



Edisto River Basin Plan Public Meeting

June 1, 2023

Edisto River Basin Plan – Public Meeting Agenda

- **Welcome and Introductions** 6:00 – 6:10
- **Overview of the Planning Process** 6:10 – 6:20
- **Draft Edisto River Basin Plan Highlights** 6:20 – 7:00
- **Summary of Draft Plan Comments and Responses** 7:20 – 7:30
- **Public Comments and Q&A with the RBC** 7:30 – 8:00





Welcome and Introductions

Edisto River Basin Council

Name	Organization	Interest Category
Glen Bell	RBM Forestry, LLC	Agriculture, Forestry, and Irrigation
Alex Tolbert	Orangeburg Country Club	
Jeremy Walther	Walther Farms	
Landrum Weathers	Weathers Farms/Circle W Farms	
Laura Bagwell	Aiken Soil and Water Conservation District	At-Large
Dr. John Bass	Retired	
Alta Mae Marvin	Edisto River Canoe and Kayak Trail Commission	
Jerry Waters	Palmetto Realty and Land Co.	
Brandon Stutts	Dominion Energy South Carolina	Electric-Power Utilities
Dr. David Bishop	The Nature Conservancy	Environmental Interests & Conservation
Hank Stallworth	Retired (SCDNR Chief of Staff)	
Hugo Krispyn	Friends of the Edisto and Edisto Riverkeeper	Industry and Economic Development
Amanda Sievers	Orangeburg County	
Will Williams	Western SC Economic Development Partnership	Local Governments
Mark Aakhus	Town of Edisto Beach	
Joel Duke	Aiken County	
Johney Haralson	Bamberg Soil and Water District	Water-Based Recreation
J.J. Jowers	Public	
Eric Odom	Orangeburg Department of Public Utilities	Water and Sewer Utilities
Jason Thompson	Charleston Water System	



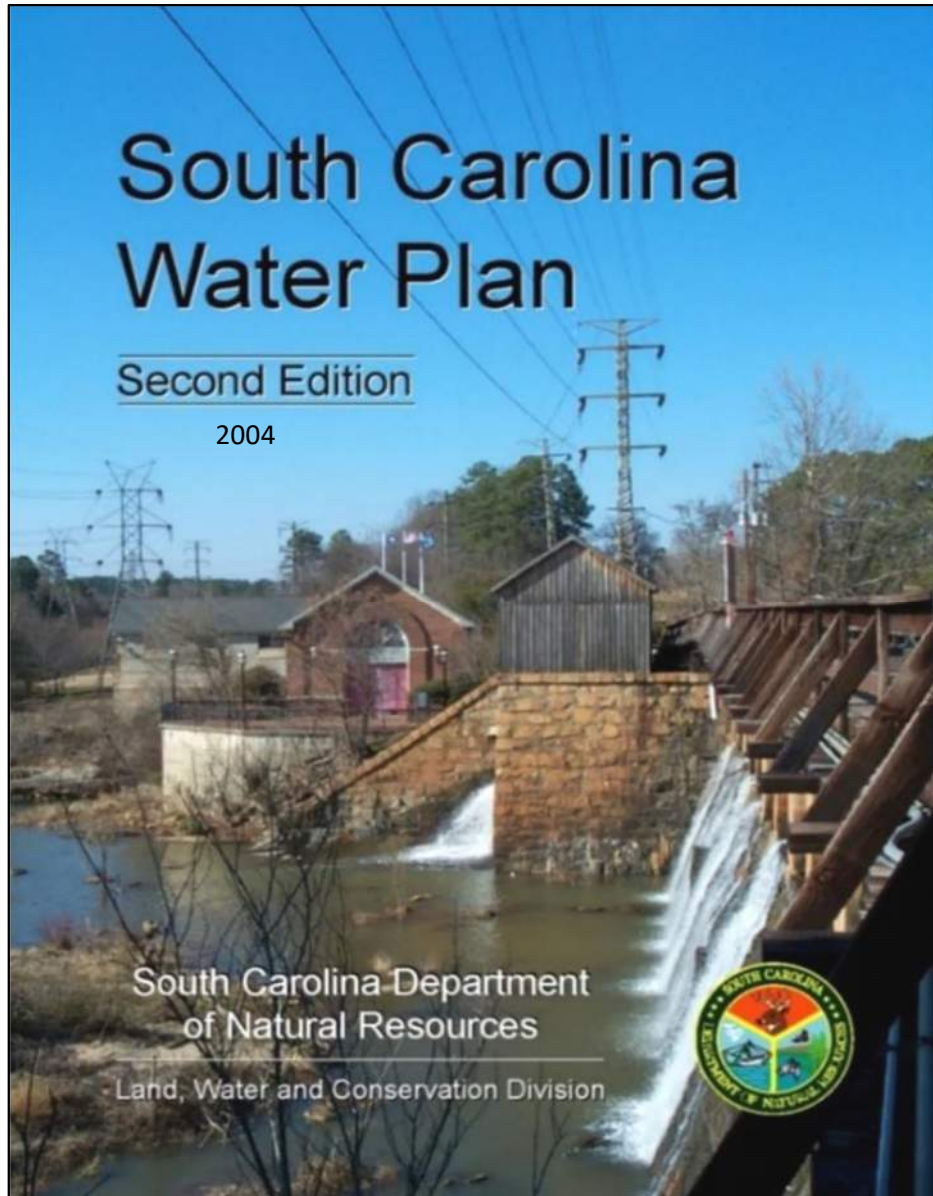
Cooperators and RBC
Support Provided by:





Overview of the Planning Process

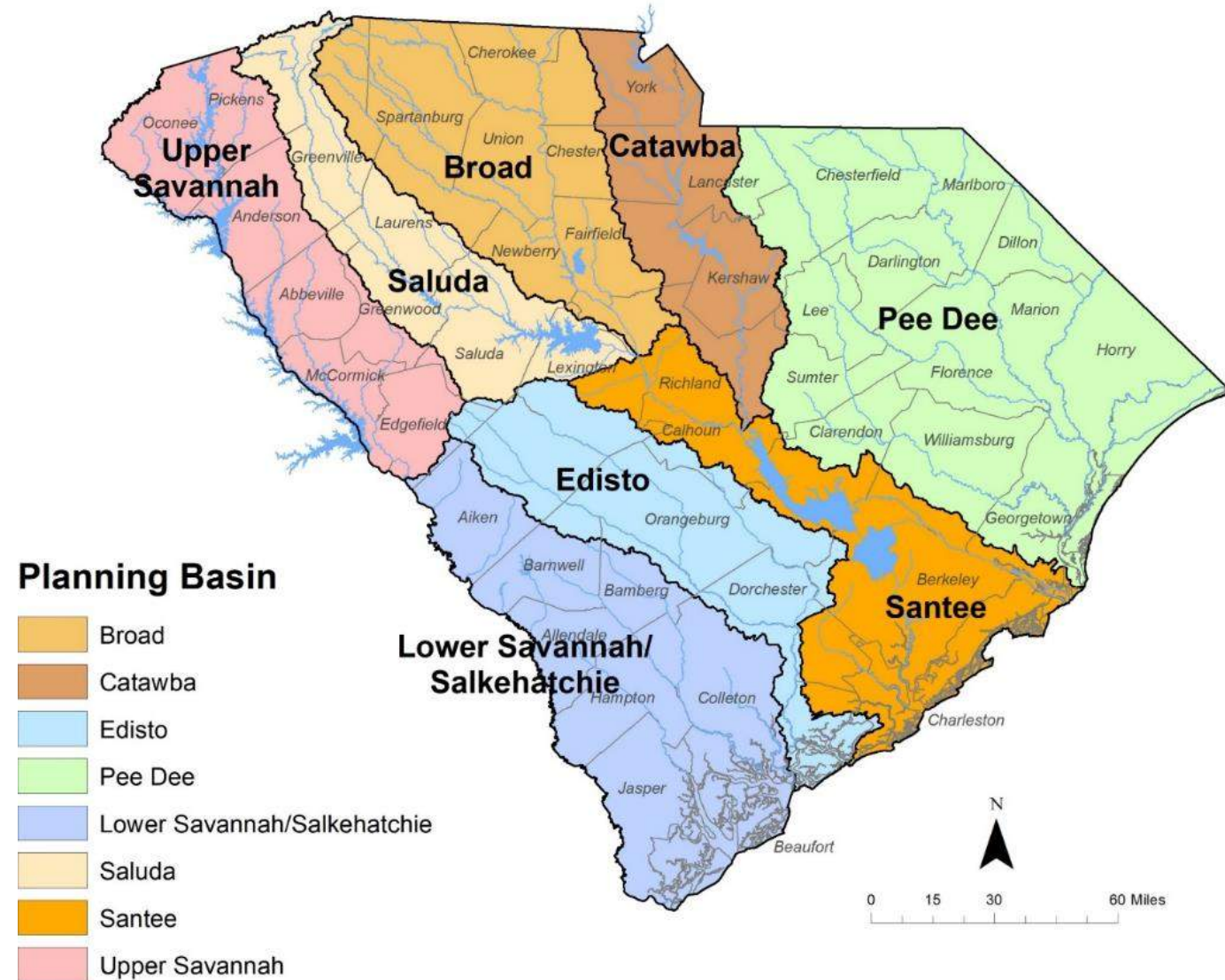
History of State Water Planning



- SCDNR is legislatively mandated to develop a State Water Plan.
- SCDNR published the first edition of the State Water Plan in 1998.
- In 2004, SCDNR published the second edition of the South Carolina Water Plan incorporating lessons learned from the drought of 1998-2002.
- One recommendation was to develop a regional water plan for each major river basin in the State.

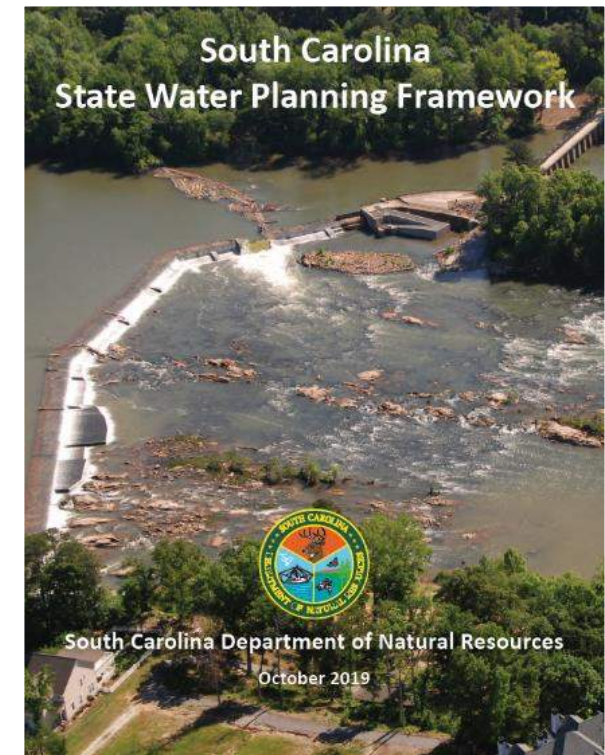
South Carolina's Eight Planning Basins

- River Basin Plans will be developed for the State's eight major river basins using a "bottom-up" approach where stakeholders in each basin lead the development of their basin plan.
- Collectively, the River Basin Plans will form the foundation of a new State Water Plan.



