

MIDDLE CHATTAHOOCHEE

# Middle Chattahoochee Council Meeting

August 23, 2022



**GEORGIA  
WATER PLANNING**

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

# Agenda

## Objectives:

1. *Review and discuss surface water availability assessment results*
2. *Review and discuss revisions to management practices and recommendations*
3. *Consider revisions to recommendations from Plan Review & Inter-Council Coordination Committees*
4. *Discuss schedule for remaining plan revisions and meetings*

10:00	Welcome, Agenda Review – Mark Masters (GWPPC)
10:10	Chair's Report – Chairman Davis
10:20	New Planning Timeline – Meagan Szydzik (GWPPC)
10:30	Summary from last meeting – Courtney Cooper (GWPPC)
10:40	EPD Update, Seed Grants – Kelli-Ann Sottile (GAEPD)
10:50	Orientation to goals for afternoon group discussions – Courtney Cooper (GWPPC)
11:00	Surface Water Availability Assessment Results – Mark Masters (GWPPC) & Wei Zeng (GAEPD)
12:00	Lunch
1:00	Small Group Discussions: Surface Water Availability Assessment
2:00	Water Quantity Committee report on revised recommendations – Harry Lange
2:20	Water Quality Committee report on revised recommendations – Ed Moon
2:40	Break
2:50	Inter-Council Coordination Committee report on revised joint recommendations – Patrick Bowie
3:05	Full group discussion and report back
3:50	Next Steps in Plan Review and Revision – Meagan Szydzik (GWPPC)
4:00	Adjourn



# Introductions

## STEVE DAVIS

Columbus Water Works

### Council Chair for:

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### Council Lead for:

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## MARK MASTERS

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## MEAGAN SZYDZIK

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## COURTNEY COOPER

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### Council Advisor for:

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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 Moyer	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





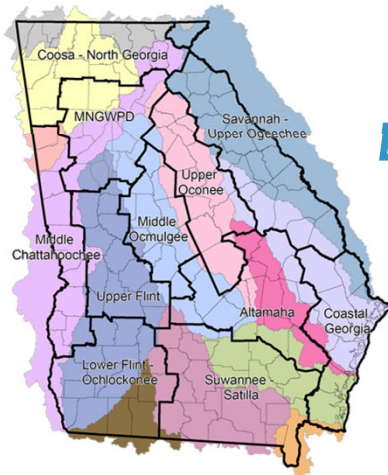
# New Planning Timeline

*Meagan Szydzik*



# Regional Water Plan Update

## Regional Water Plan Review and Revision Schedule



***EPD targeted date of  
adoption of revised  
Regional Water Plan by  
June 2023***



# Previous Meeting Summary

*Courtney Cooper*





# Previous Meeting Summary

- Reviewed additional water resource assessment results
- Reviewed and discussed management practices and recommendations
- Considered recommendations from Plan Review & Inter-Council Coordination Committees
- Learned about recent studies on water system interconnectivity and biosolids management



# EPD Update, Seed Grants

*Kelli-Ann Sottile, GAEPD*



# FY23 RWP Seed Grant Program

- EPD made grant announcement on July 7
- Funding for projects that implement Regional Water Plan management practices/recommendations
- Letter of endorsement from Council Chair
- Up to \$75,000 state funding available (per project)
- Cost-Share: 60% state /40% match (with at least 10% cash match)
- Pre-application meeting & application deadlines in October

## EXAMPLE IN-KIND MATCH SERVICES

- ✓ Personnel/Staff Salaries
- ✓ Professional Fees
- ✓ Labor
- ✓ Supplies & Materials
- ✓ Equipment (Leases or Purchases)
- ✓ Office / Meeting Space Rent
- ✓ Indirect Charges
- ✓ Volunteer Hours



# Seed Grant History & Awards

- Since State Fiscal Year 2014, EPD has awarded \$1,966,900 in state funds to Seed Grant projects
- Projects support implementation of Regional Water Plans
- In the **Middle Chattahoochee** region, \$107,000 of state funds have been awarded towards 2 seed grant projects
  - Including match, the total project spending is \$178,500





# Seed Grant Projects in this Region

- FY14 seed grant to Albany State GWPPC
  - “Water Supply Alternatives Development Plan for Agricultural Irrigators in Ichawaynochaway Sub-Basin (HUC 03130009)”
- FY18 seed grant to River Valley Regional Commission
  - “Update of the Watershed Management Plan for Long Cane Creek Watershed”



# More Information on Seed Grants



GEORGIA  
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Water Planning

Water Planning Regions

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More Information

Funding Opportunities

Partnering Agencies

Latest News

Funding Opportunities

Partnering Agencies

Latest News

## Funding Opportunities

### Regional Water Planning Seed Grants

From State Fiscal Year 2023 funds appropriated by the Georgia General Assembly for Regional Water Planning, EPD announces the SFY2023 Regional Water Plan Seed Grant program. The Regional Water Plan Seed Grants are being provided to support and incentivize local governments and other water users as they undertake their [Regional Water Plan](#) implementation responsibilities.



# Orientation to goals for afternoon group discussions

Courtney Cooper



# Small group discussions

- What are your primary takeaways from the water availability assessment?
  - What implications do they have for you?
- Are there any new issues not yet reflected in the recommendations?
  - Do the results mesh with the revised plan recommendations?
- What else do you want to know about water availability?
  - Are there other metrics that you would like to see?
- If you had sufficient funds, what water-related projects would you prioritize over the next 5 years?
- Discuss any unsettled committee items





# Surface Water Availability Assessment Results

Mark Masters & Wei Zeng



# Presentation Outline

- Introduction and Model Settings
- Model Results
  - Water Supply Challenges
  - Wastewater assimilation Challenges
  - West Point Elevation Results
  - Columbus Flow Results

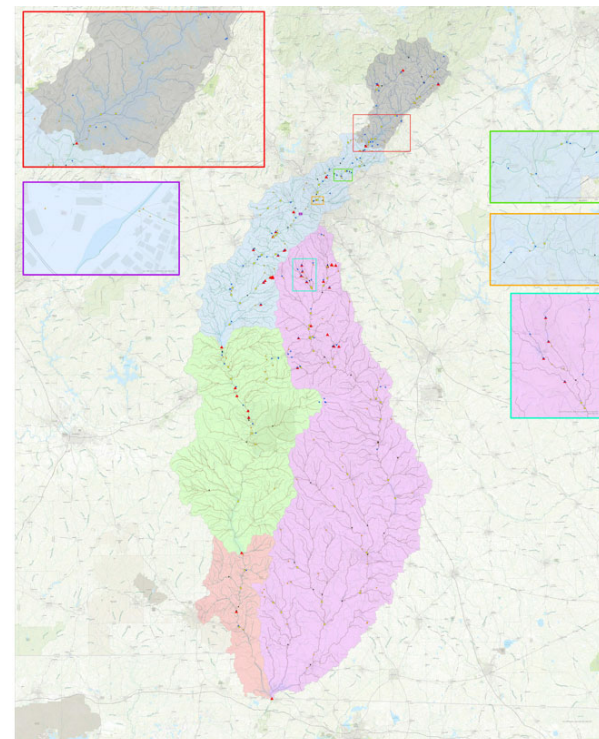
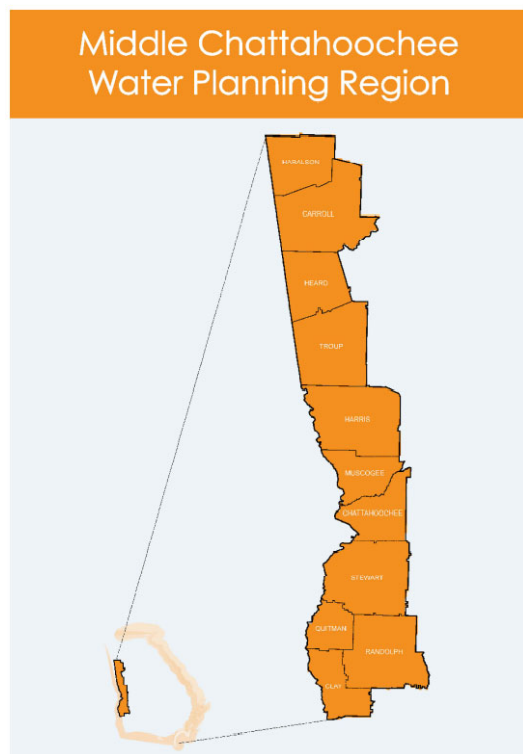


# Middle Chattahoochee Region Metrics

<b>Water Supply Availability</b>	% model period with water supply challenge
	Total volume of shortage
	Shortage volume in 2007-2008 drought
	Shortage volume in 2011-2012 drought
<b>Wastewater Discharge Assimilation</b>	% model period with wastewater assimilation challenge
	Total volume of shortage
<b>Lake Elevation</b>	West Point > top of conservation pool: 628-635 ft, varies by month
	West Point < Initial impact level: 632.5 ft
	West Point < Recreation impact level: 628 ft
	West Point < Water access level: 627 ft
<b>Streamflow</b>	Columbus - 1,350 cfs

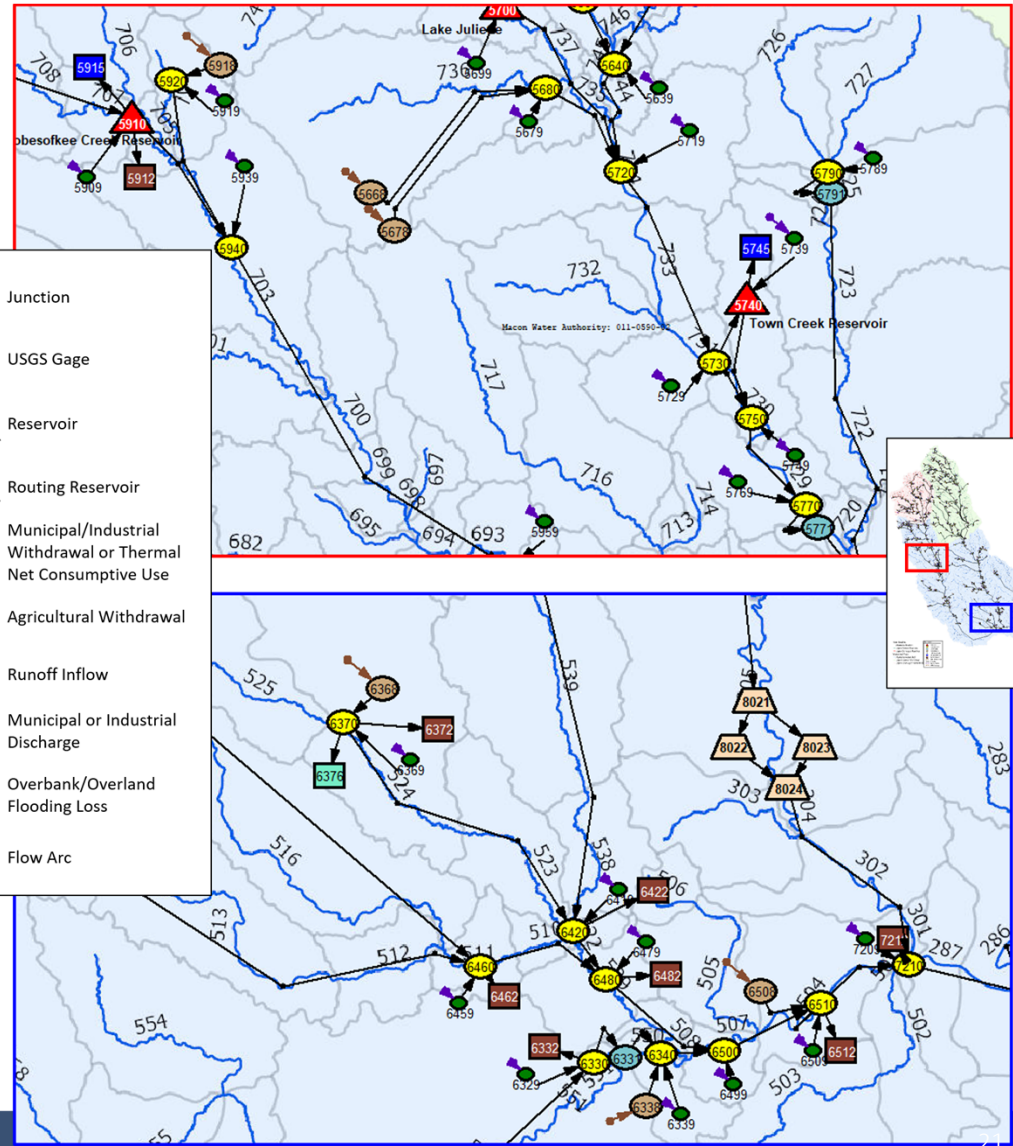
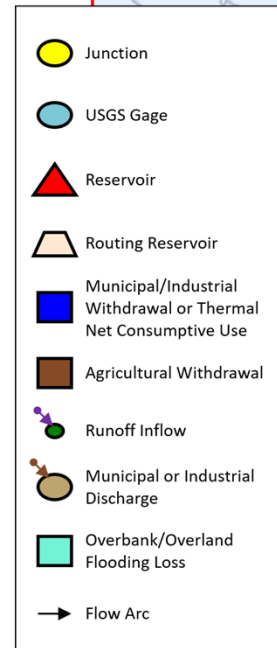
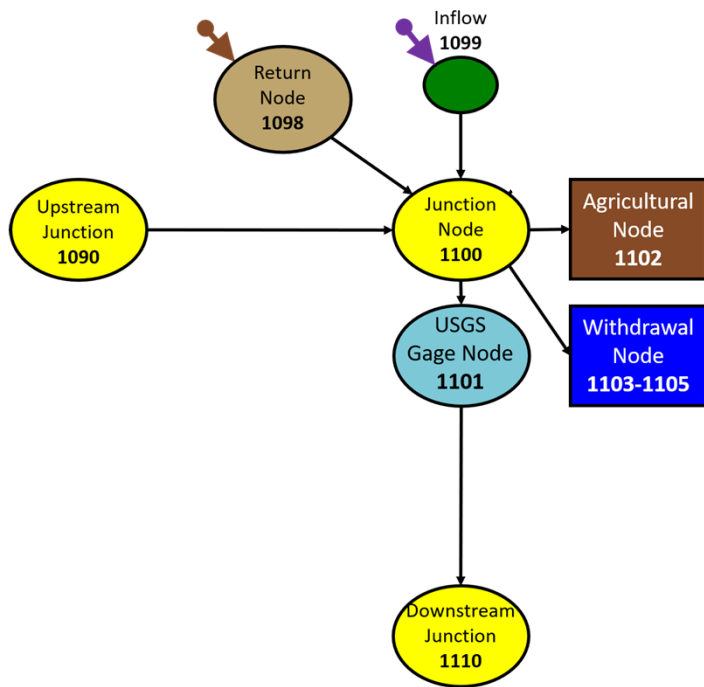


# Middle Chattahoochee Region and ACF Model Domain





# BEAM Node Types



# ACF Baseline & Future Scenarios Settings

<b>Simulation Period</b>	1939 – 2018 (model period includes various hydrologic conditions)
<b>Withdrawal and Discharge Amounts</b>	<p>4 Scenarios</p> <ul style="list-style-type: none"> <li>■ <b>Baseline</b>: Average water and wastewater demands for 2010-2018</li> <li>■ <b>Baseline Drought</b>: 2011 demands</li> <li>■ <b>Forecast (ag constant)</b>: 2060 demands but agriculture held constant at Baseline</li> <li>■ <b>Forecast (ag growth)</b>: 2060 demands with agriculture 2060 forecast</li> </ul>
<b>Instream Flow Protection Thresholds</b>	Per permit conditions
<b>Reservoir physical and operational data</b>	From reservoir owner or GAEPD

## Water and Wastewater Facilities Analyzed in the Middle Chattahoochee Region

	<b>Facility Type</b>	<b>Analyzed (# of facilities)</b>	<b>Challenge Indicated (# of facilities)</b>
Water Withdrawals	Municipal	11	3
	Industrial	2	0
	Energy	1	0
Wastewater Discharges	Municipal	12	7
	Industrial	1	1

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

## Facilities With Water Supply Challenges

FACILITY	Scenario	Heard County Water Authority (permit 074-1220-02)	Heard County Water Authority (permit 074-1220-03)	PVA Water Association, Inc
BEAM Node		3625	3684	4225
Waste Supply Challenge (% Days)	Baseline	25.6%	0.7%	0.6%
	Baseline Drought	25.9%	0.2%	0.0%
	Forecast (ag constant)	25.2%	3.5%	1.8%
	Forecast (ag growth)	25.2%	3.5%	1.8%
Shortage Volume (million gallons)	Baseline	8,774 <i>2007-08 drought: 300 2011-12 drought: 313</i>	22 <i>2007-08 drought: 0.1 2011-12 drought: 1</i>	28 <i>2007-08 drought: 0 2011-12 drought: 1.1</i>
	Baseline Drought	9,916 <i>2007-08 drought: 334 2011-12 drought: 338</i>	7 <i>2007-08 drought: 0 2011-12 drought: 0</i>	0 <i>2007-08 drought: 0 2011-12 drought: 0</i>
	Forecast (ag constant)	7,325 <i>2007-08 drought: 252 2011-12 drought: 262</i>	557 <i>2007-08 drought: 44 2011-12 drought: 48</i>	216 <i>2007-08 drought: 4 2011-12 drought: 7</i>
	Forecast (ag growth)	7,325 <i>2007-08 drought: 252 2011-12 drought: 262</i>	557 <i>2007-08 drought: 44 2011-12 drought: 48</i>	216 <i>2007-08 drought: 4 2011-12 drought: 7</i>



# Facilities With Wastewater Assimilation Challenges

FACILITY		Hogansville	Pine Mountain	Callaway Gardens Resort, Inc. WPCP	Koch Foods of Pine Mountain Valley	Hamilton WPCP	Lumpkin WPCP	Richland WPCP	Cuthbert WPCP
BEAM Node		3908	4178	4218	4298	4318	4738	7998	8368
7Q10 Flow (cfs)		0.98	0.1	0.09	0.33	0.96	6.31	0.08	0.68
Wastewater Challenge (% Days)	Baseline	3.4%	0.2%	1.1%	0.4%	1.7%	9.9%	0.0%	0.1%
	Baseline Drought	3.5%	0.2%	0.1%	0.4%	1.7%	0.6%	0.0%	0.4%
	Forecast (ag constant)	3.4%	0.2%	2.5%	0.4%	1.7%	9.9%	0.0%	0.1%
	Forecast (ag growth)	3.2%	0.2%	2.5%	0.4%	1.7%	9.9%	0.0%	0.1%
Shortage Volume (million gallons)	Baseline	299	2	41	9	137	6,207	0.01	3
	Baseline Drought	321	2	1	9	137	6,909	1	46
	Forecast (ag constant)	299	2	125	9	137	6,179	0.01	3
	Forecast (ag growth)	268	2	125	9	137	6,325	1	10

