

Objectives:

Agenda

- 1) Review water quality assessment results
- 2) Review and discuss committee reports from Water Quality and Quantity Committees
- 3) Discuss outstanding committee issues in break-out session (Water Quality/Water Quantity)
- 4) Discuss plan revisions that need input from the full Council
- 5) Consider revisions to recommendations from Inter-Council Coordination Committees
- 6) Discuss schedule for remaining plan revisions and meetings

9:45	Registration
10:00	Welcome, Agenda Review, GA-FIT Update – Mark Masters, Kristin Rowles (GWPPC)
10:15	Chair's Report – <i>Chairman Royal</i>
10:20	Summary from last Meeting – Courtney Cooper (GWPPC)
10:30	Surface Water Quality Assessment Results - Corinne Valentine & Steve Simpson (B&V)
11:15	Water Quality Committee Report – John Heath (Council Member)
11:30	Water Quantity Committee Report
11:45	Inter-Council Coordination Committee Report – Jay Smith (Council Member)
12:00	Group Photo
12:15	Lunch
1:00	Forecast Dashboard Update – B&V
1:10	EPD Updates – Jennifer Welte (GAEPD)
1:20	Albany CSO Update – Jennifer Welte (GAEPD)
1:30	Break-Out Sessions: Water Quality/Water Quantity
2:20	Break
2:30	Report back from Small Groups & Plenary Discussion of Plan Revisions
3:10	Next Steps in Plan Review and Revision – Meagan Szydik (GWPPC)
3:20	Public Comment
3:30	Adjourn



Introductions

RICHARD ROYAL

JENNIFER WELTE

STEPHEN SIMPSON

Black & Veatch

Georgia EPD

CORINNE VALENTINE

Black & Veatch

JASON HOWARD

Black & Veatch

GEORGIA
WATER PLANNING

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Lower Flint-Ochlockonee Council Members

Name	City	County
Chris Addleton	Cairo	Grady
J. Steve Bailey	Donalsonville	Seminole
C. LaDon Calhoun	Colquitt	Miller
Murray Campbell	Camilla	Mitchell
Marc E. DeMott	Moultrie	Colquitt
Frederick Dent	Sylvester	Worth
David Dixon	Leesburg	Lee
Hugh Dollar	Bainbridge	Decatur
Vincent Falcione	Albany	Lee
John A. Heath	Dawson	Terrell
Jack Henderson	Newton	Baker
Connie C. Hobbs	Newton	Baker
Greg Hobbs	Thomasville	Thomas
Sen. Dean Burke		

Name	City	County
Phil Long	Bainbridge	Decatur
Michael A. McCoy		Dougherty
George C. McIntosh	Dawson	Terrell
Mike Newberry III	Arlington	Early
Calvin D. Perry	Moultrie	Colquitt
Walt Pierce	Edison	Calhoun
A. Richard Royal	Camilla	Mitchell
J. Stephen Singletary	Blakely	Early
Jay Smith	Albany	Dougherty
Mark Spooner	Donalsonville	Seminole
Steve Sykes	Camilla	Mitchell
Cory Thomas	Colquitt	Miller
James L. Webb	Leary	Calhoun
Rep. Gerald Greene		









August 22 meeting

- Discussed surface water availability assessment results
- Discussed revisions to management practices and recommendations
- Considered revisions to recommendations from Plan Review & Inter-Council Coordination Committees







How This Presentation Relates to the Plan

- Section 3.2.3 Surface Water Quality
 - Covers existing water quality
- Section 3.3.1 303(d) List and TMDLs
 - Documents assessed stream segments meeting/not meeting designated uses
- Section 5.3 Surface Water Quality
 - Compares current and future projected differences in water quality
- Section 6.2 Selected Water Management Practices
 - WQ1 through WQ-4
- Section 6.3 Recommendations to the State
 - IN-3, IN-10, WP-10, JT-4

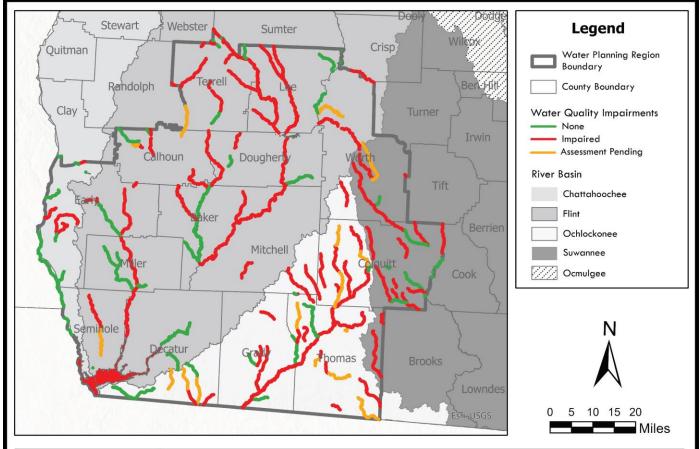


Water Quality Overview

- Impaired Waters Identification (305(b)/303(d) list
 - Based on actual water quality test data from specific stream reaches
 - Addressed by Total Maximum Daily Loads and Implementation Plans
- Dissolved Oxygen Modeling (Assimilative Capacity)
 - Calculated under low flow, high water temperature, maximum permit flows and limits
 - Future conditions evaluated with revised permit limits
- Watershed Modeling
 - Current conditions calibrated based on water quality test data
 - Future conditions projected based on land use changes



Lower Flint Ochlockonee Impaired Stream Segments



River Basin	Total River Miles Impaired in the Lower Flint-Ochlockonee Region					
Chattahoochee	0 6 0 21					
Flint	27	171	164	104		
Ochlockonee	49	137	69	17		
Suwannee	70	64	0	6		
Criterion Violated	DO	Fecal Coliforms	Metal	Other		

Note: Stream reaches may have more than one criterion violated, i.e. the sum of DO, Fecal Coliform, Metals, and Other may be greater than the total number of stream miles listed as impaired. Metals include mercury trophic weighted residue value and fish consumptive guidance.