Planning Process Advisory Committee

- Convened by SCDNR in March 2018.
- Purpose - develop a guidance document (Planning Framework) for developing River Basin Plans and for updating the State Water Plan.
- South Carolina State Water Planning Framework (Planning Framework) was published in October 2019 after an 18-month process.



Planning Framework is available for review and download at:
<https://hydrology.dnr.sc.gov/water-planning-framework.html>

PPAC Committee Members

Jeffery Allen

David Baize

David Bereskin

Jesse Cannon

Fred Castles, III

Clay Duffie

Steve Hamilton

Erika Hollis

J.J. Jowers, Jr.

Eric Krueger

Jeff Lineberger

Jill Miller

Dean Moss, Jr.

Myra Reece

Ken Rentiers

Bill Stangler

Landrum Weathers

Scott Willett

Charles Wingard

Clemson University

SCAWWA/WEASC

Greenville Water

Santee Cooper

Catawba-Wateree Water

Management Group

Mt. Pleasant Waterworks (retired)

The Dunes Golf and Beach Club

Upstate Forever

Bamberg County citizen, Edisto

Engineers and Surveyors, Inc.

The Nature Conservancy

Duke Energy

South Carolina Rural Water Association

Beaufort Jasper WSA (retired)

South Carolina Department of

Health and Environmental Control

South Carolina Department of Natural Resources

Congaree Riverkeeper

Farmer

Anderson Regional Joint Water System

Walter P. Rawl and Sons, Inc.



For more information, visit:

[https://www.clemson.edu/public/water-assessment/State Water Planning Process Advisory Committee.html](https://www.clemson.edu/public/water-assessment/State-Water-Planning-Process-Advisory-Committee.html)

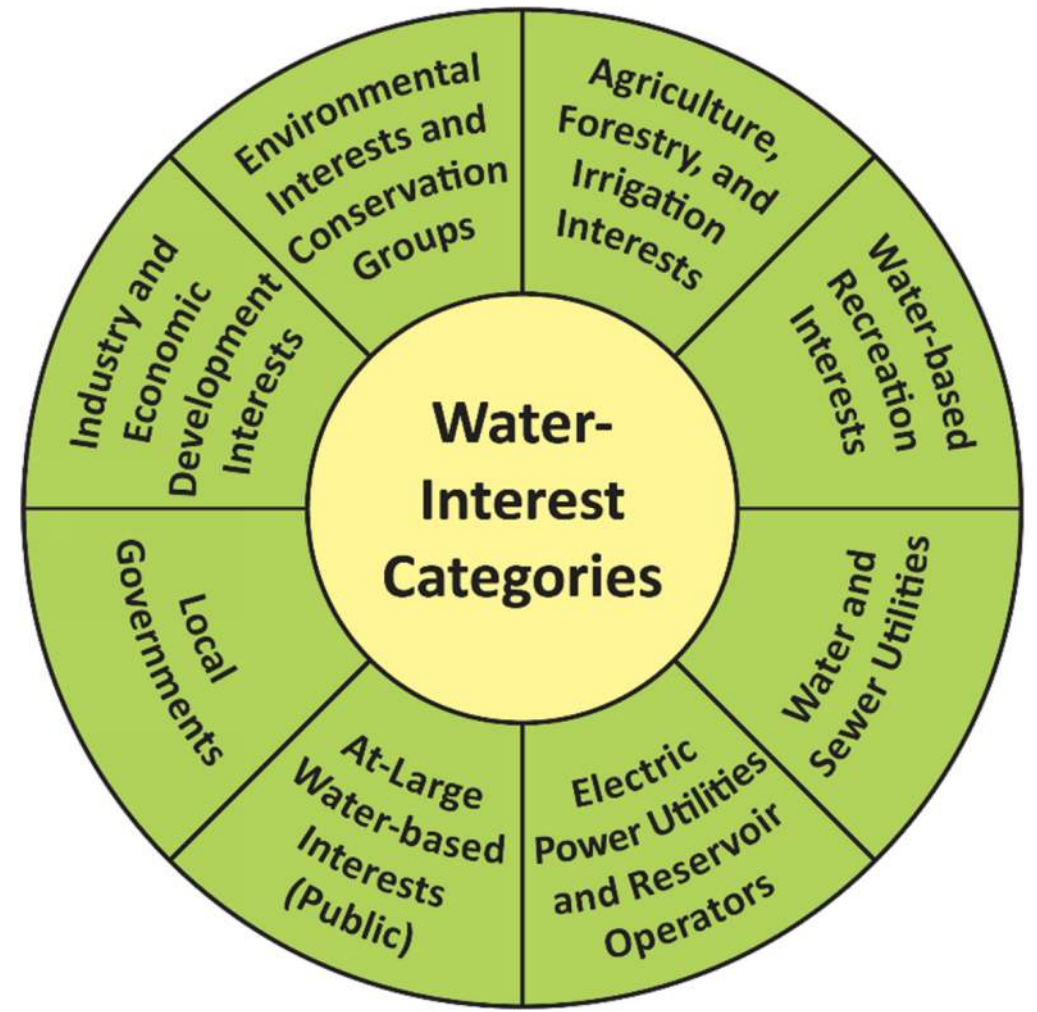
CLEMSON
UNIVERSITY



<https://hydrology.dnr.sc.gov/ppac.html>

Planning Framework calls for the formation of a River Basin Council (RBC) in each planning basin

- **Stakeholder-led team** responsible for developing the River Basin Plan
- Up to **25** members representing **8 interest categories**
- Governed by a set of Bylaws
- **Consensus based** decision-making process
- Chair and Vice-Chair elected by RBC

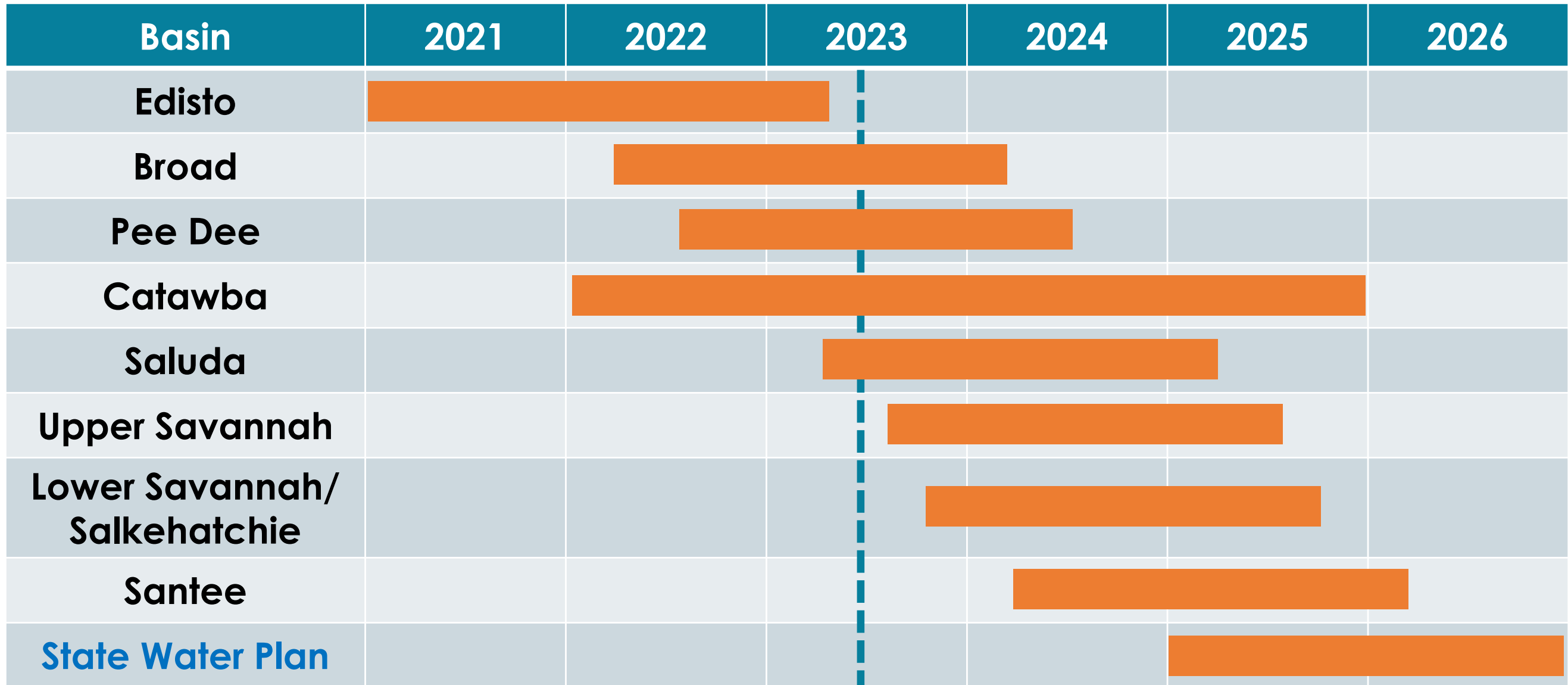


River Basin Planning Current Status

Basin	Status
Edisto	June 2020 – present
Broad	March 2022 – present
Pee Dee	June 2022 – present
Saluda	March 2023 – February 2025
Upper Savannah	Scheduled to begin Summer 2023
Lower Savannah/ Salkehatchie	Scheduled to begin Fall 2023
Santee	Scheduled to begin Spring 2024
Catawba	CWWMG's Integrated Resource Plan in progress



State Water Plan - Schedule



Stakeholder Participation

Edisto River Basin Council Field Trip



PPAC Meeting



Broad River Basin Council Meeting



Pee Dee River Basin Council Meeting



Edisto Basin Water Demand Projection Stakeholder Meeting



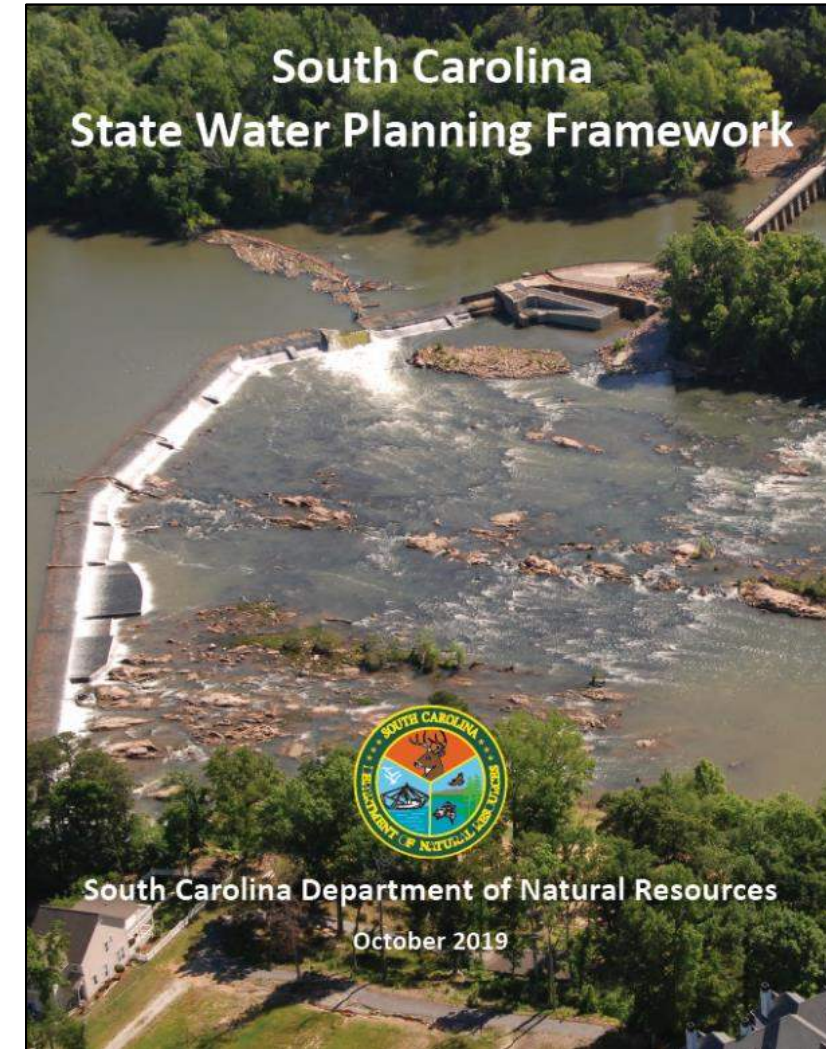
SWAM Model Stakeholder Meeting



What is a River Basin Plan?