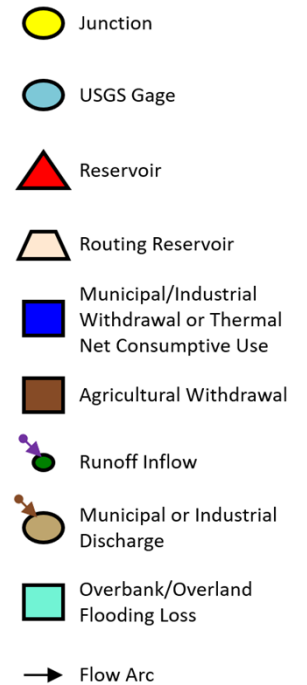
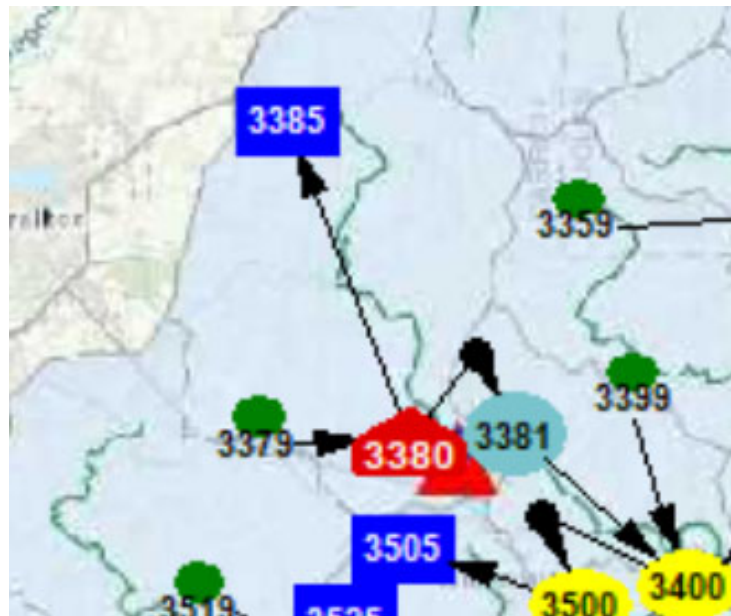
WPCP=Water Pollution Control Plant<sup>25</sup>

West Point Recreation Impacts Summary	Scenario	Metric			
		Above top of conservation pool 628-635 ft (varies by month)	Below initial impact level 632.5 ft	Below recreation impact level 628 ft	Below water access level 627 ft
% Days	Baseline	5.3%	23.5%	1.6%	0.9%
	Baseline Drought	5.1%	25.7%	2.3%	1.5%
	Forecast (ag constant)	5.0%	24.4%	1.4%	0.7%
	Forecast (ag growth)	5.0%	25.0%	1.6%	1.0%

Columbus Flow Summary		Metric	
		Daily Flow >= 1,350 cfs	7-Day Average Flow >= 1,350 cfs
% Days	Scenario		
	Baseline	92.31%	99.97%
	Baseline Drought	92.06%	99.96%
	Forecast (ag constant)	92.17%	100.00%
	Forecast (ag growth)	92.27%	99.99%

# Water Supply Example 1

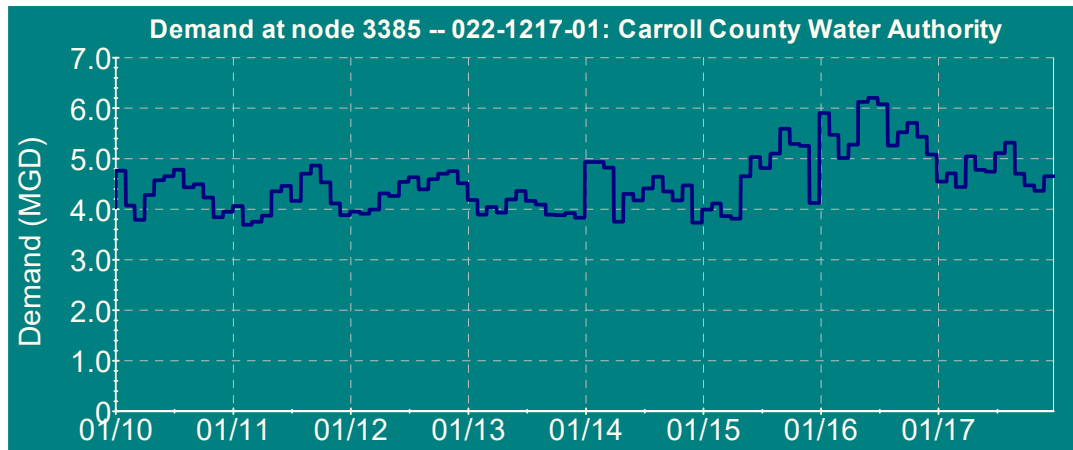
- Permit holder: Carroll County Water Authority
- Permit 022-1217-01, BEAM (Node 3385)
- Withdrawal limit: 13 mgd (daily)/11 mgd (monthly)/8 mgd (annual)
- Min flow requirement: 8.42 cfs or natural flow below Reservoir Dam



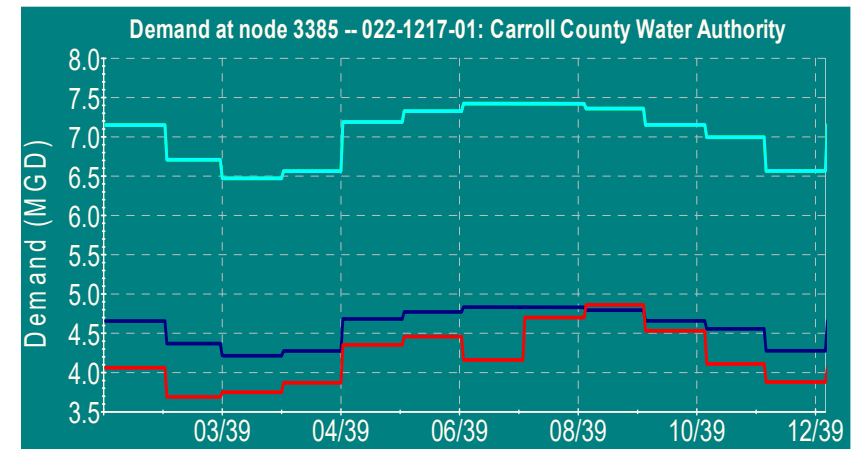
# Carroll County Water Authority

Permit 022-1217-01 Withdrawal Amount

Setting- average of 2010-2018



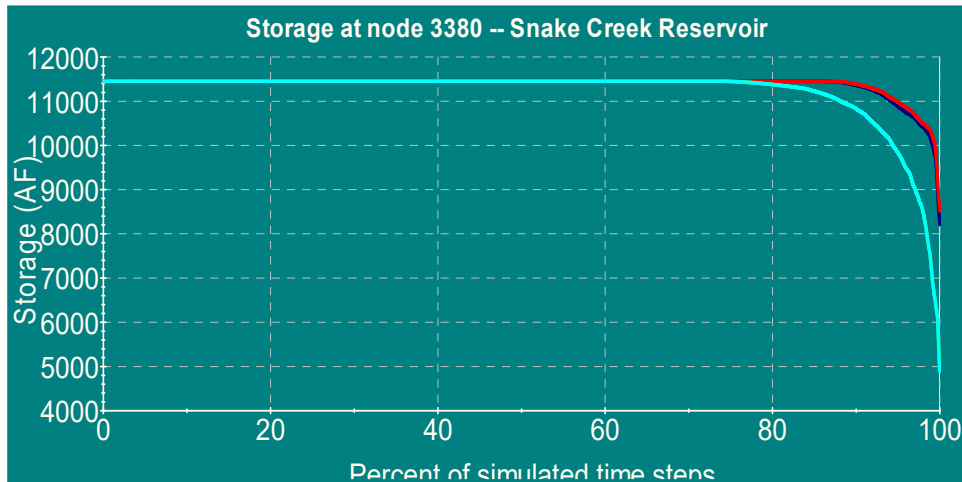
## Baseline and Future Demand



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

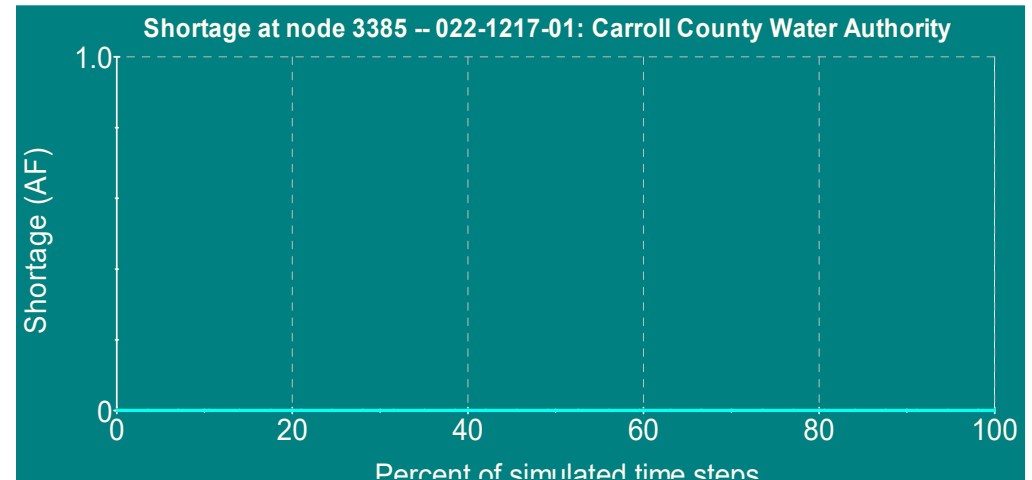


# Simulated Reservoir Storage Frequency & Water Supply Challenge Frequency



Storage at all times remaining above 4000 ac-ft indicates there is enough storage for water supply

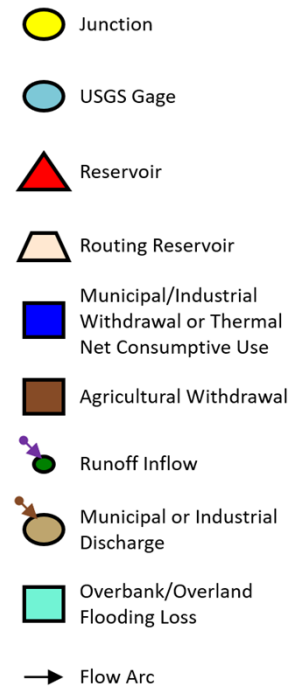
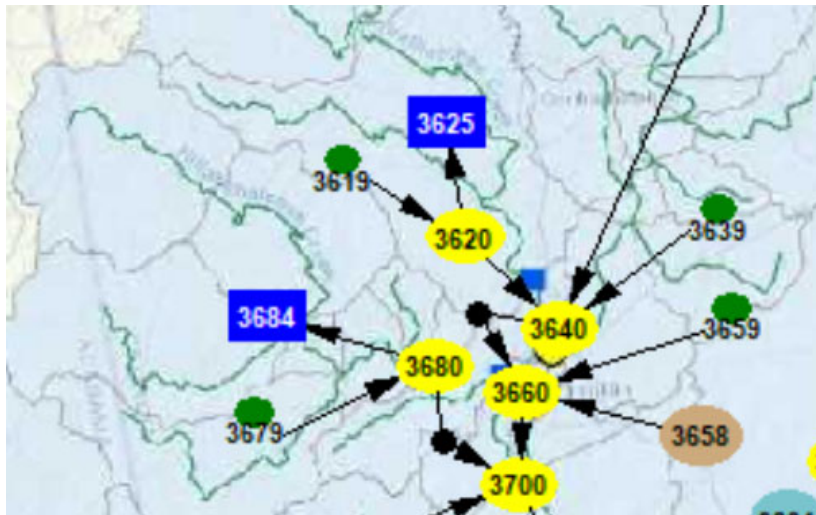
Shortage is zero -- indicates no challenges encountered.



- **Baseline:** Average demands 2010-2018
- **Baseline Drought:** 2011 demands
- **Forecast (ag constant):** 2060 demands with ag held constant at baseline
- **Forecast (ag growth):** 2060 demands with ag projected growth

# Water Supply Example 2

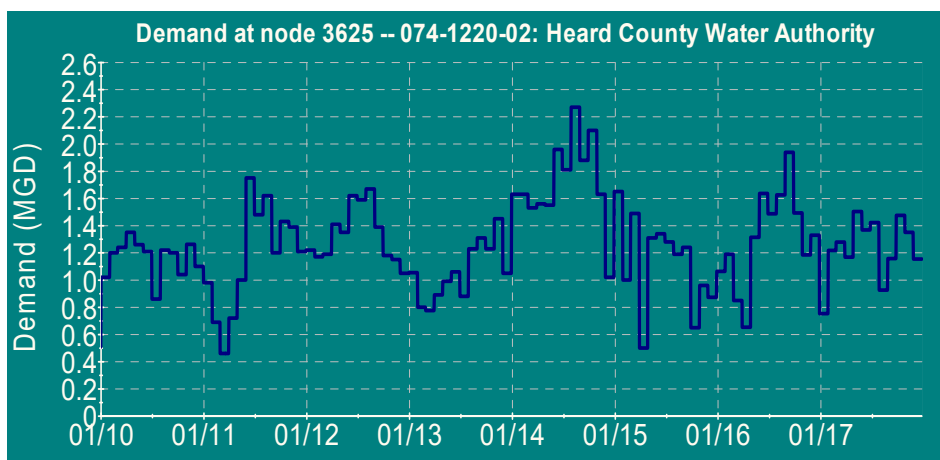
- Permit holder: Heard County Water Authority
- Permit 074-1220-02, BEAM Node 3625
- Withdrawal limits: 4 mgd (daily)/3.1 mgd(monthly)
- Centralhatchee Creek IFPT of 13.0 cfs (8.4 mgd)