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)

Legend

Available Assimilative Capacity

Very Good

--- Good

Moderate

Limited

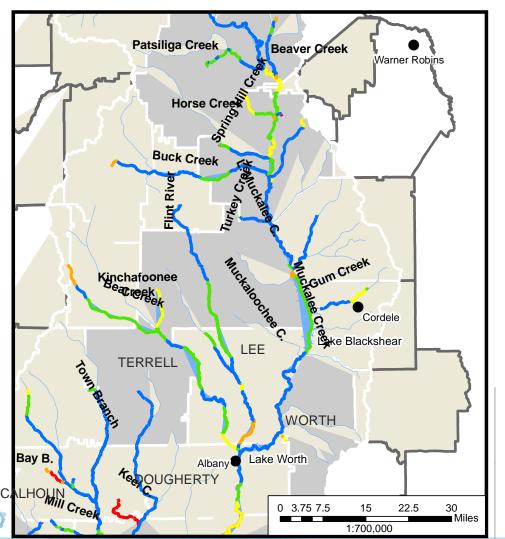
None or Exceeded

Unmodeled Lakes and Streams

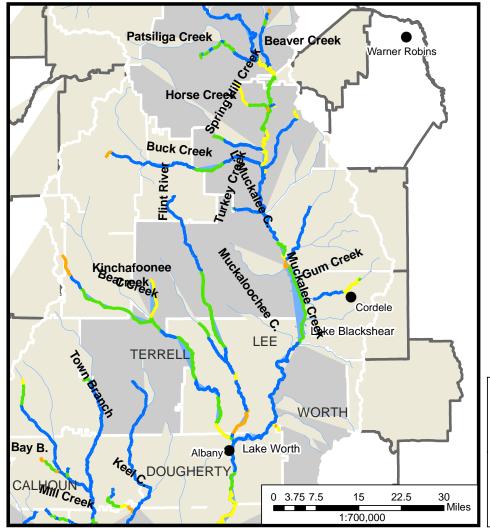


Dissolved Oxygen Results: Middle Flint Basin

Current Conditions



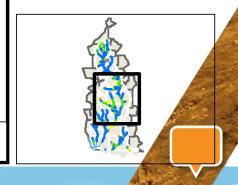
Future Conditions



Legend

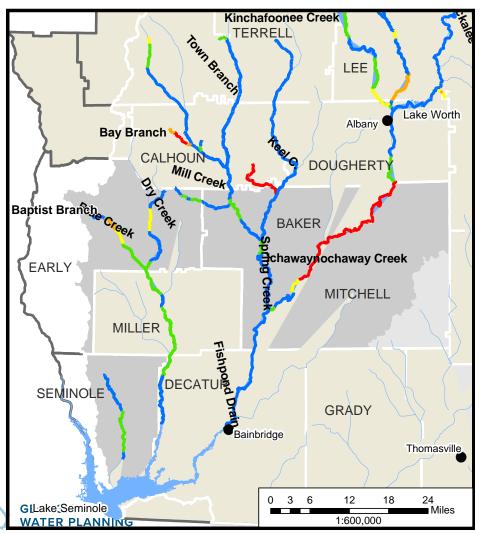
Available Assimilative Capacity

- Very Good
- Good
- Moderate
- Limited
- None or Exceeded
- Unmodeled Lakes and Streams

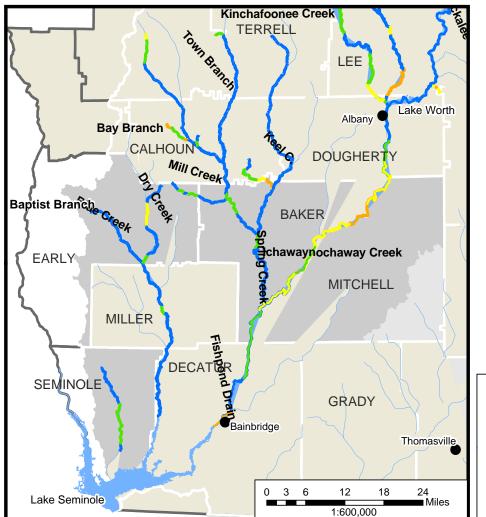


Dissolved Oxygen Results: Lower Flint Basin

Current Conditions



Future Conditions



Legend Available Assimilative Capacity Very Good Moderate Limited None or Exceeded Unmodeled Lakes and Streams



Dissolved Oxygen Results: Ochlockonee Basin

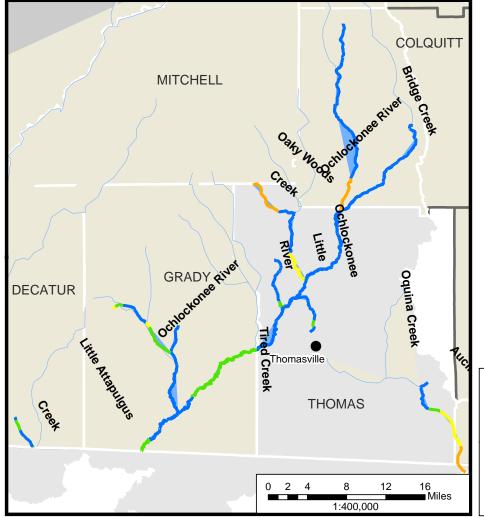
Current Conditions

COLQUITT Ost Moderhot one & Hiver MITCHELL chlockone GRADY River Oquina Creek **DECATUR THOMAS**

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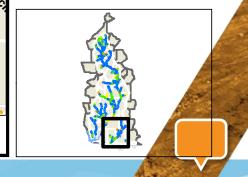
ALER PLANNING

Future Conditions



Legend Available Assimilative Capacity Very Good Good Moderate Limited None or Exceeded

Unmodeled Lakes and Streams



Assimilative Capacity Total Stream Miles

Current Conditions

	Fl	Flint Basin-Available Assimilative Capacity (Total Mileage)				
Model Run	Very Good	Good	Moderate	Limited	At Assimilative Capacity	Exceeded
Current	664	267	72	32	0.51	56
	Ochlockonee Basin-Available Assimilative Capacity (Total Mileage)					
Model Run	Very Good	Good	Moderate	Limited	At Assimilative Capacity	Exceeded
Current	91	29	1	10	0	23

