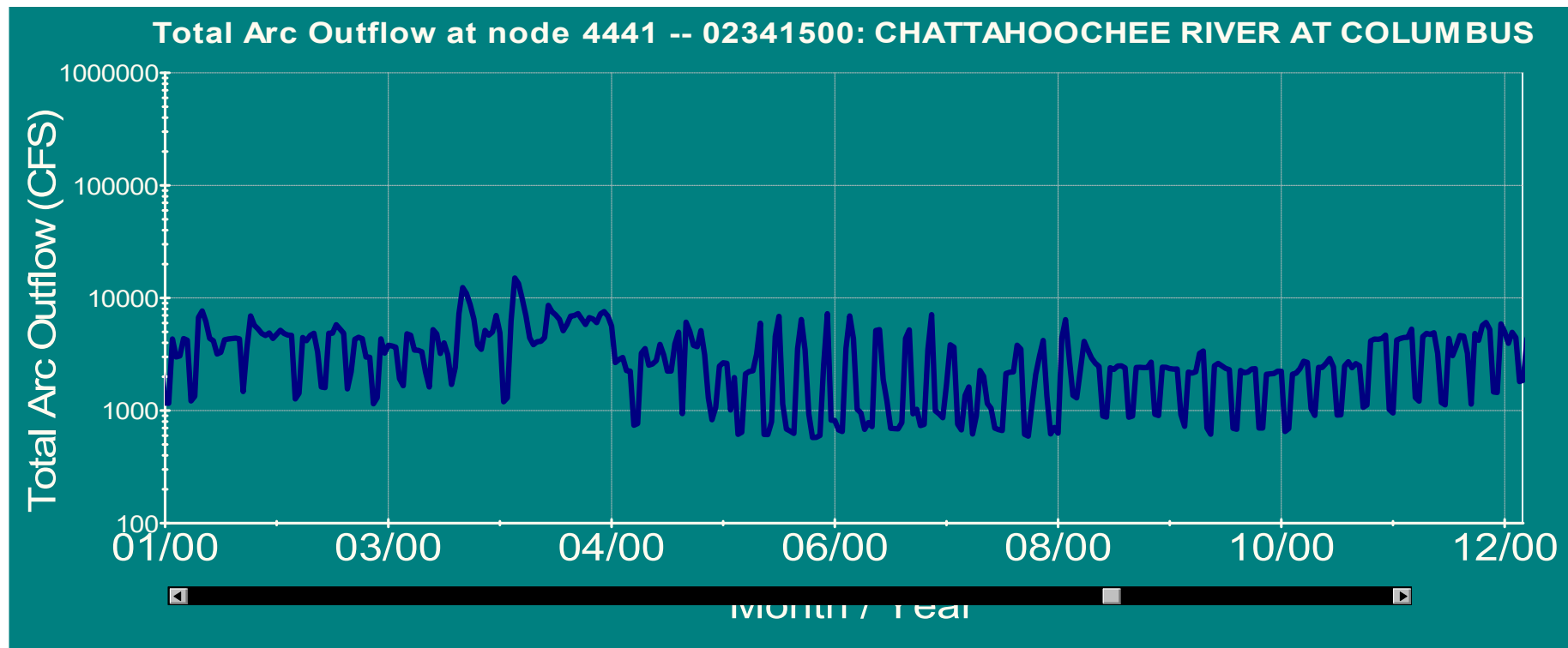
Columbus Flow Condition (BEAM Node 4441)



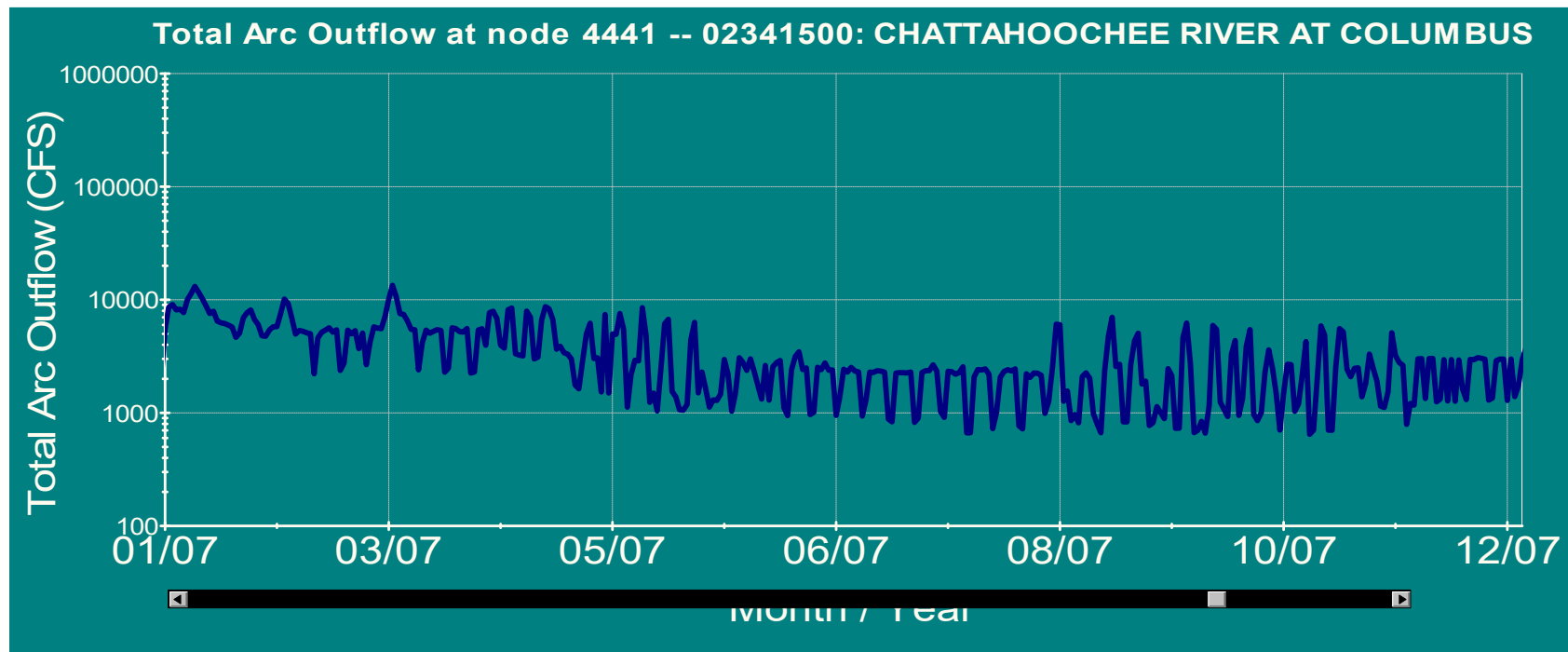
Simulation Results at USGS 02341500 Location Flow in 1986



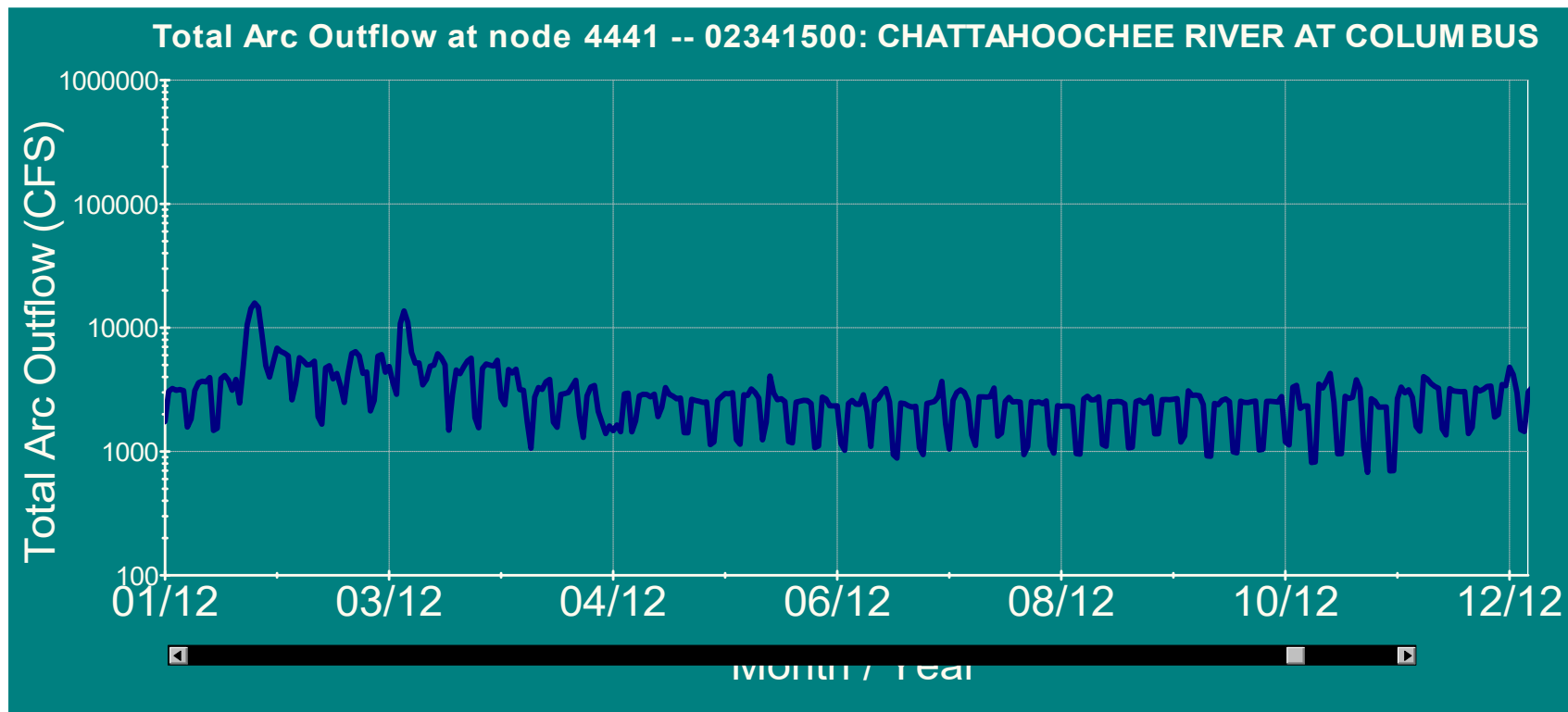
Simulation Results at USGS 02341500 Location Flow in 2000



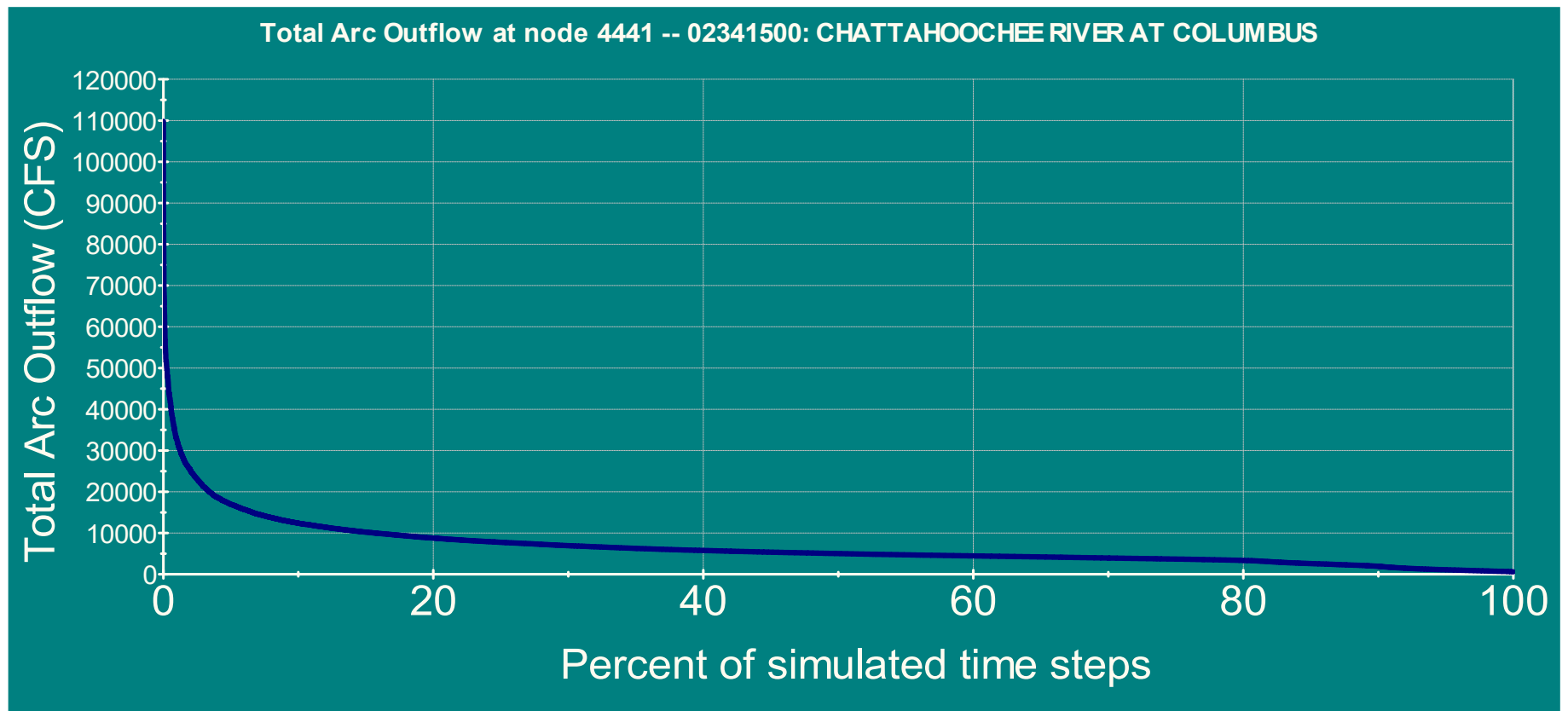
Simulation Results at USGS 02341500 Location Flow in 2007



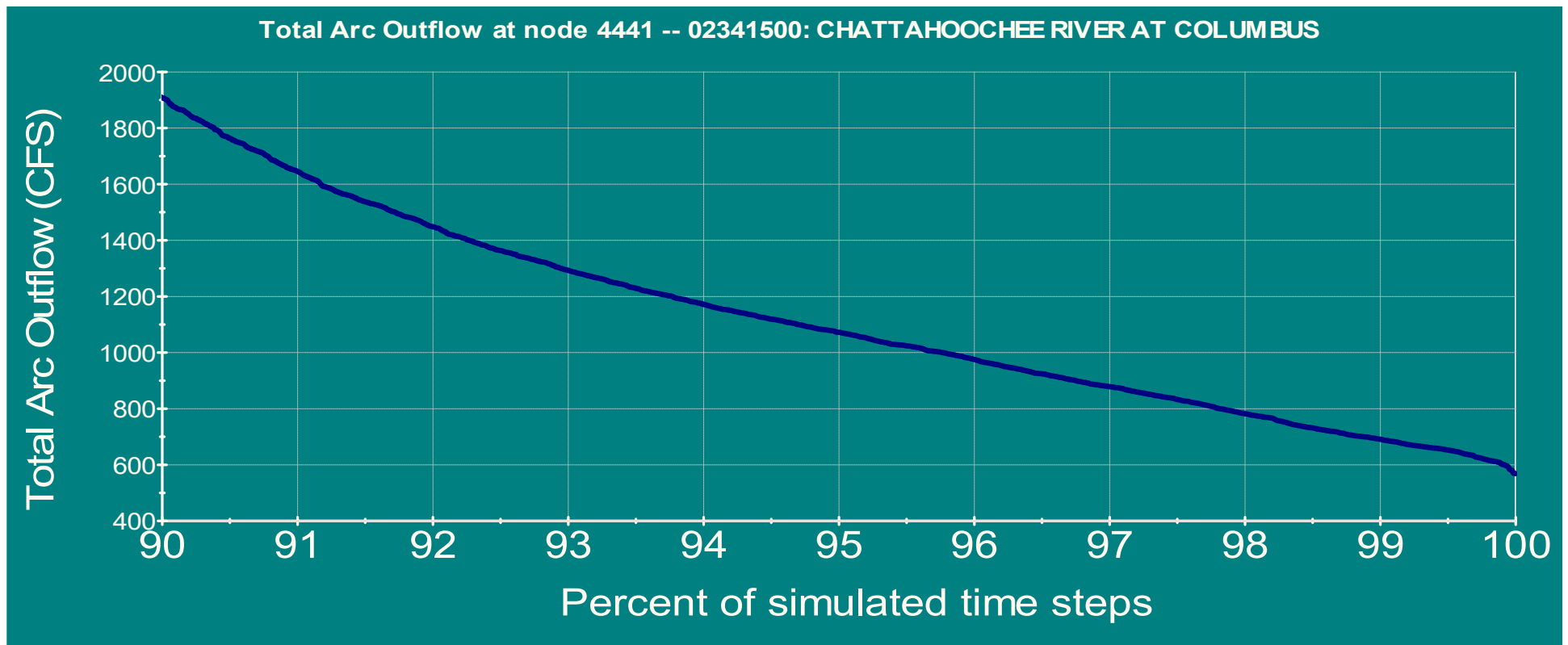
Simulation Results at USGS 02341500 Location Flow in 2012



Simulation Results at USGS 02341500 Location Flow Frequency



Simulation Results at USGS 02341500 Location Flow Frequency (low end)



Summary

- Moderate water supply challenges under baseline water use conditions
- Moderate wastewater assimilation challenges under baseline water use conditions
- West Point Elevation under baseline water use conditions
- Flow at Columbus under baseline water use conditions
- Additional evaluation can be added according to stakeholders' inputs
- RA team will provide updates with Tech Memo and presentation as additional results become available

Questions?