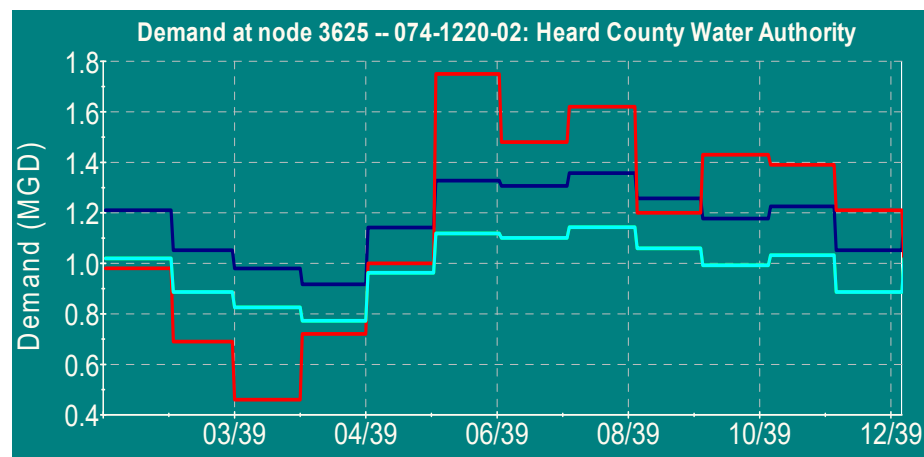
# Heard County Water Authority

Permit 074-1220-02

Withdrawal Amount Setting-  
average of 2010-2018

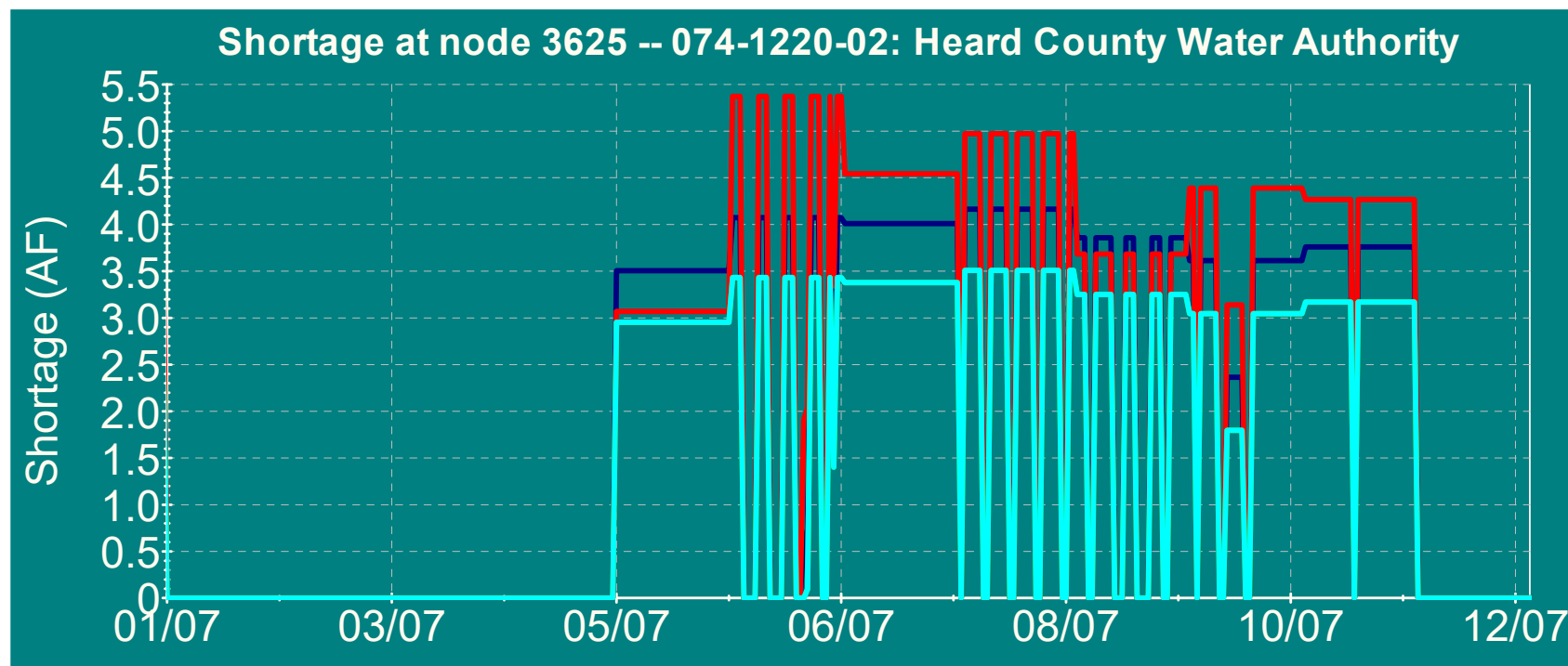


## Baseline and Future Demand



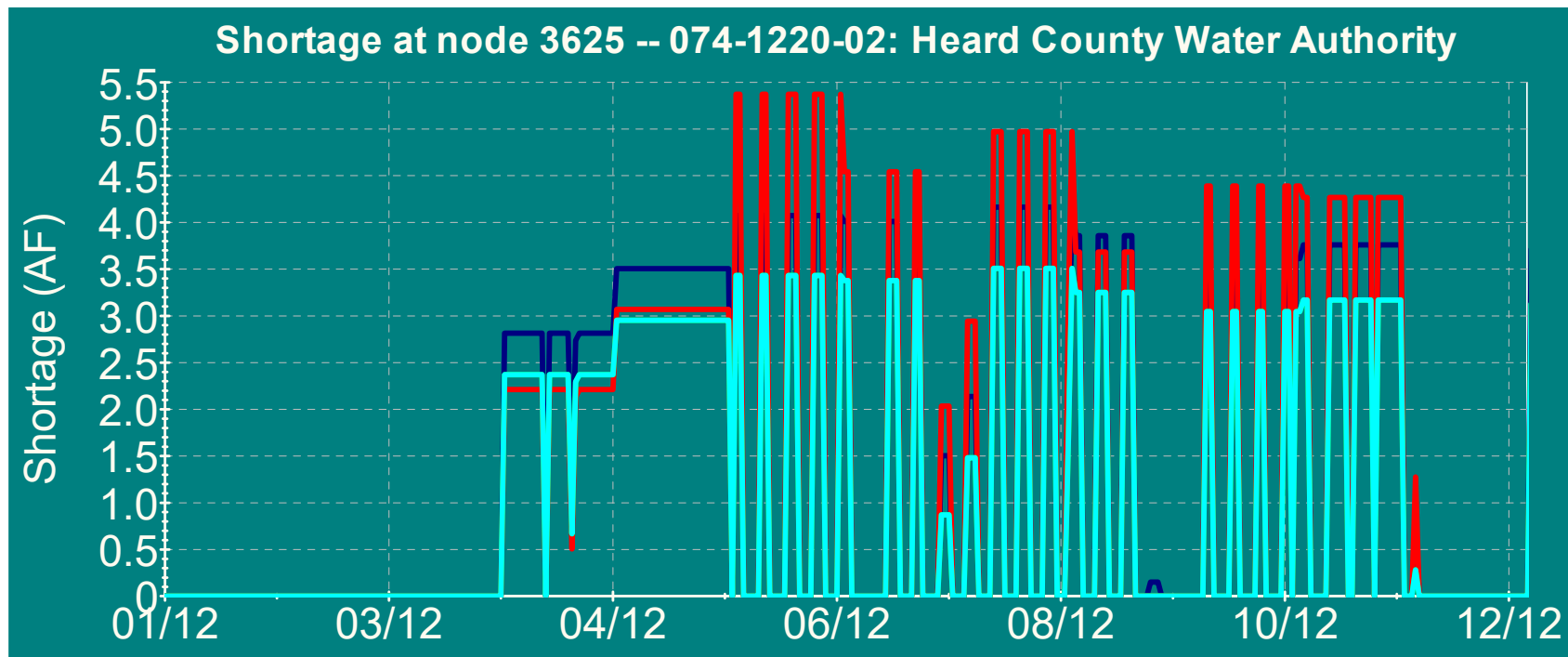
- **Baseline:** Average demands 2010-2018
- **Baseline Drought:** 2011 demands
- **Forecast (ag constant):** 2060 demands with ag held constant at baseline
- **Forecast (ag growth):** 2060 demands with ag projected growth

## Water Supply Challenge Under 2007 Hydrologic Conditions



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

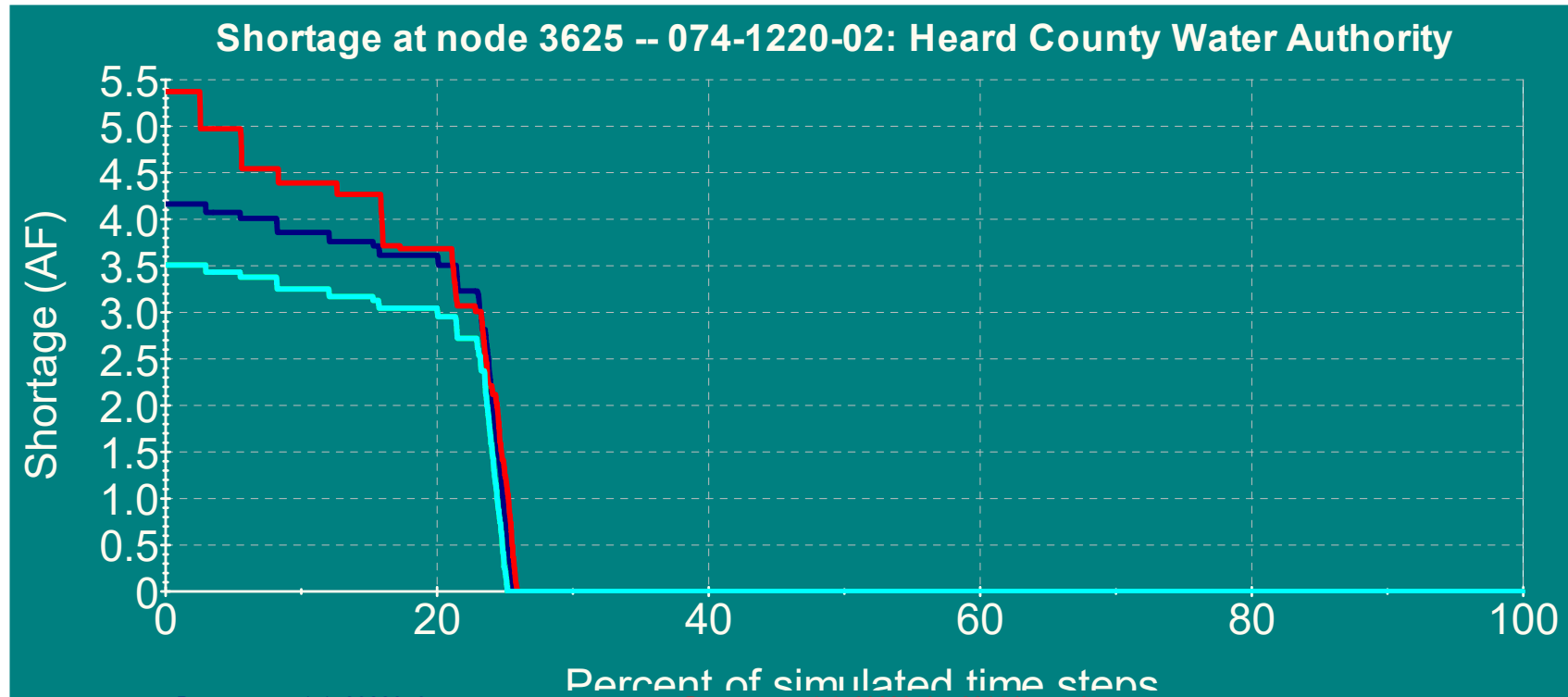
# Water Supply Challenge Under 2012 Hydrologic Conditions



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant) 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth



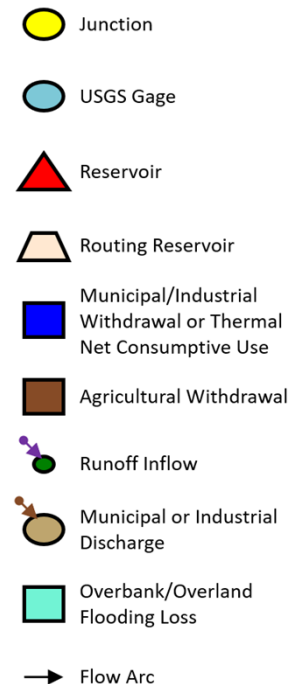
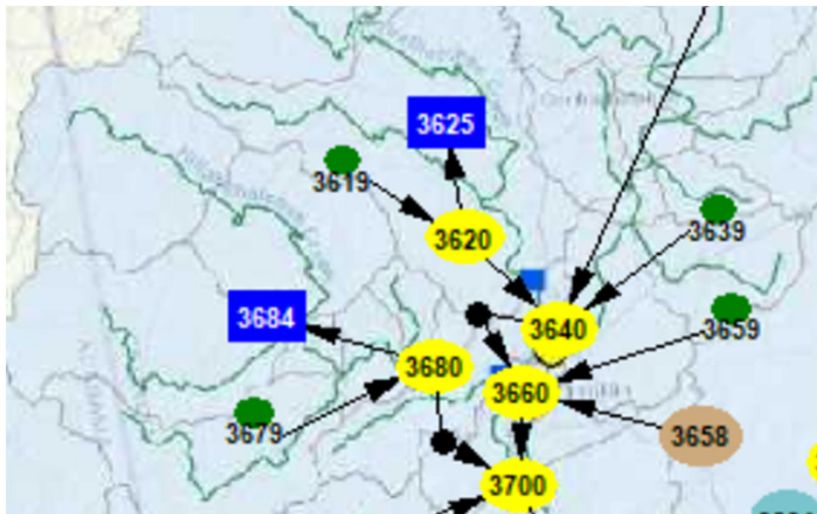
## Water Supply Shortage Frequency in 1939-2018



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

# Water Supply Example 3

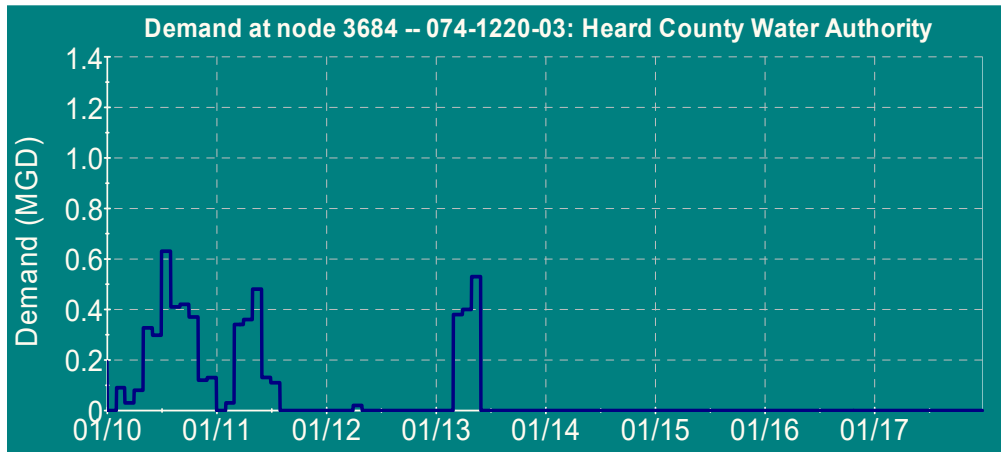
- Permit holder: Heard County Water Authority
- Permit 074-1220-03, BEAM Node 3684
- Withdrawal limits: 4 mgd (daily)/3.1 mgd(monthly)
- Hillabahatchee Creek IFPT of 12.0 cfs (7.8 mgd)



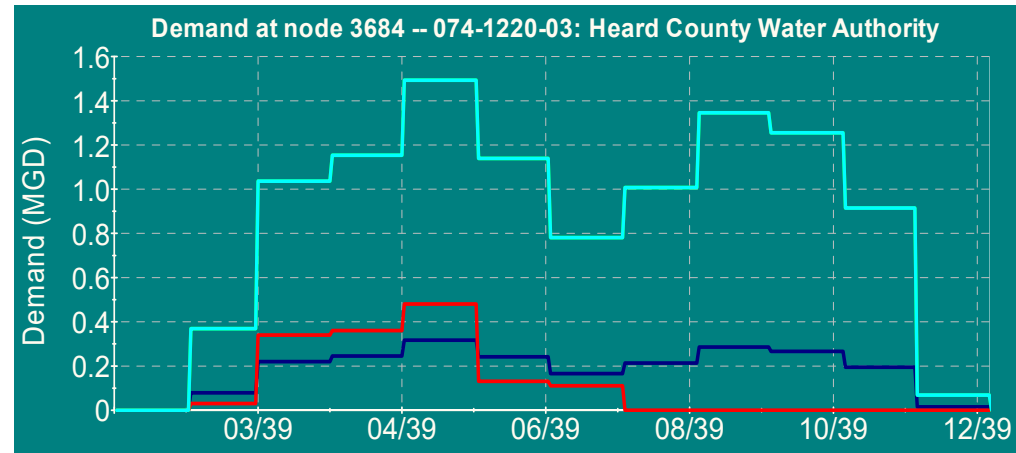
# Heard County Water Authority

Permit 074-1220-03

Withdrawal Amount Setting-  
average of 2010-2018

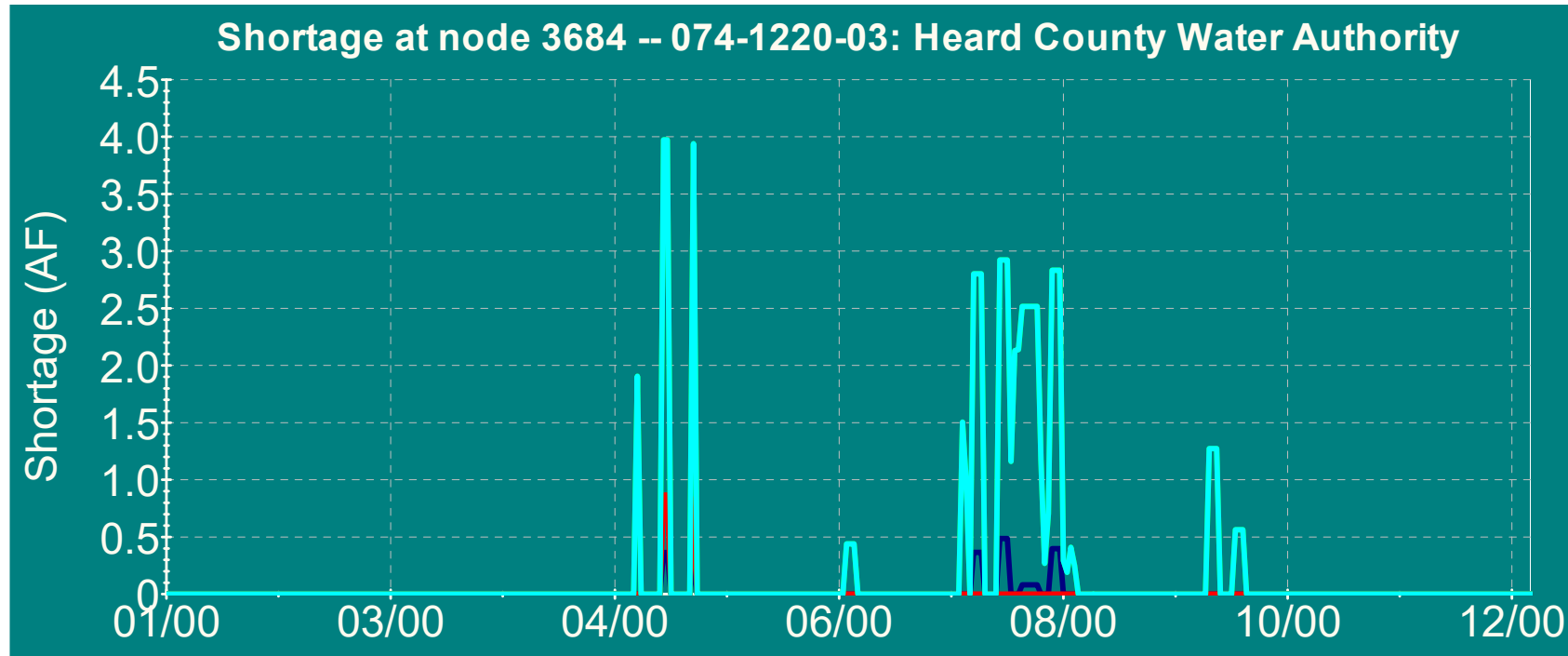


## Baseline and Future Demand



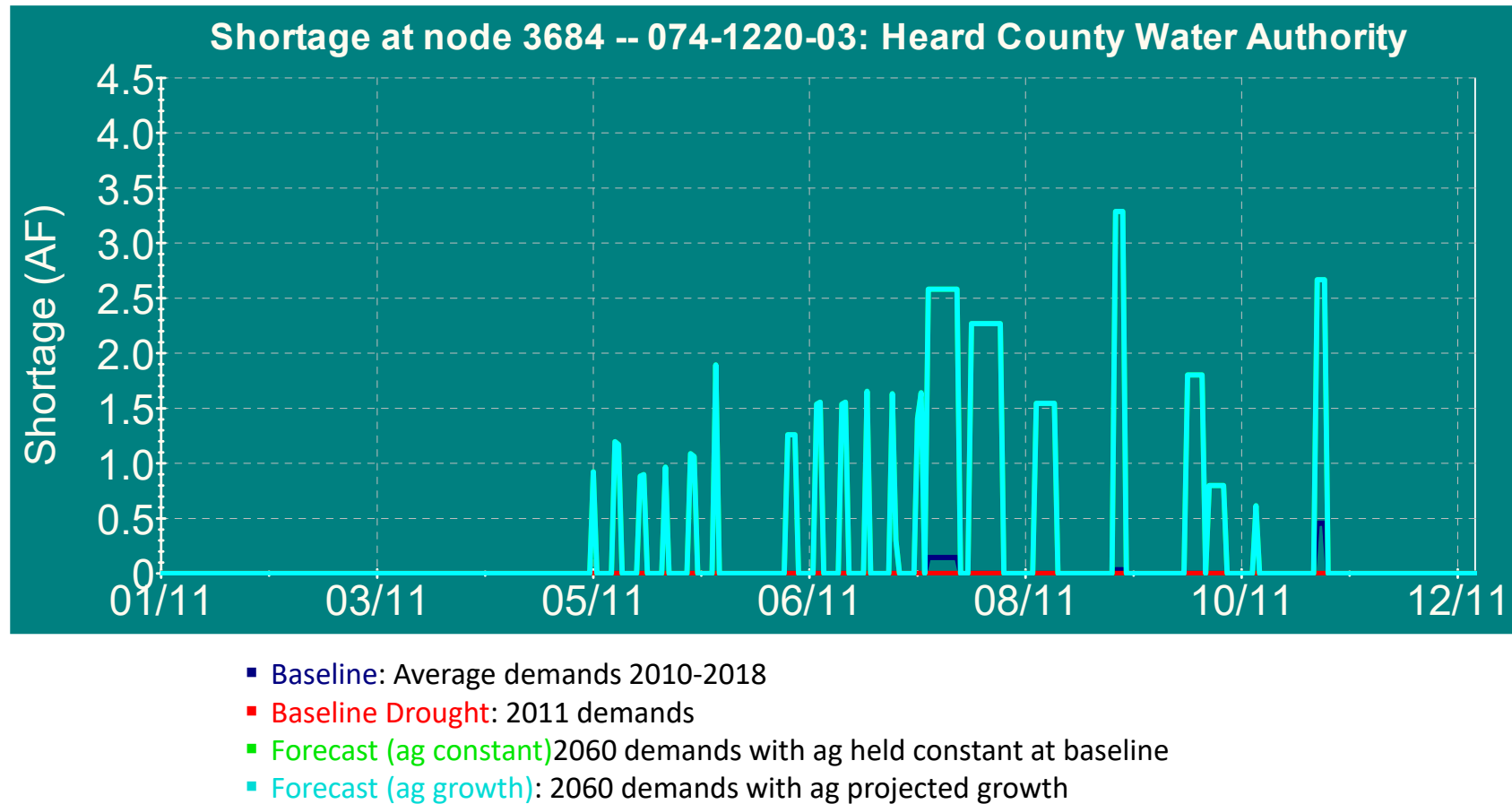
- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