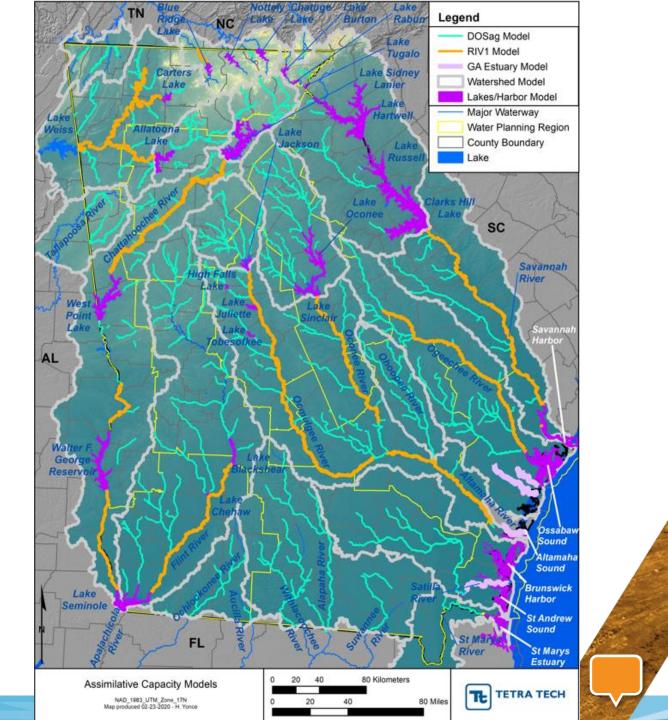
Future Conditions

	Flint Basin-Available Assimilative Capacity (Total Mileage)					
Model Run	Very Good	Good	Moderate	Limited	At Assimilative Capacity	Exceeded
2060	712	229	102	43	0	0
	Ochlock	Ochlockonee Basin-Available Assimilative Capacity (Total Mileage)				
Model Run	Very Good	Good	Moderate	Limited	At Assimilative Capacity	Exceeded
2060	107	26	10	11	0	0



Watershed Modeling

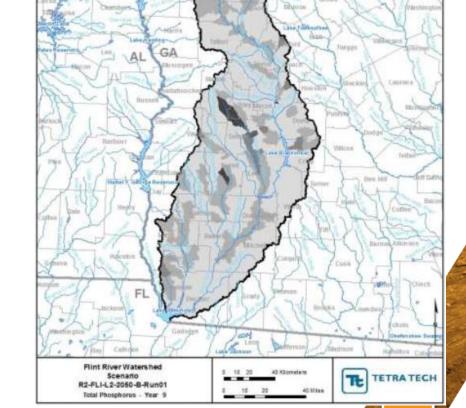
Model updates are underway





Watershed Modeling: Nutrients

- Current (2008) and future (2050) land use
- Meteorological information (2001-2012)
- Point Source Discharges
 - Current 2014, Future 2050
- Heat maps
 - Loadings by subbasin under representative wet and dry years
 - Total Nitrogen
 - Total Phosphorus
- Increases under dry year conditions
 - Point source-driven
- Increases under wet year conditions
 - Nonpoint source-driven (land uses)



Loadings (lb/ac/yr)

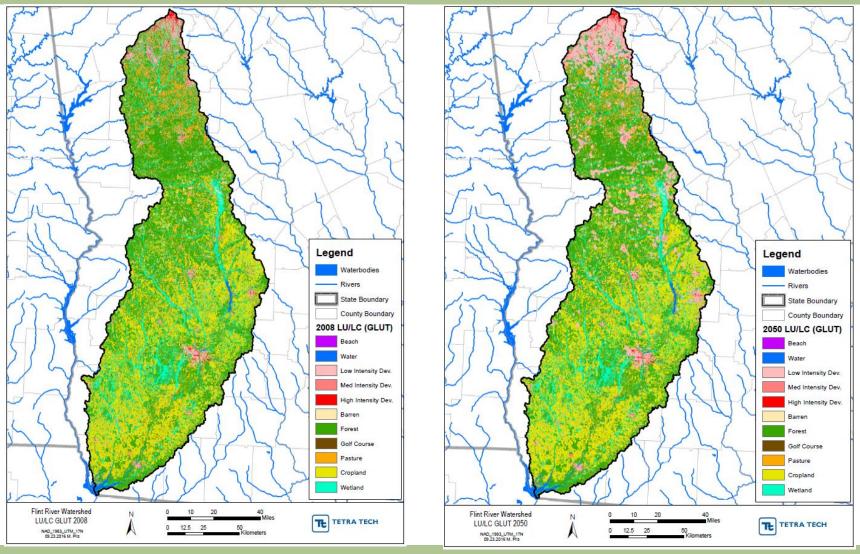
0.501 - 0.750 State Boundary

0.751 and higher Flat River Watershed





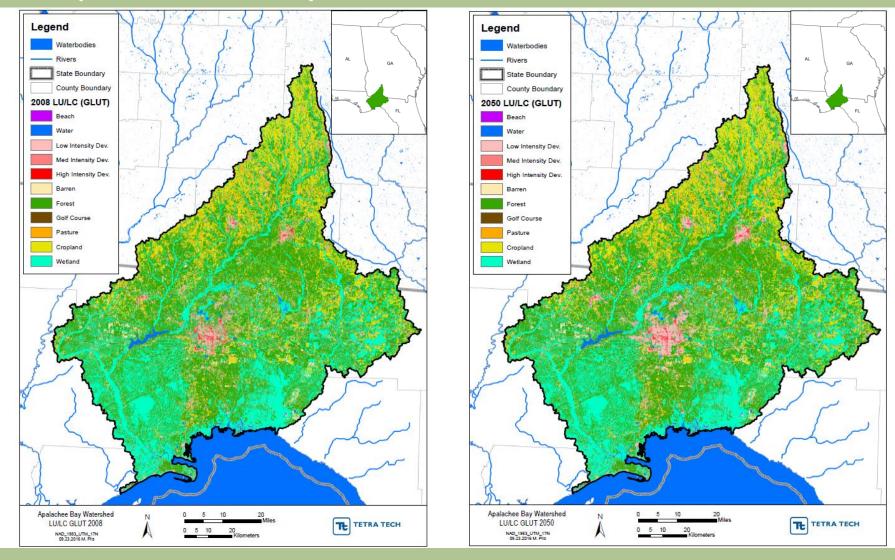
FLINT LANDUSE CHANGES (2008-2050)







