



Introduction to Saluda River Basin Planning

Saluda River Basin Council – Meeting #1, March 22, 2023

Scott Harder

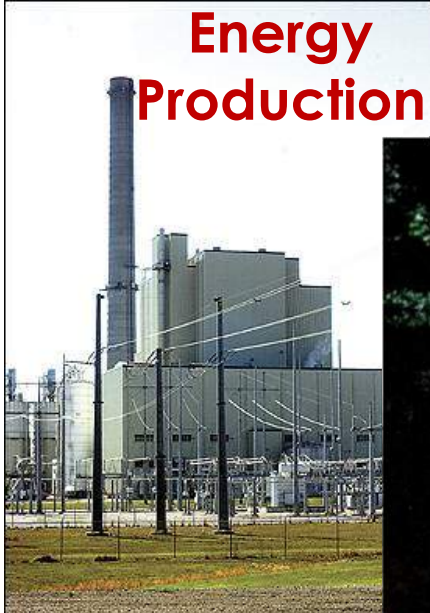
Hydrology Section Chief

SC Department of Natural Resources





Water Use in South Carolina



**Energy
Production**



Fishing



**River
Recreation**



**Wastewater
dischargers**



**Public Water
Supply**



**Fish and
wildlife**



**Manufacturing/
industry**



Agriculture

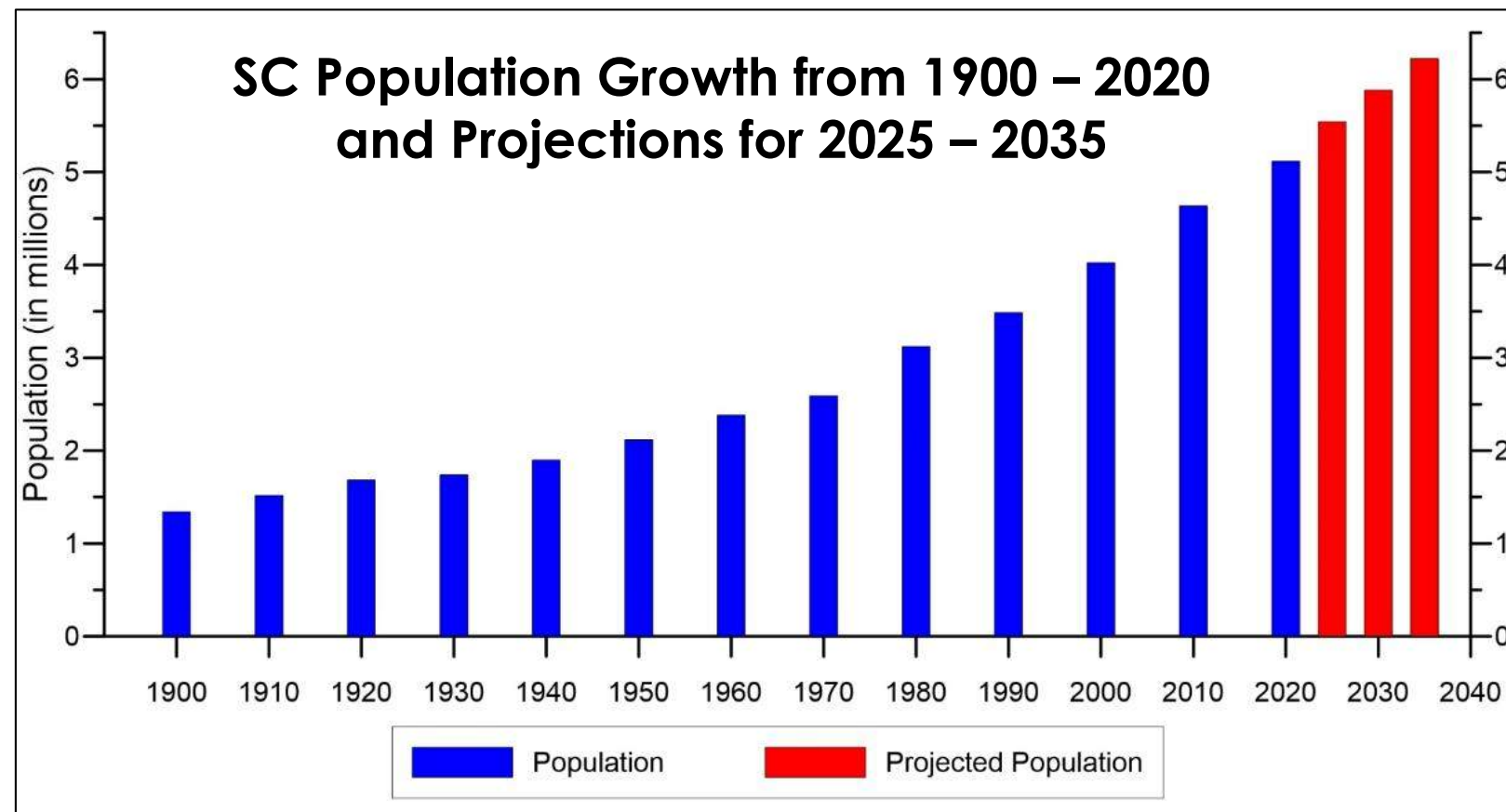