A River Basin Plan answers four questions:

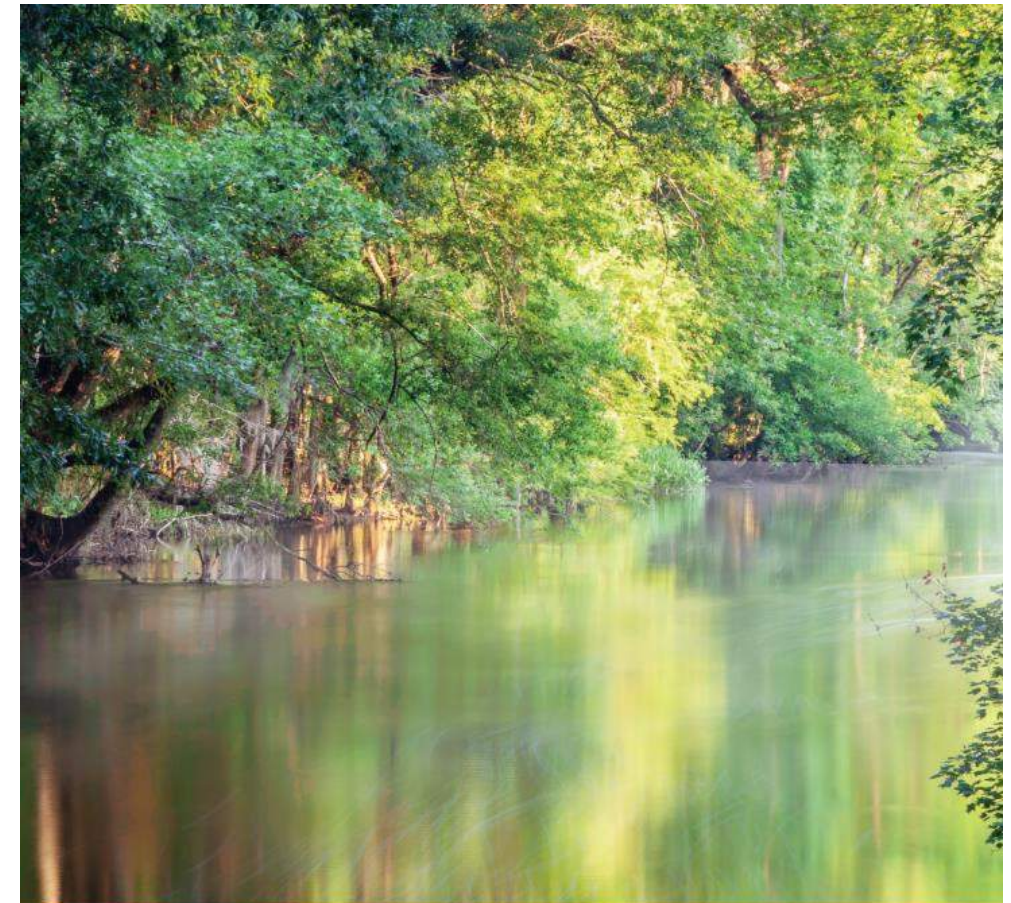
1. What is the basin's current available water supply and demand?
2. What are the current permitted and registered water uses?
3. What will be the basin's water demand over the Planning Horizon, and will the water supply meet the demand?
4. What water management strategies will be employed to ensure the supply meets or exceeds the projected demand over the Planning Horizon?



Proactive Water Management, not Reactive!

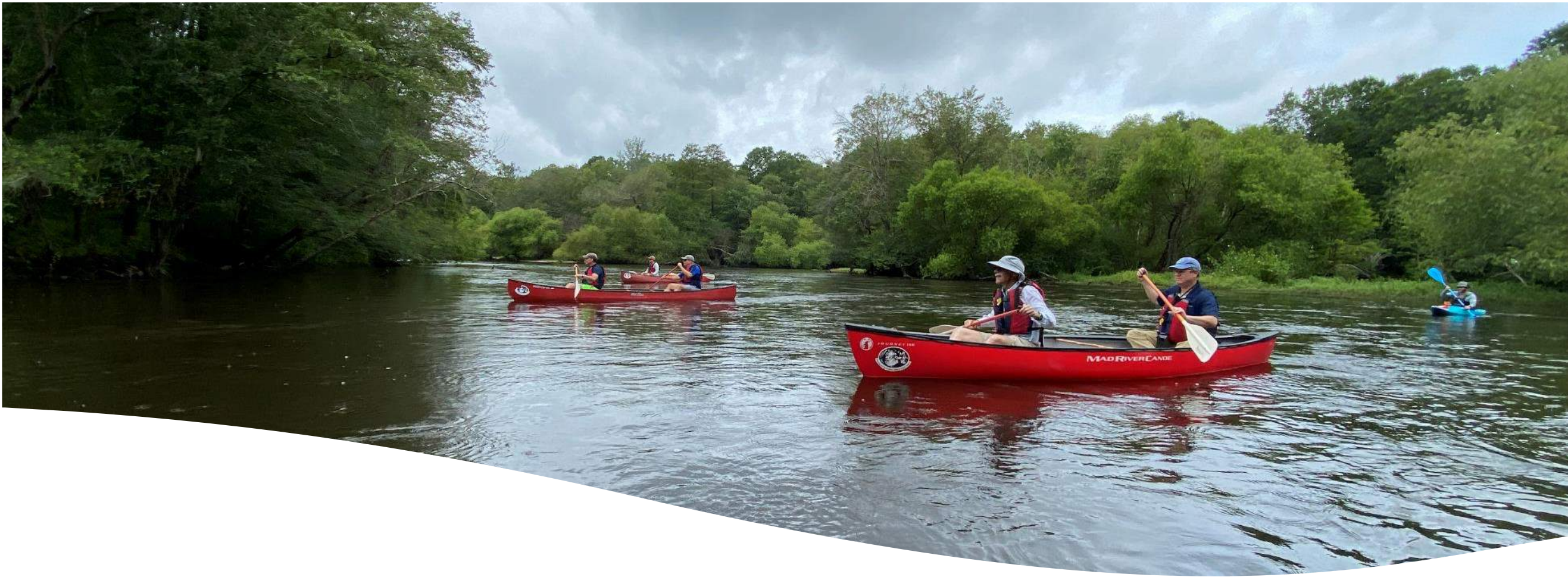
Features of a River Basin Plan

- Stakeholder-developed
- Covers a **50-year** Planning Horizon.
- Considers both **surface water** and **groundwater** resources.
- Current focus is on water **quantity** not water **quality** with emphasis on drought conditions.
- **Not a regulatory document** but may include recommendations regarding State water policy, law, and regulations.
- Updated every 5-years – **water planning will be an ongoing process.**
- Supported by hydrologic data, models, and water-demand projections.



EDISTO RIVER BASIN PLAN 2022





Edisto River Basin Plan Highlights

Edisto River Basin Plan Highlights

We Will Review:

- Current and projected water demands in the basin
- Results of current and future water availability assessment
- Streamflow-ecology relationships
- Recommended water management strategies
- Other Plan recommendations and implementation approach
- Issues and challenges



Edisto RBC Vision Statement

A resilient and sustainably managed Edisto River basin where stakeholder and ecosystem needs are recognized, balanced, and protected.



Edisto RBC Goals

1. Develop water use strategies, policies, and legislative recommendations for the Edisto River basin to:

- a. Ensure water resources are maintained to support current and future human and ecosystem needs.
- b. Improve the resiliency of the water resources and help minimize disruptions within the basin.
- c. Promote future development in areas with adequate water resources.
- d. Encourage responsible land use practices.

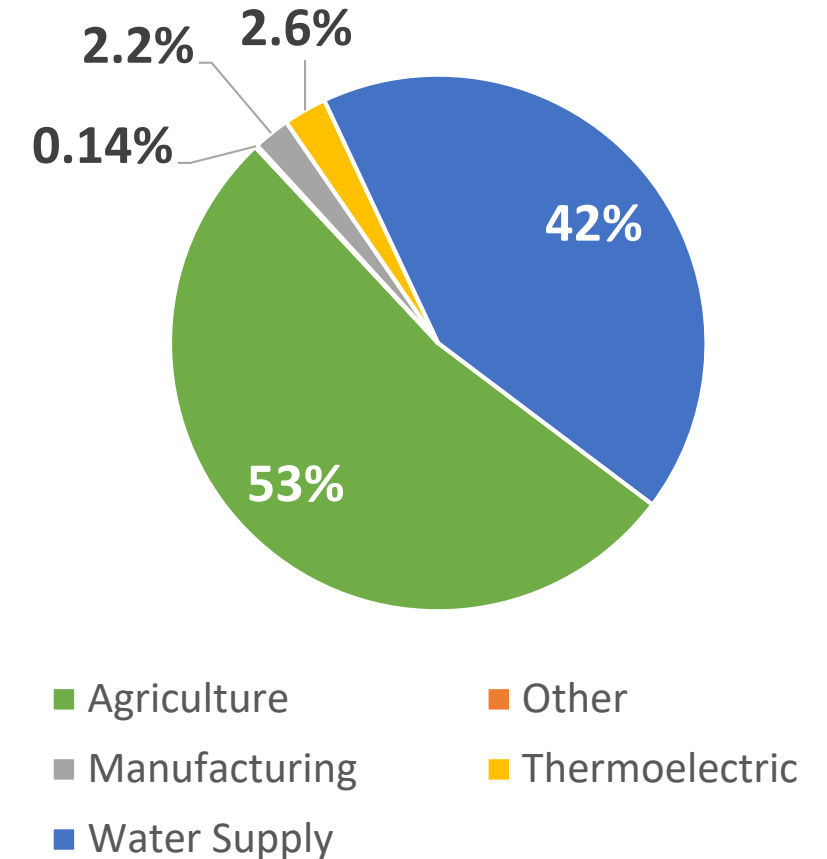
2. Develop and implement a communication plan to promote the strategies, policies, and recommendations for the Edisto River basin.