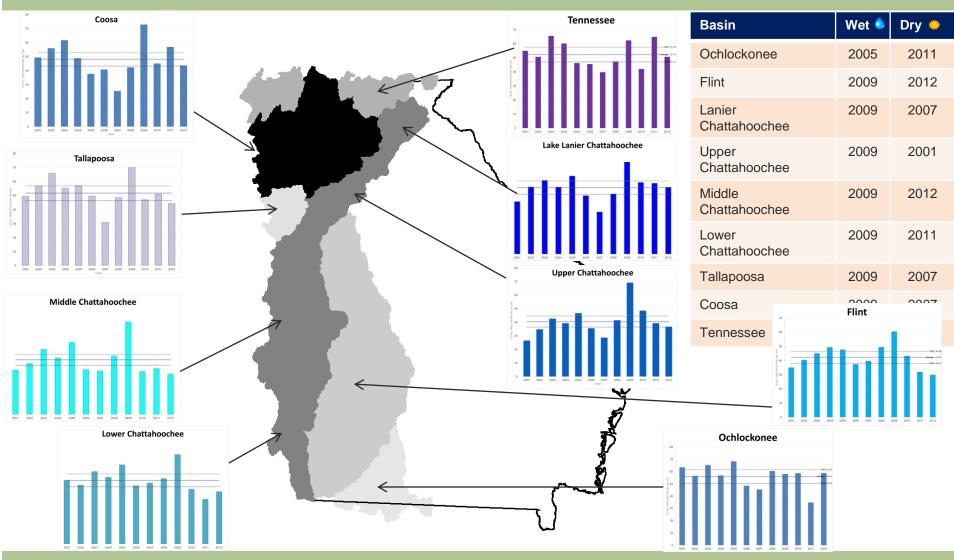
OCHLOCKONEE LANDUSE CHANGES (2008-2050)





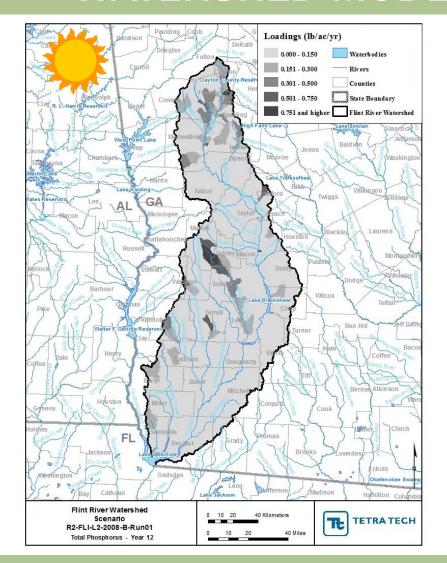


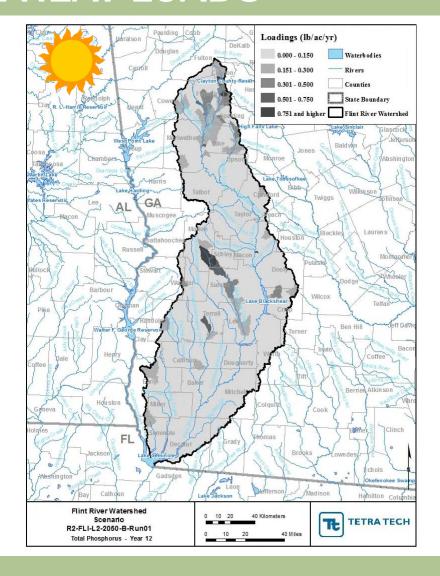
BASIN RAINFALL ANALYSIS





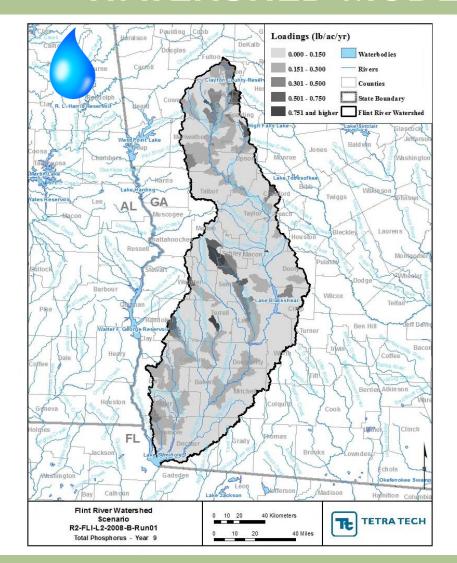
COMPARISON OF CURRENT AND FUTURE WATERSHED MODEL HEAT LOADS

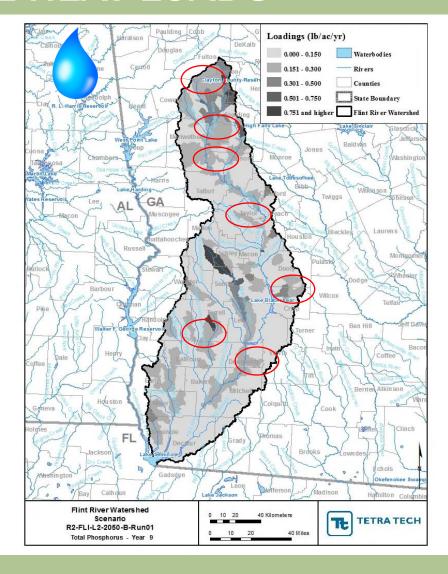






COMPARISON OF CURRENT AND FUTURE WATERSHED MODEL HEAT LOADS

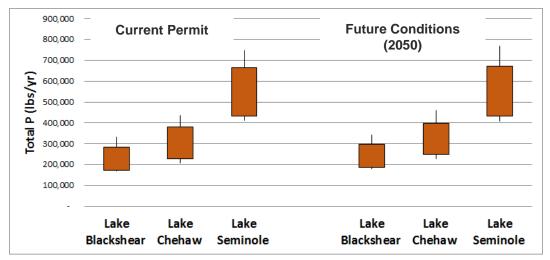




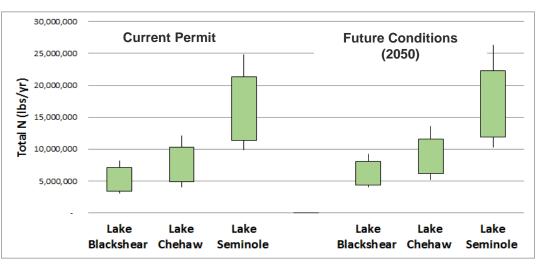




COMPARISON OF CURRENT AND FUTURE **LAKE NUTRIENT LOADS**



Total nutrient loading to lakes from all watershed areas, including point and nonpoint sources







COMPARISON OF CURRENT AND FUTURE LAKE GROWING SEASON AVERAGE NUTRIENT LEVELS

	Scenario	Lake Chehaw/Worth	Lake Seminole
	Current NPS	1.08	0.82
Total N (may/L)	Current PS + NPS	2.05	1.42
Total N (mg/L)	2050 NPS	1.10	0.89
	2050 PS +NPS	2.20	2.21
	Current NPS	0.058	0.046
Total P (mg/L)	Current PS + NPS	0.173	0.079
, ,	2050 NPS	0.060	0.048
	2050 PS + NPS	0.195	0.088