Contact Information:

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Manager, Water Supply Program
Watershed Protection Branch, Georgia EPD
470-251-4897 (Zoom Phone) **New!**
470-898-3891 (Cell)

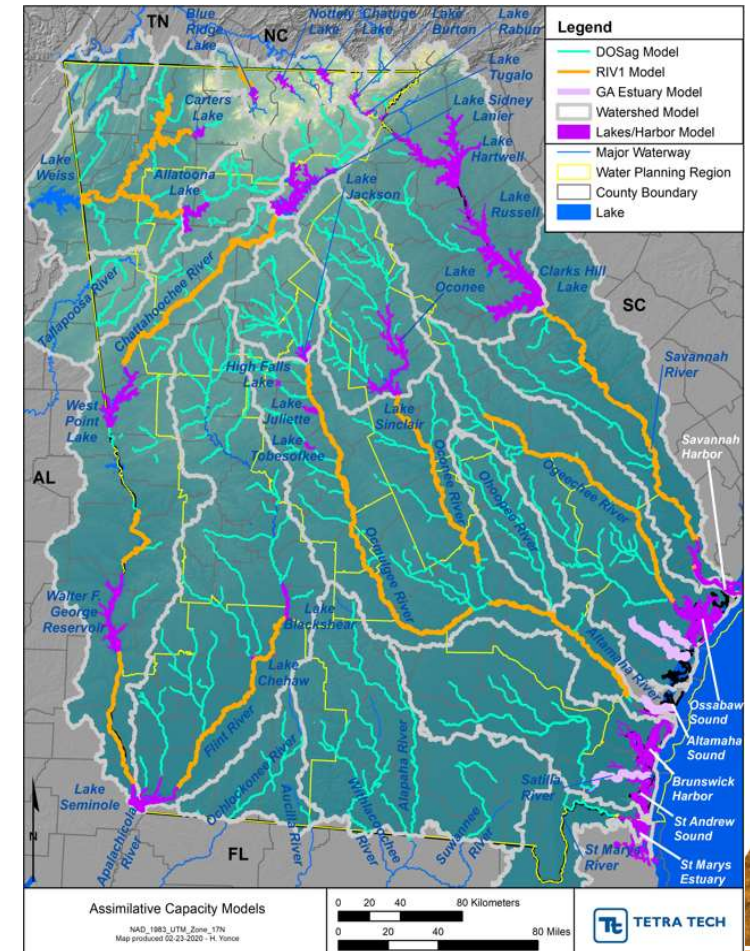
Wei.Zeng@dnr.ga.gov

The background of the slide is a grayscale aerial photograph of a river winding through a dense forest. The river reflects the sky, and the surrounding land is covered in thick trees. In the lower right, some small buildings and a road are visible. The slide has a solid blue horizontal bar at the top and a blue decorative graphic at the bottom.

Water Quality Resource Assessment Results under Future Conditions

Watershed Modeling

- These models are not updated at this time, but updates are underway
 - Time-varying landuse inputs
 - Updated meteorological conditions
- **Current Conditions:**
 - dischargers at 2014 permit limits
- **Future Conditions:**
 - 2050 assumed permit limits based on forecasted flows



Dissolved Oxygen Modeling

- **Future Conditions addressed in Plan Section 5.3**

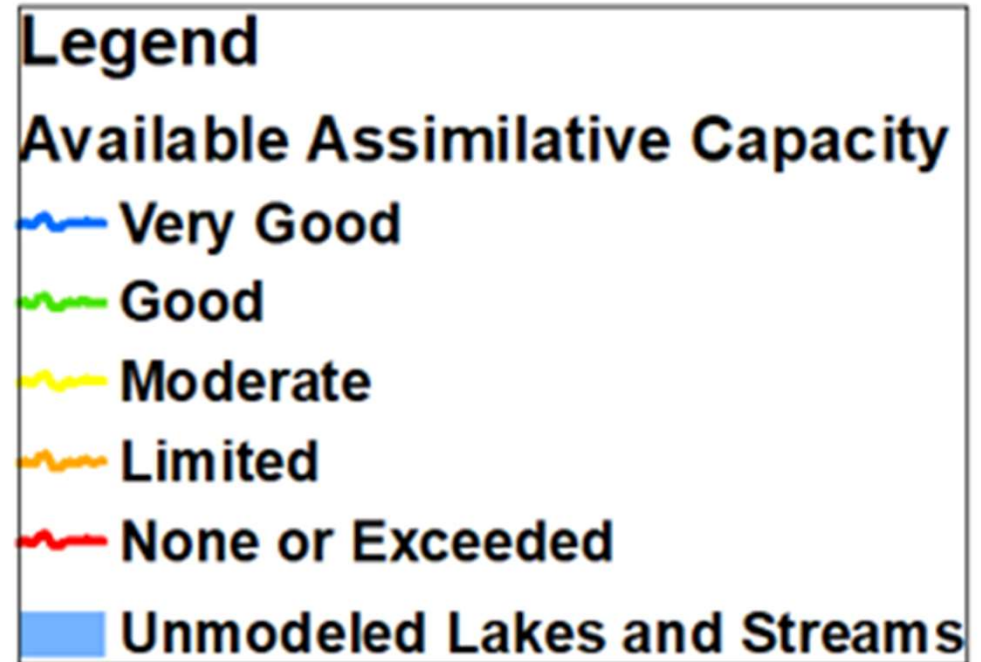
Figures 5-2 and 5-3 show assimilative capacity at assumed ~~2050~~60 permitted flows and effluent limits for the Flint, Chattahoochee, and Tallapoosa River Basins.

- Figure 5-2: Chattahoochee Basin results
- Figure 5-3: Flint and Tallapoosa Basin results



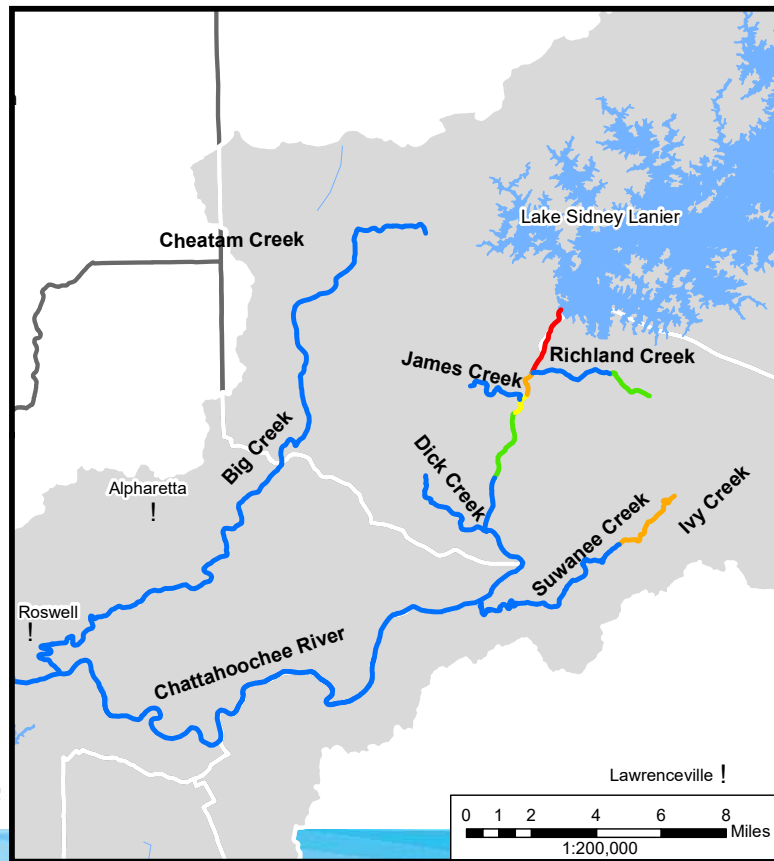
Dissolved Oxygen Modeling

- **Current Conditions**
 - 2019 Permit Limits
- **Future Conditions**
 - 2060 Assumed Permit Limits
- **DOSAG and Riv-1 Models:**
 - High temp, low flow conditions
- **Assimilative Capacity**
 - How DO levels compare to water quality standard of 5.0 mg/L (or natural conditions)

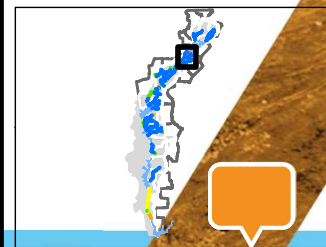
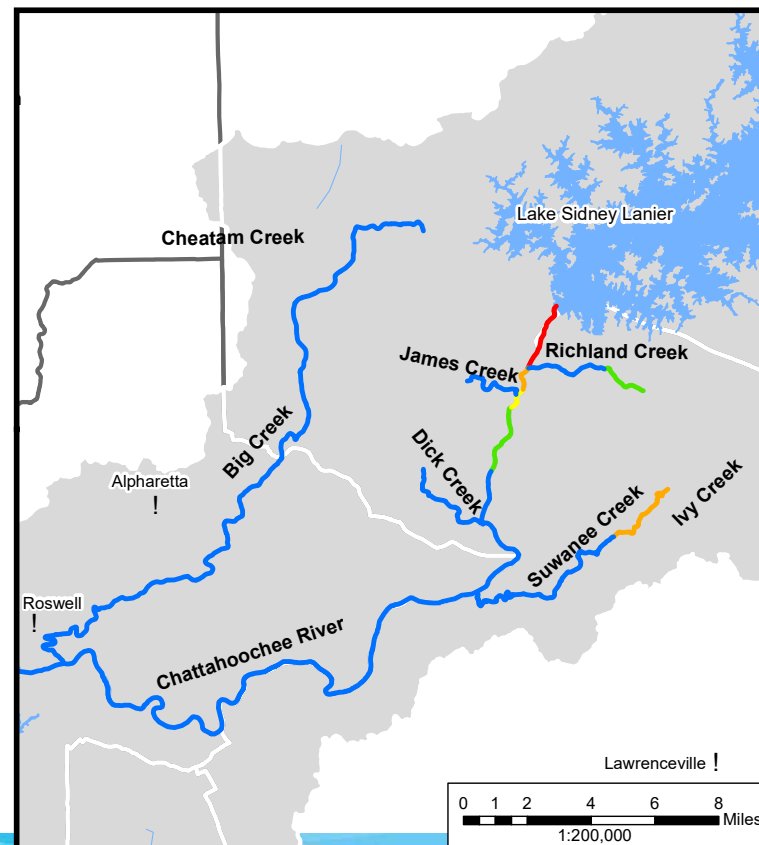


DO Conditions: Below Lake Lanier

Current Conditions

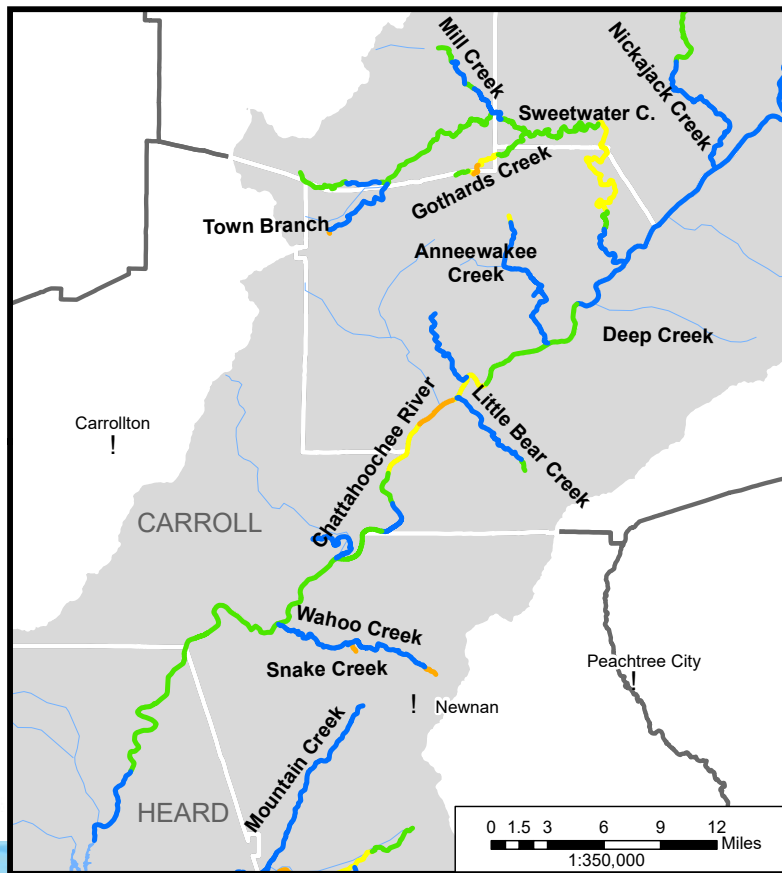


Future Conditions

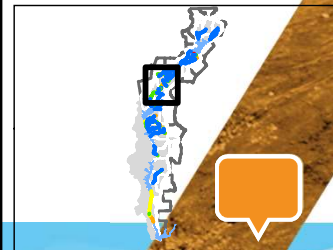
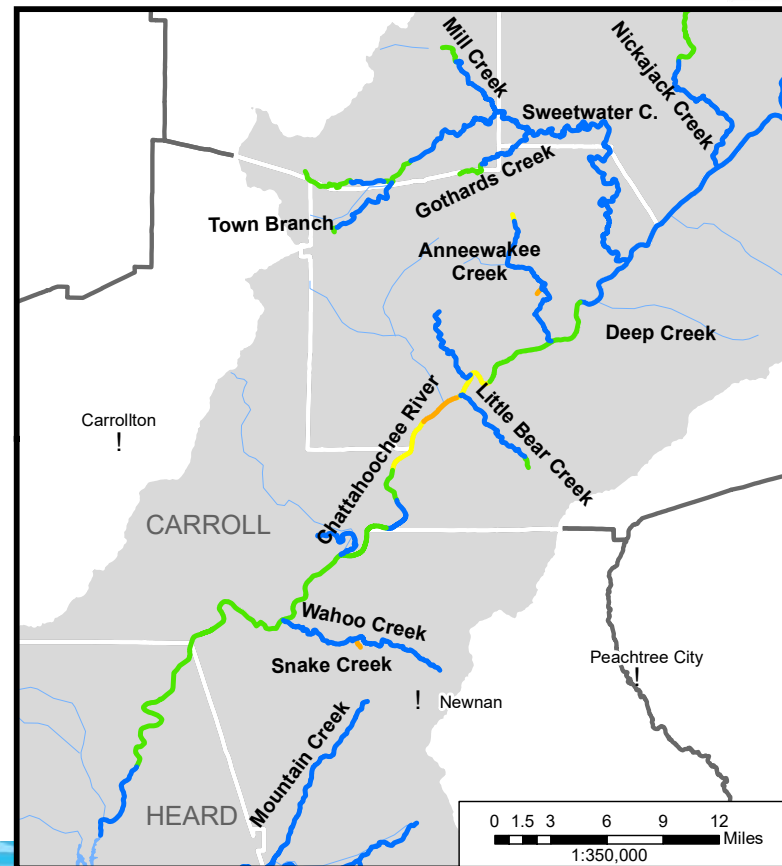