# Water Supply Challenge Under 2000 Hydrologic Conditions



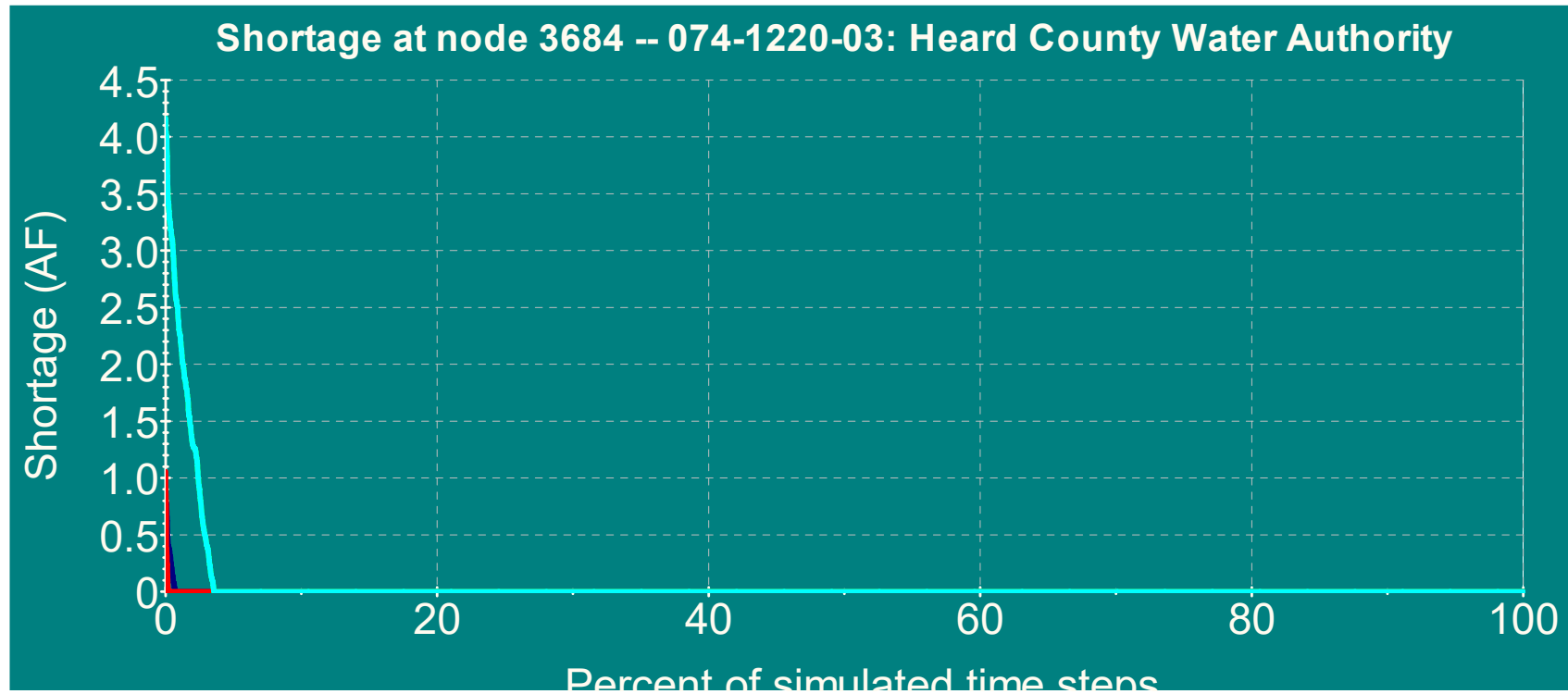
- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

## Water Supply Challenge under 2011 Hydrologic Conditions





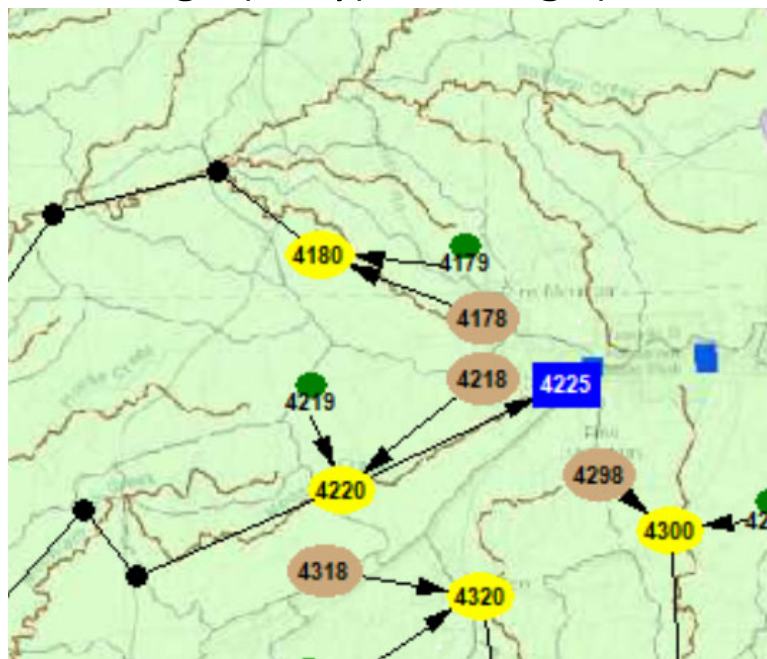
## Water Supply Shortage Frequency in 1939-2018



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

# Water Supply Example 4

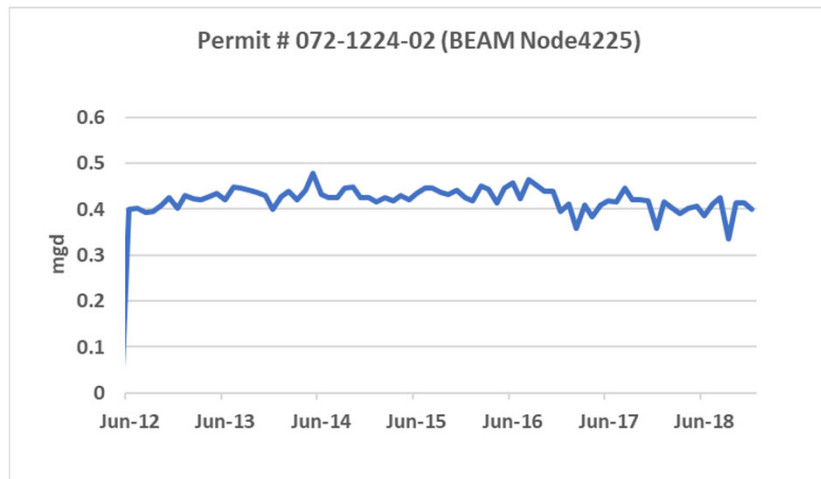
- Permit holder: PVA Water Association, Inc
- Permit 072-1224-02, BEAM Node 4225
- Withdrawal limits: 0.55 mgd (daily)/0.50 mgd(monthly)



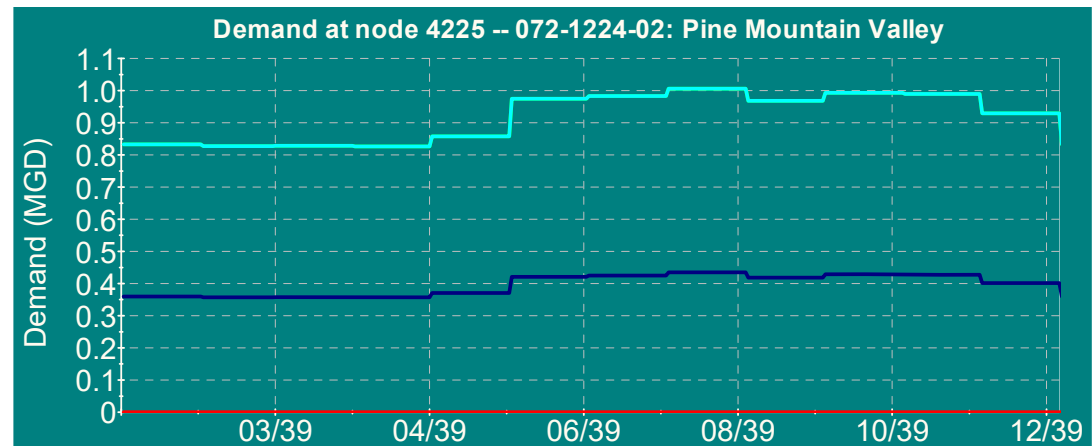
# PVA Water Association, Inc

Permit 072-1224-02

Withdrawal Amount Setting-  
average of 2010-2018

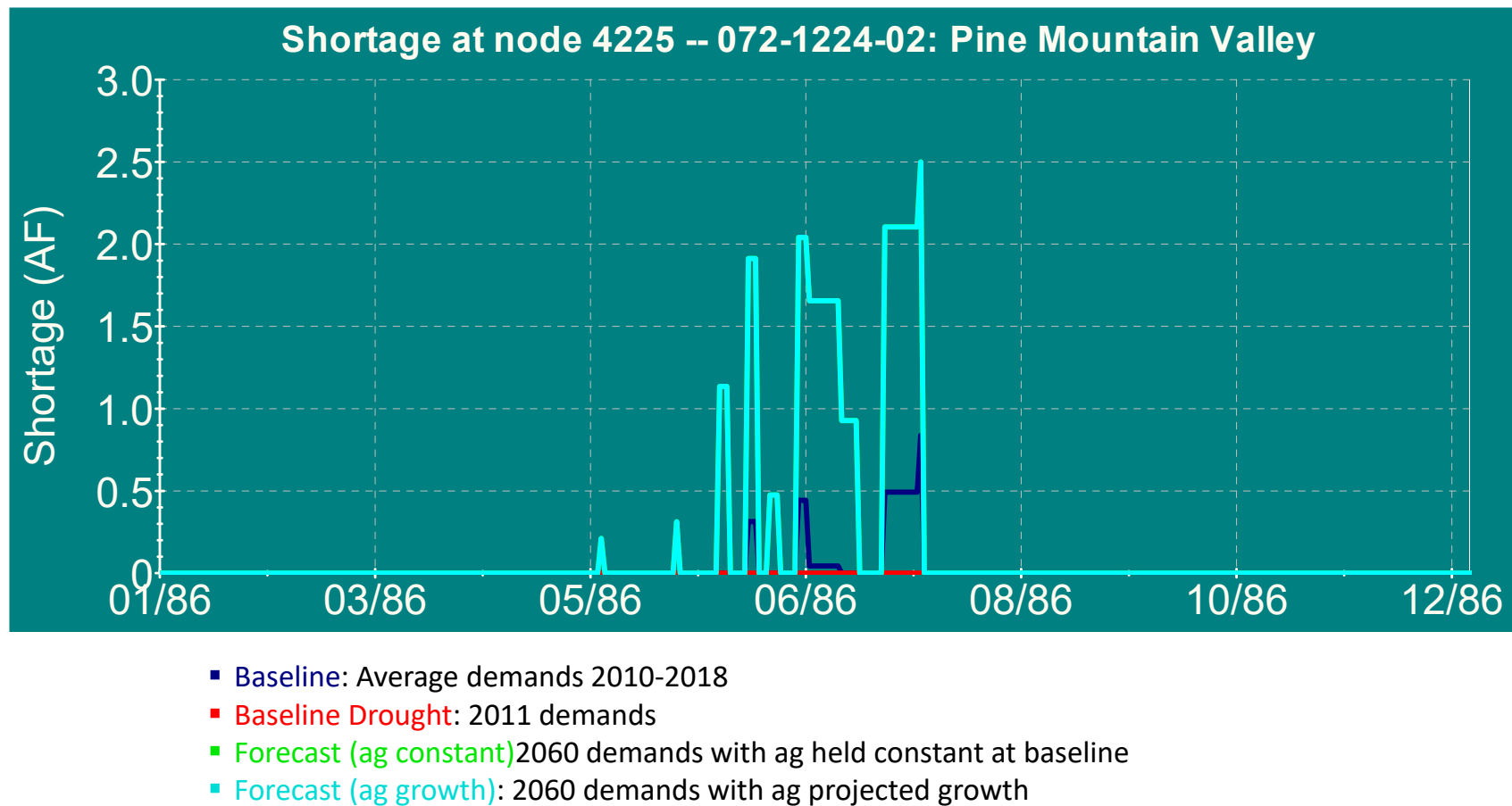


## Baseline and Future Demand

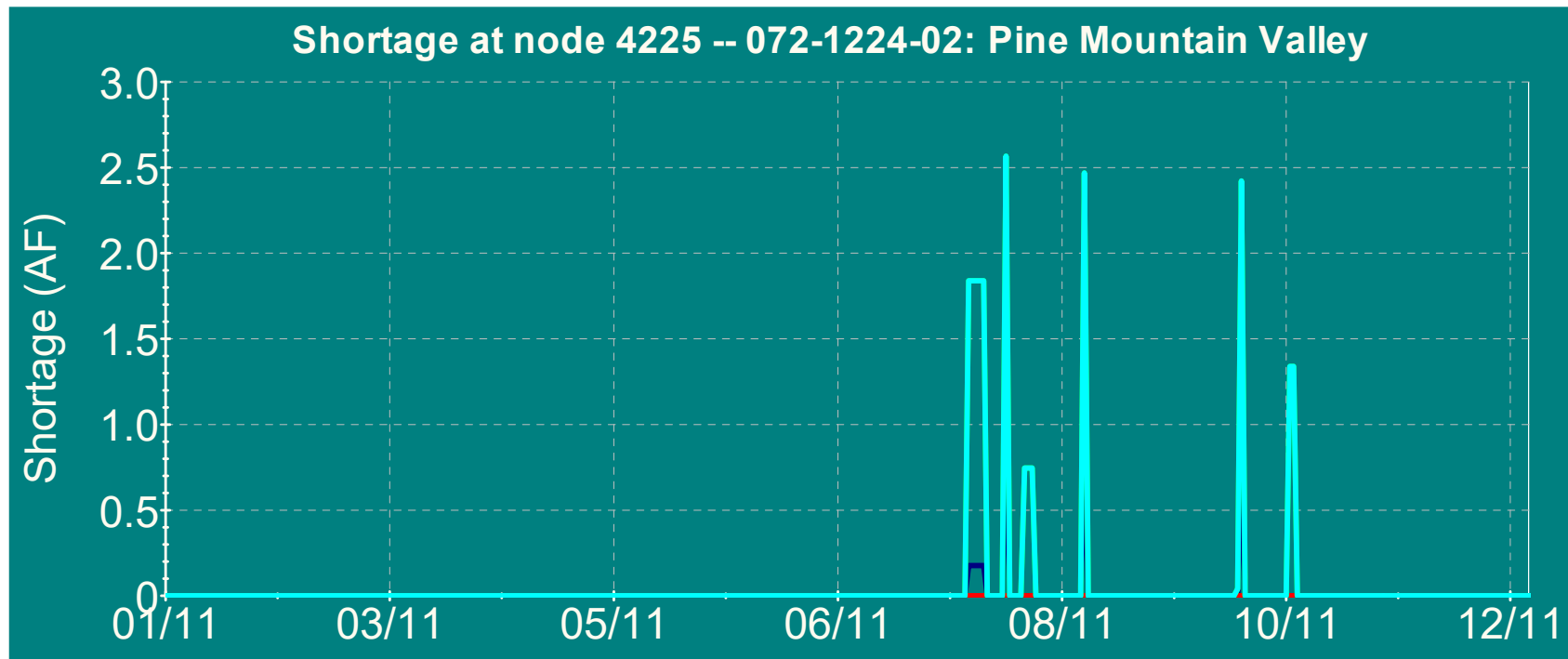


- **Baseline:** Average demands 2010-2018
- **Baseline Drought:** 2011 demands
- **Forecast (ag constant):** 2060 demands with ag held constant at baseline
- **Forecast (ag growth):** 2060 demands with ag projected growth

## Water Supply Challenge under 1986 Hydrologic Conditions



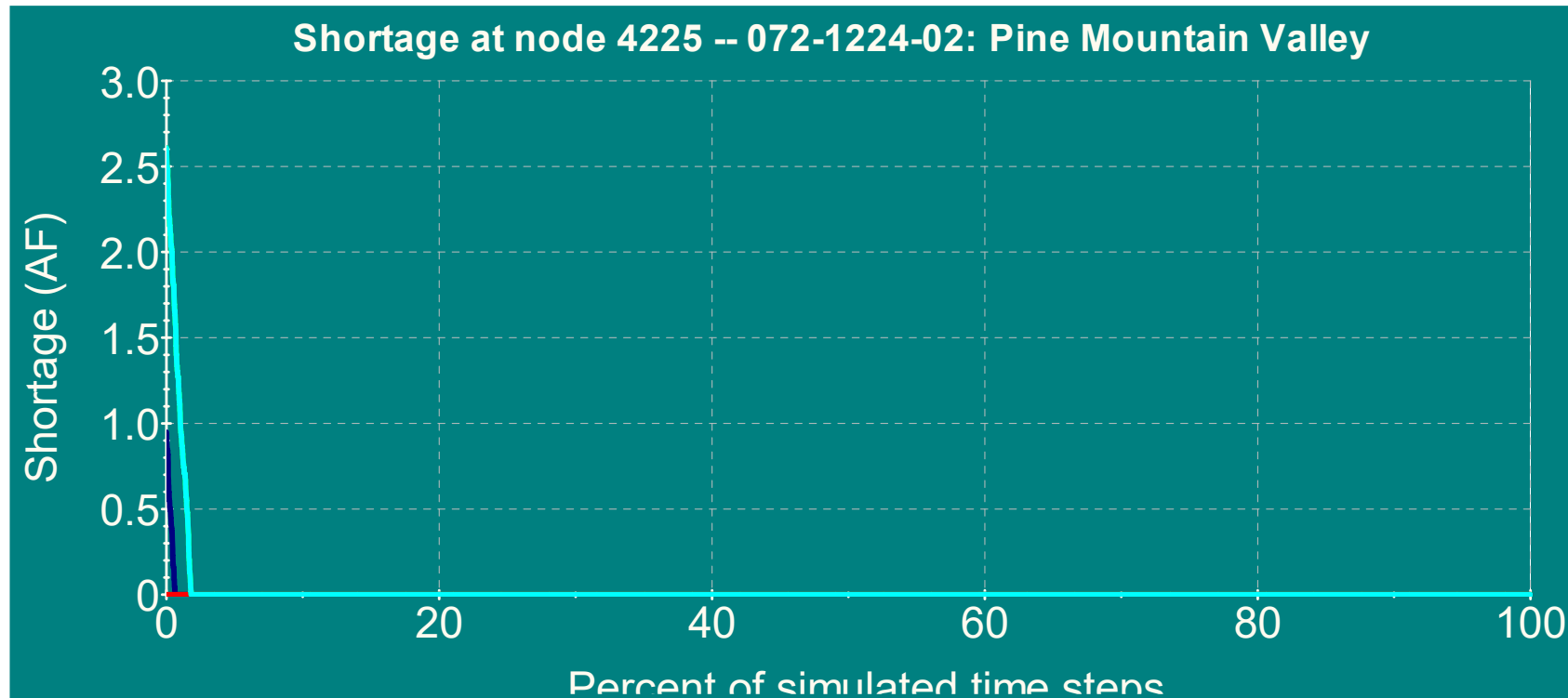
## Water Supply Challenge under 2011 Hydrologic Conditions