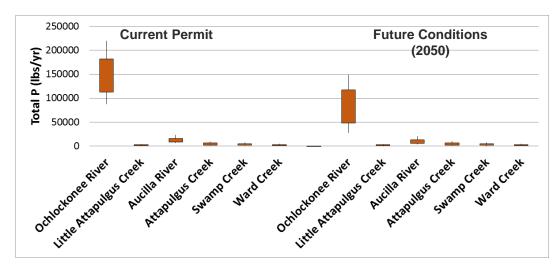
- No numeric nutrient criteria for Lakes Blackshear, Chehaw/Worth, and Seminole, but lake standards will be developed in the future
- ❖ Lake Blackshear Max Total N (under Current and Future Permit conditions) did not exceed 4 mg/L
- Lake Chehaw/Worth Max Total N (under Current Permit conditions) 4.6 mg/L
- Florida Lake Seminole Criteria 1.27-2.23 mg/L Total N and 0.05-0.16 mg/L Total P
 - Max Total N at Dam Pool current conditions 1.06 mg/L, future conditions 2.80 mg/L
 - Max Total P at Dam Pool current conditions 0.126 mg/L, future conditions 0.111 mg/L





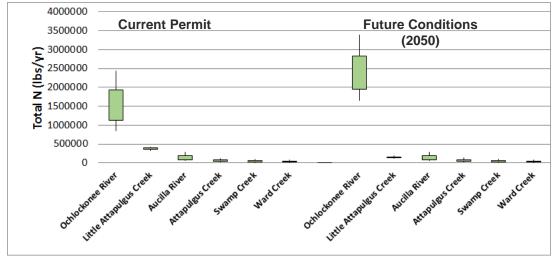


COMPARISON OF CURRENT AND FUTURE FLORIDA STATELINE NUTRIENT LOADS



Total nutrient loading at the Florida State line from all Ochlockonee watershed areas, including point and nonpoint sources

Georgia EPD will need to develop a Nutrient **Management Plan for the** Ochlockonee River Basin to meet nutrient reductions required by the Florida DEP Lake Talquin TMDL





Nutrient Modeling Findings

- Nutrient concentrations were evaluated in the Flint basin watersheds
 - Total nitrogen (N)
 - Total phosphorus (P)
- Lake models estimated the algal response (chlorophyll a levels) from the nutrient loadings in Lakes Blackshear, Chehaw and Seminole
- Findings:
 - Nonpoint sources currently contribute more total N, but future increases in total N will come more from point sources
 - Point sources currently contribute more total P
 - Future increases in loadings to Lake Seminole will be primarily point source related
 - There are currently no nutrient or chlorophyll a standards for the rivers or lakes



Watershed Modeling: Nutrients

Current Conditions addressed in Plan Section 3.2.3

Nutrients

"Watershed and lake models were run assuming current levels of water use and wastewater disposal and current land use profiles as inputs. These inputs accounted for nutrient loading from the contributing watershed over twelve years of recently observed hydrology. The model results indicated that in the Flint River Basin, nonpoint sources currently contribute, in general, more total nitrogen than point sources, whereas point sources contribute more total phosphorus than nonpoint sources.

. . .

Three lakes in the Lower Fint-Ochlockonee Water Planning Region were modeled: Lake Blackshear, Chehaw, and Seminole. "The results indicated that in all three lakes, current total phosphorus loading is primarily from point sources, whereas current total nitrogen loading is primarily from nonpoint sources. While the lake model results cannot be compared against nutrient standards for these three lakes, the results do indicate how nutrient control efforts should be directed to manage current and future nutrient loading."



Watershed Modeling: Nutrients

Future Conditions addressed in Plan Section 5.3

"Watershed and lake models were also run at future (2050) conditions. The model results indicated that in the Flint River Basin, while nonpoint sources currently contribute more total nitrogen than point sources, future increases in total nitrogen loading will come more from point sources than nonpoint sources. The lake model results indicated that in Lakes Blackshear and Chehaw, total phosphorus loading in the future will be primarily from point sources, as it is under current conditions. In Lake Seminole, the model results indicated that future increases in nutrient loadings will be primarily point source related.

. . .

As noted in Section 3.3, these lakes do not have established nutrient standards, and therefore, the lake model results cannot be compared against standards for these lakes. However, the model results are an indication of where management practices should be directed to control nutrient loading."







Water Quality Committee: October Meeting

- Meeting on October 21, 2022
- Review and discuss Section 3 Current Conditions
- Review and discuss Section 5 2060 Projected, time permitting
- Select representative to present at today's council meeting

Members: Chris Addleton, David Dixon, Connie Hobbs, John Heath, Jay Smith, Vince Falcione



Key Changes to Water Quality

Section 3 Current Conditions

1. River Model (Dissolved Oxygen Modeling)

a. AKA Assimilative Capacity. Assimilative capacity evaluates how DO levels compare to water quality standard of 5.0 mg/L (or natural conditions).
b. Dr. Liz Booth (EPD) presented these in May
c. Updated municipal and industrial wastewater facilities operating at their full permitted discharge levels (flow and effluent discharge limits with 2019 values

2. Lake and Watershed Models (Nutrient Modeling)

a. This data has not been updated, and we will not get an update prior to the RWP report update. Only the language was updated.

3. 303(d) list

a. Streams not supporting designated uses, and Total Maximum Daily Load (TMDL) which addresses these pollutants

b. Updated with 2022 data. Revised from stream quality number to simpler (Impaired, none,

pending)

c. Emphasis that 303d list is water quality data (not assessments or models)



Key Changes to Water Quality

Section 5 Future Conditions

- 1. River Model (Dissolved Oxygen Modeling)
 - a. Dr. Liz Booth (EPD) presented these in May
 - b. Updated to 2060 (from 2050). Improved language for clarity
 - c. Assumptions in permitting show the DO improving from current because of planned changes to wastewater discharge permits becoming more stringent as permittees update permits
- 2. Lake and Watershed Models (Nutrient Modeling)
 - a. This data has not been updated, and we will not get an update prior to the RWP report update. Only the language was updated.
- 3. Summary of Future Resource Assessment Results
 - a. Update section 5.4 to revise gaps to challenges