Current water demands in the basin

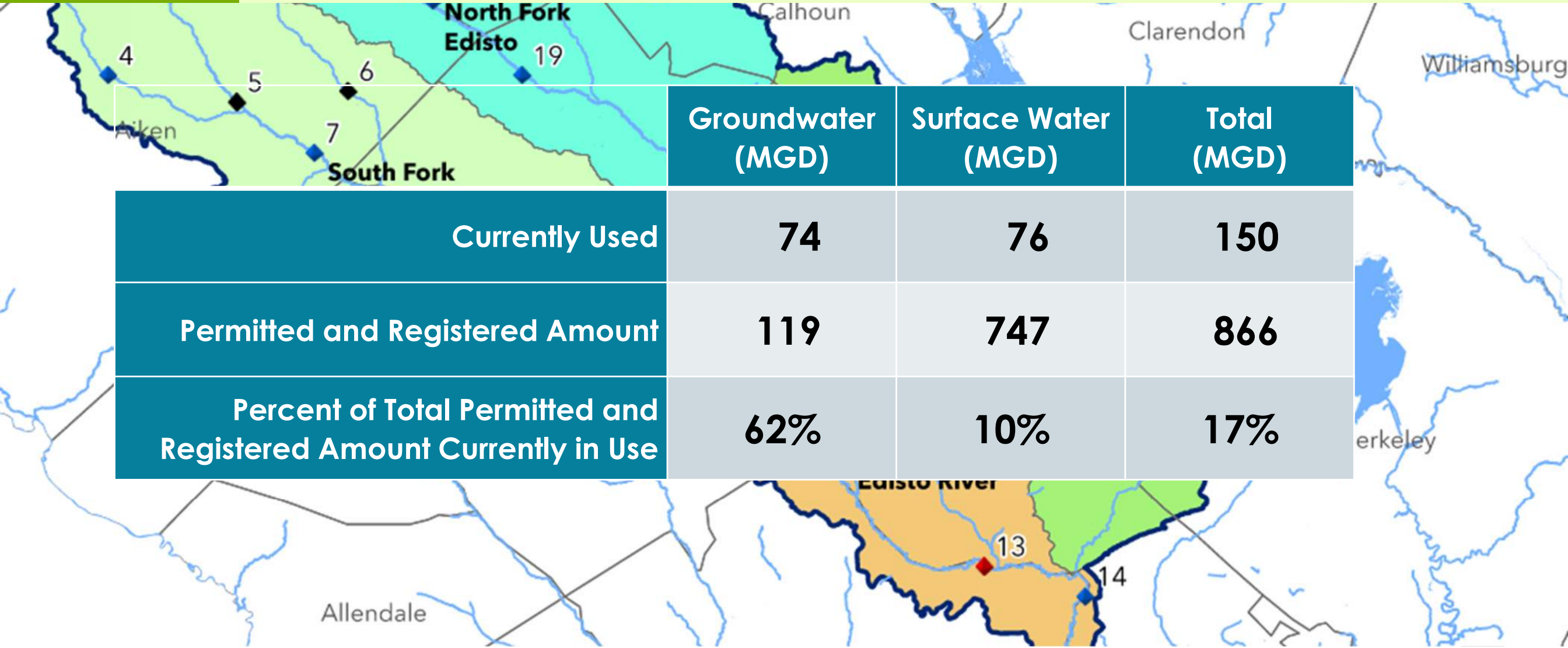
Water Use Category	Groundwater (MGD)	Surface Water (MGD)	Total (MGD)
Agriculture	61	18	79
Public Supply	6	57	63
Manufacturing	2	1	3
Thermoelectric	4	0	4
Other	0.2	<0.1	0.2
Total	74	76	150

Most numbers are rounded to the nearest 1 MGD



 **Key Finding**

Only 17 Percent of the Permitted and Registered water amount is currently being used in the basin



Projected water demands in the basin

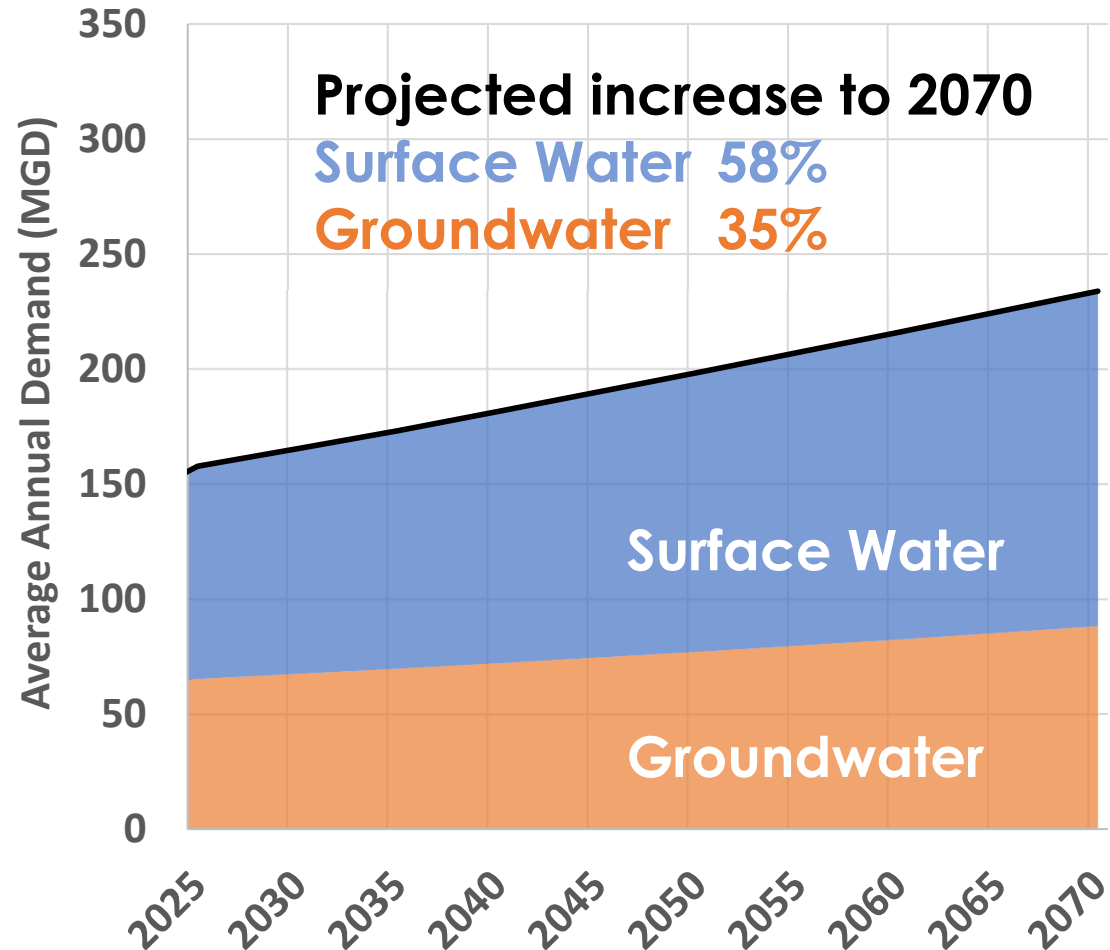


Key Finding

Moderate Growth Scenario demands are projected to increase from 150 MGD (currently used) to 234 MGD by 2070

2070 water demands for this scenario are 27% of Registered and Permitted amounts

Moderate Growth Scenario



Projected water demands in the basin

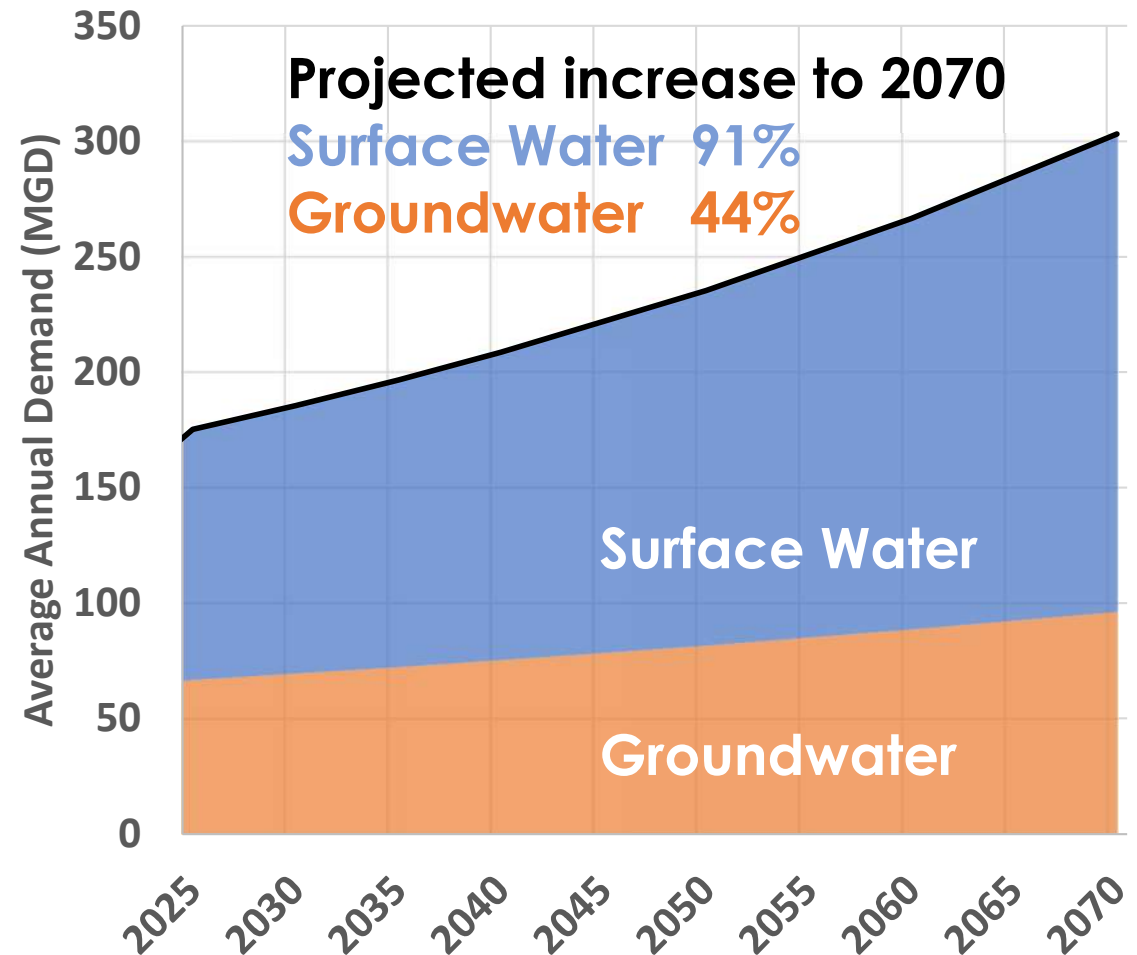


Key Finding

High Growth Scenario demands are projected to increase from 150 MGD (currently used) to 303 MGD by 2070