- **Baseline:** Average demands 2010-2018
- **Baseline Drought:** 2011 demands
- **Forecast (ag constant):** 2060 demands with ag held constant at baseline
- **Forecast (ag growth):** 2060 demands with ag projected growth



## Water Supply Shortage Frequency in 1939-2018



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

# Pine Mountain Valley Water Association

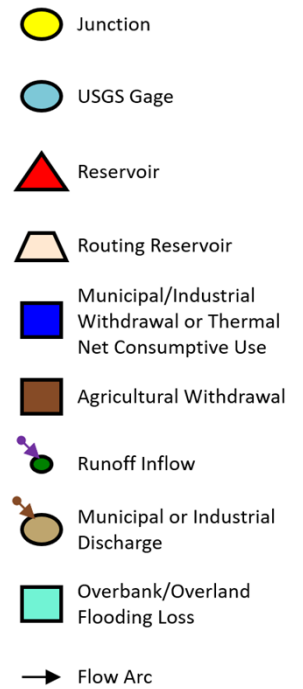
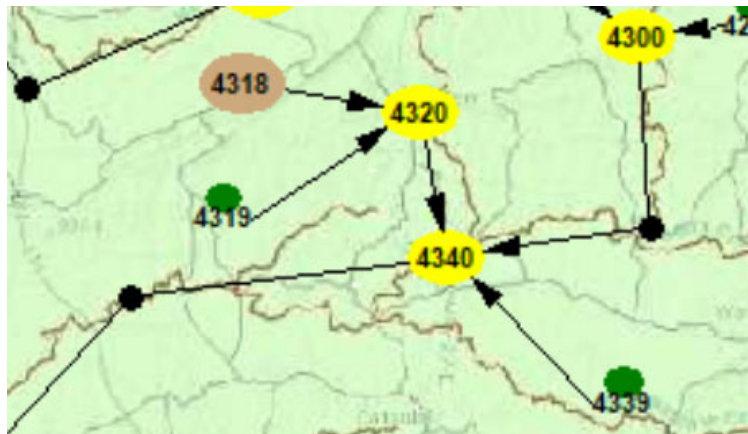
- Water supply intake located at “X Street Springs.”
- Water withdrawal permit does not have an instream flow protection threshold.
- Permittee’s intake has a small drainage area of 0.05 acre.

# Wastewater Assimilation Challenge

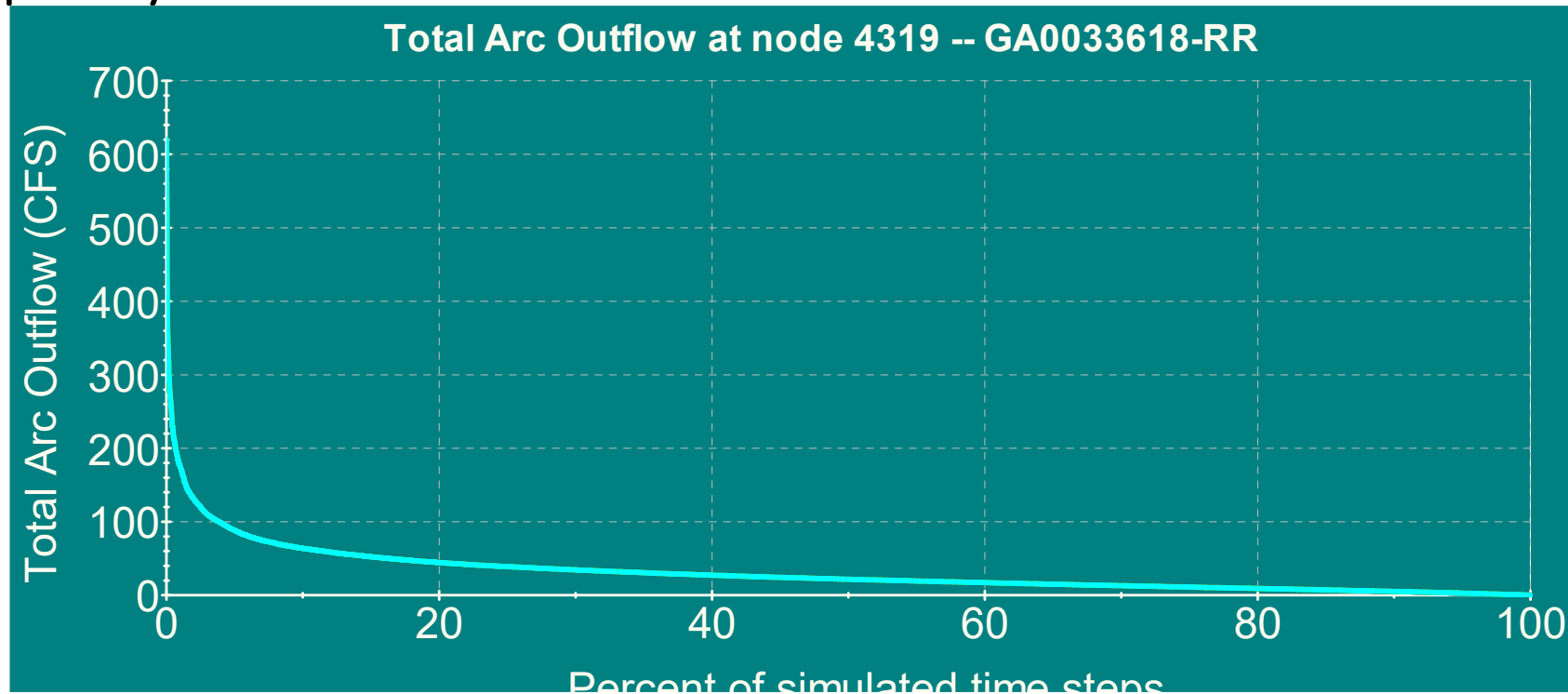
- Wastewater increases with population growth, which may also bring challenge to water resource management.
- Effluent limitation is determined by two factors:
  - Available technology – technology based effluent limitations
  - Water quality standards – upholding water quality standards in the receiving 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 holder: City of Hamilton (Hamilton WPCP)
- Permit GA 0033618 (BEAM Node 4318)
- Permitted monthly discharge flow: 0.2 mgd
- 7Q10 Flow at discharge location: 0.96 cfs

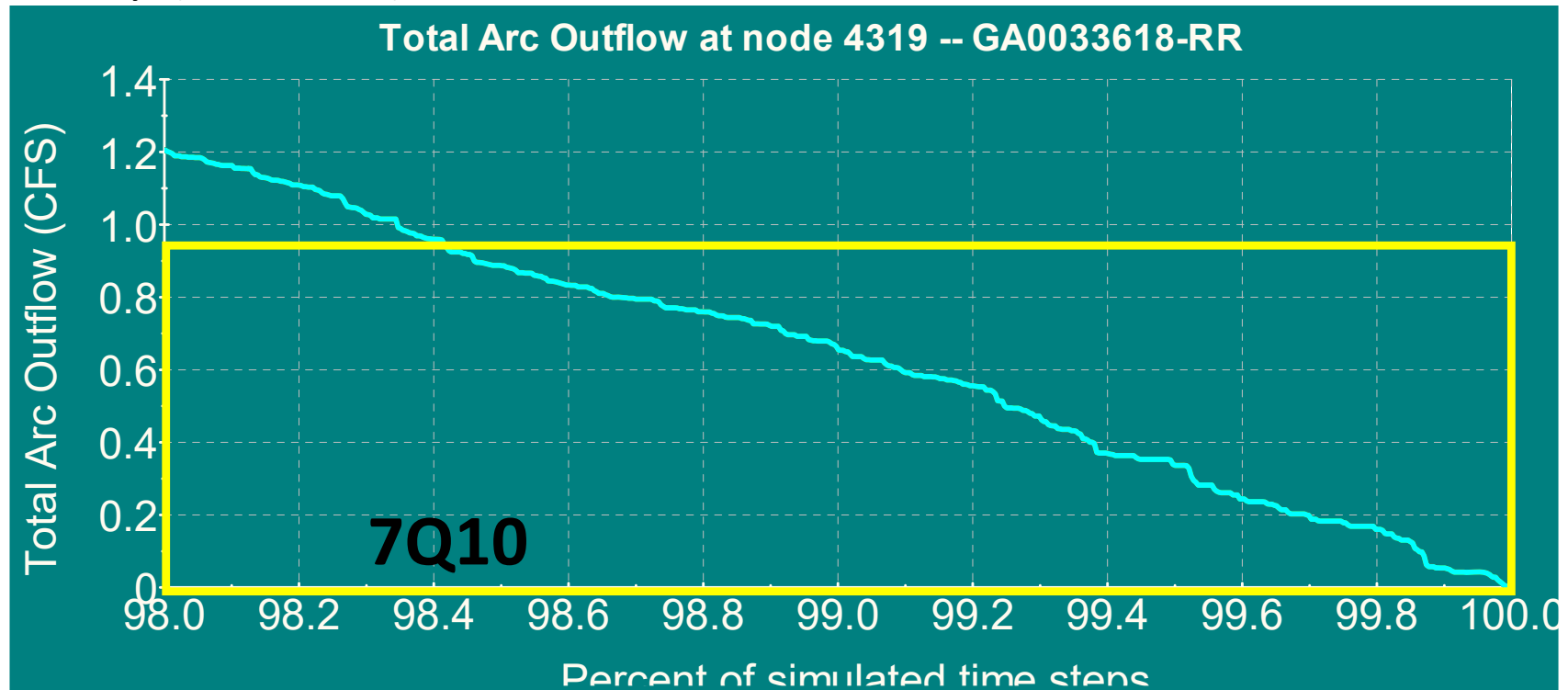


## Simulation Results at Hamilton (GA 0033618) Location Flow Frequency



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

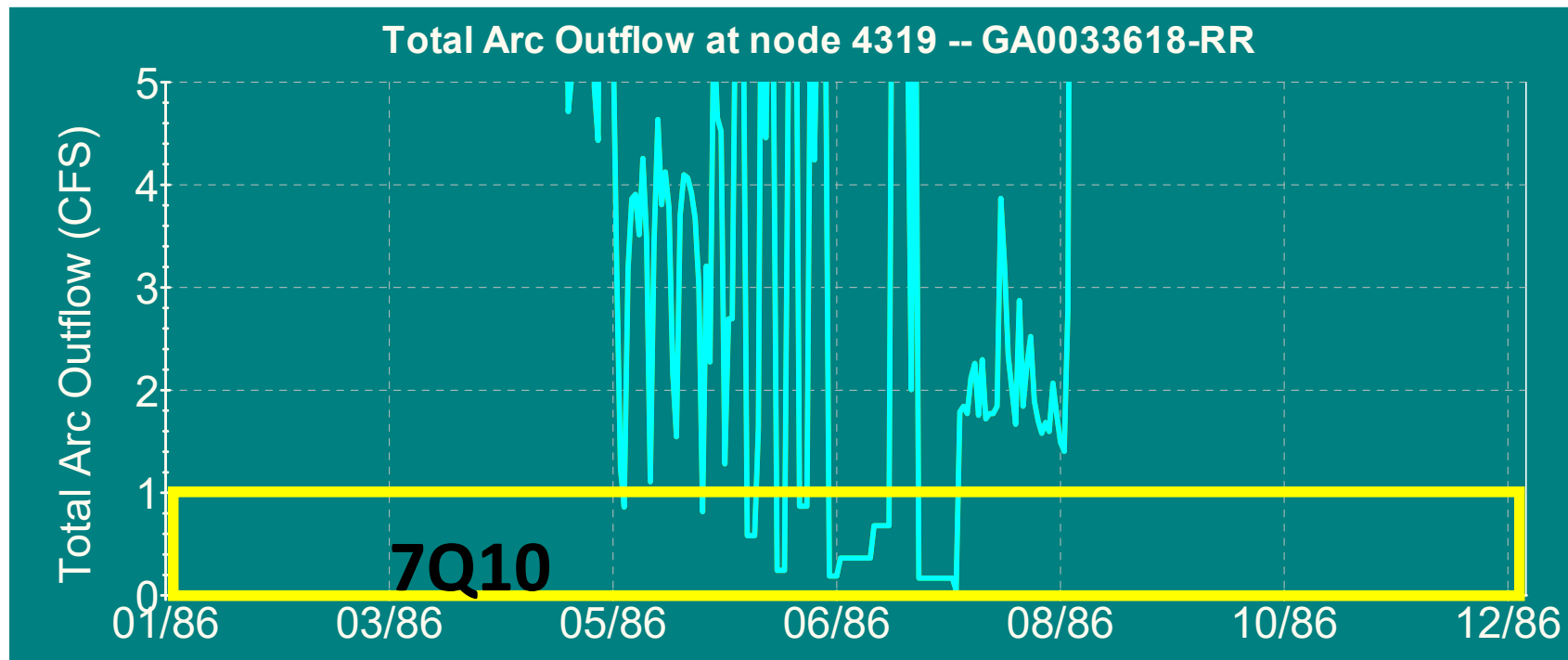
## Simulation Results at Hamilton (GA 0033618) Location Flow Frequency (low end)



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

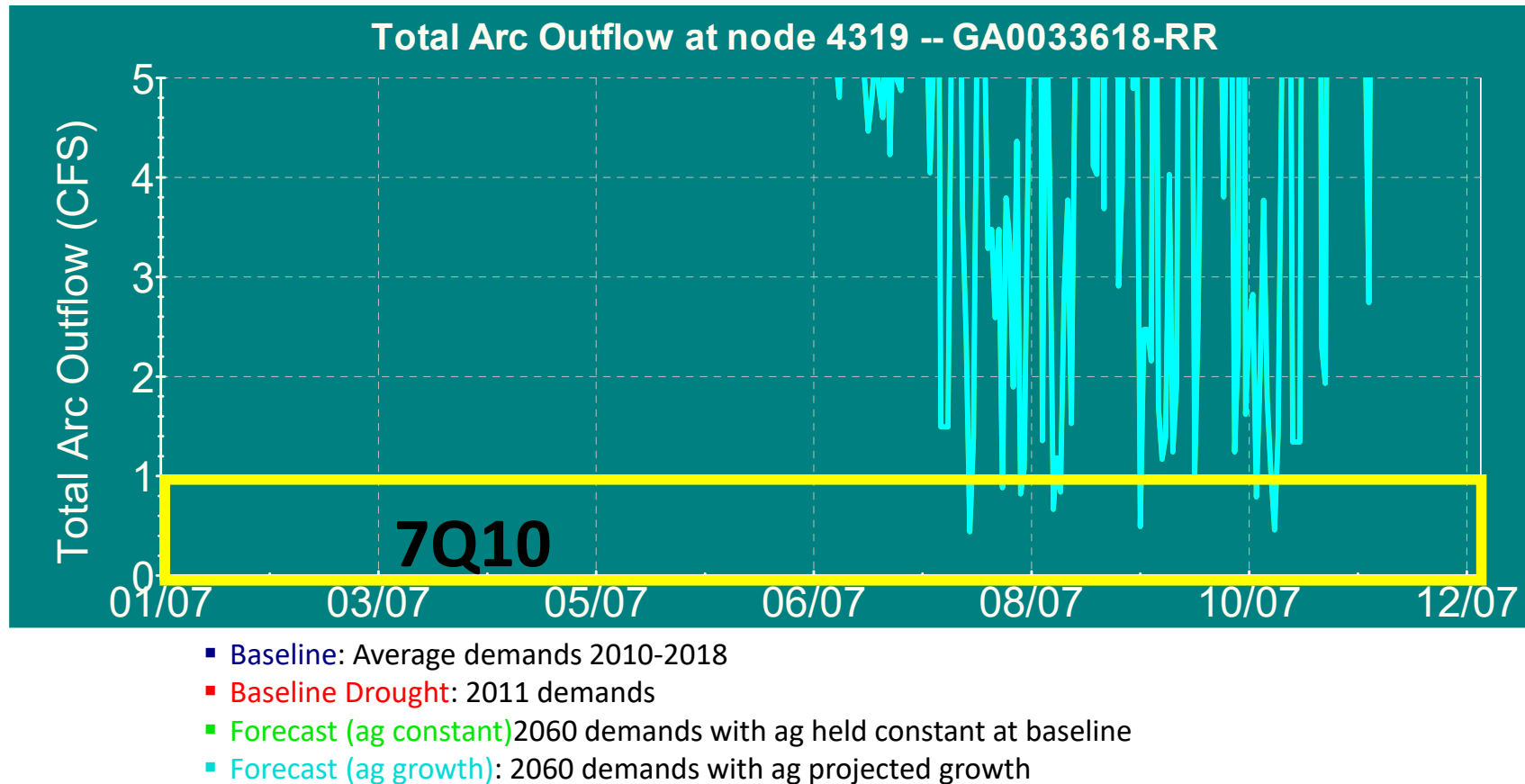


## Simulated Flow at Hamilton GA 0033618 Discharge Location under 1986 Hydrology



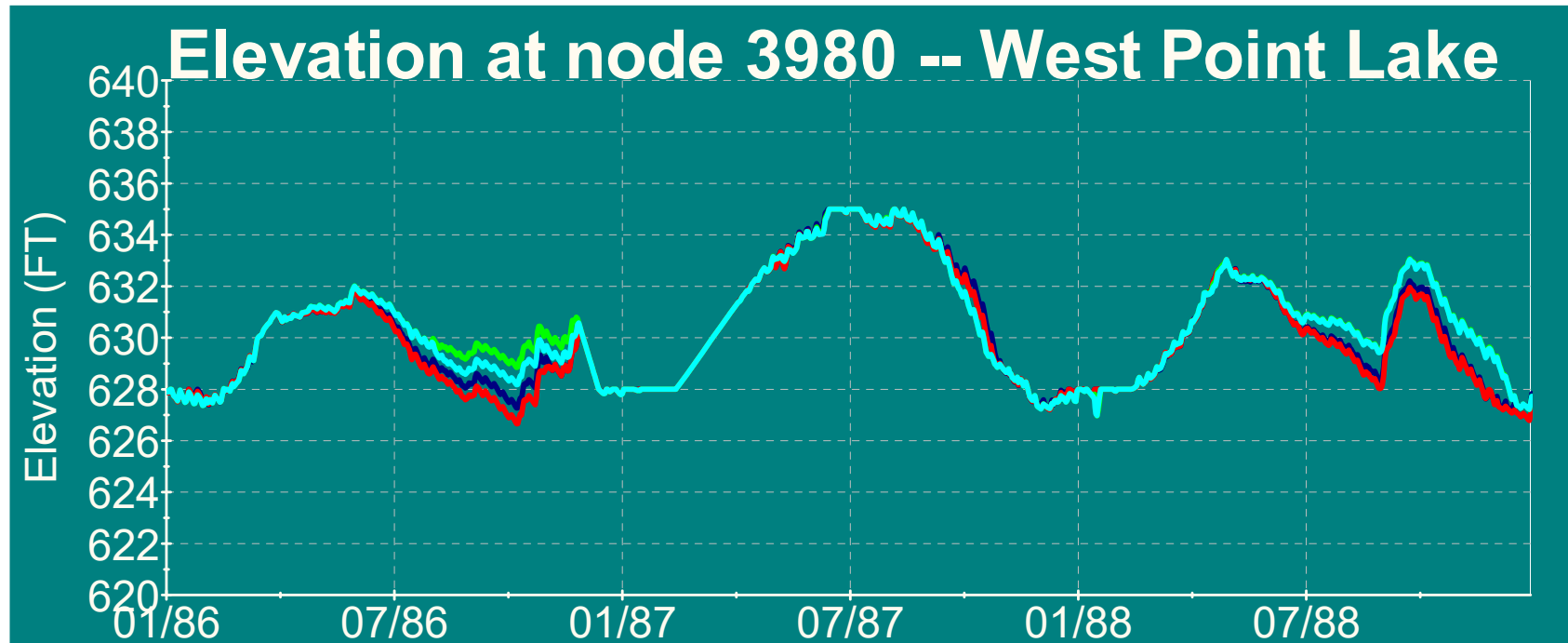
- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant) 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