Water Quantity Committee Meetings

Meeting 1: October 13

Reviewed and discussed Section 3 (Current Conditions)

Members Present

 Murray Campbell, Richard Royal, Cory Thomas, Marc DeMott, David Dixon

Meeting 2: November 7

Reviewed and discussed Section 5 (2060 Projected)

Members Present

Murray Campbell, Richard Royal, Marc DeMott, David Dixon



Key Changes to Water Quantity

Section 3 Current Conditions

Surface water availability

1. BEAM results and analysis integrated

2. Integrated discussion about the increases in solar farm and associated withdrawal permits

3. Removed Edison WPCP from list of challenges

Groundwater availability

 Discussed Floridan (Dougherty Plain) results
 New maps with moratorium and management zones (Figs 3-10) & 3-11)

3. Add more details about how the sustainable yield estimates are established (low-end/high-end) -- especially Floridan



Key Changes to Water Quantity

Section 5 Future Conditions (2060)

Groundwater demand

1. Added a description of the GA-FIT program and associated assessment results (corresponds with SF2)



Today's Small Group Discussion

 Review management practices and text sections in Section 6 related to resource assessment results (including MP-5 and MP-7)







Inter-Council Coordination Committee October 12, 2022

Upper Flint

Beth English

Lower Flint - Ochlockonee

- Hugh Dollar
- Jay Smith
- Jimmy Webb

Middle Chattahoochee

- Steve Davis
- Patrick Bowie
- Harry Lange
- Ken Van Horn



Meeting on October 12, 2022

- 1. Reviewed and Discussed JT-3
 - 1. Reviewed existing language
 - 2. Reviewed optional alternative language
 - 3. Discussed collaborated agreed removal
- Select representative to present at August council meeting



JT-3: Original Text from 2017 Plan

 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-3: Alternative 1

 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.

JT-3: Alternative 2 (revised during discussion)

 The Councils recommend the proactive development of and/or engagement with a (an existing) tristate framework designed to address interstate water issues in the future and the inclusion of the regional water planning councils within this framework. Consider providing a framework to update the previous ACF Compact.



Recommendation to Council

- Ultimately, it was determined that all three councils did not view JT-3 as a priority recommendation to the State; therefore, the Joint Recommendation JT-3 will not be included in the updated plans.
- Each council can discuss the inclusion of this recommendation in separate recommendation to the state.