2070 water demands for this scenario are 35% of Registered and Permitted amounts

High Growth Scenario

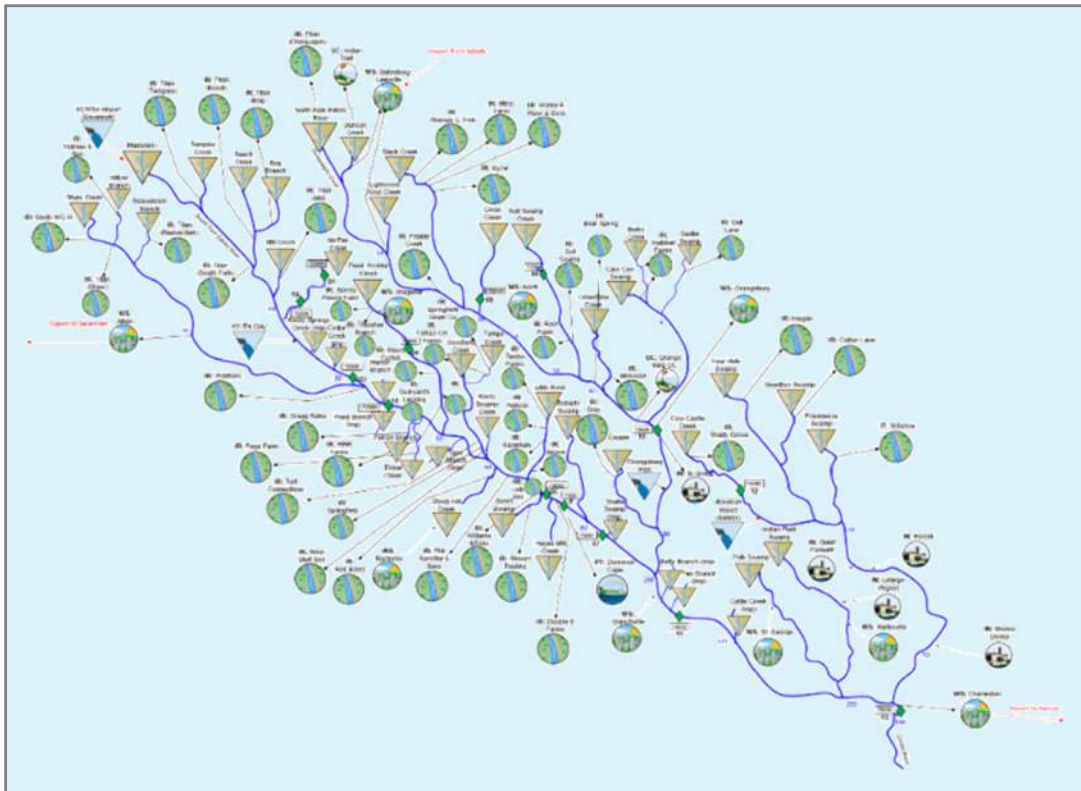


Current and Future Water Availability Assessment

Surface and groundwater models were used to compare available supply to current and projected water demands

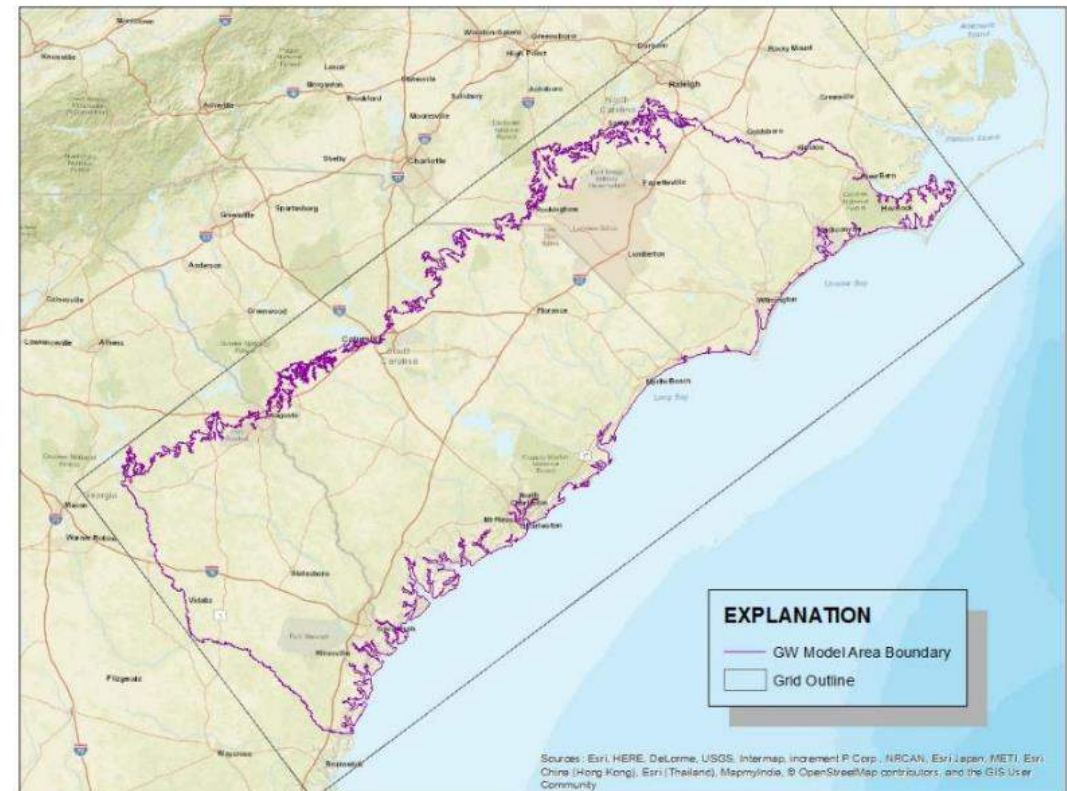
Surface Water

Simplified Water Allocation Model (SWAM)



Groundwater

USGS Atlantic Coast Plain Groundwater Model



Source: Matthew Petkewich and Greg Cherry, USGS

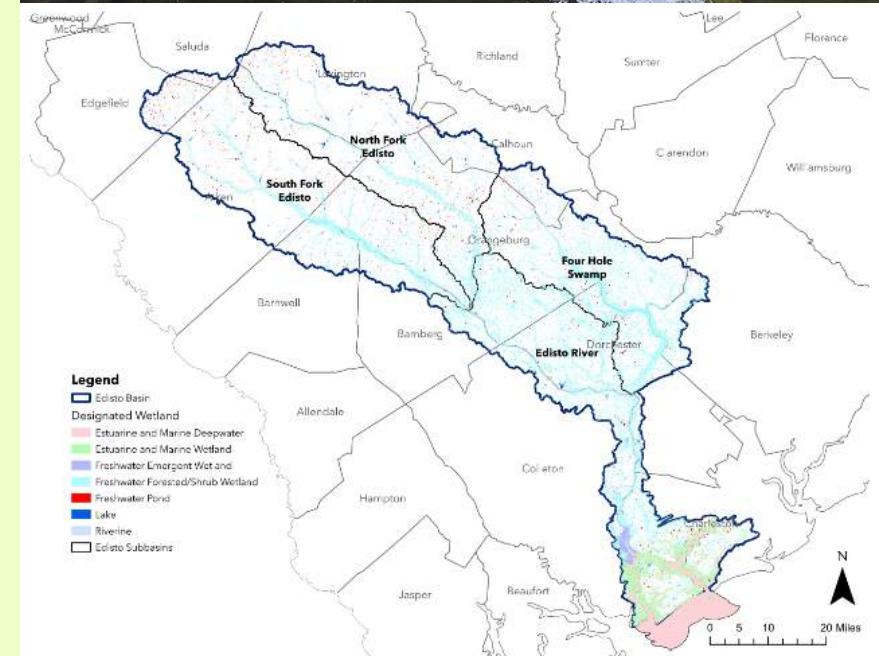


Surface Water Key Findings

- Surface water resources of the Edisto River basin are generally sufficient to meet current and projected future needs.
- If fully permitted and registered amounts were withdrawn, the basin would be unsustainably stressed with frequent shortages and more severe low flows.
- Projected water shortages through 2070 in the agricultural sector are likely overestimated because the many (over 350) impoundments were not modeled.
- Projected public water supply shortages occurred in the High Demand Scenario for year 2070 under drought of record (2002) flows.
- Existing water suppliers' Drought Management Plans, if followed, eliminate projected shortages in 2070.