## Simulated Flow at Hamilton (GA 0033618) Discharge Location under 2007 Hydrology



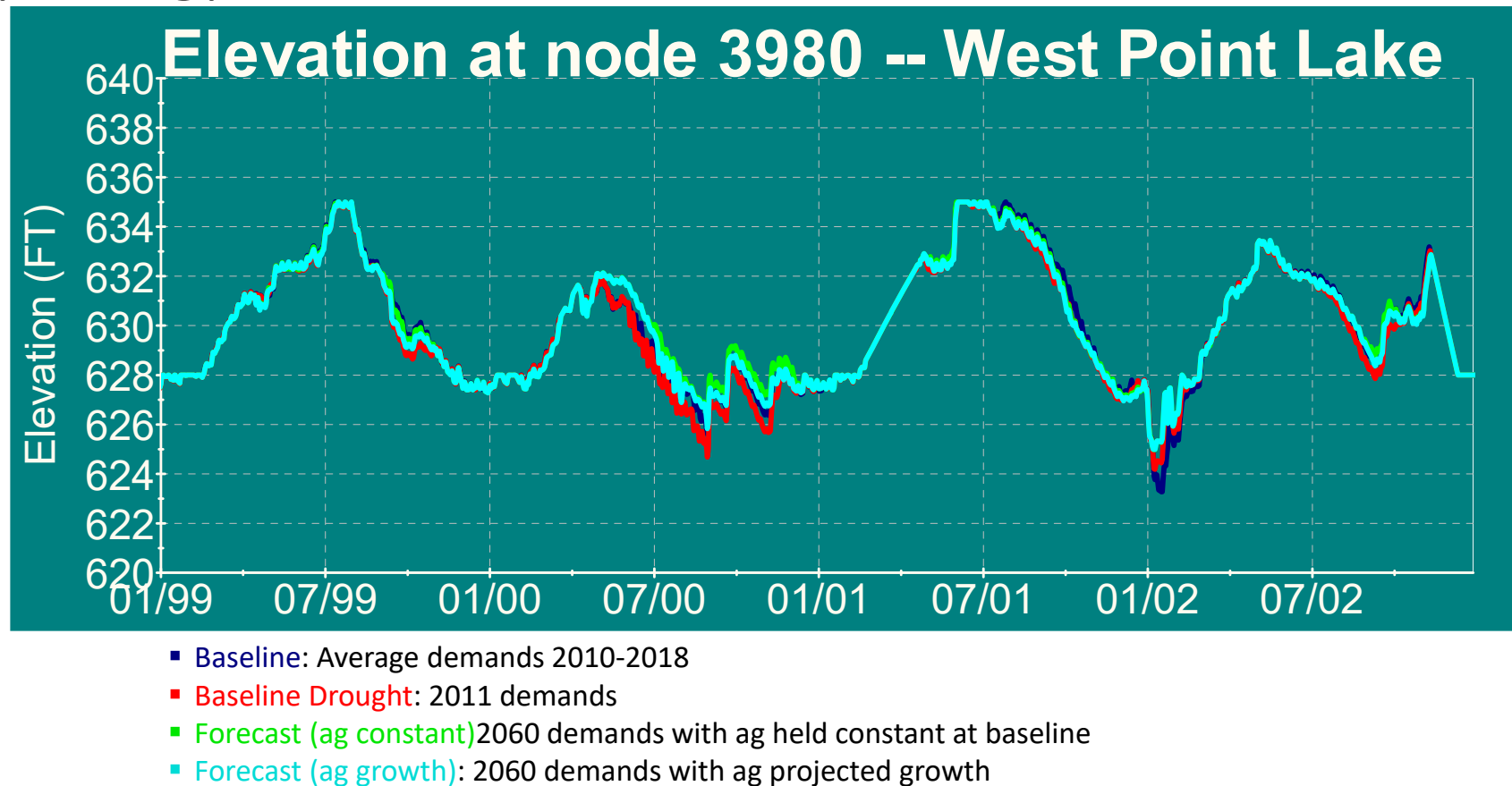


## Simulated West Point Elevation under 1986-1988 Hydrologic Conditions

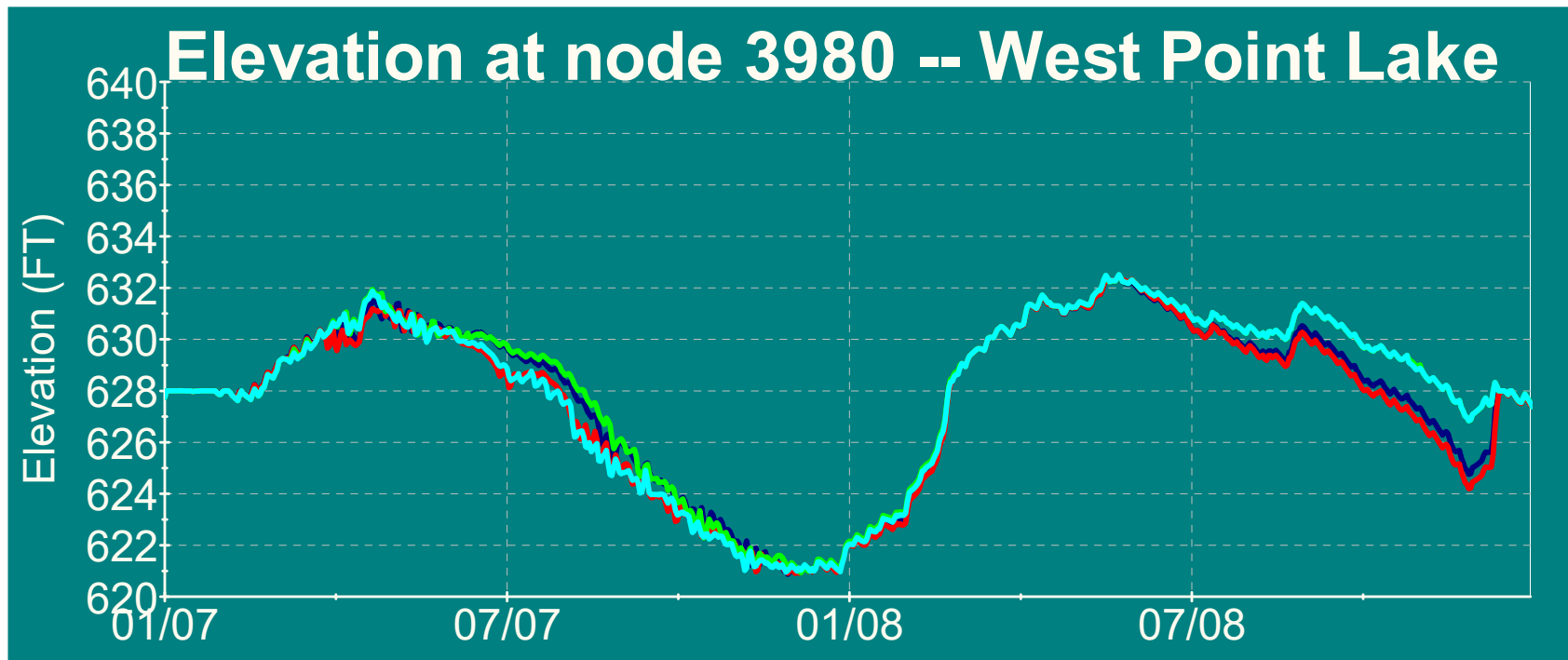


- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

# Simulated West Point Elevation under 1999-2002 Hydrology



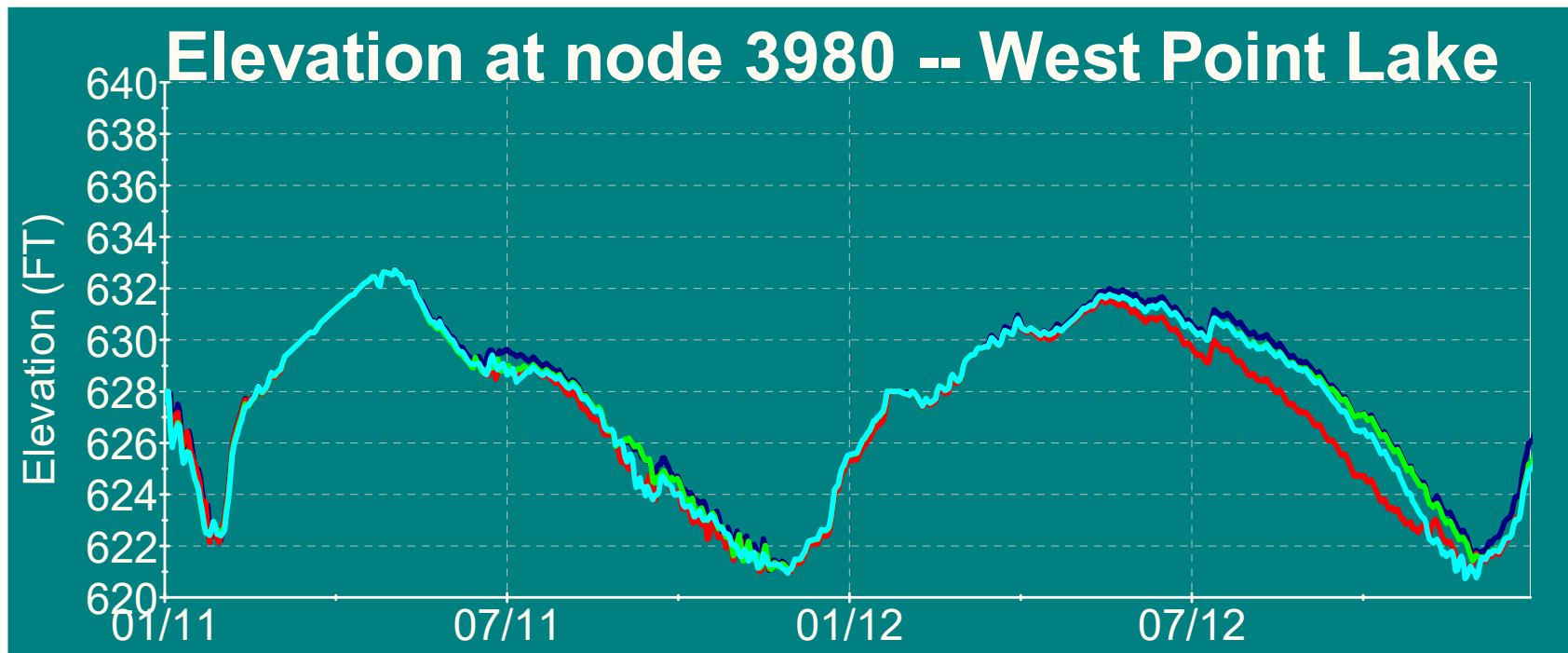
## Simulated West Point Elevation under 2007-2008 Hydrology



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

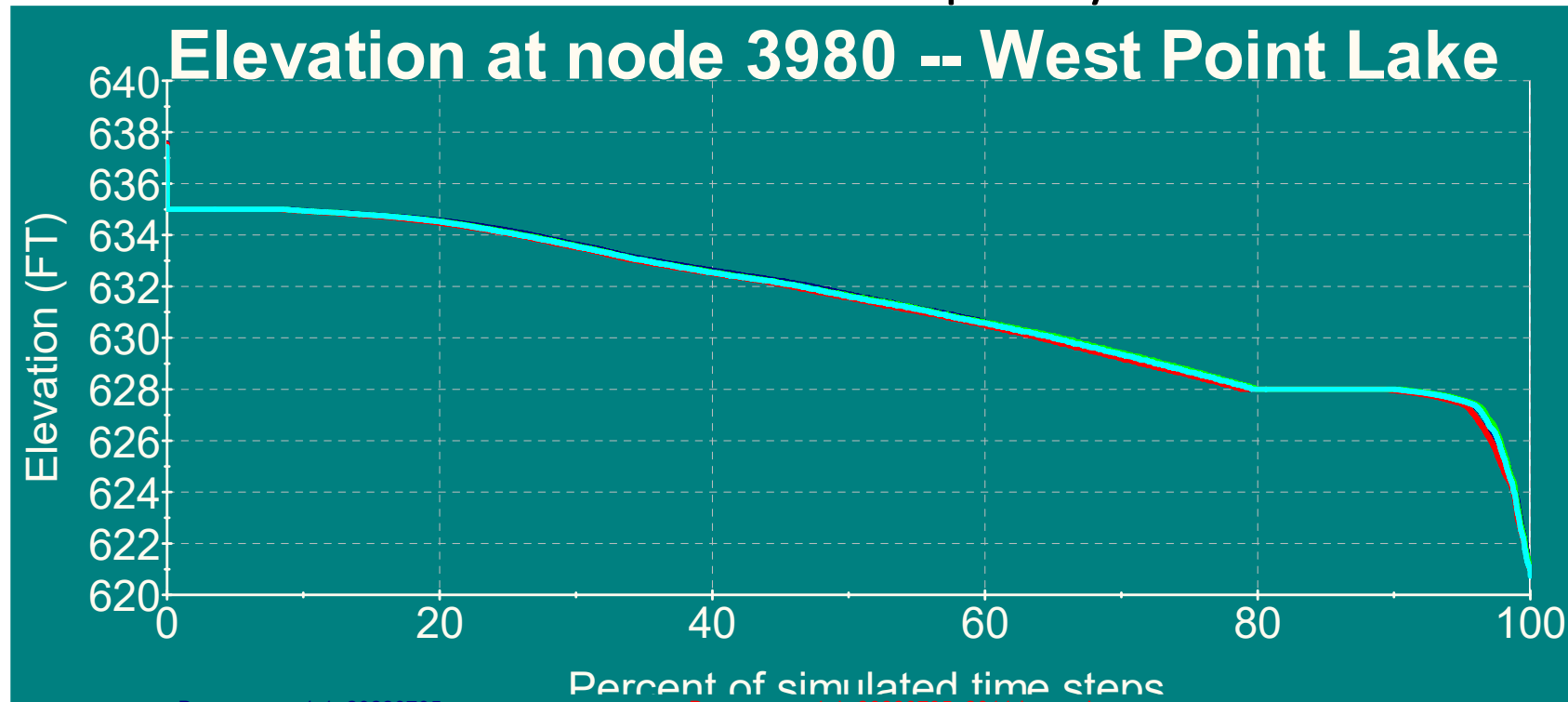


## Simulated West Point Elevation under 2011-2012 Hydrology



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

## Simulated West Point Elevation Frequency



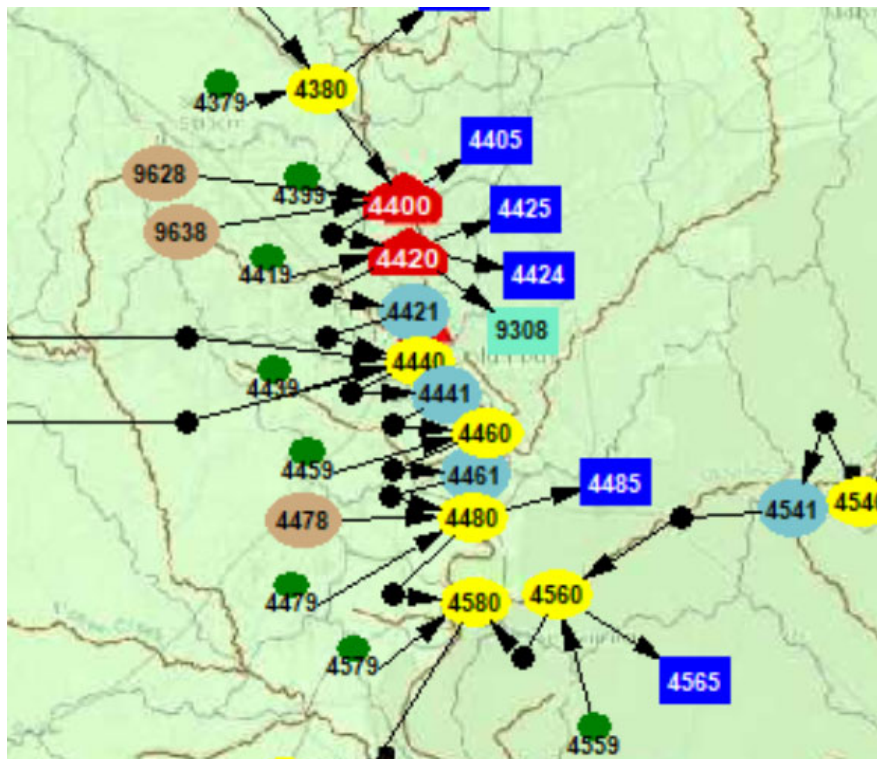
- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