Why State Water Planning



Population Growth → Increased Water Demand

- From 1990 – 2020, SC population increased from **3.5** to **5.1** million and is forecasted to increase to **6.2** million by 2035.
- Our growing population may increase future water demands and may increase competition for our water supplies.



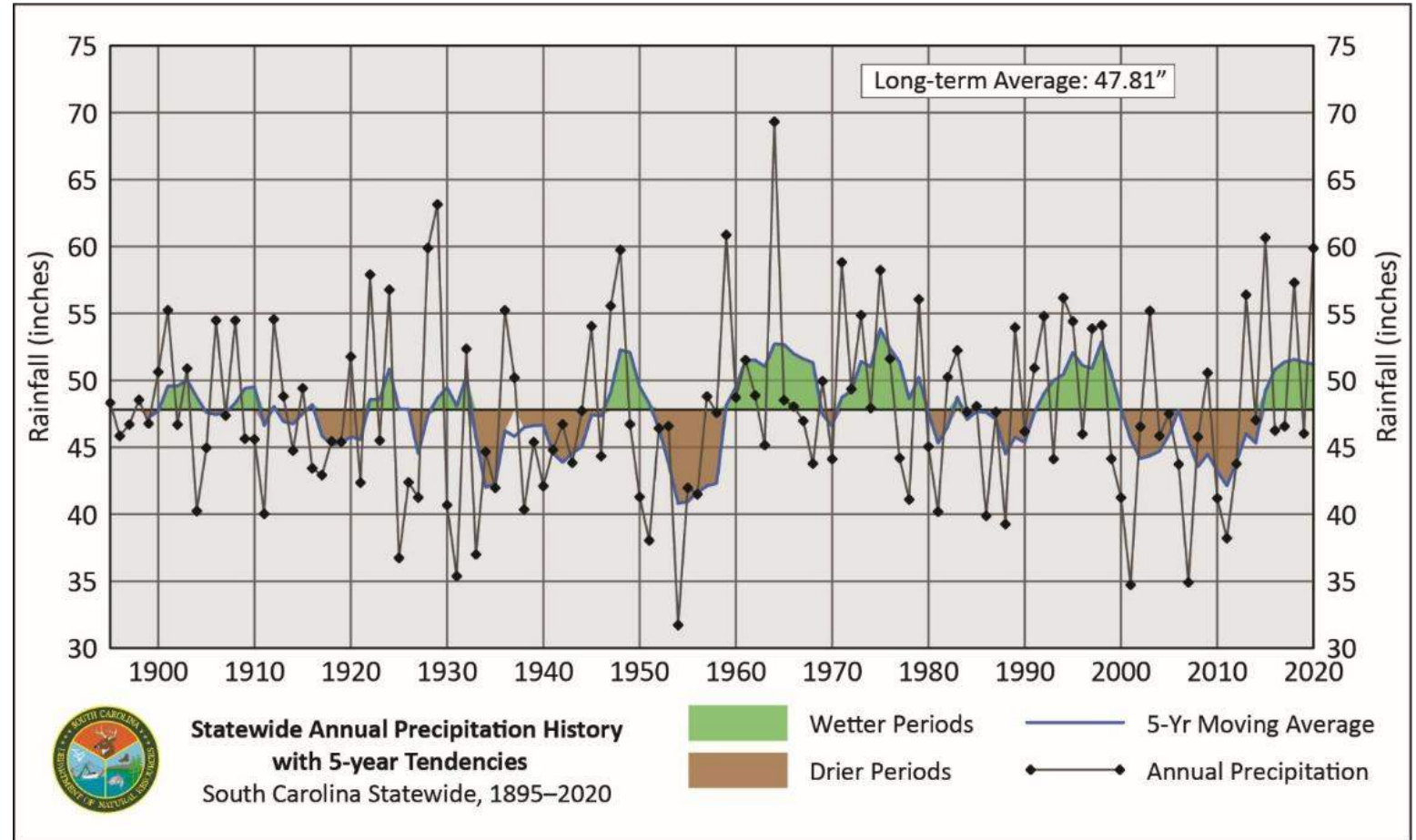
Data from the SC Office of Revenue and Fiscal Affairs, 2021, and U.S. Census Bureau, 2021.