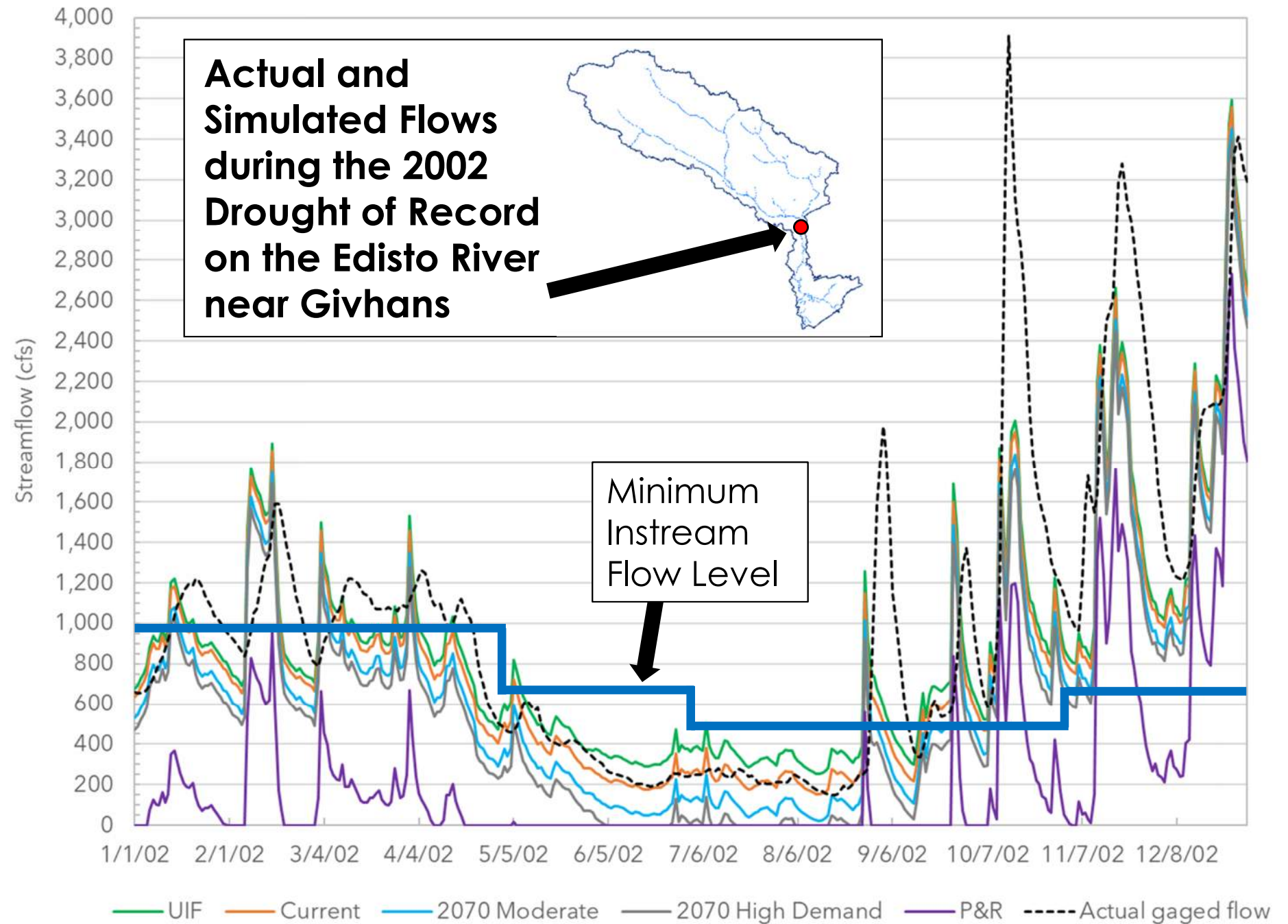


Source: Charleston Water System



Surface Water Key Findings

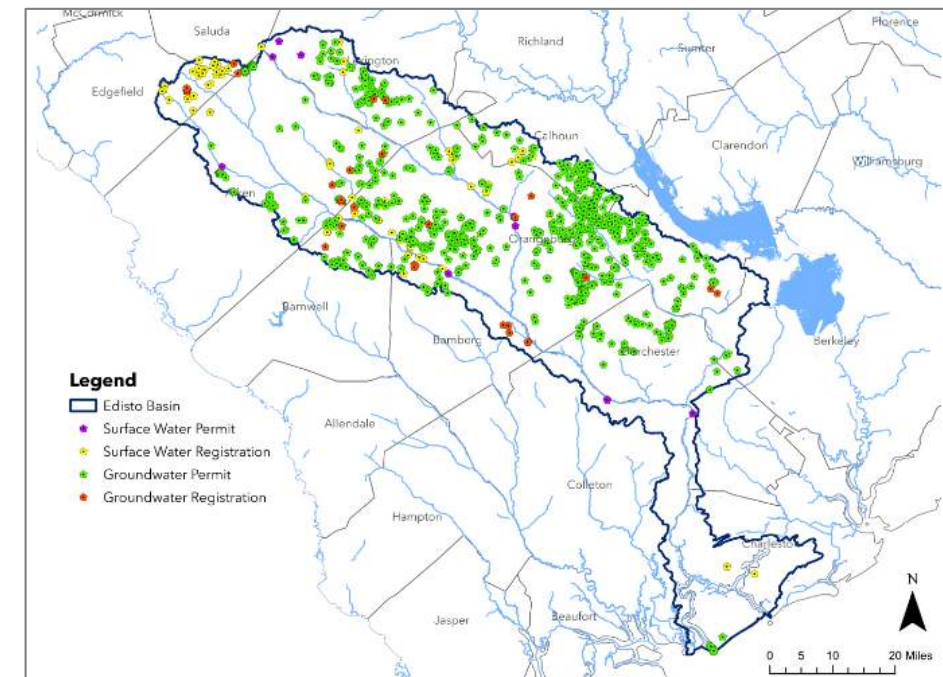
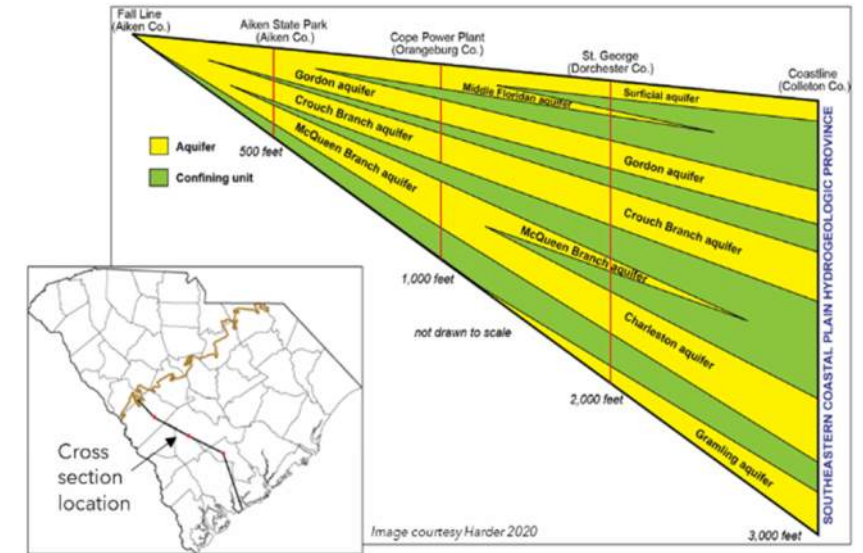
- Even without any surface water use, flows in the Edisto River and other reaches can drop below minimum instream flows during periods of low precipitation and drought.





Groundwater Key Findings

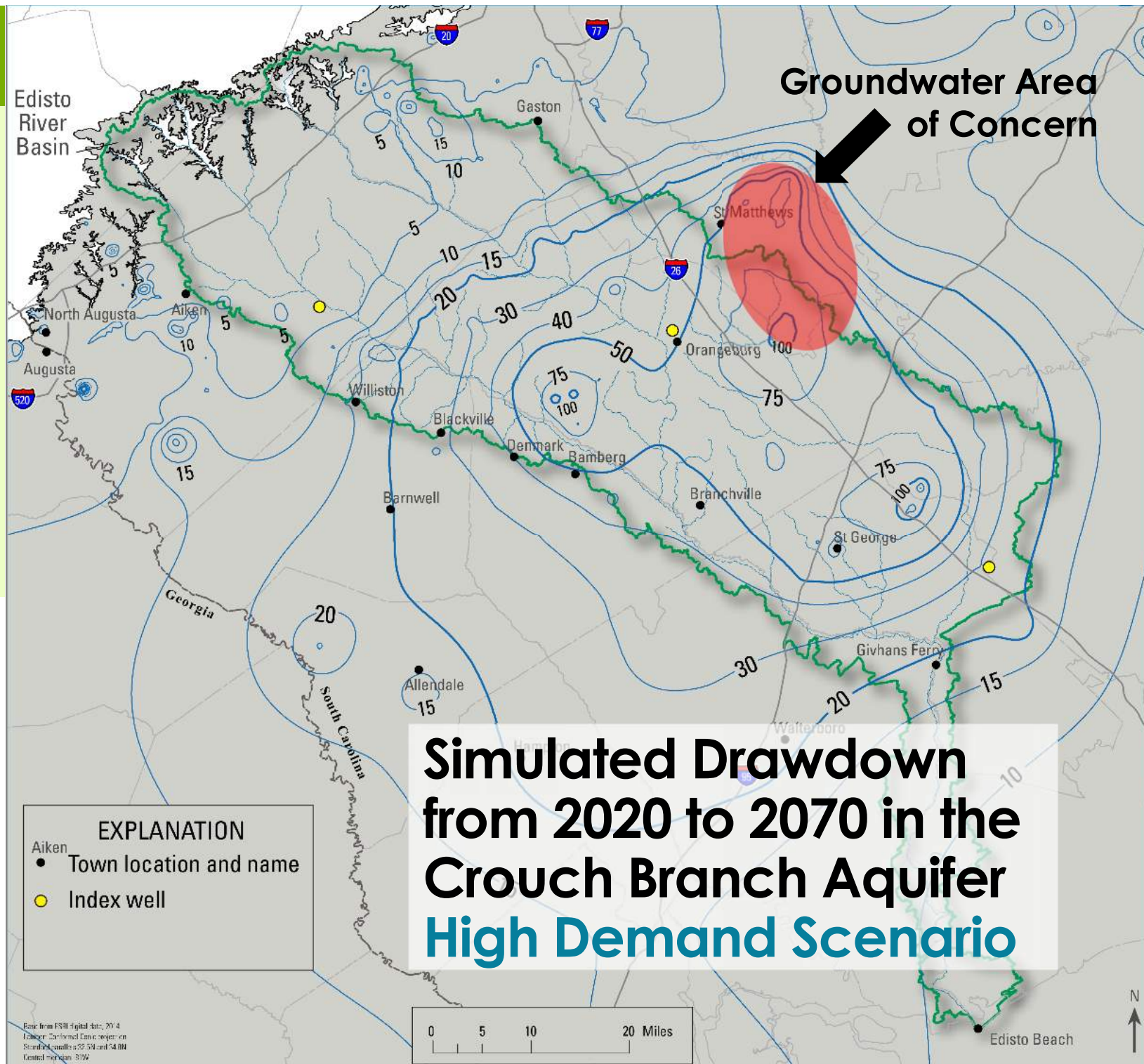
- Groundwater level declines simulated in all scenarios result in aquifer levels dropping below the top of the Crouch Branch aquifer and below the top of the McQueen Branch aquifer in certain locations.
- At these locations, there are risks to the groundwater aquifers that will need to be managed, including the risk of reduced storage, land subsidence, reduced well yields, and/or dry wells. Because of the potential for negative impacts when groundwater levels drop below the top of an aquifer, the RBC designated areas where modeling or monitoring show declines below the top of an aquifer as Groundwater Areas of Concern.





Key Finding

A Groundwater Area of Concern was identified in Calhoun County where water levels are predicted to drop below the top of the Crouch Branch aquifer.