# Summary of West Point Elevation Frequency

	Baseline	Baseline Drought	Forecast (ag constant)	Forecast (ag growth)
Minimum	620.9	620.9	620.9	620.7
10 percentile	628.0	628.0	628.0	628.0
25 percentile	628.7	628.5	628.7	628.7
Median	631.7	631.6	631.6	631.6
75 percentile	634.2	634.1	634.1	634.1
90 percentile	635.0	634.9	634.9	634.9
Maximum	637.6	637.5	636.7	637.4

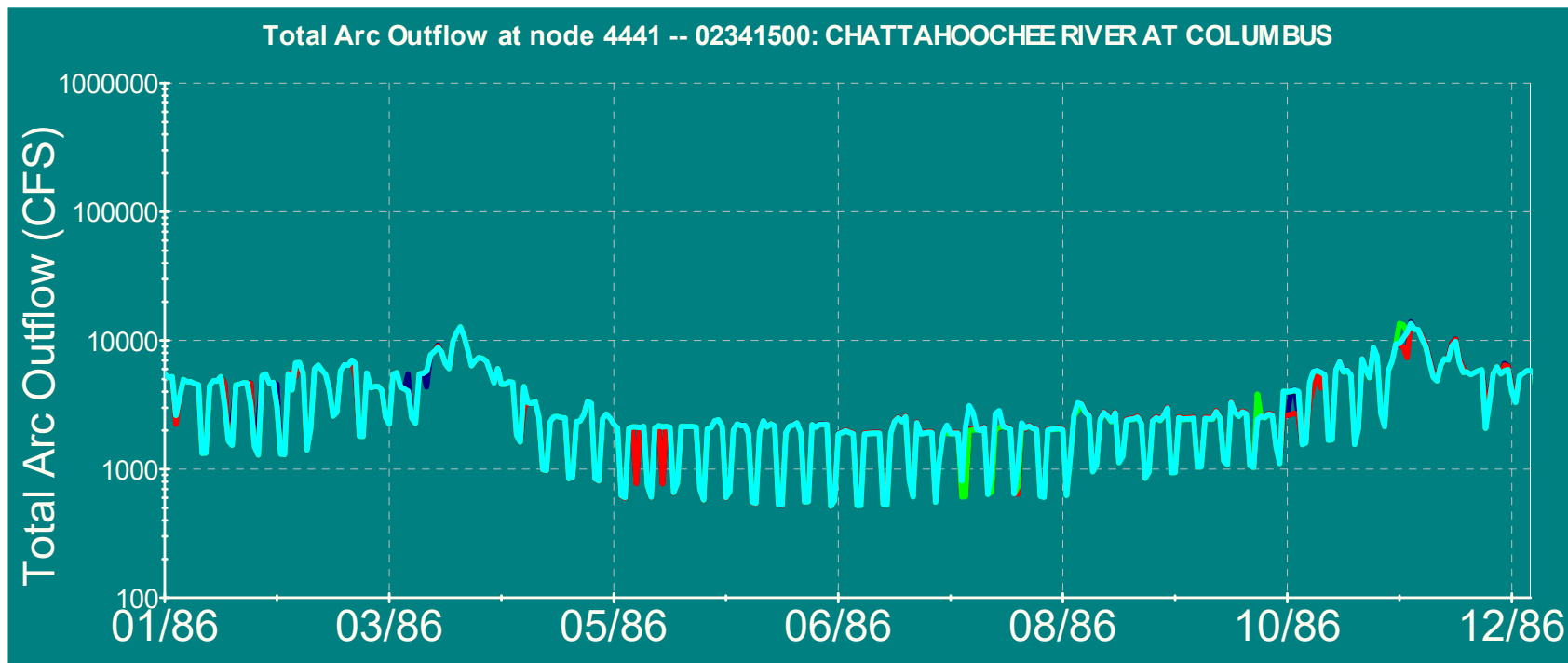
# Columbus Flow Condition

## BEAM Node 4441



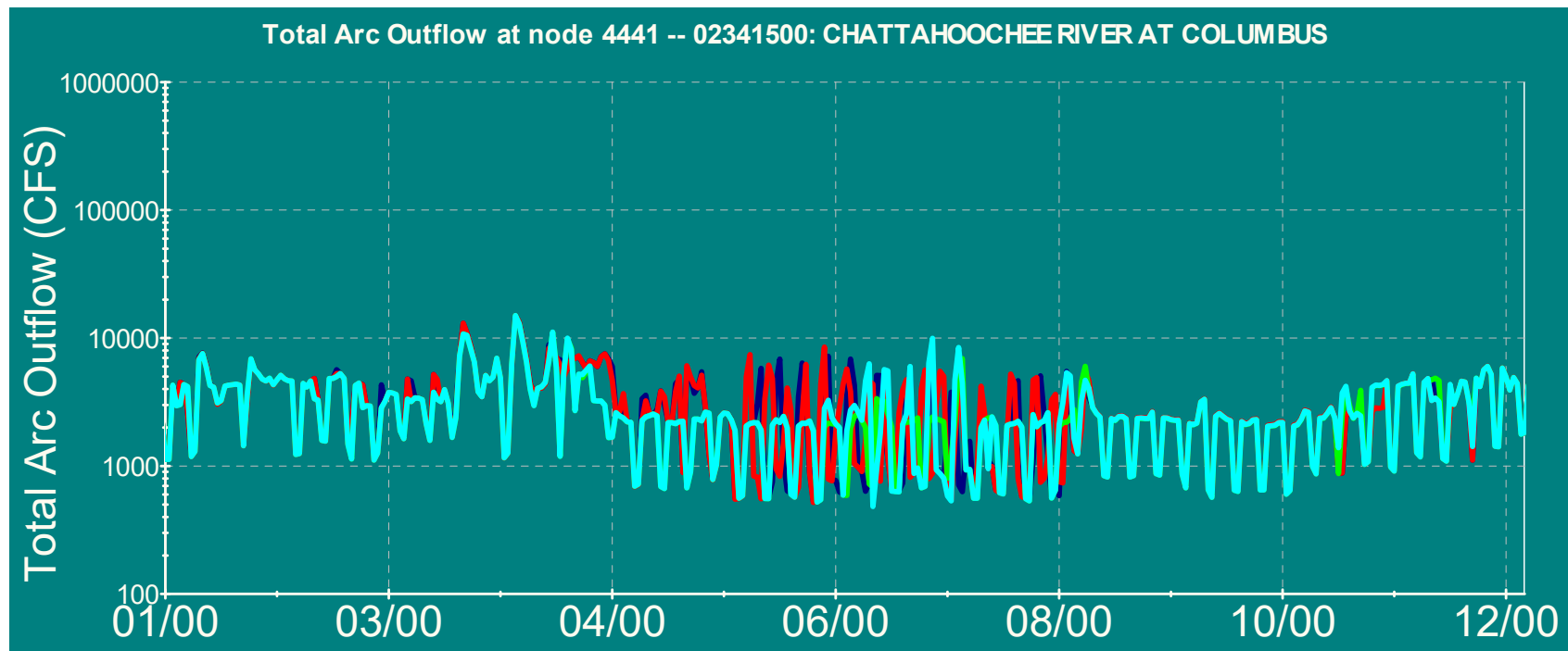
- Junction
- USGS Gage
- Reservoir
- Routing Reservoir
- Municipal/Industrial Withdrawal or Thermal Net Consumptive Use
- Agricultural Withdrawal
- Runoff Inflow
- Municipal or Industrial Discharge
- Overbank/Overland Flooding Loss
- Flow Arc

## Simulated Flow at Columbus (USGS 02341500) under 1986 Hydrology



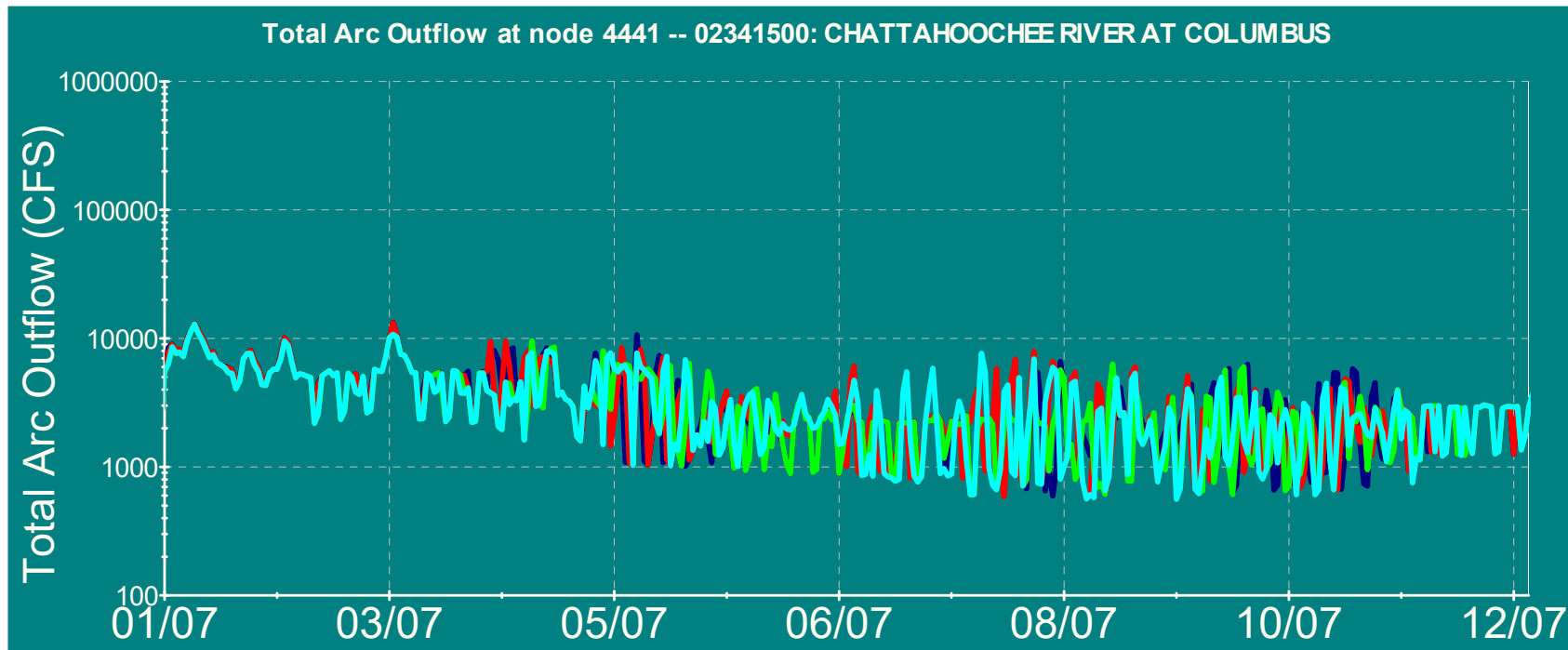
- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

## Simulated Flow at Columbus (USGS 02341500) under 2000 Hydrology



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

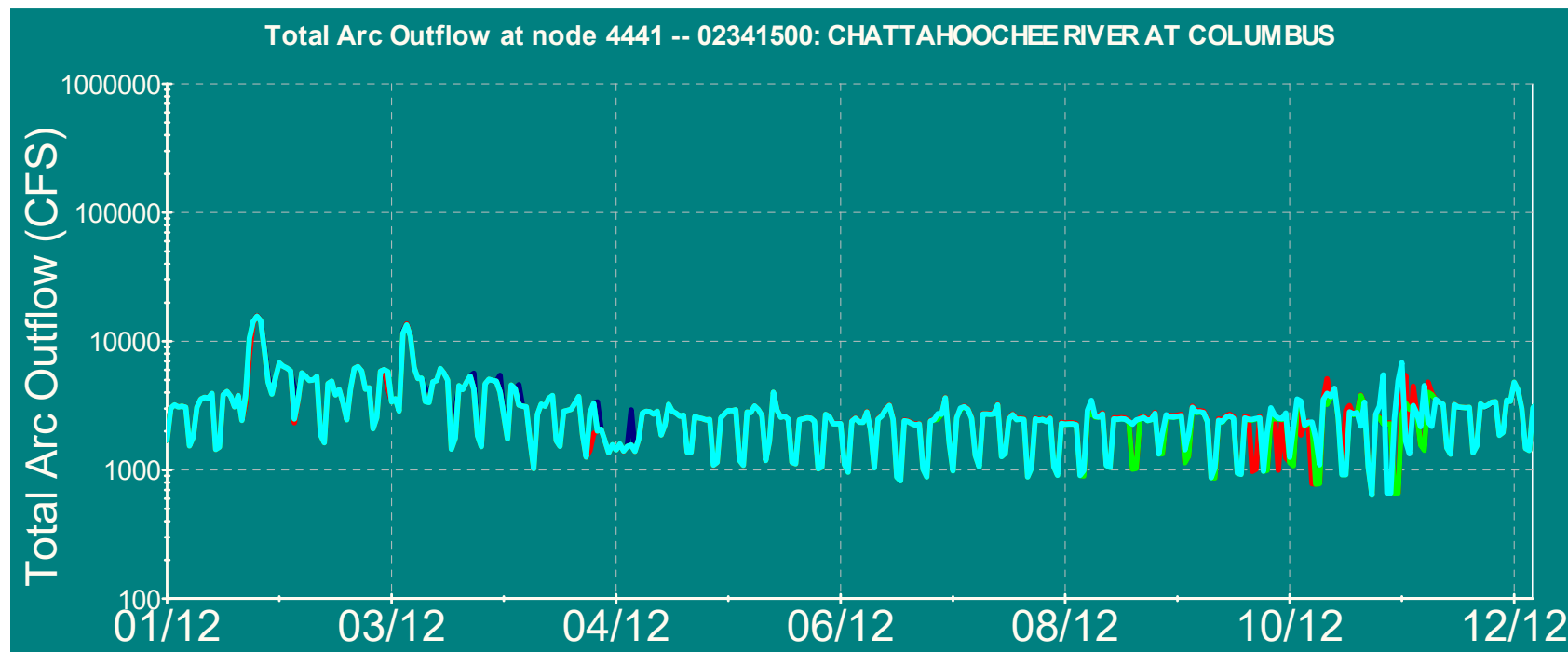
## Simulated Flow at Columbus (USGS 02341500) under 2007 Hydrology