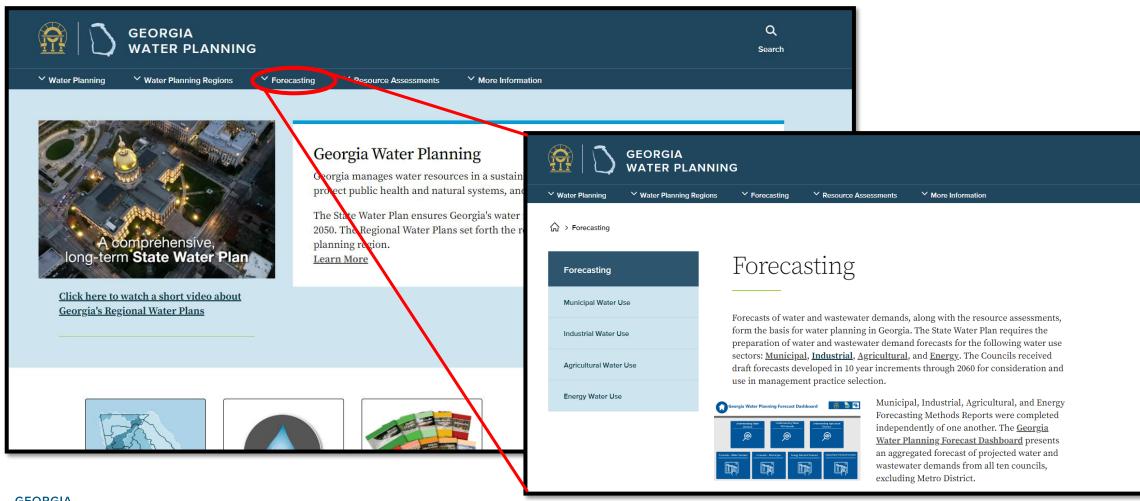








Forecast Dashboard Available NOW on the Georgia Water Planning Website



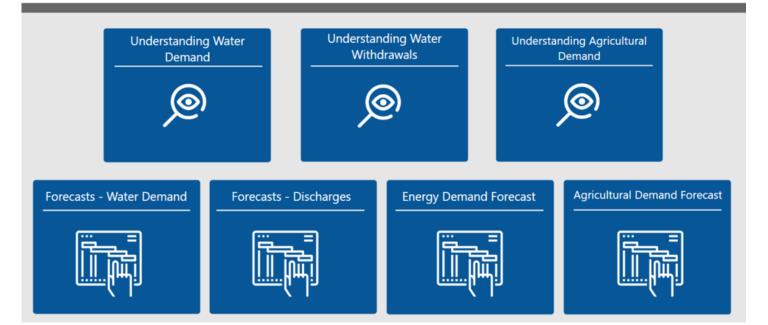


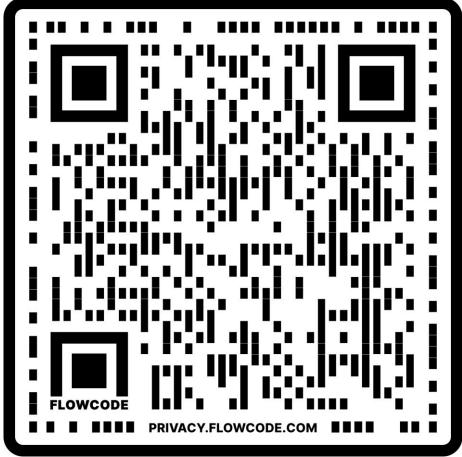
Forecast Dashboard



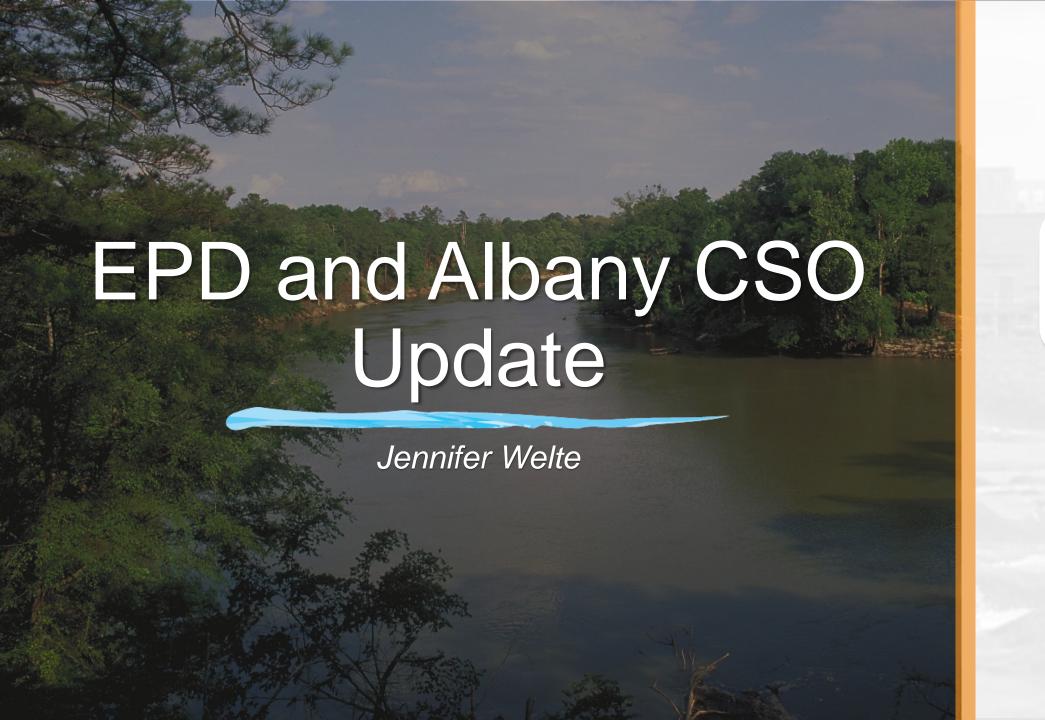
Georgia Water Planning Forecast Dashboard

















Water Quantity Committee

Sections 3 & 5 Edits to Review

Section 3.1

Revisions – USGS data, discussion of use estimates, ag meter data (pp. 3-2 & 3-3)

Section 3.2.1

- Added detail regarding reservoir operations in BEAM model (p. 3-6, highlighted)
- Footnote 3: Solar operations Added per committee input (p. 3-6, highlighted)

Section 3.2.2

 Added to discussion of Floridan Aquifer results: Figures 3-10 and 3-11 – Maps of moratorium area and red/yellow/green management areas (pp. 3-24, 3-27, 3-28, also referenced in Section 5.2 on p. 5-13)

Section 5.2

- Floridan results See revisions on p. 5-13 based on committee input
- Table 5-9 Added a clarifying note based on a question at committee meeting

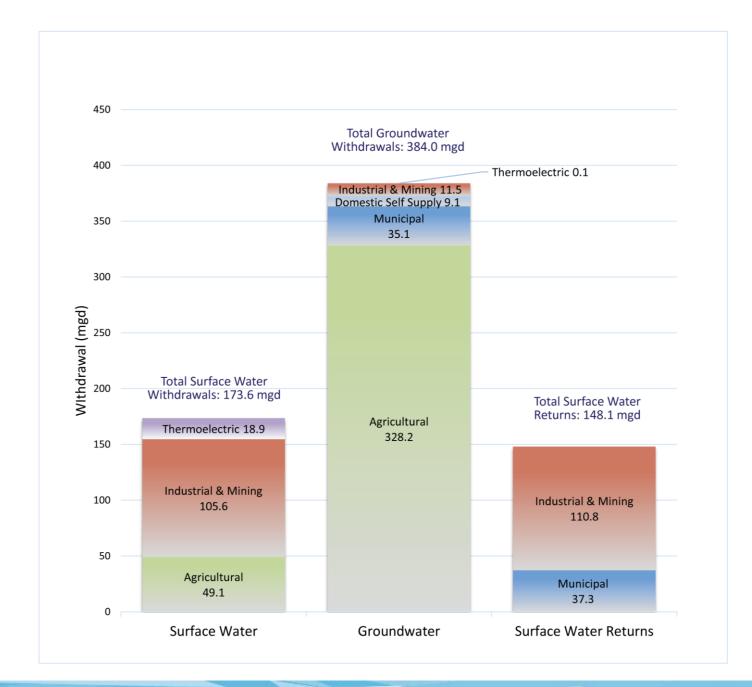
Section 5.4

Added text re: Floridan Aquifer results (pp. 5-22 & 5-23)



Water Quantity Committee Section 3.1

- New graph with USGS 2015 data
- New text (p. 3-2)
 on water use
 data, ag meters





Section 3.2.1 Added detail about reservoir operations in BEAM (p. 3-6)

Reservoir operations data used in the model were from the current Water Control Manual operations for the federal reservoirs. For other reservoirs, the resource assessment incorporates data from reservoir owners if they provided storage and operational data to GAEPD for this purpose. Storage and operational data were not available for Georgia Power reservoirs in the region, and these reservoirs were modeled as run-of-river projects.



Section 3.2.1 Added footnote solar farms and related water withdrawal permits (p. 3-6)

The Council notes a regional trend of increasing installation of solar energy facilities that are located on previously irrigated agricultural in the region. The baseline scenarios accounted for all solar conversion sites that were in place prior to 2020, but it is likely that additional acreage has been converted in the past few years. It is difficult to quantitatively assess the impact of these conversions on irrigated acreage. Landowners that convert irrigated acreage to solar energy facilities might not be retiring their agricultural water withdrawal permits. It is possible for them to shift those permits to inactive status rather than retiring the permits. Further quantification of the impacts of solar conversions in the region is needed to estimate the potential impacts on agricultural water demand.