DO Conditions: Above West Point Lake

Current Conditions

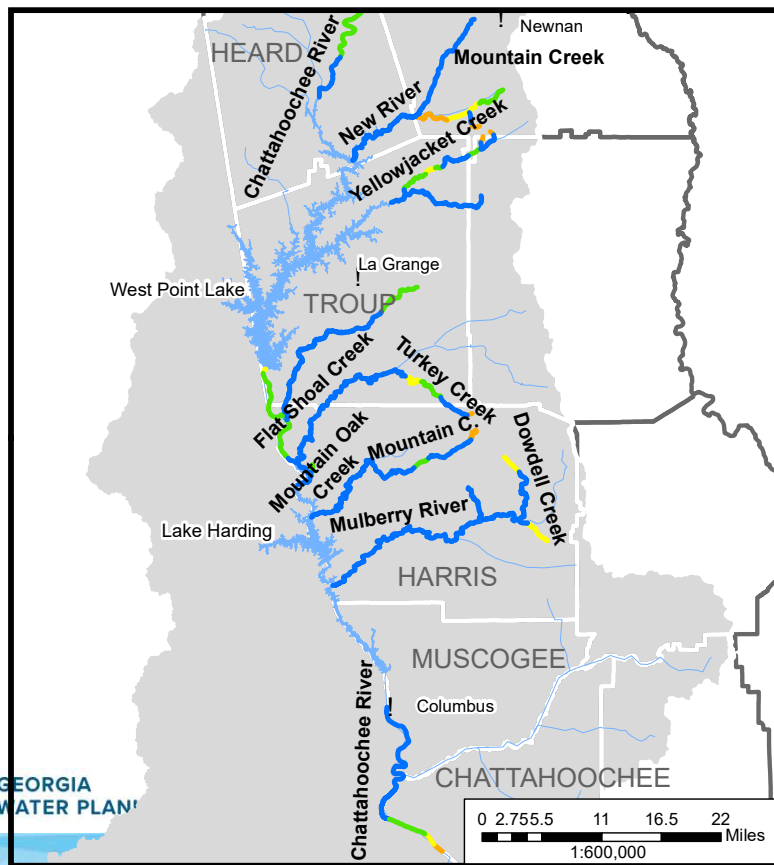


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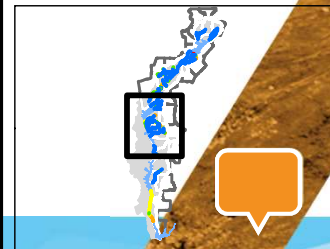
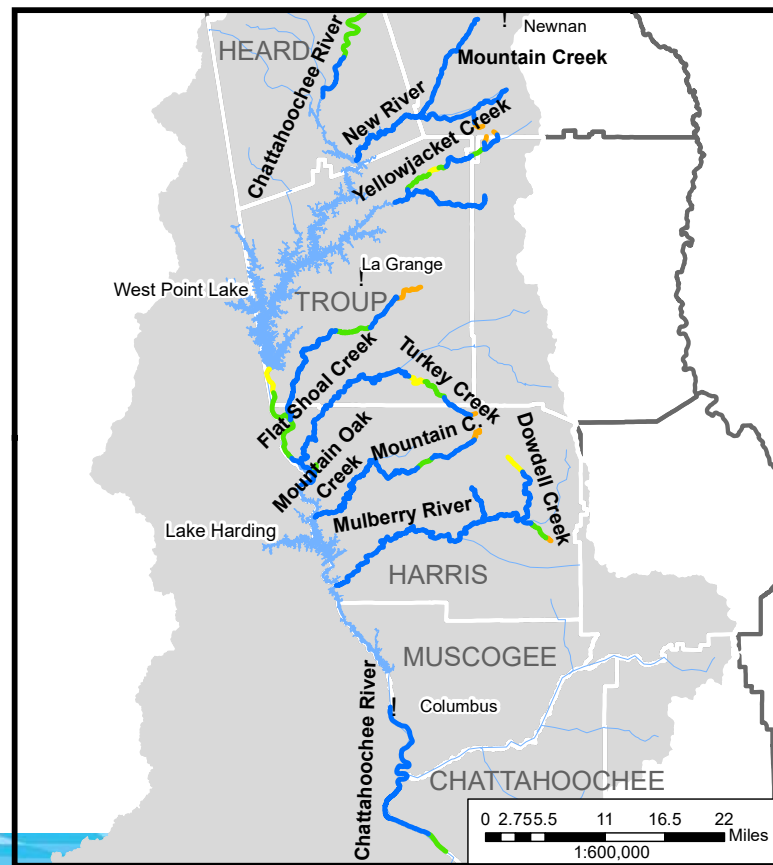


DO Conditions: West Point to Columbus

Current Conditions

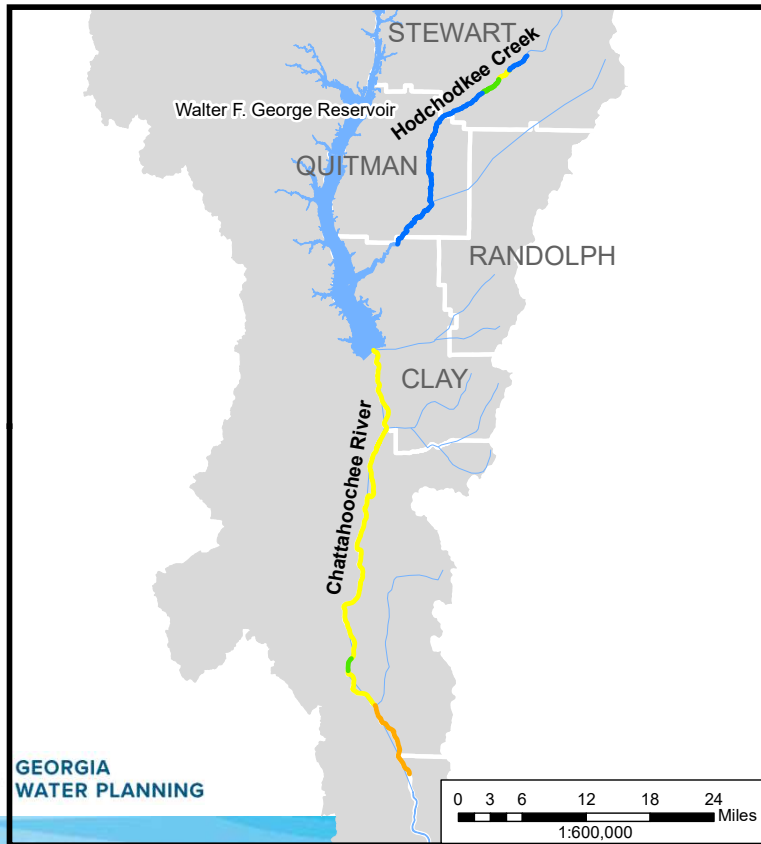


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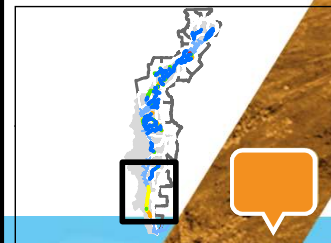
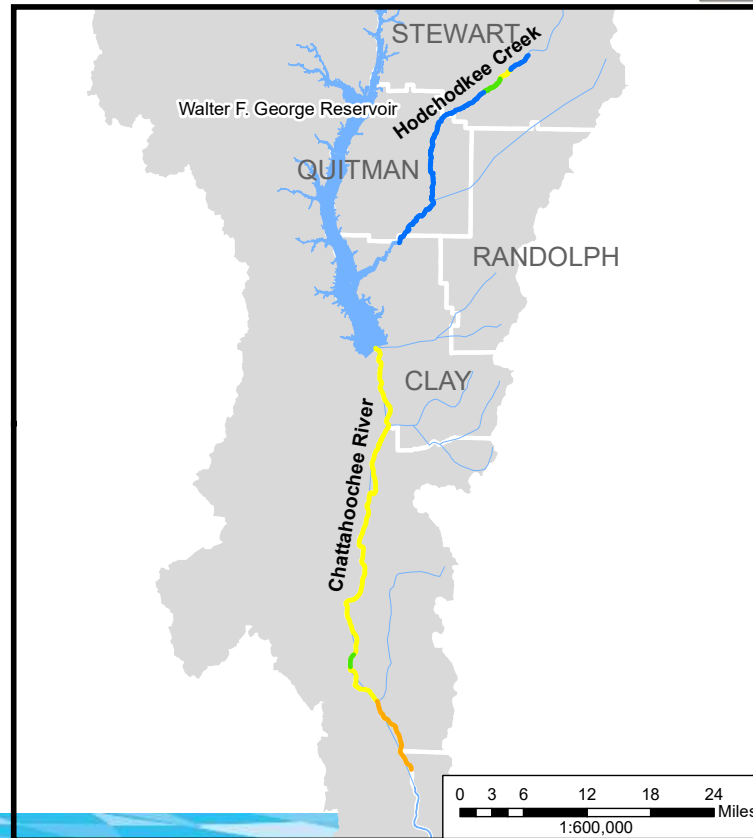


DO Conditions: Below Columbus

Current Conditions

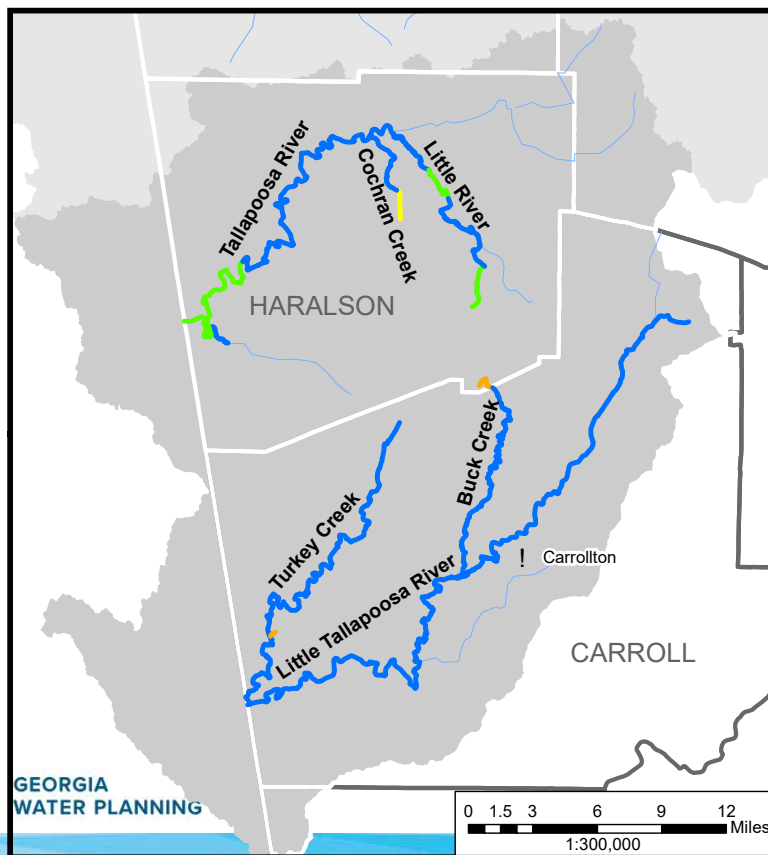


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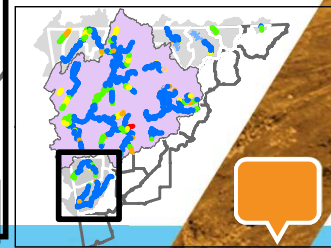
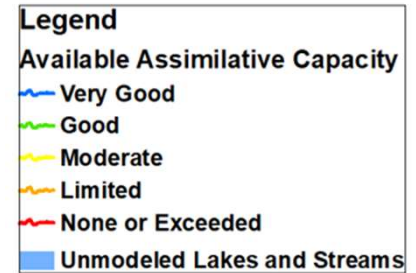
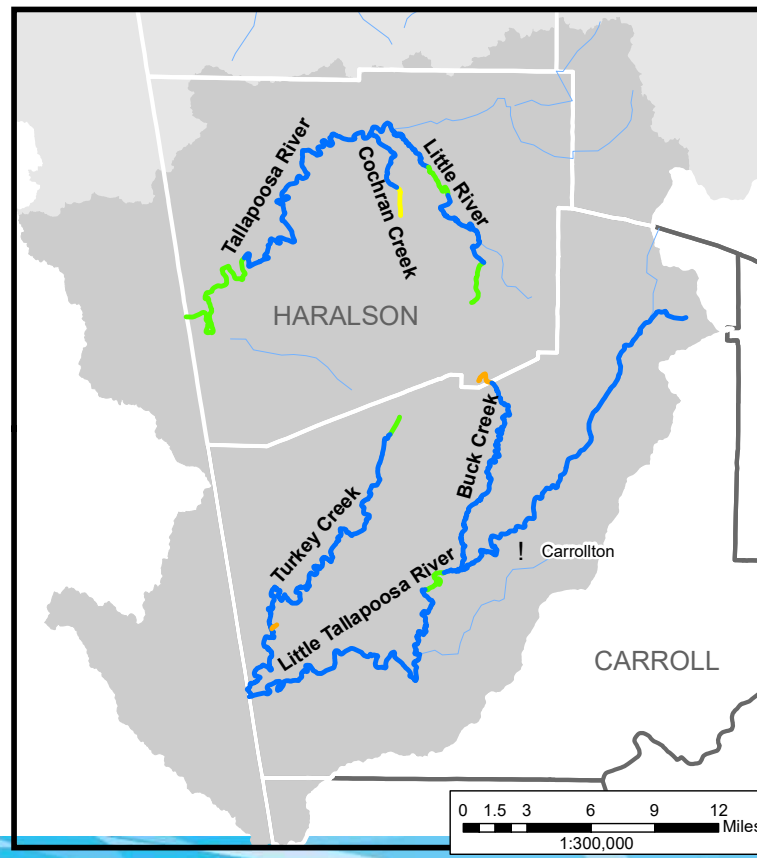


DO Conditions: Tallapoosa Basin

Current Conditions

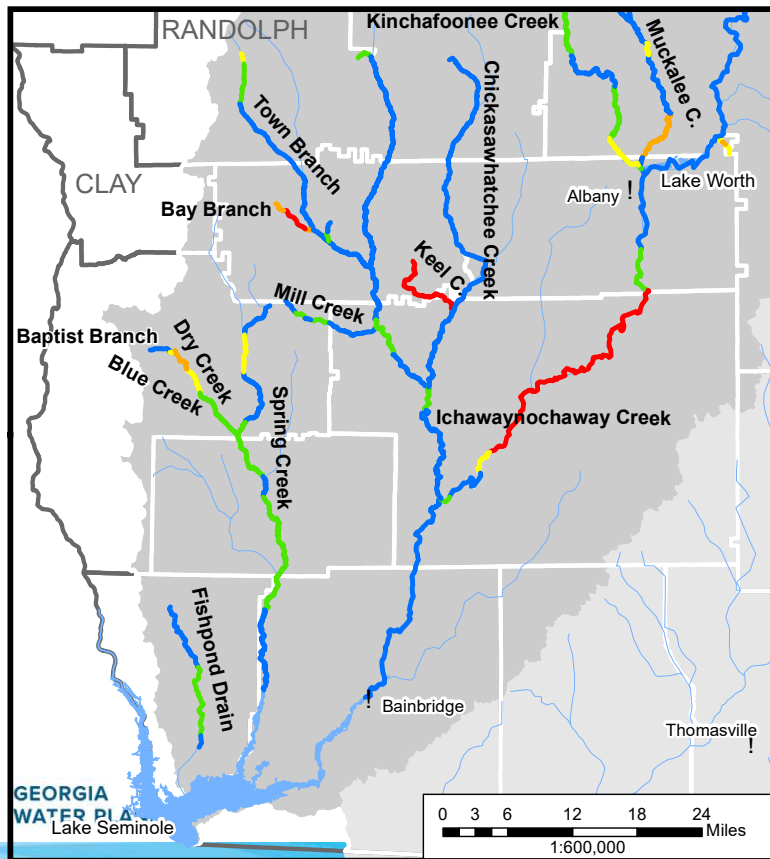


Future Conditions

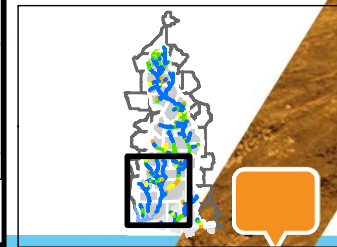
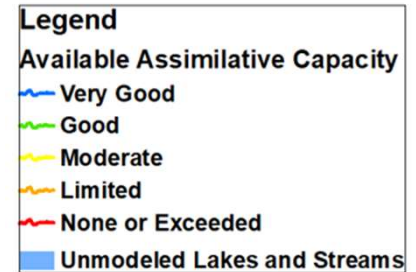
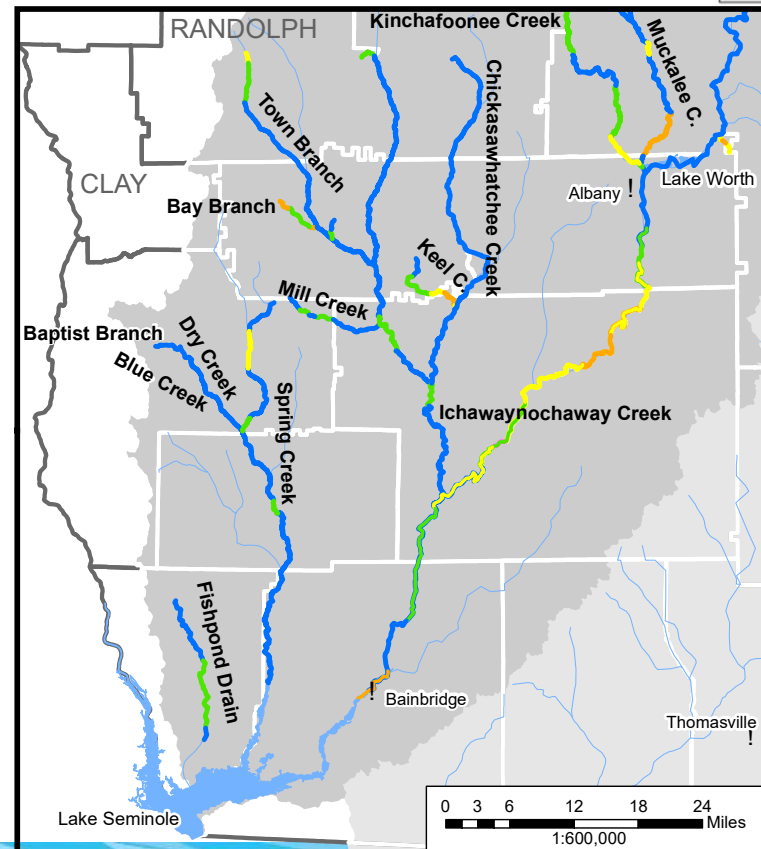