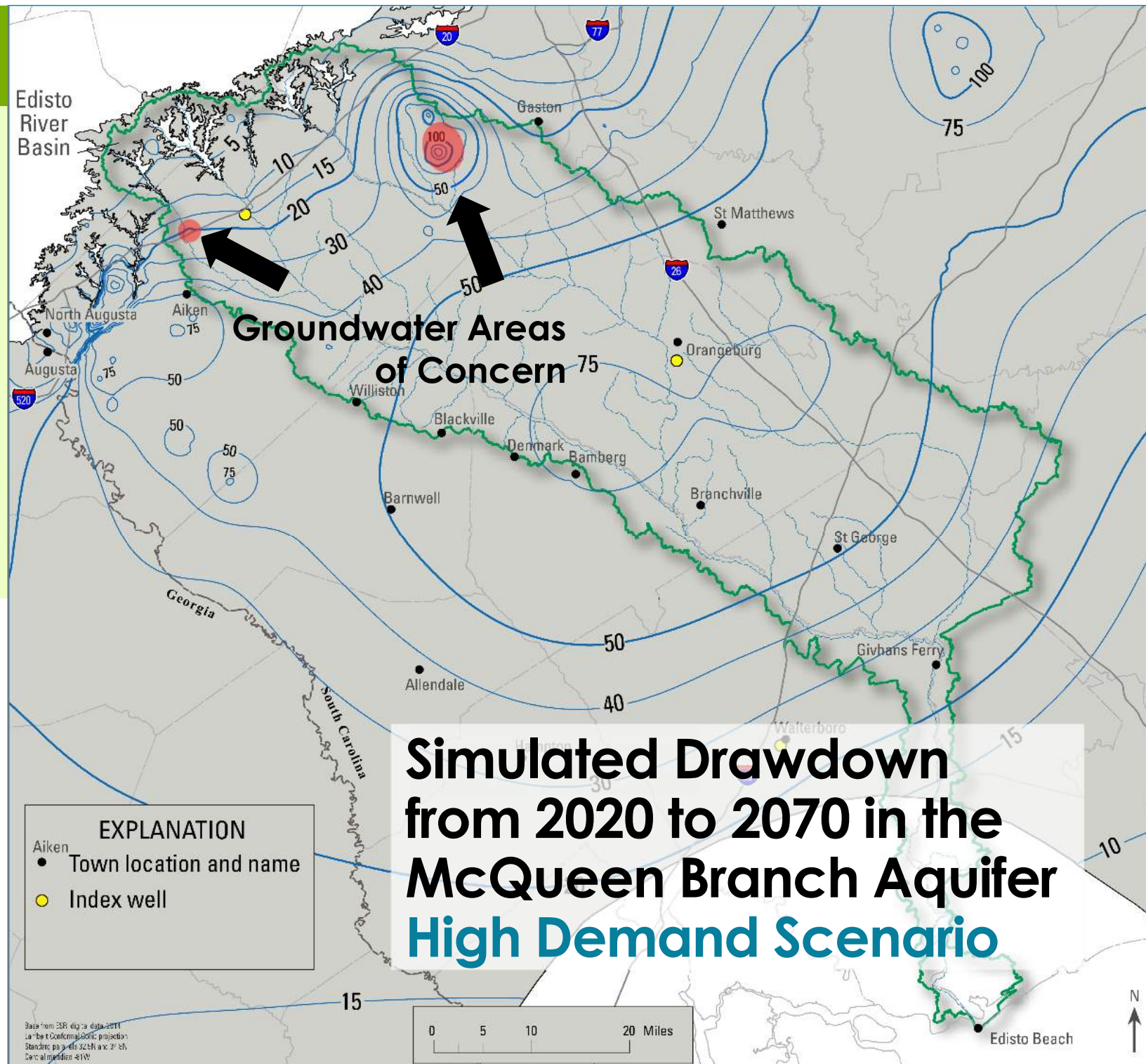
Provisional – All data is considered provisional and subject to revision.

Source: Matthew Petkewich and Greg Cherry, USGS



Key Finding

Groundwater Areas of Concern were identified in Lexington and Aiken Counties where water levels are predicted to drop below the top of the McQueen Branch aquifer.

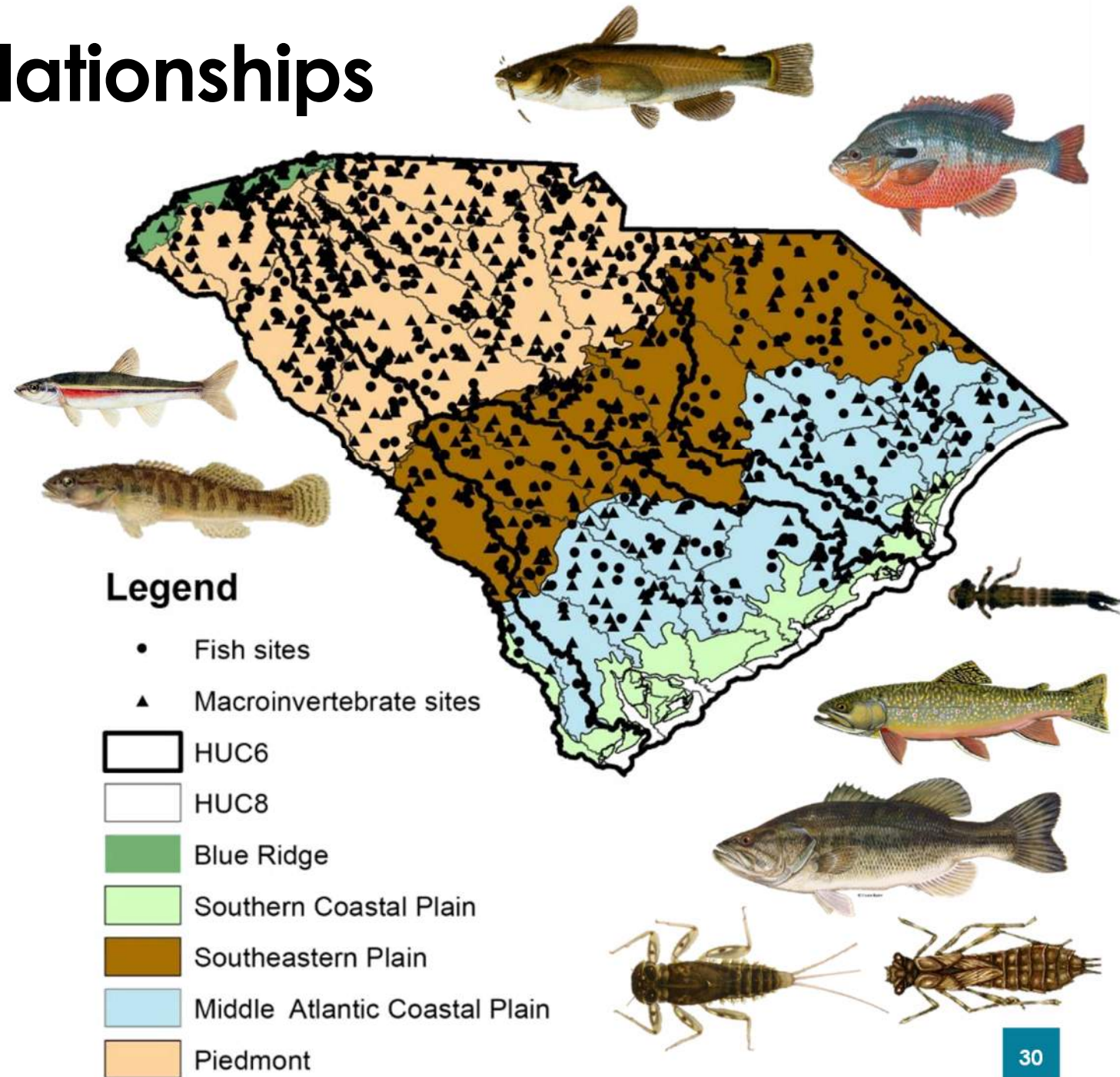


Provisional – All data is considered provisional and subject to revision.

Source: Matthew Petkewich and Greg Cherry, USGS

Streamflow-Ecology Relationships

Objective: Quantify relationships between key flow metrics and biotic response to better inform water flow standards throughout the state and serve as a tool supporting informed decision making in the river basin planning process.



Streamflow-Ecology Relationships

Key Finding

Simulated flow regimes of the Moderate, High Demand, and Permitted and Registered Scenarios are likely to result in low ecological risk in primary and secondary tributaries of the Edisto River basin.

- At only a few river reaches were risks predicted to increase to the medium or high risk range, and only in the High Demand and Permitted and Registered Scenarios.
- This is the first time South Carolina has used biological metrics. Relationships between hydrology and biology will continue to be refined and improved.



Surface Water Management Strategies

Portfolio of Demand Side Strategies



Agricultural Strategies (Examples)

- Water audits and nozzle retrofits
- Irrigation equipment changes
- Soil management and cover crops
- Irrigation scheduling
- Crop variety, type, and conversion



Municipal Strategies (Examples)

- Conservation pricing structures
- Leak detection and water loss control program
- Toilet rebate program
- Landscape irrigation program and codes
- Time-of-day watering limit
- Car wash recycling ordinances
- Public education about water conservation
- Residential water audits
- Water efficiency standards for new construction
- Reclaimed water programs

Surface Water Management Strategies

Supply Side Strategies

Conjunctive Use

- Switching from surface water use to groundwater use during times when river and streamflows are low.

Small Impoundments

- Serve to reduce or eliminate agricultural water shortages during drought conditions.



Low Flow Management Strategy

The strategy serves to augment statewide and municipal drought management plans by triggering tiered withdrawal curtailment by the largest water users in the basin when Edisto River flow reaches certain low levels.

Incremental Percent Below 20% of Median Flow	Edisto River Flow Range (cfs) at Givhans Ferry		Reduction Goal for Surface Water Withdrawals
	Lower	Upper	
0-20%	266	332	20%
20-40%	199	266	40%
40-60%	133	199	60%
60-80%	66	133	80%
80-100%	0	66	100%



Other RBC Recommendations

Technical and Program Recommendations

Example: SCDNR work with SCDHEC, USGS, and other partners to enhance monitoring capabilities in the identified Groundwater Areas of Concern.

Recommendations to Improve the River Basin Planning Process

Example: RBC members should communicate with legislative delegations throughout the river basin planning process to promote their familiarity with the process and its goals and to generate buy-in on its recommendations.



Other RBC Recommendations

Policy, legislative, and regulatory issues

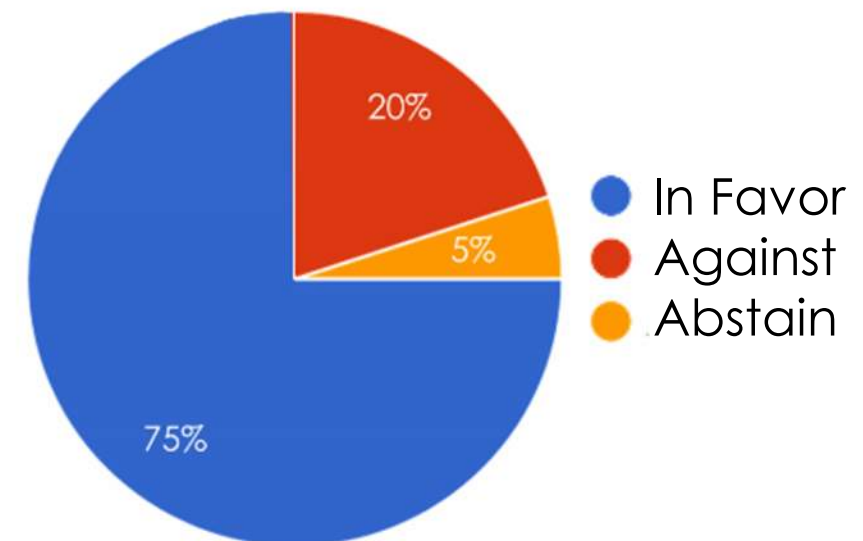
The Edisto RBC did not reach consensus on these topics but identified and discussed issues, developed proposals, and documented support or concerns with the proposals.

Example Proposal: The Surface water withdrawal, permitting, use, and reporting regulations should use 80 percent of **median** annual daily flows instead of 80 percent of **mean** annual daily flows to determine safe yield at a withdrawal point.

Support for: The median is a better statistical representation of flow on the river and may reduce overallocation.