Water Quantity Committee

Section 3.2.2: New figures in Floridan Aquifer discussion

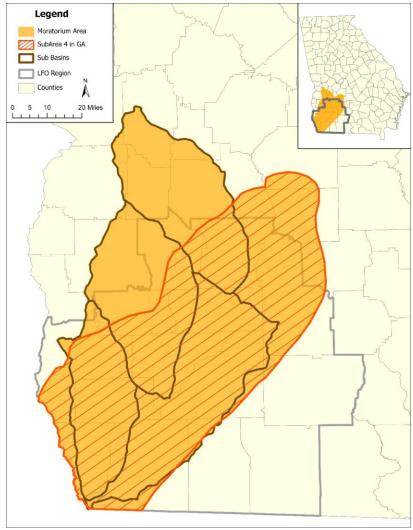


Figure 3-10: Moratorium on New and Expanded Agricultural Water Withdrawal Permits

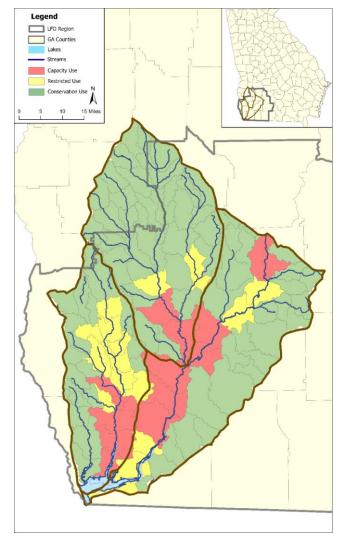


Figure 3-11: Agricultural Water Withdrawal Permit Management Zones based on 2006 Flint Plan



Water Quantity Committee Section 6.3

- Section 6 Pages 6-18 6-20: Are any updates needed now that the committee has reviewed Sections 3 & 5?
- Review WP-5, WP-7 (see slides)



Water Quantity Committee Section 6.3: WP-5, p. 6-25 Review/modify if needed

WP-5: The Council recommends that any modifications to existing water withdrawal permitting practices should consider the updated surface water availability and groundwater availability resource assessment model results. However, the Council advises caution in interpretation of the sustainable yield levels for the Floridan Aquifer. Sustainable yield results for the Floridan Aquifer should be considered in light of the expected rate of recovery of aquifer levels between drought periods, when the model metric of concern is aquifer drawdown. Floridan Aquifer levels have historically recovered quickly after drought periods, but it should also be noted that the model did not evaluate the potential for drought longer than two years. For a more complete discussion of the Council's concerns interpretation and use of with the assessment modeling approaches and results, please see Section 5.4.



Water Quantity Committee Section 6.3: WP-7, p. 6-26 Elevate to a Management Practice?

WP-7: The Council supports efforts of the new GA-FIT project described in Management Practice SF2 to seek to recommends that the General Assembly provide funding and authority (or other mechanism) for the Council to work with the USFWS to resolve potential conflicts between agricultural water use and imperiled species in the region through the development of a Habitat Conservation Plan (HCP). The Council urges all appropriate state agencies to join in this process, including the EPD. A Habitat Conservation Plan (HCP) feasibility study was conducted between 2011 and 2014 in response to a request from the Council. It was led by the Georgia Water Planning and Policy Center and involved numerous agencies and stakeholders from this region. The project provided information that can be used to advance consideration of alternative approaches to address imperiled species concerns in the region. The Council supports continued consideration of a Habitat Conservation Plan as a tool that should be evaluated to provide for both habitat protection and irrigation supply needs in the region, while also reducing the liability and uncertainty associated with potential Endangered Species Act enforcement or litigation.



Water Quantity Committee Section 6.1 - pp. 6-18 to 6-20

- Committee asked to review this text after finishing review of the resource assessments
- This section of text is a Council-added discussion of how the resource assessments relate to the management practices. Prior version addressed concerns about the previous surface water availability model.
- Need to modify?







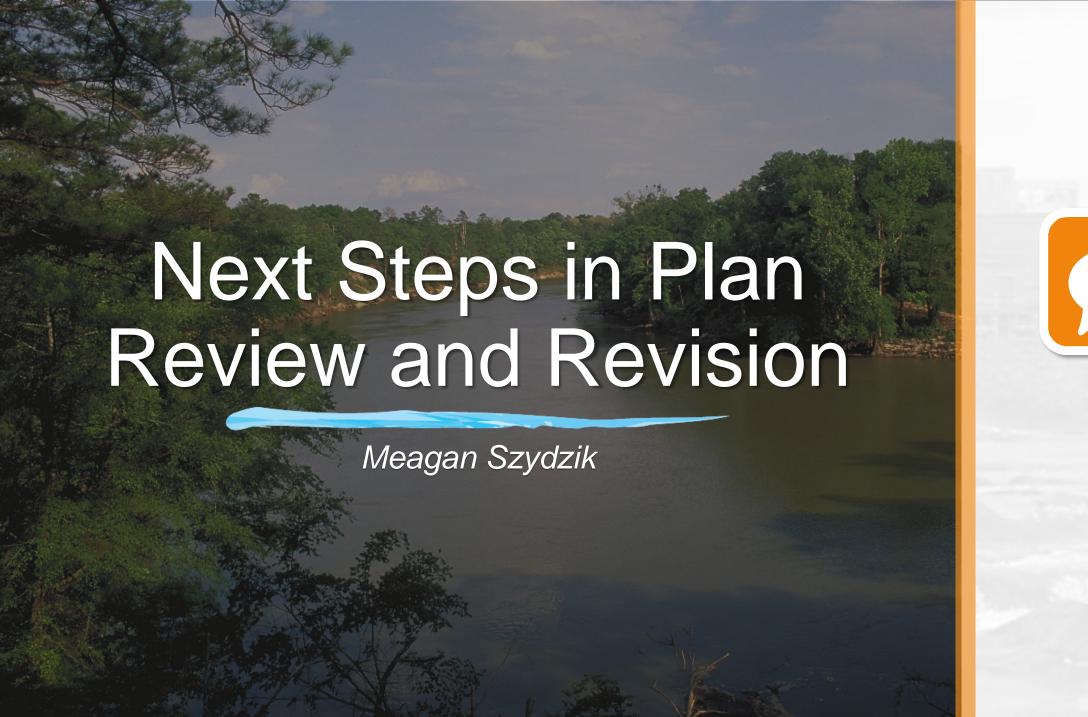




Section 6: WP-8 – Review/edit as needed after deletion of JT-3

WP-8: The Council urges the State to seek a timely resolution of current interstate water issues that directly affect the Apalachicola-Chattahoochee-Flint Basin. The Council recommends the development of a tri-state framework designed to address interstate water issues in the future and the inclusion of the regional water councils within this framework. See below for a coordinated recommendation with neighboring councils regarding an ACF planning and management institution.

JT-3 (deleted by ICC): 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.





Next Steps

- Next Meeting: March 17th, 2023
 - Discuss High Priority Management Practices
 - Reviewing Implementation Schedule and Fiscal Implications
 - Last review of the Plan before Public Review Period (Council will receive the full Plan to read over and suggest any final comments before next meeting)
 - After today's meeting → Clean versions of the Plan to review without markup
 - Committee Meetings?