DO Conditions: Flint Basin

Current Conditions



Future Conditions



Management Practices Review



Small Group Discussions: Management Practices Review

1. Demand & Returns Management Practices
2. Supply & Instream Use Management Practices
3. Water Quality Management Practices

- Which Management Practices are most important to you? (And why?)
- Are there any that should be added/removed?
- Which Management Practices need to be updated? (Committee work)



Plan Review Committee Report

Steve Davis



Plan Review Committee Members

- John Asbell
- Victoria Barrett
- Steve Davis
- Dan Gilbert
- Harry Lange
- Mac Moye
- Ken Van Horn
- Matt Windom



Plan Review Committee Activity

- Meeting: May 6, 2022
- Reviewed Draft Sections 1, 2, & 4
- Committee meeting notes and edited plan sections in pre-meeting packet
- Major topics discussed:
 - Water Control Manual update
 - Population projections discussion
- Committee recommendation – Approve these sections (as edited by committee)
- Note: Further edits to these sections are expected. Any substantial edits will be reviewed by committee/Council.



Inter-Council Coordination Committee Report

Patrick Bowie



Inter-Council Coordination Committee

Members

- Patrick Bowie
- Steve Davis
- Ken Van Horn



Inter-Council Coordination Committee

April 19, 2022

Metro Water District Presentation

- Attended and Reviewed Plan

May 3, 2022

Inter-Council Coordination Meeting

- Discussed the Metro Water District Plan Update
- Discussed Council's Letter to Metro Water District

June 2022

Inter-Council Coordination Meeting

- Include Councils of:
 - Lower Flint – Ochlocknee
 - Middle Chattahoochee
 - Upper Flint
- Currently Scheduling



Inter-Council Coordination Committee Report

Meeting on May 4, 2022

1. Discussed the Metro Water District Plan Update

1. Septic tank use and return flows - dept of public health tracks septic, which lacks reporting.
2. Increasing Lake Lanier storage and winter pool at West Point
3. Coosa North Georgia (CNG) Council got a seed grant to study raising summer pool
4. Acknowledgement that City of Atlanta converting Bellwood Quarry as raw water storage
5. Coordinate with downstream regional water councils to pursue options to expand regional water storage capacity. Other storage – Carroll County and Heard County proposed reservoirs

2. Recommendations to Metro Water District Plan Update

1. Improving the lagging septic tank data.
2. Reduction of Consumptive use
3. Encourage rural development to use centralized treatment and point source discharge



Inter-Council Coordination Committee

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- Improving the lagging septic tank data.
- Reduction of Consumptive use
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Letter to Metro Water District – Recommendation to Council



May 12, 2022 DRAFT TO COUNCIL AND METRO WATER DISTRICT

Chairman Glenn Page
Metropolitan North Georgia Water Planning District International Tower
229 Peachtree Street, NE
Suite 100
Atlanta, GA 30303

Dear Mr. Page:

The Middle Chattahoochee Regional Water Council (the Council) appreciates the opportunity to review the draft Water Resource Management Plan (Plan) of the Metropolitan North Georgia Water Planning District (Metro Water District). I am submitting this letter to you with the Council's comments on the draft plan. These comments were approved by the Council at its May 11th meeting.

Since the inception of the Metro Water District and the Council, both entities have increased coordination in regional water planning, and we applaud this joint effort and commitment to working together. The Council looks forward to increasing coordination with the Metro Water District in future planning.

The Council would like to submit the following comments on the Metro Water District's draft Plan. Our comments emphasize the need for basin-wide coordination in the management of shared resources, particularly in the Apalachicola-Chattahoochee-Flint (ACF) Basin. Our comments emphasize as a top priority the need for improved levels of return flows to water supply sources to support downstream demands and needs – instream and offstream. The Council offers the following comments for incorporation into the Metro Water District Plan:

- Support the Council's recommendation for assessment of modification of the rule curves for West Point Lake and Lake Lanier to increase system storage and improve operations for all uses. The Council advocates for consideration of a revision to the rule curve for West Point Lake winter drawdown operations in order to improve water resource benefits while also maintaining flood protection. A GAEPD study demonstrated that the use of probability based forecasts could reduce peak releases without compromising flood mitigation operations at West Point. The Council also advocates for consideration of a revision to the rule curve for Lake Lanier to increase the conservation pool by two feet to

increase ACF System storage. We understand that Lake Lanier has been managed at approximately 1-ft above the full pool level for much of the last two years. We also understand that the Coosa North Georgia Water Planning Council received a seed grant to conduct a study to increase the Lake Lanier full pool elevation by 2-feet. We support this effort and we would appreciate the Metro Water District's support of this initiative in its plan. We request that the Metro Water District join our Council in supporting and requesting funds for flood studies and thorough evaluation of these alternative operation options in order to improve ACF system storage and operations to meet the needs of all water uses. The Council supports cooperative efforts between the State and the U.S. Army Corps of Engineers to fully evaluate these options and support adoption of the proposed rule curve modifications, as appropriate.

- Advocate for expanded regional water storage capacity to improve water resource management. The Council believes that water storage in the ACF Basin is a critical issue. We commend the City of Atlanta in its effective utilization of the Bellwood Quarry for additional 2.4 billion gallons of emergency water supply. In the ACF, competing and increasing demands for water, including those from the Metro Water District, could strain the capacity of the system and limit its ability to meet needs across the Basin. The Metro Water District's draft Plan lacks a discussion of additional regional water storage capacity. The Council requests that the Metro Water District join the Council in advocating for thorough evaluation of options for increased regional water storage capacity through the development of new capacity and/or the enhancement of existing capacity. The Council encourages continued storage efforts and requests the Metro Water District's support in its plan for coordinated planning and development of regional water storage capacity. We recommend that the Metro Water District Plan continue to make a commitment in coordinating with the Middle Chattahoochee, Upper Flint, Lower Flint- Ochlockonee Regional Water Councils to evaluate and support the development of additional regional water storage capacity. These three Councils, downstream of the Metro Water District, share common views on the need for more regional water storage capacity, especially in the ACF Basin. We believe that coordination with the Metro Water District would help us to pursue common interests, improve water resource management, and ensure that needs across the regions are addressed.
- Offer awards and incentives for commendable examples of outdoor water conservation in new developments. The Metro Water District continues to propose a strong plan for water conservation in the draft Plan, and it has achieved remarkable results in implementation of water conservation in previous planning cycles. The Council commends the Metro Water District for its conservation efforts with outdoor water use, and the Council supports this focus because it can help to reduce consumptive use and support increased return flows for downstream use. The draft Plan included Water Supply and Water Conservation Action Item WSWC-8, which expands landscape irrigation systems design requirements. We commend this addition and encourage additional incentives and requirements that will reduce consumptive water usage. We continue to recommend that the Metro Water District amend its Action Items to include an awards and/or incentive program to recognize developers that support best practices

for water conservation in outdoor water use. Support the collection and use of better field data for nutrient modeling. The Council recognizes the need for more actual conditions data on nutrient loading and its impacts in our shared water systems. EPD is currently modeling surface water quality. Water quality is important to downstream users because of the impact on algal growth and resulting increased chemical and treatment costs for drinking water. We commend the Metro Water District for the emphasis in its plan in action item Watershed-10 for the increased collection and use of water quality monitoring data to support better water quality modeling and improved understanding of how to protect and enhance water quality.

- Pursue increased returns of treated wastewater to support downstream flows and uses. The Council is concerned with net consumptive use of surface water, and we encourage the Metro Water District to monitor the trends of net consumptive use and advance policies to reduce consumptive use. We encourage the continued septic system area planning and coordination with County Boards of Health included in the Action Item Integrated-4. The Council commends the Metro Water District's planning principle for a preference for return flows to local water supplies. We support this policy and its implementation. The Council also acknowledges that Integrated-5 and Integrated-8 through Integrated-12 action items address septic and decentralized systems. However, these action items encourage, rather than require, minimizing wastewater practices that reduce return flows, such as using septic and land application systems. We recommend that the Metro Water District encourage policies for rural development to use centralized treatment and point source discharge. We also recommend that the Metro Water District implement benchmarks for increasing returns and decreasing consumptive use throughout the future planning horizon. Our Council views high wastewater returns as an objective to strive toward. Achieving high return rates is a key to sustainability, particularly where the resource is stressed.

I hope you will address the Council's comments into the Metro Water District's Plan. If you have any questions about the Council's comments, please let me know. The Middle Chattahoochee Regional Water Council thanks you for your consideration, and we look forward to continuing to work together.

Sincerely,

Steve Davis, Chair
Middle Chattahoochee Regional Water Council



Inter-Council Coordination Committee

Next meeting will be coordinated with Lower Flint – Ochlocknee and Upper Flint in June 2022

Discussion Topics:

1. Review 2017 Plans - Section 7.4
Recommendations to the State: Coordinated Recommendations with Neighboring Councils
2. Develop Updated Coordinated Recommendations with Neighboring Councils
3. Present to Council at August Meeting



Recommendations Review

Kristin Rowles



Recommendations to the State

Section 7.4 of 2017 Plan

1. Improve the Updated ACF Water Control Manual and Operating Procedures
2. Establish Task Forces for Alabama and Energy Water Use Forecasting
3. Increase Metropolitan North Georgia Water Planning District Returns and Reduce Nutrient & Sediment Loading
4. Continue Research on Groundwater Development
5. Increase Storage in the ACF and Tallapoosa
6. Evaluate Water Conservation
7. Address Regional Assimilative Capacity Limitations
8. Fund Additional Resource Assessments
9. Increase State Funding for Implementation of Management Practices
10. Strengthen Coordination in Regional Water Planning and Management
11. Coordinated Recommendations with Neighboring Councils
12. Regional Water Plan Use



1. Improve the Updated ACF Water Control Manual and Operating Procedures

- Water quality: Operate USACE dams consistent with FERC and wastewater quality permits
- Evaluate West Point drawdown rule curve and Lake Lanier storage capacity
- Model Chattahoochee River under extreme conditions
- Consider GA Contemplation performance metrics (2013)
- Consider recommendations for changes in operations from GWRI model results (Georgakakos)
- Evaluate springtime pulse flows coordination for navigation/ecological needs
- Improve scientific justification for minimum flows below Woodruff Dam (Apalachicola River)
- Evaluate structural measures (weirs, gates, steps) to control river states and sediment transport/scour to protect critical habitat below Woodruff Dam
- Update unimpaired flows dataset

Council seeks improvements to:

- increase available storage in the reservoirs
- provide more rapid refill after drought periods
- maintain higher lake levels (esp. West Point)
- provide flow guidelines at the Columbus and Columbia planning nodes

The Council urges the states in the ACF to work with the USACE to evaluate recommended improvements.



2. Establish Task Forces for Alabama and Energy Water Use Forecasting

- Alabama
 - Water use estimates/forecasts
 - Common time horizons/forecasting assumptions
- Energy sector water use forecasts
 - Not geographically specific in 2011/2017
 - Additional information for forecasts (efficiency, conservation, power production, water quality)



3. Increase Metropolitan North Georgia Water Planning District Returns and Reduce Nutrient & Sediment Loading

- Acknowledge coordination with District & commend water conservation efforts
- Increase wastewater returns to ACF (and auditable reporting)
- Concerns about nutrient and sediment loads from District in Chattahoochee
 - Improve mitigation
 - Document progress
 - Collect data for better modeling
 - Consider tighter nutrient standards for West Point Lake
- Need a better understanding of nutrient and sediment loading
 - Sources/management strategies
 - Peer review of lake/watershed models
 - Review model assumptions/calibration with Councils



4. Continue Research on Groundwater Development

- Develop groundwater as alternative source for municipal, industrial, and agricultural supplies
 - Below Fall Line and where there is not direct interaction of gw/sw
- Improve understanding of agricultural water use
 - Meters – install/maintain
 - More data: monthly use, crops, inputs



5. Increase Storage in the ACF and Tallapoosa

- Mitigate surface water availability gaps with storage
 - Better utilization of existing storage
 - New storage
 - New approaches (e.g., ASR)
- Explore designation of environmental storage in federal reservoirs to meeting downstream needs (use/in-stream)



6. Evaluate Water Conservation

- Conservation = Important part of the regional water plan
- Difficult to evaluate implementation/progress
- Continue to expand the information base



7. Address Regional Assimilative Capacity Limitations

- Improve assimilative capacity below WF George Reservoir
 - GA, EPA, USACE
- Conduct more detailed model verification and consider permit revisions to support availability of assimilative capacity below WF George Reservoir



8. Fund Additional Resource Assessments

- On-going data collection and model refinement
- GWRI ACF Model (for ACF Stakeholders): Consider the improvements in reservoir operations recommended by that model
- Model Chattahoochee under extreme conditions (evaluate resilience)
- Better info on consumptive uses and returns
- BMP implementation assessment and effectiveness evaluation
- GA Forestry Commission's BMP Complaint and Survey program as a model for the agricultural sector
- Make use of wastewater and stormwater permittee data



9. Increase State Funding for Implementation of Management Practices

10. Strengthen Coordination in Regional Water Planning and Management

- Recommends state law delegate planning, management, and oversight of water resources to stakeholder-led councils)

11. Coordinated Recommendations with Neighboring Councils

- More water storage capacity in the ACF (e.g., better use of existing, additional new storage)
- Use of actual/current data in resource assessments
- Interstate planning organization for ACF (consider transboundary institution recommendation of the ACF Stakeholders)

12. Regional Water Plan Use

- Important resource for EPD and stakeholders
- Regional Water Plans are just one source of information and permitting should be based on full framework of laws/rules/guidance and information provided by permit applications



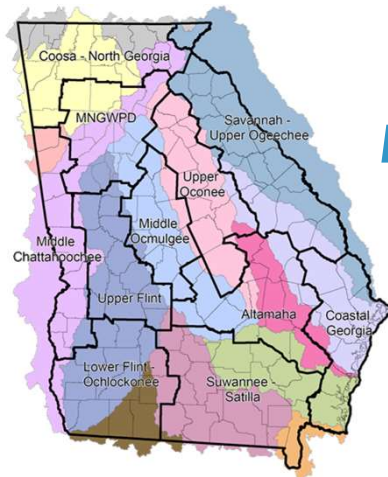
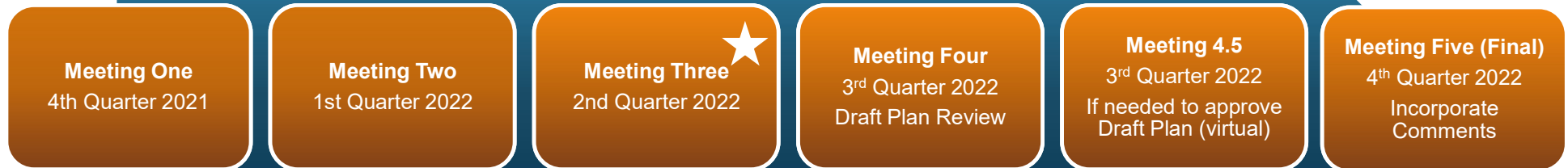
Next Steps in Plan Review and Revision

Corinne Valentine, Black & Veatch



Regional Water Plan Update

Regional Water Plan Review and Revision Schedule



***EPD targeted date of
adoption of revised
Regional Water Plan by
December 2022***



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Regional Water Plan Update – Before Today

Regional Water Plan Review and Revision

Meeting One
4th Quarter 2021

Meeting Two
1st Quarter 2022

Meeting Three
2nd Quarter 2022

Plan Review
Committee

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Final
2022
Rate
Plans



Regional Water Plan Update – Today's Discussion

Regional Water Plan Review and Revision

Meeting One
4th Quarter 2021

Meeting Two
1st Quarter 2022

Meeting Three
2nd Quarter 2022



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Regional Water Plan Update - Next

Regional Water Plan Review and Revision Schedule



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Committee Work – Next Steps

Inter-Council
Coordination

Recommendations to the State – Coordinated
Recommendations with Neighboring Councils

Plan Review

...