Why State Water Planning?

Drought

SC generally has an abundance of water, but recent droughts (**1998-2002, 2007-2008, 2011-2012, 2016, 2019, 2021**) have stressed the State's water resources.



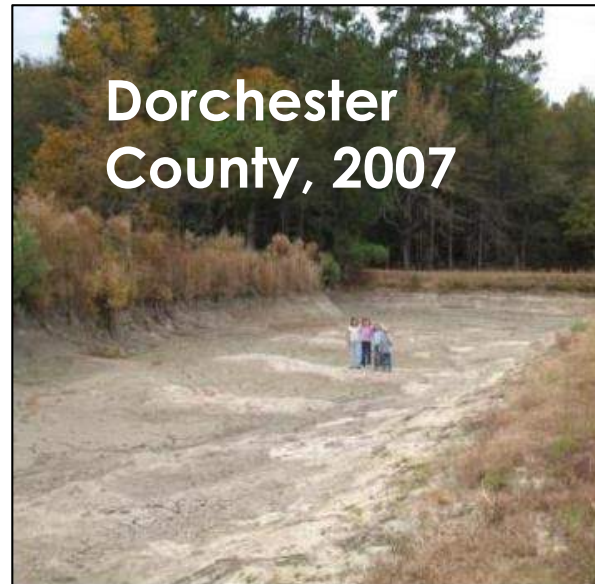
Statewide Average Annual Rainfall (inches) and 5-year Running Average



Why State Water Planning?

Tree-ring studies indicate the occurrence of more severe and longer-term droughts (Mega-droughts) over the past 400 years.

Uncertainty in future droughts + increased water demand = the need for comprehensive State and river basin planning.