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

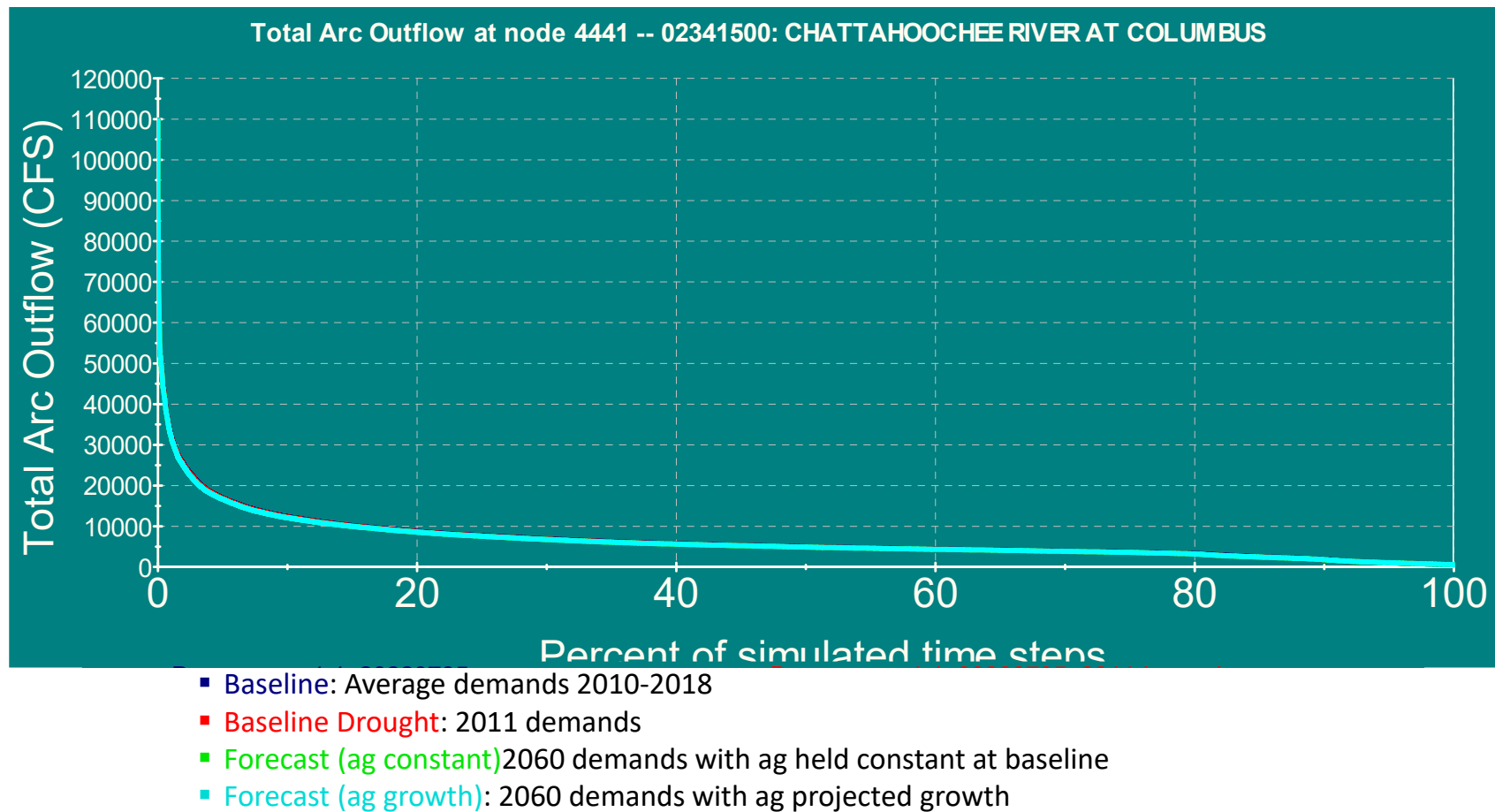


# Simulated Flow at USGS 02341500 under 2012 Hydrology

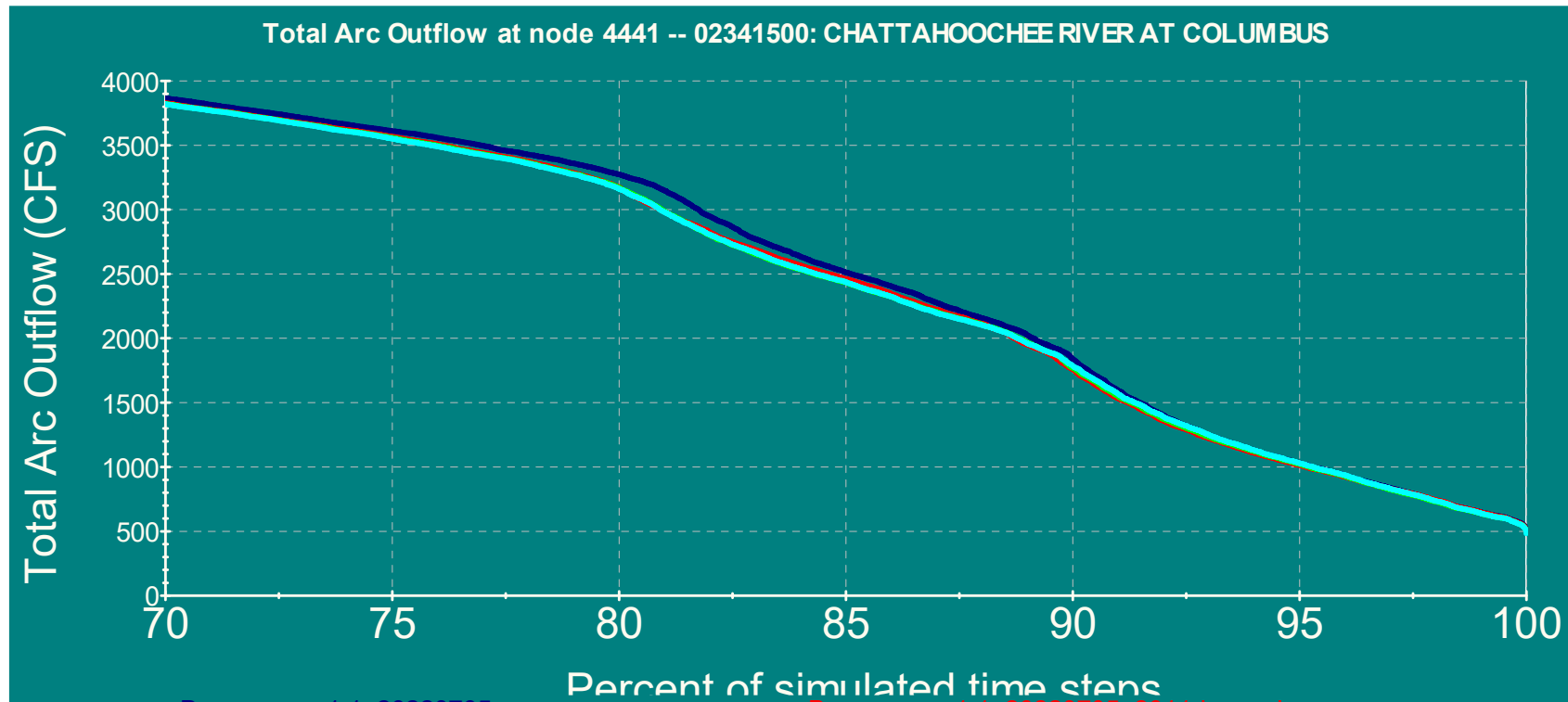


- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant) 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

## Frequency of Simulated Flow at Columbus (USGS 02341500)



## Frequency of Simulated Flow at Columbus (USGS 02341500) (low end)



- Baseline: Average demands 2010-2018
- Baseline Drought: 2011 demands
- Forecast (ag constant): 2060 demands with ag held constant at baseline
- Forecast (ag growth): 2060 demands with ag projected growth

# Summary of Columbus Simulated Flow Frequency

	Baseline	Baseline Drought	Forecast (ag constant)	Forecast (ag growth)
Minimum	525	512	511	482
10 percentile	1,839	1,760	1,770	1,785
25 percentile	3,610	3,566	3,558	3,551
Median	4,952	4,910	4,868	4,870
75 percentile	7,676	7,622	7,542	7,539
90 percentile	12,335	12,254	12,081	12,070
Maximum	109,718	109,731	109,649	109,648

# Summary

- Moderate water supply challenges under baseline and future water use conditions
- Moderate wastewater assimilation challenges under baseline and future water use conditions
- Reviewed model simulation results for West Point elevation and Columbus flows under baseline and future water use conditions
- Additional evaluation can be added according to stakeholders' inputs
- Council suggestions for other metrics?

# 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](mailto:Wei.Zeng@dnr.ga.gov)

# Surface Water Availability Assessment

Small Group Discussion





# Small group discussions

- What are your primary takeaways from the water availability assessment?
  - What implications do they have for you?
- Are there any new issues not yet reflected in the recommendations?
  - Do the results mesh with the revised plan recommendations?
- What else do you want to know about water availability?
  - Are there other metrics that you would like to see?
- If you had sufficient funds, what water-related projects would you prioritize over the next 5 years?
- Discuss any unsettled committee items



# Water Quantity Committee Report on revised recommendations

Harry Lange



# Water Quantity Committee: June Meeting

- Meeting: June 15, 2022
- Members: Harry Lange, Patrick Bowie, Steve Davis, James Emery, Matt Windom
- Discussed draft edits/updates made to the Management Practices and Recommendations to the State in Section 6



# Management Practices – Key Changes

- Reviewed IU-1 and IU-2: Both concern Chattahoochee Reservoir operations – Should they be combined? *Input needed from Council*
  - **IU-1:** Utilize and improve upon reservoir release quantity and timing in the Chattahoochee River to maintain and/or improve water quality in the Chattahoochee River below the Columbus Planning Node
  - **IU-2:** Assess the potential to modify Chattahoochee River operations to protect instream uses and increase system conservation storage.
- **IU-3:** Added new management practice to promote improvements in timing of flow releases in the Chattahoochee River, which is important to recreational opportunities.
- Reviewed Table 6-2: Instream Flows and Reservoir Levels – Will address in full Council discussion this afternoon



# Recommendations to the State – Key Changes

- Recommendations to the State:

- 2. *Improve Alabama and Energy Water Use Forecasting*

- Updated
    - Removed “Establish task forces...” and instead more generally recommend improvements to these forecasts for use in planning

- 4. *Continue Research on Groundwater Development*

- Updated with info on new ARPA project that will provide deep groundwater alternatives to surface water withdrawals for use only during drought periods, new groundwater monitoring, and development of a Habitat Conservation Plan for freshwater mussels.

- 6. *Increase Storage in the ACF and Tallapoosa*

- Consolidated some information need recommendations from the management practices about farm ponds and ASR



# 2<sup>nd</sup> Water Quantity Committee

Meeting on July 26, 2022

- Initial look at BEAM Model results discussed today
- Discussed population projection analysis provided by Columbus State University for Muscogee County
  - To be discussed by full Council this afternoon



# Summary of Water Quantity Committee Report

- Completed review of Section 6 pieces that were relevant to Water Quantity
  - Some items for full Council discussion (this afternoon)
  - Additional tweaks may be needed based on BEAM results and Council deliberations
- Next steps: Reviewing revisions to Resource Assessment reporting in the plan (Sections 3 and 5)





# Water Quality Committee Report on revised recommendations

Ed Moon





# Water Quality Committee: June Meeting

- Meeting on June 22, 2022
- Discussed draft edits/updates made to the Management Practices and Recommendations to the State in Section 6

Members: Victoria Barrett, Laura Lee Bernstein, Harry Lange, Ed Moon



# Key Changes to Water Quality Related Management Practices

Management Practice	Key Change
<b>WQ-1 :</b> <i>Encourage increased/additional funding and attention on erosion and sediment control</i>	Added language on encouraging funding to support local governments to become Local Issuing Authorities (LIA)
<b>WQ-2:</b> <i>Improve funding for monitoring, enforcement, and use of stream buffers</i>	Added language on incentivization for improving compliance for stream buffers, and stream buffer encroachments
<b>WQ-8:</b> <i>Implementation of monitoring of E. coli versus Fecal Coliform to monitor stream quality</i>	Added. Raise awareness of new E. Coli limits in discharge permits



# Key Changes to Water Quality Related Recommendations

- Table 6-2 Preferred Flows and Lake Levels in Middle Chattahoochee River Basins:
  - **West Point and Lanier**
    - Added language “with consideration to flood control and water quality impacts” to evaluation in rule curves
      - *Input needed from Council*



# Inter-Council Coordination Committee Report on Revised Joint Recommendations

Patrick Bowie



# Inter-Council Coordination Committee

## Middle Chattahoochee

- Patrick Bowie
- Harry Lange

## Upper Flint

- Donald Chase

## Lower Flint - Ochlockonee

- Hugh Dollar
- Jay Smith
- Jimmy Webb



# Inter-Council Coordination Committee Report

## Meeting on June 23, 2022

1. Reviewed and Discussed 2017 “Coordinated Recommendations with Neighboring Councils” in Section 6
2. Made Updates and Revisions
3. Select representative to present at August council meeting



# Inter-Council Coordination Committee

## JT-1 Unedited

- Recognize the critical need for better use of existing storage and for more storage in the Apalachicola-Chattahoochee-Flint (ACF) System and recommend that a plan for additional storage be developed and implemented and that it consider the following: better utilization of existing storage in the Chattahoochee River Basin, new storage in the Flint River Basin, and enhancement of existing storage capacity.

## JT-2 Edited

- Urge EPD and those involved in the resource assessment modeling to continue to improve upon existing models for future regional water planning by further expanding use of actual and current data on water use and conditions and by continuing to refine assumptions that more closely approximate actual conditions.



# Inter-Council Coordination Committee

## JT-3 Unedited

- Consider the creation of a new coordinated, interstate planning organization for the ACF System. Membership in this organization to represent Georgia shall include, but not be limited to, members of the regional water planning councils with water planning regions that include parts of the ACF. Consider the recommendation of the ACF Stakeholders in its Sustainable Water Management Plan regarding an ACF transboundary water management institution as this organization is developed.

## JT-4 New

- Recognize the need for identifying contributors that diminish water quality. Continue to develop methods, guidelines, and BMPs to improve water quality, and continue to educate on these BMPs.





# Council Discussion



# Council Discussion

- Report from Break-Out Groups
- Issues for Council Input/Discussion:
  - Table 6-2 Flow & Levels
  - Population Projections
  - Recommendation #11
- Other topics from the Council?



# Table 6-2

- IU-1 and IU-2 also address flows and lake levels.

**Table 6-2: Middle Chattahoochee Water Planning Council Preferred Flows and Lake Levels in Middle Chattahoochee River Basin**

<b>Preferred Flows</b>	
<b>Columbus</b>	<p>Meet the following at a frequency of 95% of higher:</p> <ul style="list-style-type: none"> <li>• 800 cfs instantaneous</li> <li>• 1350 cfs daily average</li> <li>• 1850 cfs weekly average</li> </ul> <p>In any periods where flows are below these levels, manage to avoid possible downstream water quality impacts.</p> <p>(See Management Practice IU-1 in Section 6 and Recommendation 1 in Section 7.46.3.)</p>
<b>Preferred Lake Levels</b>	
<b>West Point</b>	<p>632.5 – 635 feet (normal) 635 – 641 feet (induced flood storage)</p> <p>The Council recommends evaluation of a revision in winter pool rule curve to a lake level of 632.5 feet, <u>with consideration to flood control and water quality impacts.</u></p> <p>(See Management Practice IU-2 in Section 6 and Recommendation 1 in Section 7.46.3.)</p>
<b>Walter F George</b>	<p>187.5 – 190 feet (normal) 185 feet (minimum)</p>
<b>Seminole</b>	76.5 – 77.5 feet
<b>Lanier</b>	<p>The Council recommends evaluation of an increase in the rule curve at Lake Lanier by two feet, <u>with consideration to flood control and water quality impacts.</u></p> <p>(See Management Practice IU-2 in Section 6 and Recommendation 1 in Section 7.46.3.)</p>



*IU-1: Utilize and improve upon reservoir release quantity and timing in the Chattahoochee River to maintain and/or improve water quality in the Chattahoochee River below the Columbus Planning Node*

**\*\*HIGH PRIORITY\*\*  
MANAGEMENT  
PRACTICE**

Protect water quality in the Chattahoochee River in the Middle Chattahoochee Water Planning Region. Advocate for the U.S. Army Corps of Engineers operate such that:

- 1) the specific minimum flow levels stated in the Federal Energy Regulatory Commission license (800 cfs instantaneous; 1350 cfs daily average; 1850 cfs weekly average) are met at a frequency of 95% or higher at the USGS gauge at Columbus, and
- 2) any periods where flows are below these levels are managed to avoid possible downstream water quality impacts, including the stretch of river below Walter F. George Reservoir in which the water quality modeling shows assimilative capacity challenges (see Figure 5.2).

The Council recognizes that there may be tradeoffs in operations that support the system in meeting some targets while adversely affecting its capacity to meet others. The Council offers targets for flows and lake levels in Table 6-2 as its preferences and does not support implementation that leads to an outcome that is less desirable than historical conditions at any of these locations in the Basin.

See also: Recommendation #1 in Section 6.3.

*IU-2: Assess the potential to modify Chattahoochee River operations to protect instream uses and increase system conservation storage*

**\*\*HIGH PRIORITY\*\*  
MANAGEMENT  
PRACTICE**

Evaluate the following as possible changes in U.S. Army Corps of Engineers management in the Chattahoochee River Basin (~~also s~~See also: Recommendation #1 in Section 7.46.3) for more details):

- Revise the rule curve for West Point Lake winter drawdown operations to improve water resource benefits while also maintaining flood protection. A ~~recent~~ GAEPD study demonstrated the use of probability-based forecasts to reduce peak releases without compromising flood mitigation operations. Cooperative efforts between the state and the U.S. Army Corps of Engineers should be funded and implemented to fully evaluate and support adoption of the proposed rule curve modifications.
- Increase the rule curve at Lake Lanier by two feet to increase storage capacity in the system.
- Model Chattahoochee River operations under extreme conditions to evaluate system resilience (i.e., 2009 flood data; 1920's extreme drought data).
- Evaluate the stretch of river downstream of Walter F. George Reservoir to verify periods and river locations of low dissolved oxygen, probable causes, and recommendations to enhance assimilative capacity.

# Population Projections for Middle Chattahoochee Region

*Table 4-1: Population Projections by County – Middle Chattahoochee Water Planning Region*

County	2020	2030	2040	2050	2060
Carroll	120,119	133,363	145,151	156,752	169,579
Chattahoochee	10,749	10,890	10,966	11,273	11,418
Clay	2,855	2,705	2,527	2,423	2,421
Haralson	30,722	35,829	38,981	41,665	43,669
Harris	34,712	37,327	39,640	41,902	44,818
Heard	12,370	14,339	15,343	16,048	16,693
Muscogee	191,626	179,704	166,681	153,247	141,670
Quitman	2,294	2,251	2,195	2,212	2,319
Randolph	6,754	6,425	6,145	5,947	5,986
Stewart	6,129	5,784	5,434	5,103	4,878
Troup	70,414	72,836	74,307	74,975	75,970
<b>TOTAL</b>	<b>490,764</b>	<b>503,483</b>	<b>509,410</b>	<b>513,597</b>	<b>521,481</b>



# Muscogee County – Columbus State University Analysis/Recommendation

Muscogee  
County  
Population  
Trend  
1980-2020

<u>Census Year</u>	<u>Population</u>	<u>10 year % increase</u>
1980	170,108	
1990	179,278	5.39% (1980 to 1990)
2000	186,291	3.91% (1990 to 2000)
2010	189,885	1.92% (2000 to 2010)
2020	206,922	8.97% (2010 to 2020)



# Muscogee County – Columbus State University Analysis/Recommendation

- Considering population growth from 40 years of US Census data, 1980 to 2020; the increasing rate of population growth over the last decade; and the recent economic and quality of life developments, the forecasted population growth for Muscogee County supports the 2017 Middle Chattahoochee Regional Water Planning Council report (page 4-2).
- Utilizing the population growth rate from 2010 to 2020 (8.9%) and applying it to the 2020 Census population of 206,922 provides a 2030 forecast of 225,483. Comparing this recent Census data to the MCRWPC 2017 report 2030 population forecast of 225,912 provides a reasonable basis to support the 2017 population forecast. (See next slide.)
- See Columbus State document in pre-meeting packet for more information on recent economic trends in county.



# Population Projections Comparison

	2020	2030	2040	2050	2060
CSU Recommendation	206,922*	225,912**	233,750**	238,600**	247,548***
Current Population Project for Water Plan	191,626	179,704	166,681	153,247	141,670

*\* actual 2020 US Census data*

*\*\* 2017 MCRWPC report page 4-2*

*\*\*\* Applies average population increase (3.75%) from 2020 to 2050 (MCRWPC) for 2060 est.*





# Current Text in Section 4 to Address Muscogee County Concern

The Council has discussed these population projections in detail and met with demographers that worked with OPB, as well as demographers from Columbus State University. The Muscogee County population projections reported in Table 4-1 do not match with local understanding of the current population levels and trends in that county, which is the largest in the region. The U.S. Census estimates that the 2020 population of Muscogee County is 206,922. At this time, Council members are exploring other options for population projections for this region in order to present an alternative scenario and more completely illustrate potential future outcomes for population and water demands. One possible scenario to consider is the population projections for Muscogee from the 2017 regional water plan, which project for this county from a base on 206,058 in 2015 to 238,600 in 2050.



# Update: Former Recommendation #11 Deleted Based on Discussion at Last Council Meeting

## ~~11. Strengthen Coordination in Regional Water Planning and Management~~

~~The Middle Chattahoochee Water Planning Council recommends that the Georgia General Assembly study and codify into state law a plan whereby the planning, management and oversight of water and watershed resources in the state be delegated to stakeholder led water or watershed councils. Water councils should have funding and staff for ongoing research, studies, assessments, measurement, monitoring, and reporting on the progress of goals and future updates to the Regional Water Plans.~~



# Public Comment



# Next Steps

Meagan Szydzik



# Next Steps

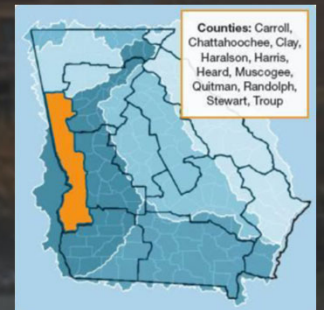
- Next Meeting: December 1<sup>st</sup> – Plan Review of Sections 3 & 5
- Committees to work on plan revisions
  - Water Quantity and Water Quality





# Thank You

## Middle Chattahoochee



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