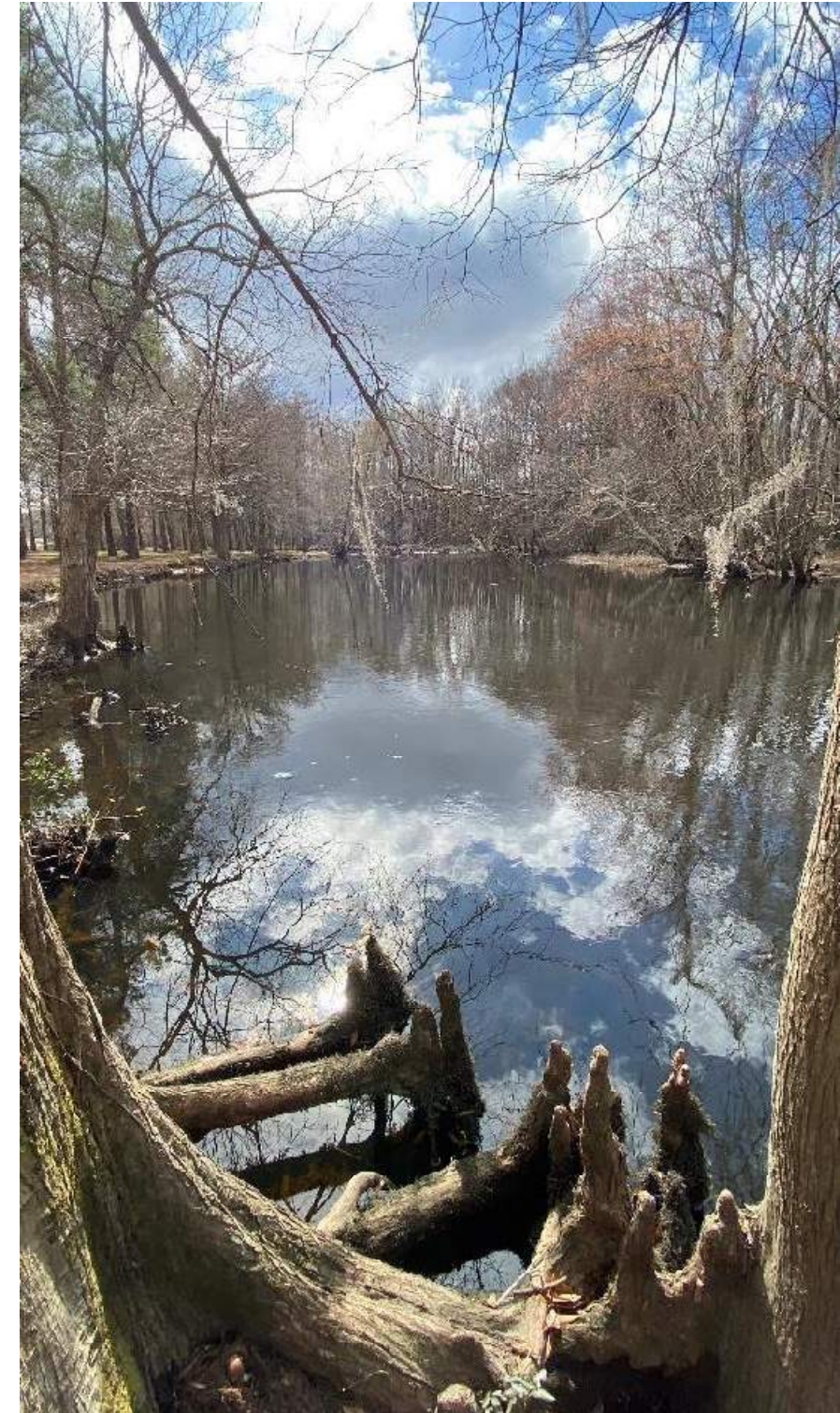
Reasons Against: Although flawed, existing regulations effectively protect the resource, and a switch may not be worth the confusion it could create.

RBC Voting Results



Identified Issues and Challenges

- Surface water resources of the basin are over-allocated based on existing permit and registration amounts. The registered and permitted withdrawals have effectively used up the safe yield of the basin and SCDHEC cannot grant any new surface water registrations.
- Future surface water withdrawers seeking new registrations in the basin will need to apply for a permit and be subject to permit fees and conditions.



Identified Issues and Challenges

- Because no new registrations can be granted and the full existing registered and permitted amounts are unlikely to ever be used, the existing permits and registrations effectively act as a conservation measure.
- Currently no users in the Edisto River basin are subject to Minimum Instream Flow requirements.



Implementation Plan

The RBC-developed implementation plan includes specific short-term (5-year) and long-term strategies and actions to address the following six objectives:

1. Reduce demand to conserve water resources
2. Conserve surface water during low-flow conditions
3. Augment sources of supply
4. Protect groundwater supplies and existing users
5. Improve technical understanding of water resource management issues
6. Effectively communicate RBC findings and recommendations





Summary of Comments and Responses on the Draft Plan

The Final Edisto River Basin Plan is available at:

<https://hydrology.dnr.sc.gov/edisto-river-basin-plan.html>

SCDNR Hydrology

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Edisto River Basin Plan

Final Edisto River Basin Plan Access and Public Meeting Information

Edisto River Basin Planning Documents:

[Executive Summary](#)
[Edisto River Basin Plan](#)

Public Meeting Information:

Date and Time: **June 1st, 2023, 6:00 PM - 8:00 PM**

[Meeting Agenda](#)

Location:
Clemson Edisto Research and Education Center
64 Research St.
Blackville, SC 29817

Purpose:
To introduce the final Edisto River Basin Plan and address public comments received on the draft plan.

Edisto River Basin Plan

EDISTO RIVER BASIN PLAN 2023

The Final Edisto River Basin Plan is available at:

<https://hydrology.dnr.sc.gov/edisto-river-basin-plan.html>

Appendix F
Public Comments and Responses

Public comments on the Draft Edisto River Basin Plan were accepted from February 15th through March 7th, 2023. Comments were received from the following:

Peter DeLorme, PMP
W.A.T.E.R. Water for Aiken Through Environmental Reform

Eric Krueger
Director of Science and Stewardship
The Nature Conservancy, South Carolina

Leonilda Burke

Landrum Weathers
Edisto RBC Vice Chairman and Planning Process and Advisory Committee Member

The Edisto RBC appreciates the comments and suggestions for improving the Draft Plan. Where noted, the Final River Basin Plan was revised to address comments. All submitted comments are included on the following pages. Responses follow each set of comments.

Comments Submitted by:
Peter DeLorme, PMP
T.E.R. Water for Aiken Through Environmental Reform

Responses follow each comment in red text.

My general impression upon reading the Executive Summary and scanning the full draft is that the plan is based on extensive research and discussion, some which confirms data and modeling seen in the past during advocacy for the Western Capacity Use Area. The science is appropriate and sufficient for the Council to make informed decisions on near-term and anticipated future needs for our critical, though not infinite, water resources.

Response: The RBC appreciates the comment.

The consensus basis for making decisions about recommendations has several drawbacks and should be replaced by presentation of the majority recommendation with provision for including one, or more, minority opinions in the Plan.

Having followed the entire process from beginning to end, with periodic updates on progress, the one recurring theme in those updates was the difficulty in reaching consensus. Consensus building is known to be a difficult outcome to achieve. In this case though it seems to have been extremely difficult. Just one person was generally the cause of much of the drawn-out discussion and watering down of recommendations.

Requiring consensus makes it possible for one member of the team to disrupt, or make less useful the recommendations proposed by the majority. Perhaps, as is used in Congress, a 2/3 rule should apply, with published recommendations requiring more than just a simple majority vote.

The reporting of the votes for and against a recommendation/proposal such as in the pie charts found in in Table ES-4 is a step in the right direction. An improvement would be provision for counter proposal(s) by the dissenter(s). See Executive Summary page 24.

More extensive majority/minority reporting would give future users of the information, especially those building the State Water Plan, a clearer understanding of the issues which will need to be addressed.

Response: The State Water Planning Framework notes that, "the diverse membership of each RBC is intended to allow for a variety of perspectives during the formulation of the River Basin Plan. The planning process is intended to follow a consensus-driven approach, in which local stakeholders work together to develop a water plan that fairly and adequately addresses the needs and concerns of all water users." The recommendations developed by the RBC which are documented in Chapter 9, were consensus-based.

In considering recommendations focusing on policy, legislative and regulatory issues, it became apparent that the RBC was not likely to reach consensus. So that decision makers can assimilate and understand the diverse points of view represented, the RBC decided to document not only the number of votes for and against these specific recommendations, but to include the reasons why RBC members

Public Comments and Responses

Topic 1 - Consensus

“The consensus basis for making decisions about recommendations has several drawbacks and should be replaced by presentation of the majority recommendation with provision for including one, or multiple, minority opinions in the Plan.”

“Using a consensus approach dilutes the recommendations legislators will ultimately depend on to support new legislation related to our rivers.”

- The Planning Framework stipulates a consensus-driven approach
- Nearly all the recommendations developed by the RBC which are documented in Chapter 9, were consensus-based meaning all members indicated they could “live with” them.
- Only for recommendations focusing on policy, legislative and regulatory issues, was the RBC not able to reach consensus. The Plan documents the reasons why RBC members were in favor or against it and presents majority and minority opinions.

Discussion of Public Comments and Responses

Topic 2 – Balancing water allocations between sectors

“Balance of allocations between the categories of uses represented on the ERB should be tracked and possibly maintained over time. Current relationships between sector allocations may shift due to uneven future growth. This report should define how future allocations be distributed and who will make the decisions. For instance, if irrigation uses 40% of river flow at present and Municipal Water Supply uses 20%, will that 2:1 ratio be maintained in the future. Will municipalities be allowed to grow their consumption to the detriment of irrigation?”

- **Permits and registrations for surface water withdrawals are issued by SCDHEC. SCDHEC does not consider sector allocations when issuing permits and registrations.**

Public Comments and Responses

Topic 3 – Trigger points, voluntary actions, and mandatory actions

“Trigger points in defined metrics should be used to start voluntary action, with mandatory restrictions following if there is further lowering or increasing of the defined metrics-based triggers. These triggers should be strongly supported by scientific data, rather than merely by the votes of the RBC participants”

- **The trigger points for the RBC-developed Low Flow Management Strategy were selected and agreed upon by the RBC, with the clear understanding that they are triggers for voluntary action.**
- **The RBC is not a regulatory body, and therefore the recommendations are not mandatory, enforceable actions.**
- **The public water suppliers Drought Plans have a suite of voluntary and mandatory actions to be implemented as drought conditions worsen.**

Public Comments and Responses

Topic 4 – Consideration of past water use in permitting decisions

“Given the gross overallocation of water to some withdrawers, all allocations should be reviewed in each of the quinquennial Plan updates. Yes, this would add economic uncertainty to all users, but demonstrated prior use should be one determining factor in assessing future allocations. Being mindful of this strategy should inform urban and other sector growth plans.”

“The process of permitting and registering large users to take surface water from the River in perpetuity is flawed. “

- **SCDHEC has recently circulated for PPAC and stakeholder comment, conceptual revisions to the South Carolina Surface Water Withdrawal, Permitting, Use and Reporting Act (§ 49-4-10, et.seq.) that include having permitting timeframes of 30 years, with a coordinated review of use and permits every 10 years, which would correlate to the 10-year basin planning findings and updates.**



Public Comments and Q&A with the RBC