...



EPD Report

Christine Voudy, GA EPD



Information Items: GEFA Georgia Water Supply and Redundancy Study and GEFA Biosolids Report

Amanda Carroll, Georgia Environmental Finance Authority
Steve Simpson, Black & Veatch





Georgia Water Supply Redundancy Study

Middle Chattahoochee Water Planning Region

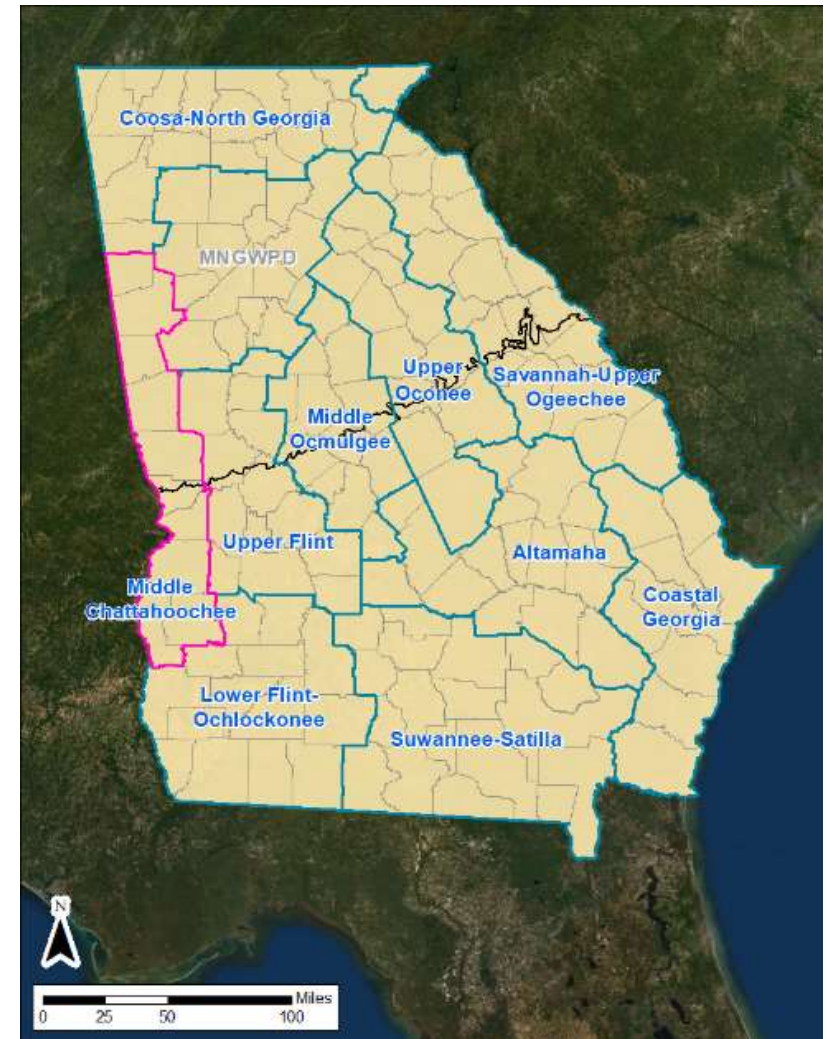
Georgia Environmental Finance Authority

See full report for details: Wood, April 14, 2022

May 2022


Study Objectives

- For qualified water systems (i.e., public system usually serving over 3,300 people):
 - Evaluate drinking water supply, demand, treatment, storage, distribution, and interconnectivity
 - Identify redundant water supply sources
 - Emergency supply and deficit under existing (2015) and future (2050) conditions
 - Evaluate potential projects
 - Recommend projects using decision-based prioritization tool




Water Withdrawals by Type

- Groundwater (GW)
 - 13% of region's 2010 water supply



Withdrawal Category	Withdrawal (MGD)	Percentage (%)
Agriculture	13	59%
Domestic/self-supply	4.8	23%
Municipal	3	13%
Mining	0.9	4%
Industrial	0.2	1%

- Surface Water (SW)
 - 87% of region's 2010 water supply

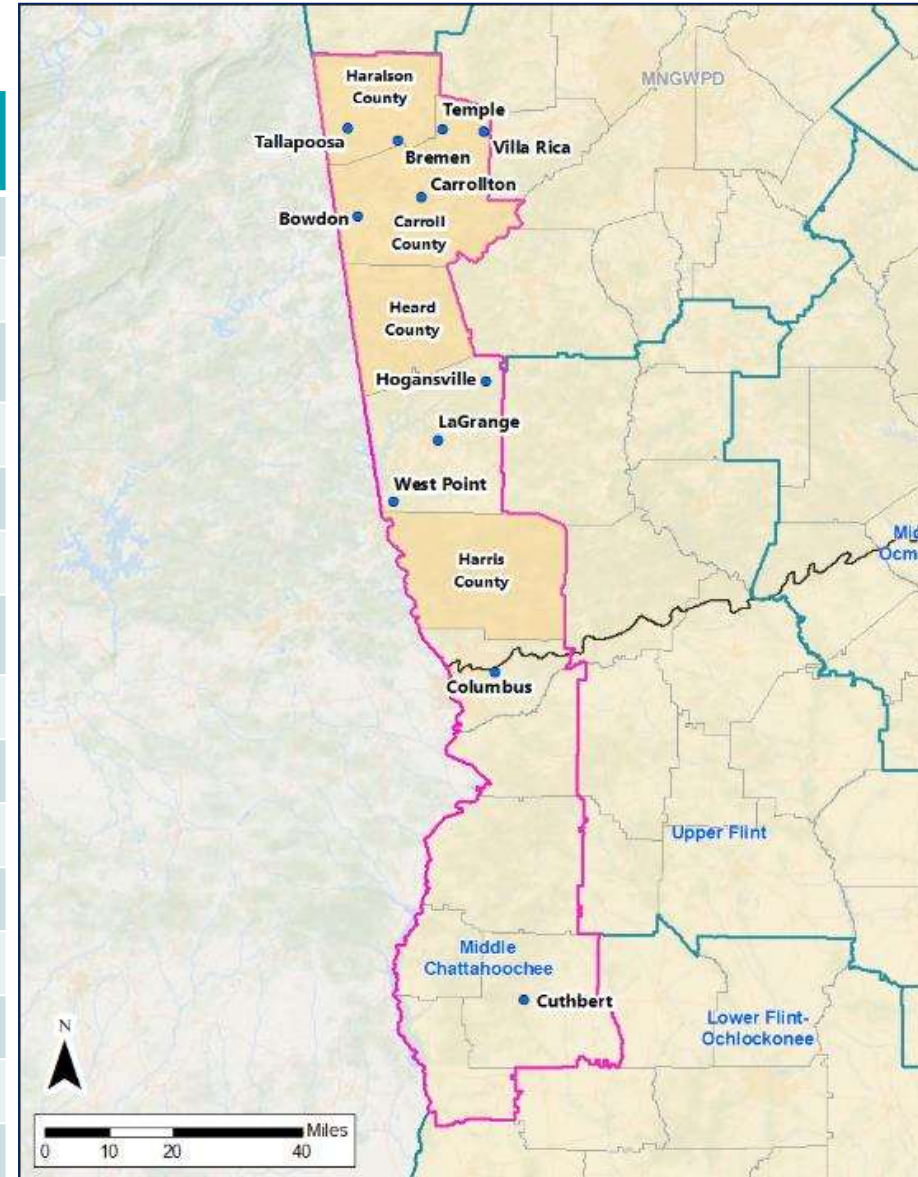


Withdrawal Category	Withdrawal (MGD)	Percentage (%)
Municipal	69	49%
Energy	53	38%
Agriculture	18	13%

Values from:
 Middle Chattahoochee Regional Water Plan.
 June 2017.

Region Qualified Water Systems

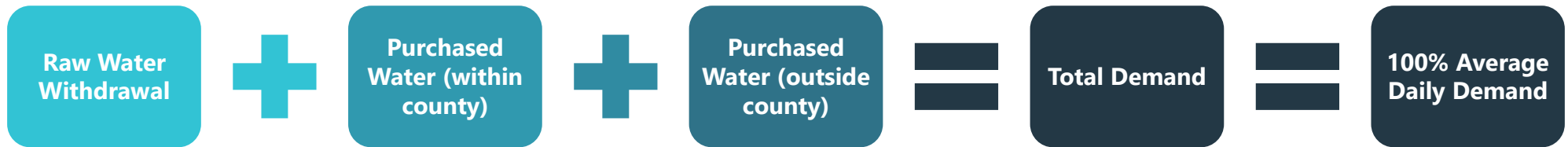
County	Qualified Water System	Raw Water Sources
Carroll	Bowdon	Surface Water (2)
Haralson	Bremen	Surface Water (2)
Carroll	Carroll County	Surface Water (1) Groundwater Wells (3)
Carroll	Carrollton	Surface Water (3)
Muscogee	Columbus	Surface Water (2)
Randolph	Cuthbert	Groundwater Wells (4)
Haralson	Haralson County	Surface Water (1) Groundwater Wells (2)
Harris	Harris County	Surface Water (1)
Heard	Heard County	Surface Water (2)
Troup	Hogansville	Wholesale Purchase
Troup	LaGrange	Surface Water (1)
Haralson	Tallapoosa	Wholesale Purchase
Carroll	Temple	Wholesale Purchase
Carroll	Villa Rica	Surface Water (2)
Troup	West Point	Surface Water (1)



Identify Redundant Water Supply Sources

- Redundancy is valuable in this context
 - Excess capacity or duplicate parts that perform if other parts fail
- Three sources of redundancy considered:
 1. Excess capacity
 - Sufficient excess capacity for 12/12 systems in 2015 and 9/12 systems in 2050
 2. Raw and potable water sources
 - EPD's groundwater and surface water resource availability models indicate sufficient availability for aquifers and varying levels of sufficiency/insufficiently for surface water nodes
 - Potential surface water source/storage options identified (e.g., expanded reservoirs, watershed dams, quarries)
 3. Interconnections
 - Some systems have the potential to interconnect

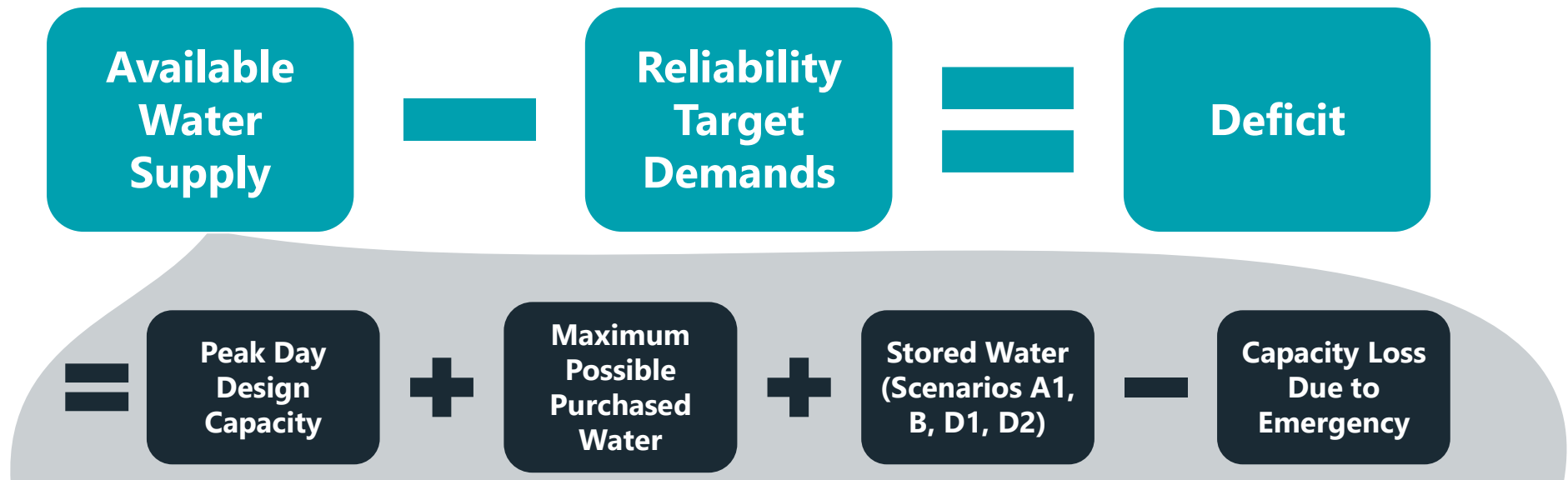
Emergency Planning Benchmarks



- Reliability targets: 100%, 65%, and 35% of average daily demand
- Each reliability target applied to 2015 and 2050 total demand to give an overview of water availability

Water Supply Risk Evaluations

Evaluate system capability to supply sufficient water to customers during a given emergency



Water Supply Risks and Emergency Scenarios

	Water Supply Risk	Emergency Scenario	Type	Duration (Days)
A.	Failure of largest water treatment plant (WTP)	A1. Power supply failure of largest WTP	Short-term	1
		A2. Critical asset failure at largest WTP (e.g., loss of clearwell, loss of chemical treatment)	Short-term	30
B.	Short-term catastrophic failure of a water distribution system	Critical transmission main failure from largest WTP or interconnection	Short-term	1
C.	Short-term contamination of a water supply within distribution system	Contamination of distribution system triggers a boil water notice	Short-term	3
D.	Short-term contamination of a raw water source	D1. Biological contamination of largest raw water source	Short-term	1
		D2. Chemical contamination of largest raw water source	Short-term	1
E.	Full unavailability of major raw water sources due to federal or state government actions	--	Long-term	>365
F.	Reduced availability of major raw water sources due to federal or state government actions	--	Long-term	>365
G.	Failure of an existing dam that impounds a raw water source	Dam failure for largest impoundment	Short-term	30
H.	Water supply reduction due to drought	Raw water supply available is 40% of ADD due to drought	Short-term	120

Water Supply Risks: Evaluation Results

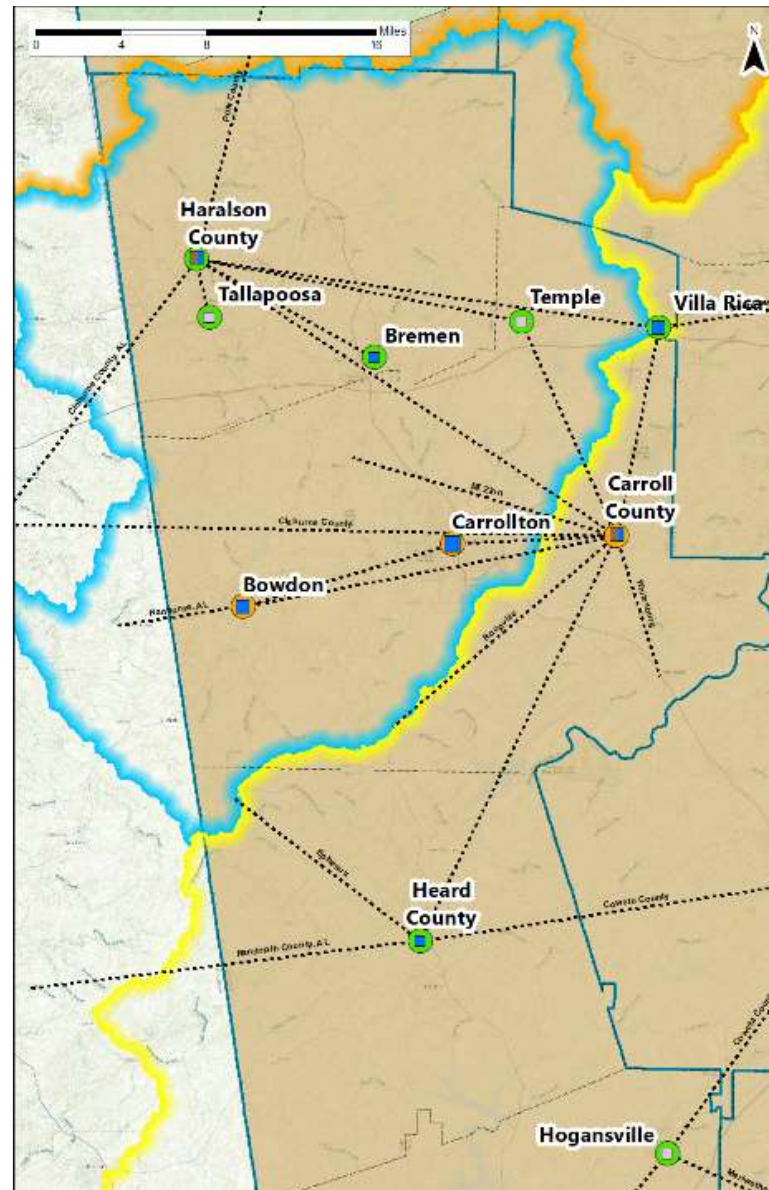
- 2015 deficits:

Qualified Water System	100% ADD	65% ADD	35% ADD
Carrollton	◇		
Columbus	◇	◇	
LaGrange	◇	◇	

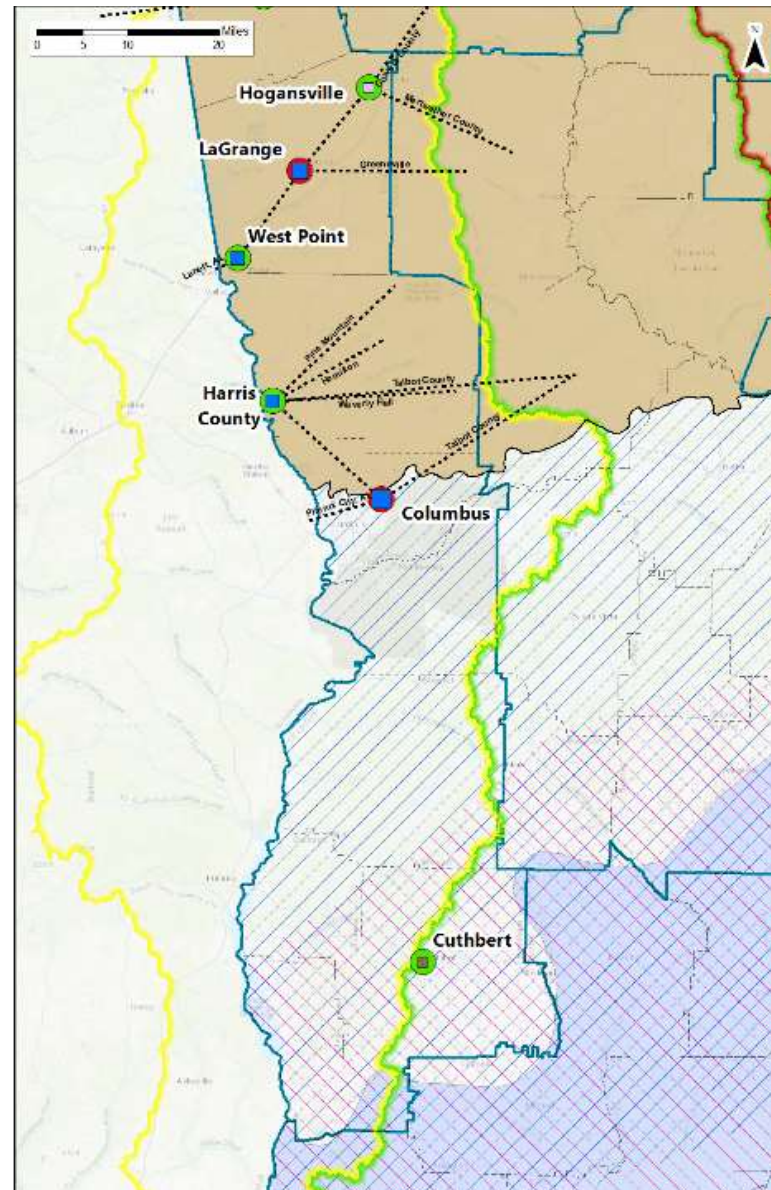
- 2050 deficits:

Qualified Water System	100% ADD	65% ADD	35% ADD
Bowdon	◇	◇	
Carroll County	◇	◇	
Carrollton	◇	◇	
Columbus	◇	◇	◇
LaGrange	◇	◇	◇

Schematic of Key System Data – North



Schematic of Key System Data – South



- Water Planning Region
- County
- Claiborne and Clayton Aquifers
- Cretaceous Aquifer
- Crystalline Aquifer
- Floridan Aquifer
- Chattahoochee River Basin
- Flint River Basin
- Ocmulgee River Basin
- Fall Line
- Interconnection
- Raw Water Source**
 - Groundwater
 - Surface Water
 - Groundwater and Surface Water
 - Wholesale Purchase
- 2050 Total Demand (MGD)**
 - 0 - 1
 - 1 - 5
 - 5 - 15
 - > 15
- 2050 Deficit Type**
 - None
 - 100% ADD
 - 65% ADD
 - 35% ADD

Potential Project Development

- Scenario(s) rendering systems with less water supply were further evaluated
 - Logical, implementable projects retained for systems with less available supply
 - Not all systems have projects
- Potential conceptual-level redundancy projects developed
- For this region, three project types:
 1. New interconnection
 2. Upgrade existing interconnection
 3. New parallel raw water transmission main (internal project)

Potential Projects

Project Number	Qualified Water System(s) Benefitted	Potential Project Description
1	Bowdon Carroll County	Interconnection: Bowdon-Carroll County; 0.9 miles along Garrett Creek Road
2	Carroll County Carrollton	Upgrade existing interconnection: Carroll County-Carrollton; new booster pump; Mt Zion Road
3	Carroll County Carrollton	Upgrade existing interconnection: Carroll County-Carrollton; new booster pump; Shady Grove Road
4	Columbus Harris County	Upgrade existing interconnection: ability to send water from Harris County to Columbus and increase supply to Harris County; McKee Road
5	Columbus Harris County	Upgrade existing interconnection: ability to send water from Harris County to Columbus and increase supply to Harris County; US-27
6	LaGrange	Upgrade existing interconnection: ability to send water from Hogansville to LaGrange
7	LaGrange	Upgrade existing interconnection: ability to send water from West Point to LaGrange
8	LaGrange	New parallel raw water transmission main: 2.3 miles

Prioritization Criteria and Weighting

- Potential projects prioritized based on performance under weighted quantitative and qualitative criteria
 - 8 criteria
 - E.g., population benefitted; cost; potential environmental, system, and community impacts
 - 4 scores (1 through 4)
 - 3 weights (1 through 3)

Potential Projects Sorted by Final Rank Order

Project Number	Systems Benefitted	Potential Project Description	Cost (\$)	Final Rank
5	Columbus Harris County	Upgrade existing interconnection: Harris County and Columbus; US-27	\$ 50,000	1
4	Columbus Harris County	Upgrade existing interconnection: Harris County and Columbus; McKee Road	\$ 50,000	2
2	Carroll County Carrollton	Upgrade existing interconnection: Carroll County-Carrollton; new booster pump; Mt Zion Road	\$ 1,071,000	3
3	Carroll County Carrollton	Upgrade existing interconnection: Carroll County-Carrollton; new booster pump; Shady Grove Road	\$ 1,071,000	3
7	LaGrange	Upgrade existing interconnection: West Point to LaGrange	\$ 50,000	5
1	Bowdon Carroll County	Interconnection: Bowdon-Carroll County; 0.9 miles along Garrett Creek Road	\$ 723,900	6
6	LaGrange	Upgrade existing interconnection: Hogansville to LaGrange	\$ 1,700,000	7
8	LaGrange	New parallel raw water transmission main: 2.3 miles	\$ 9,306,600	8

Conclusion

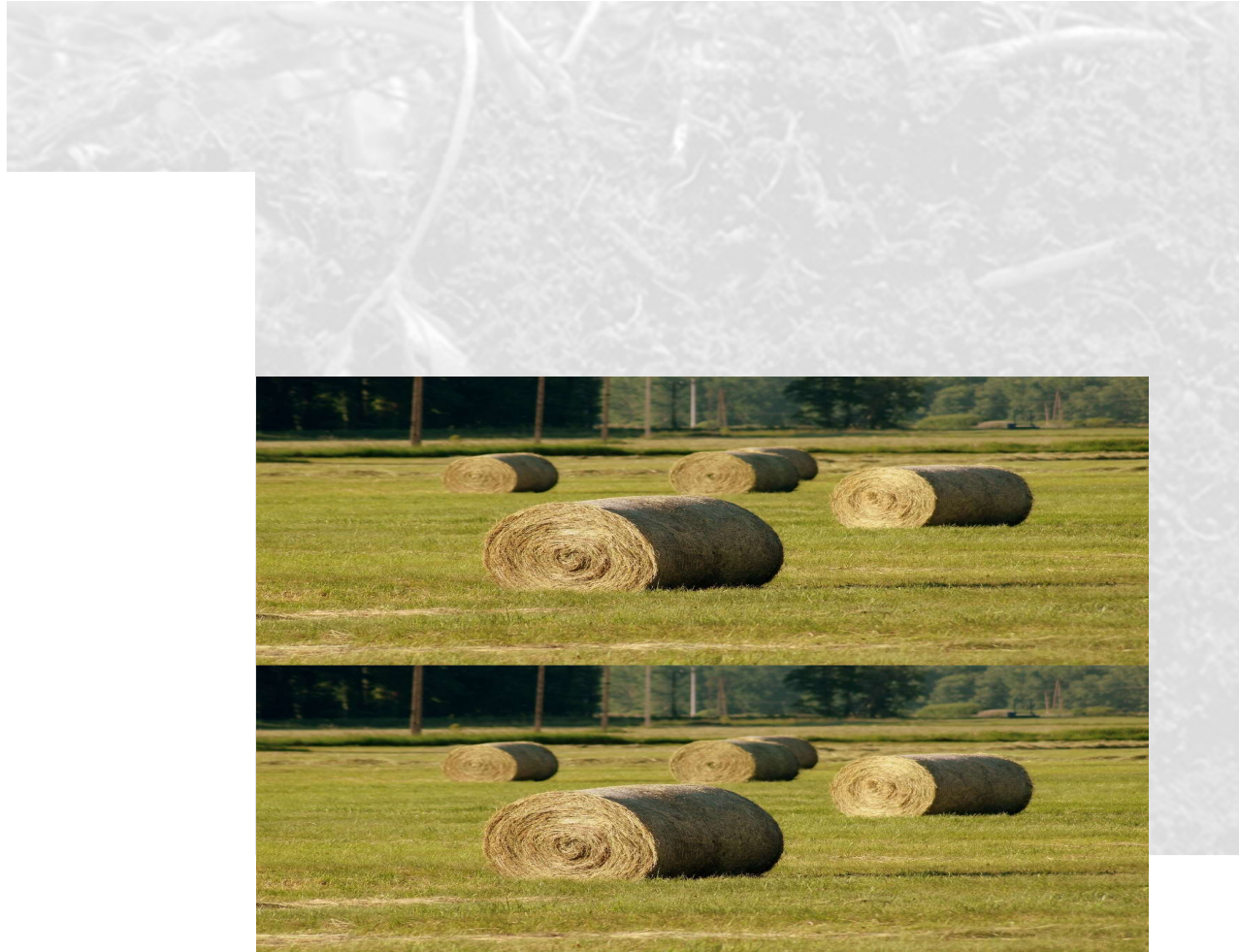
- Middle Chattahoochee Region has three 2015 deficits and five 2050 deficits
- Potential projects identified can assist Councils and systems in understanding the types of upgrades that could benefit the Water Planning Region
- Projects support Council Management Practices
 - Interconnections – WS-4: encourage interconnection of regional supply systems for reliability, specifically in times of drought or emergency conditions
- Interconnection redundancy projects highlight the potential for systems to interconnect
- Internal infrastructure redundancy projects highlight the potential for a future management practice: encourage public water systems to enhance their water supply redundancy and treatment/unit process redundancy

Questions?

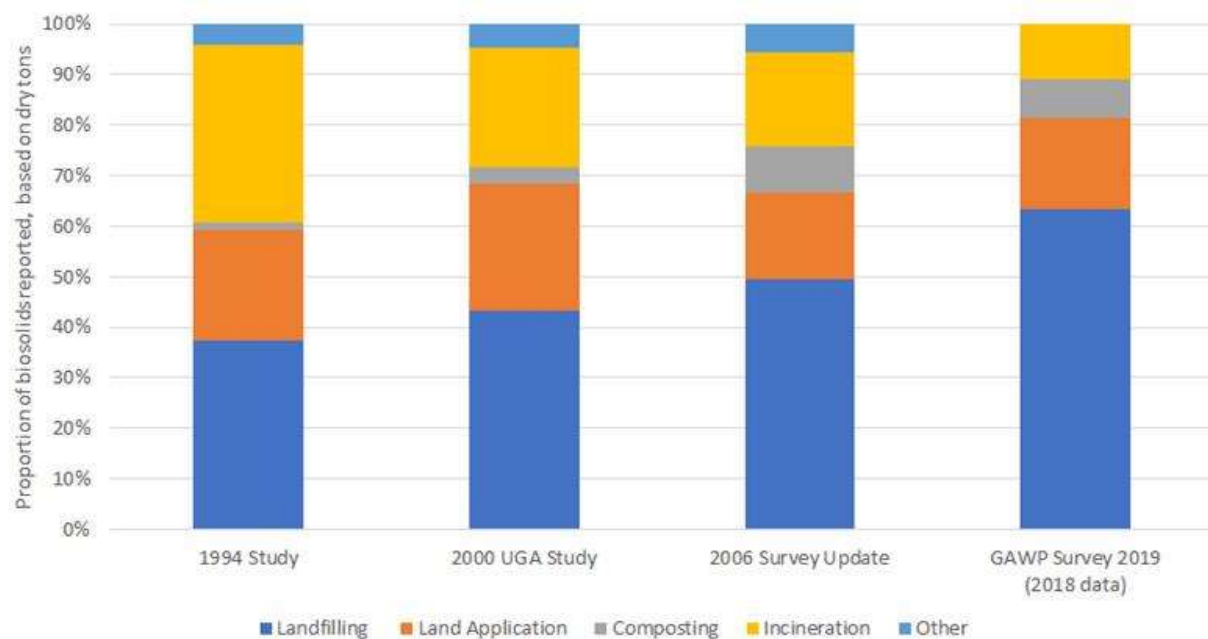
wood.