**Dorchester
County, 2007**



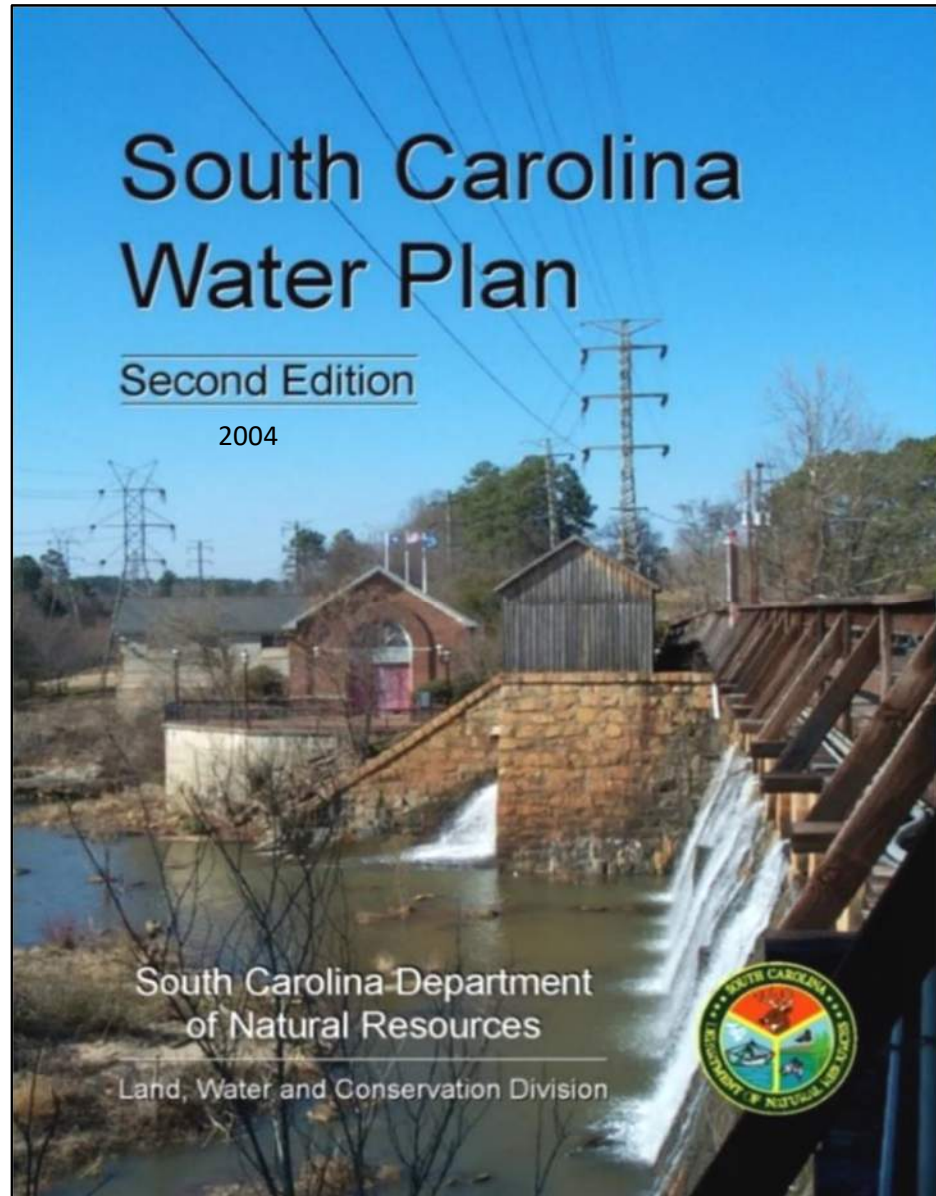
Lake Marion, 2007



**Kings Mountain
State Park, 2008**

Photos courtesy of National Drought Mitigation Center

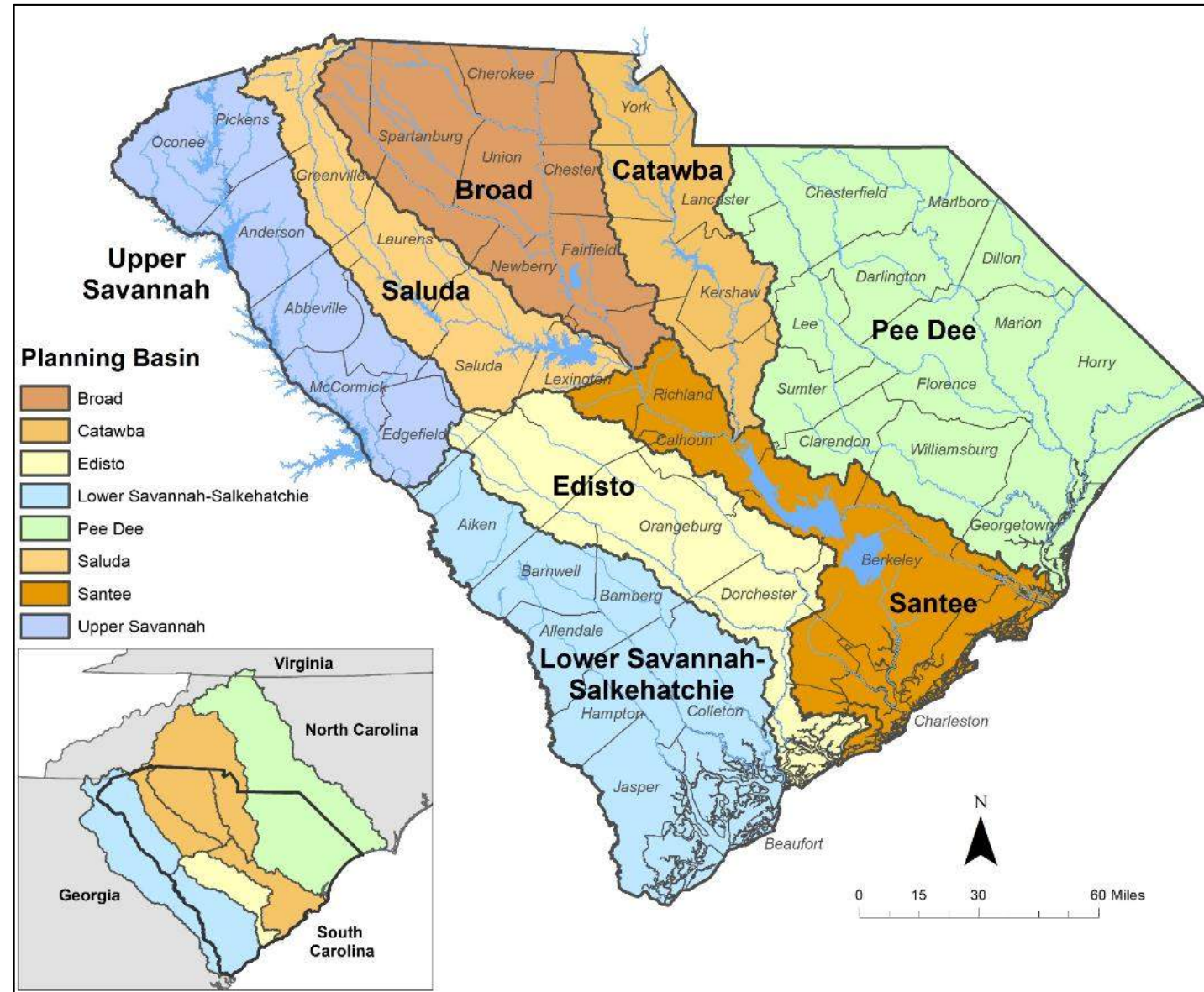
History of State Water Planning



- 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

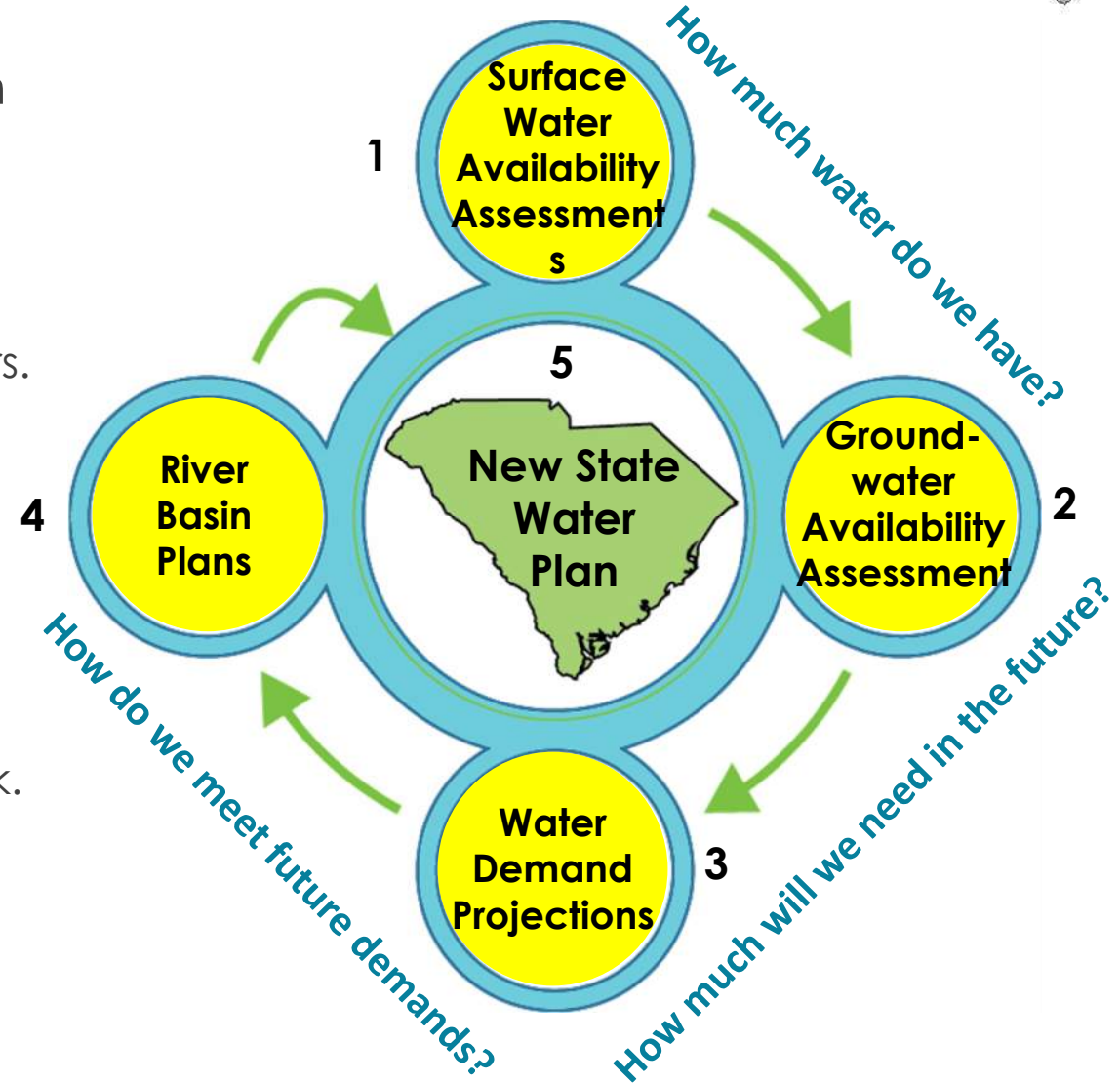
- River Basin Plans will be developed for the State's eight major river basins using a "bottom-up" approach where stakeholders in each basin lead the development of their basin plan.
- Collectively, the River Basin Plans will form the foundation of a new State Water Plan.



Five-step Process



- 1. Surface Water Assessments** – completed in 2017 for each basin (CDM Smith, Inc).
 - Several models recently updated.
- 2. Groundwater Assessment** – completed in 2021 (USGS).
 - 3 regional models to be developed over the next several years.
- 3. Water Demand Projections** – methodology report completed in October 2019.
 - Projections completed for Edisto and Broad basins.
 - Projections for Pee Dee and Saluda basins in progress.
- 4. River Basin Plans**
 - Publication of South Carolina State Water Planning Framework.
 - Edisto, Broad, and Pee Dee basin planning in progress.
 - Saluda basin is the 4th basin to begin planning activities.
- 5. State Water Plan** – River Basin Plans will form the foundation of a new State Water Plan.