GEFA Biosolids Assessment and Prepared Study

May 2022

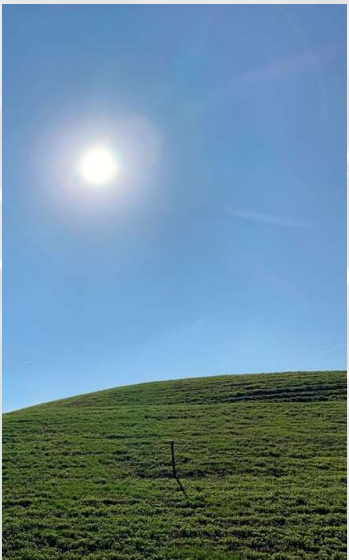


Biosolids Management: Drivers and Trends



Photos courtesy of GA EPD, Presentation to
MNGWPD WW TCC Meeting, January 24, 2019





Landfilling



**Land
Application**



Incineration

Key Trends for Solids Management

- Landfilling
 - HMCW concerns dominate
 - Tip fees likely to remain high
 - Potential limited biosolids acceptance
- Land application
 - Class B field storage logistics
 - Local jurisdiction resistance
 - PFAS-based restrictions
- Incineration
 - Permitting, cost may limit potential use

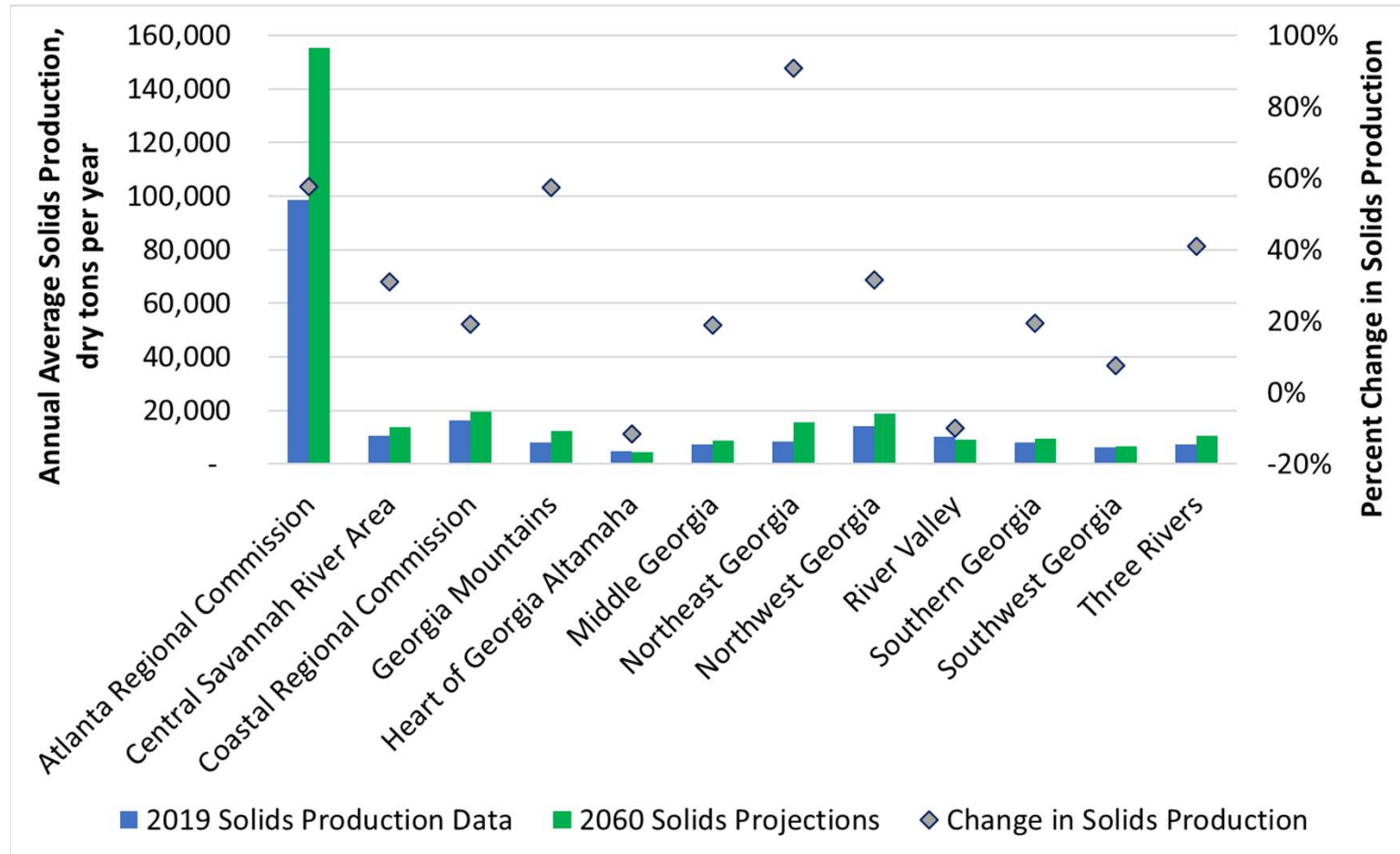
Georgia Regional Commissions

The map illustrates the 10 regional commissions of Georgia, each with a distinct color and label. The commissions are:

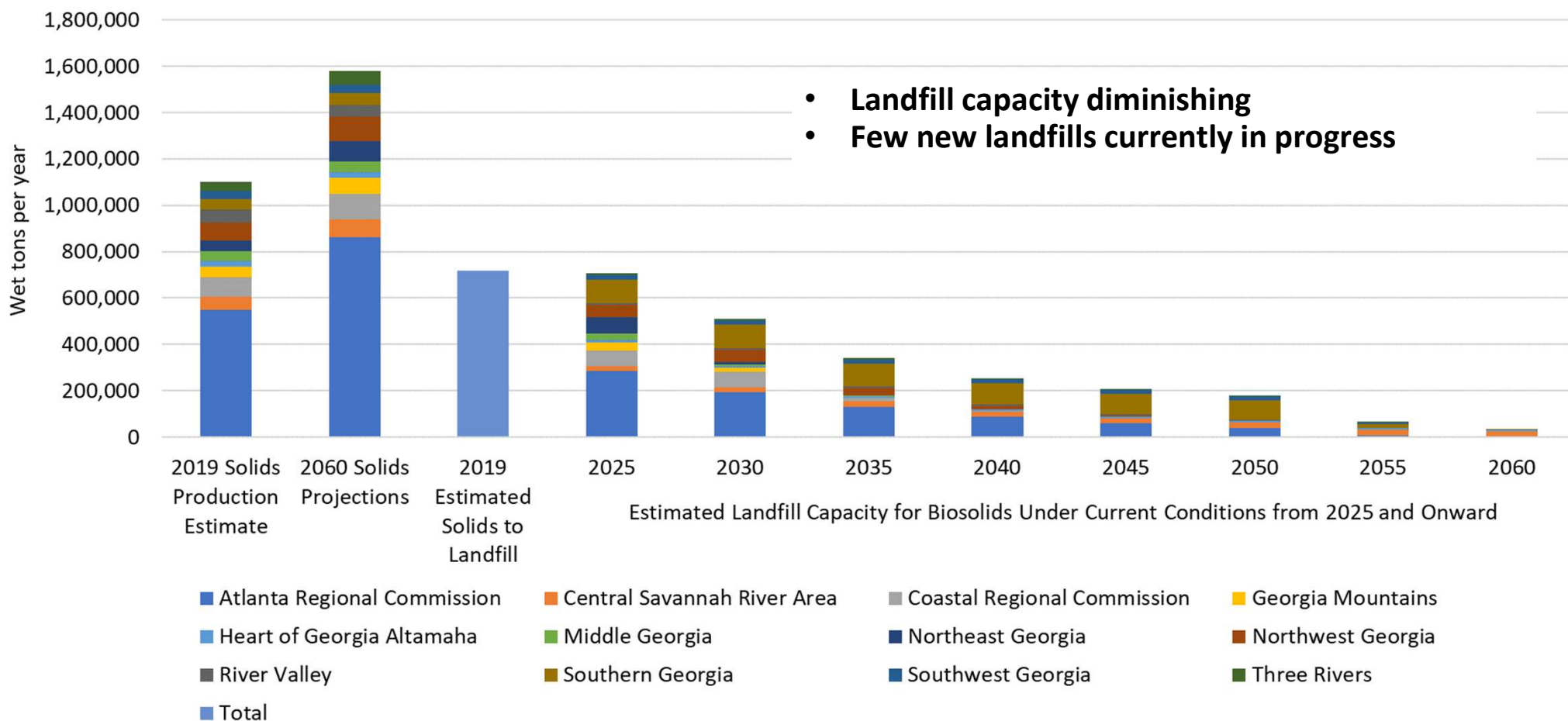
- Northwest Georgia** (Blue)
- Georgia Mountains** (Yellow)
- Atlanta Regional Commission** (Orange)
- Northeast Georgia** (Light Blue)
- Three Rivers** (Green)
- Central Savannah River Area** (Light Orange)
- Middle Georgia** (Pink)
- Heart of Georgia/Altamaha** (Brown)
- River Valley** (Purple)
- Coastal** (Light Green)
- Southwest Georgia** (Yellow)
- Southern Georgia** (Blue)

The map also displays the names of various counties, including Dade, Gatoosa, Whitfield, Murray, Fannin, Union, Towns, Rabun, Walker, Gilmer, Lumpkin, Stephens, Franklin, Hart, Chattooga, Floyd, Bartow, Cherokee, Dawson, Hall, Banks, Jackson, Madison, Elbert, Polk, Haralson, Paulding, Winnett, Barrow, Walton, Jones, Wilkes, Lincoln, Carroll, Spalding, Henry, Newton, Morgan, Greene, Wilkies, Columbia, Heard, Coweta, Fayette, Clayton, Burke, Richmond, Troup, Meriwether, Upson, Pike, Lamar, Monroe, Jones, Baldwin, Hancock, Washington, Burke, Harris, Talbot, Muscogee, Taylor, Peach, Houston, Bleckley, Laurens, Emanuel, Screven, Bulloch, Effingham, Chatham, Liberty, Glynn, Camden, McIntosh, Wayne, Tattnall, Evans, Candler, Wilcox, Dodge, Pulaski, Dooley, Crisp, Sumter, Macon, Chatham, Stewart, Randolph, Terrell, Lee, Worth, Colquitt, Brooks, Lowndes, Echols, Clinch, Brantley, Pierce, Warren, Coffee, Bacon, Appling, Jeff Davis, Turner, Ben Hill, Irwin, Berrien, Atkinson, Lanier, Cook, Miller, Early, Seminole, Decatur, Grady, Thomas, and Mitchell.

Current and Projected Solids Production Estimates

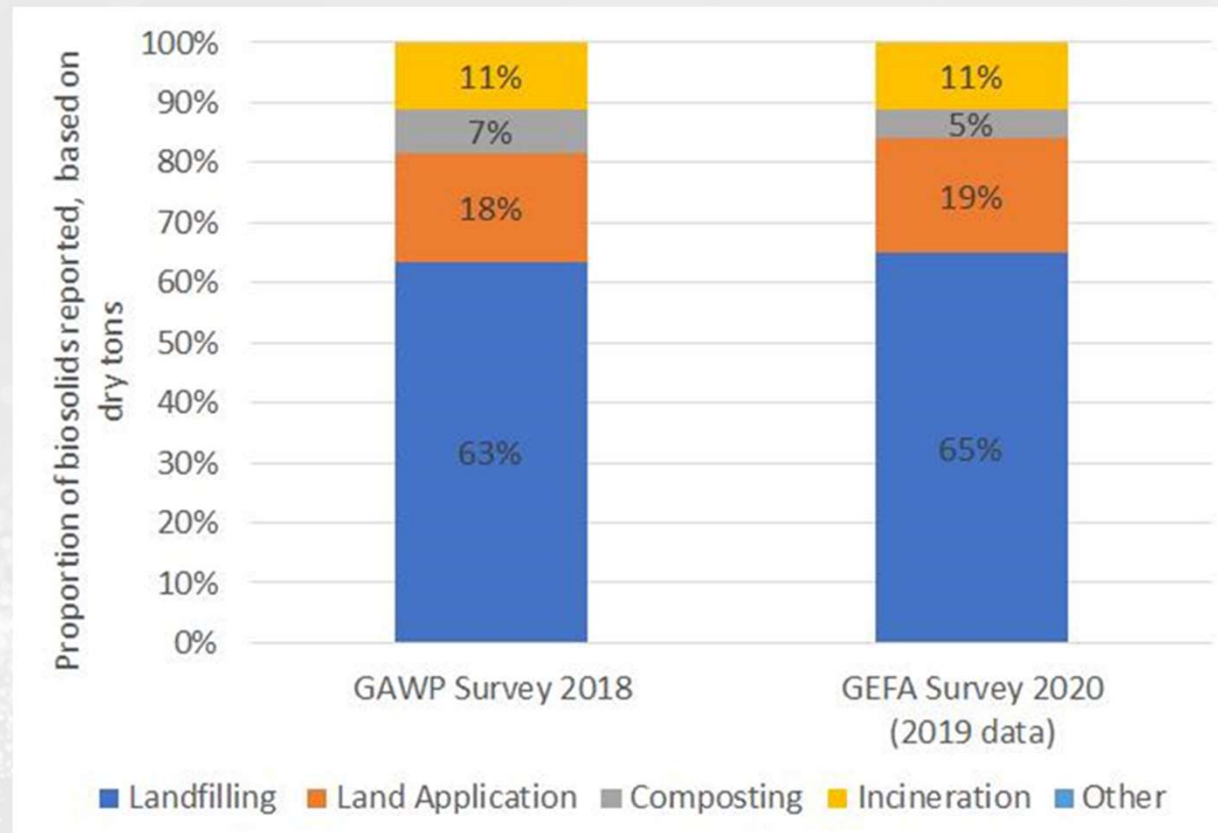


Comparison of Solids Production and Landfill Capacity* for Biosolids

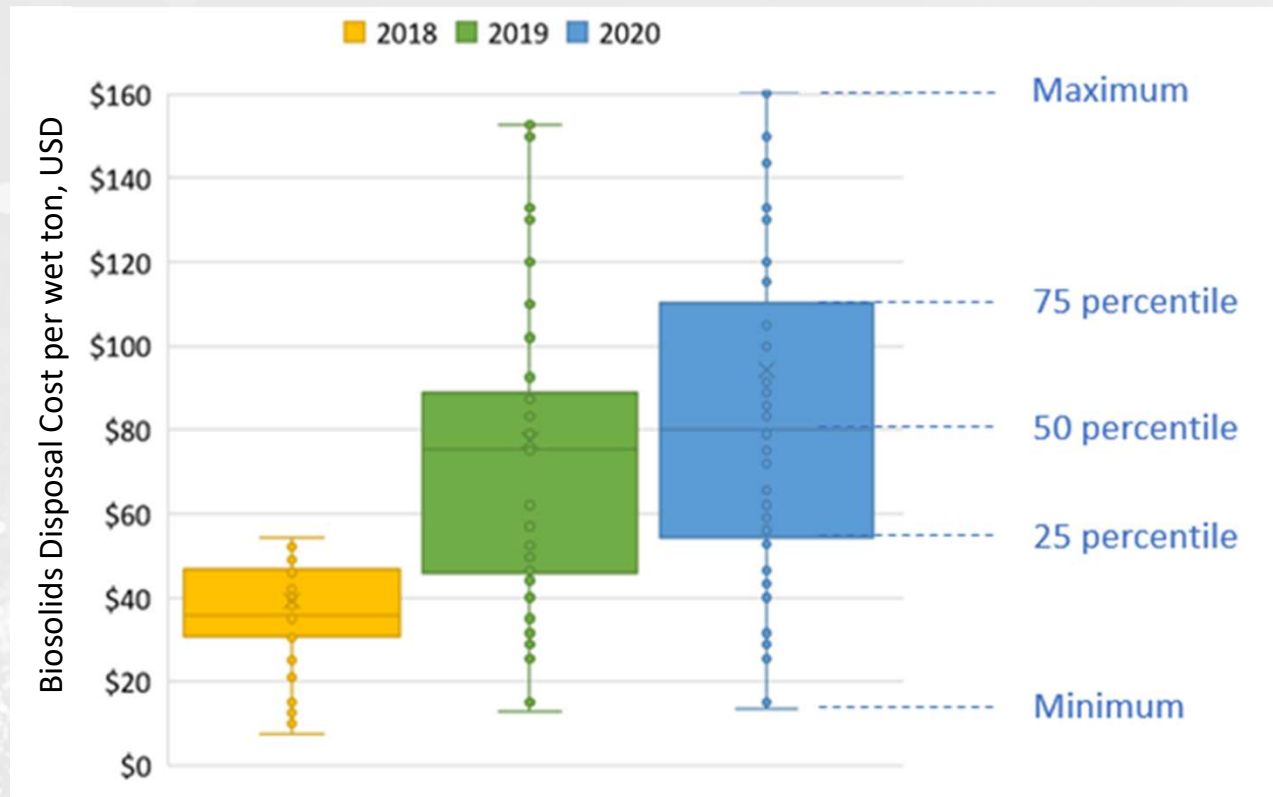


* Based on estimated closure dates from EPD, and assumes biosolids acceptance ratios remain constant

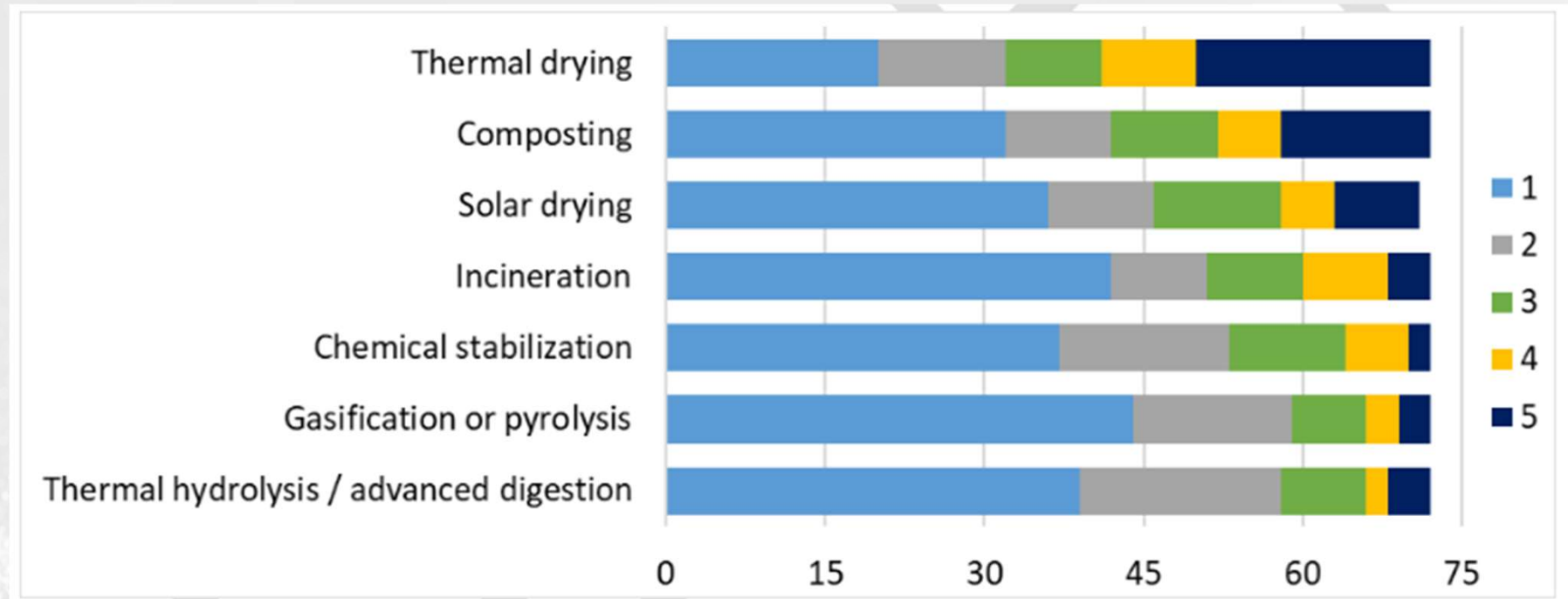
Survey Update: Biosolids End Use in Georgia



Survey Update: Biosolids End Use or Disposal Cost

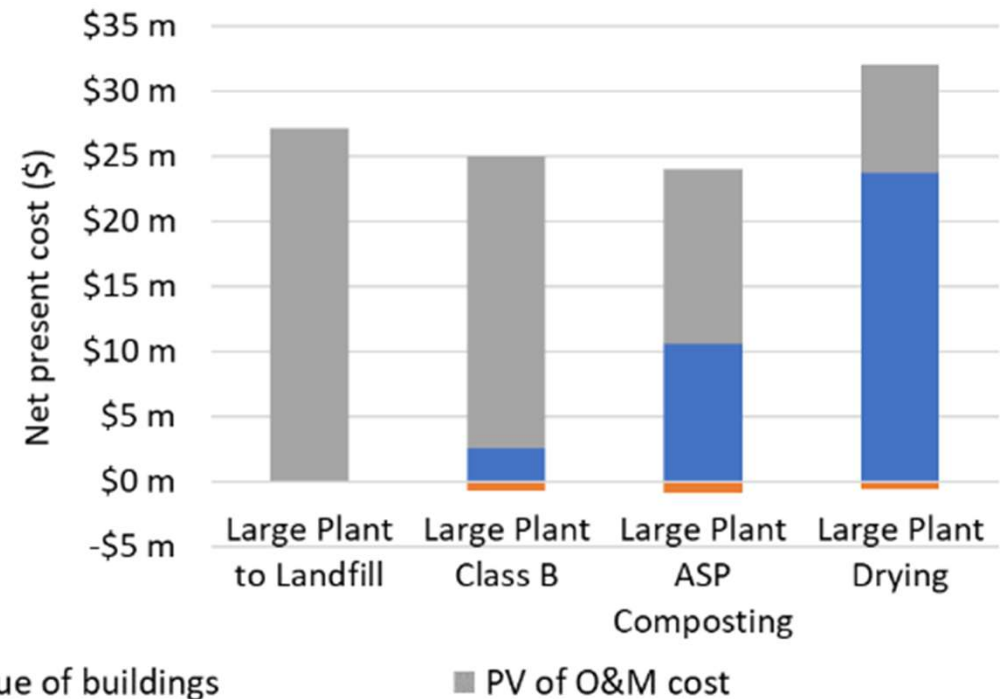
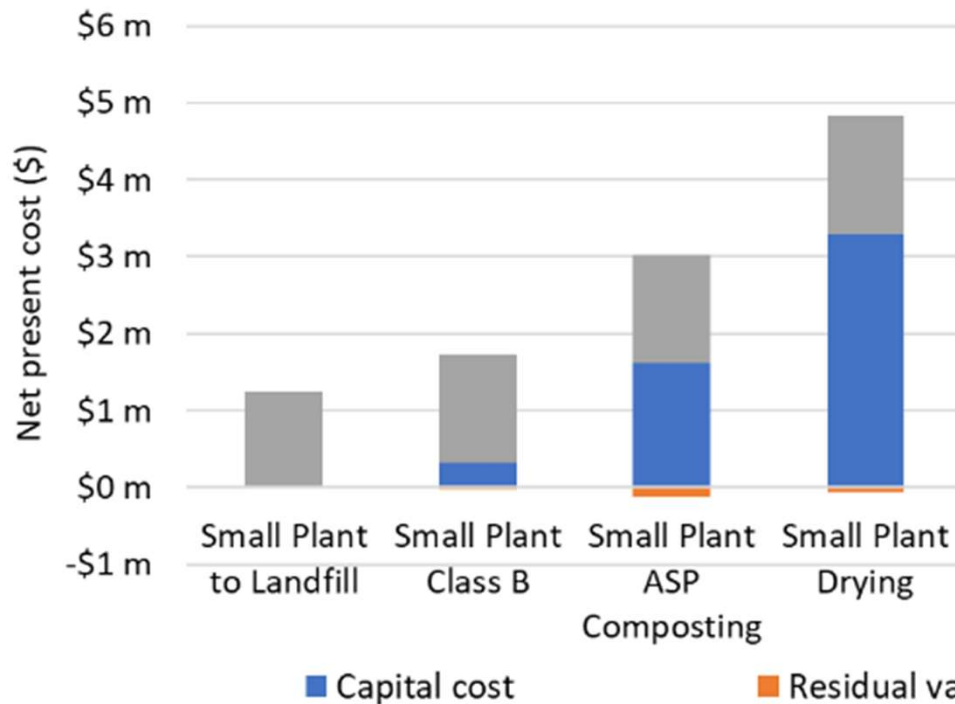


Utility Interest in Implementing Alternative Solids Treatment Processes



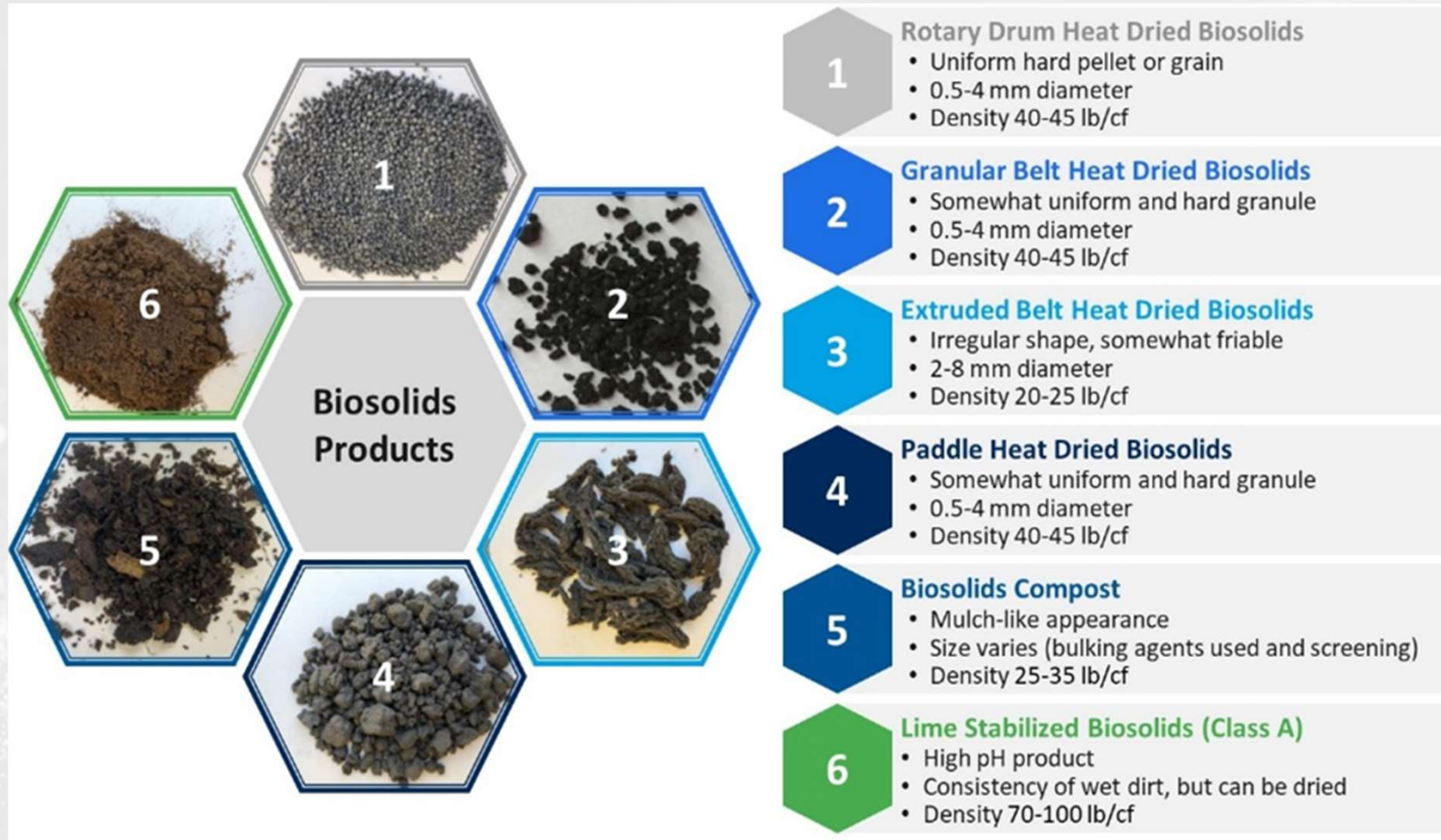
Ranked in order of highest interest (1=little to 5=high)

Technology Cost Evaluation

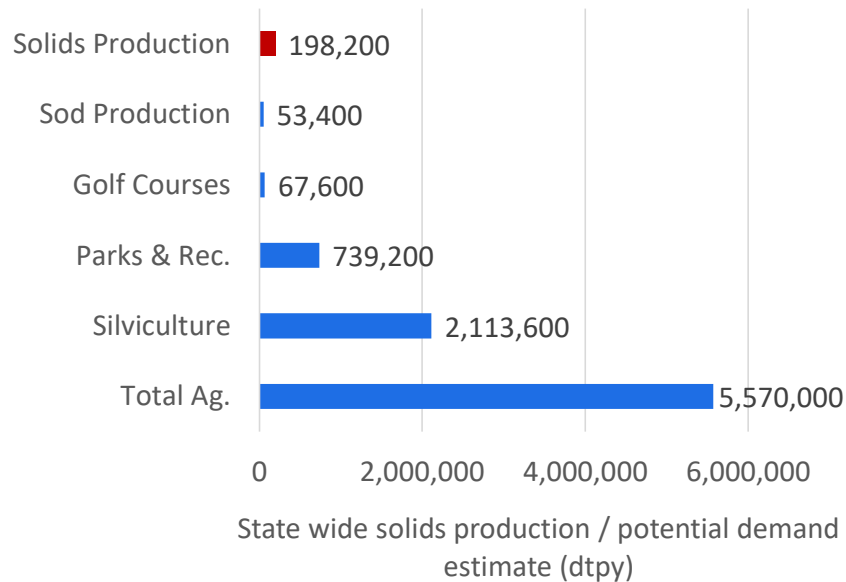


Regionalization for smaller plants could result in scale efficiencies

Market Assessment



Market Assessment



2% market penetration required to make use of all biosolids in GA



Agriculture

Large volume market, familiarity with biosolids, cost/ease of use matter



Silviculture

Potentially large market, potential impacted by market forces, demos/education needed



Sod Farms

Small market, mixed reception, positive lime-stabilized biosolids experience



Golf Courses

Familiarity with biosolids, dried pellets/compost of greatest interest, cost/uniformity/size matter



Parks & Recreation

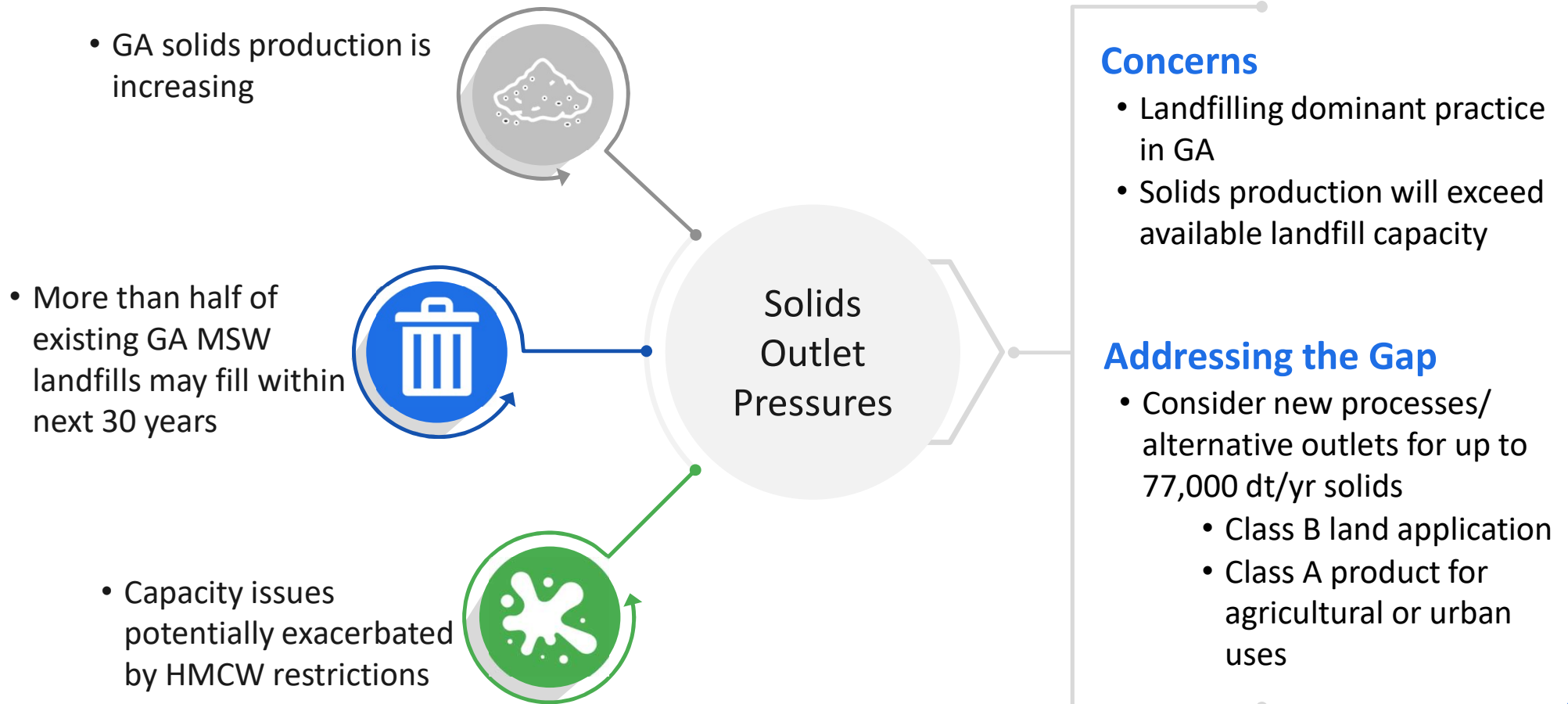
Potential for dried pellets and compost, cost critical



General Urban Uses

Some familiarity (pellets/compost), compost market not expanding, education needed.

Gap Analysis Summary



GEFA Funding Available for Biosolids Projects

Georgia Fund	Clean Water SRF
State funded	Federally funded
Water, wastewater, and solid waste infrastructure projects	Wastewater infrastructure and pollution prevention projects
\$3 million per year maximum loan amount	\$25 million per year maximum loan amount
Interest rate of 1.63% for a 20-year loan	Interest rate of 1.13% for a 20-year loan
	Scoring criteria not well aligned to biosolids drivers

Notes and Recommendations to GEFA

- Consider potential biosolids specific funding initiative
- Provide additional guidance for utilities seeking biosolids funding
- The Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) can also provide funding for biosolids projects (EPA administered)

Questions?



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Public Comment



Next Steps



Next Steps

- Next Meeting: Aug 23 – Draft Plan Review
- Committees to work on plan revisions
 - Inter-Council Coordination – Joint meeting with neighboring Councils
 - Plan Review
 - Others...



Thank You

Middle Chattahoochee



WATER



WASTEWATER



STORMWATER



<https://waterplanning.georgia.gov/water-planning-regions/middle-chattahoochee-water-planning-region>