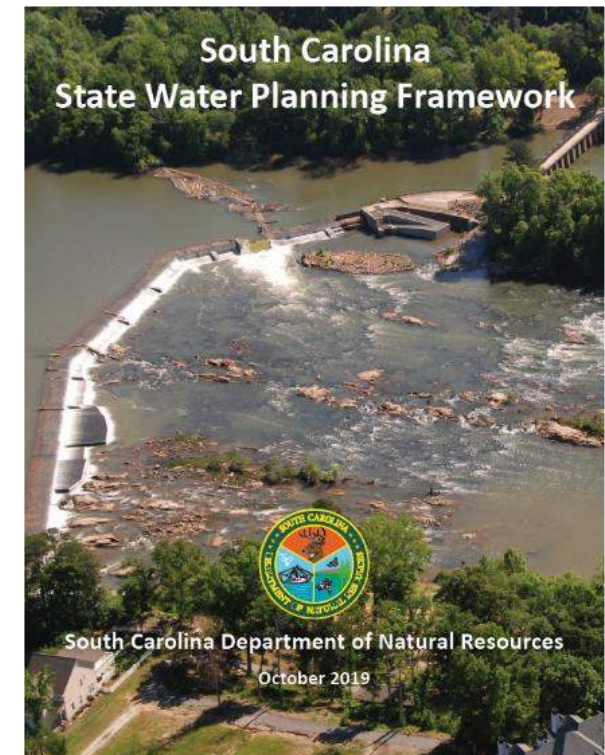


Cooperators:



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)

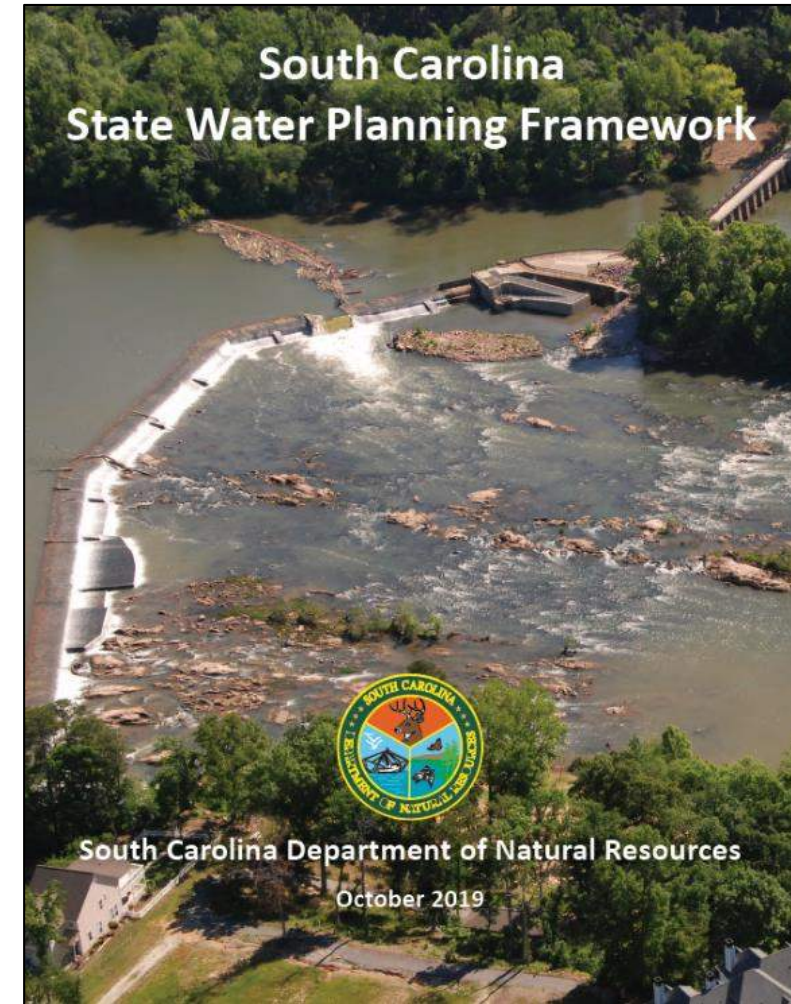




Contents of Planning Framework

Sections:

1. Executive Summary
 2. Introduction
 3. River Basin Planning Process
 4. Methodologies for Evaluating Water Availability
 5. River Basin Plan Table of Contents
 6. River Basin Planning Process Implementation
 7. River Basin Plan Implementation
 8. State Water Plan
- Appendix: River Basin Council Bylaws



Planning Framework is available for review and download at:

<https://hydrology.dnr.sc.gov/water-planning-framework.html>

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





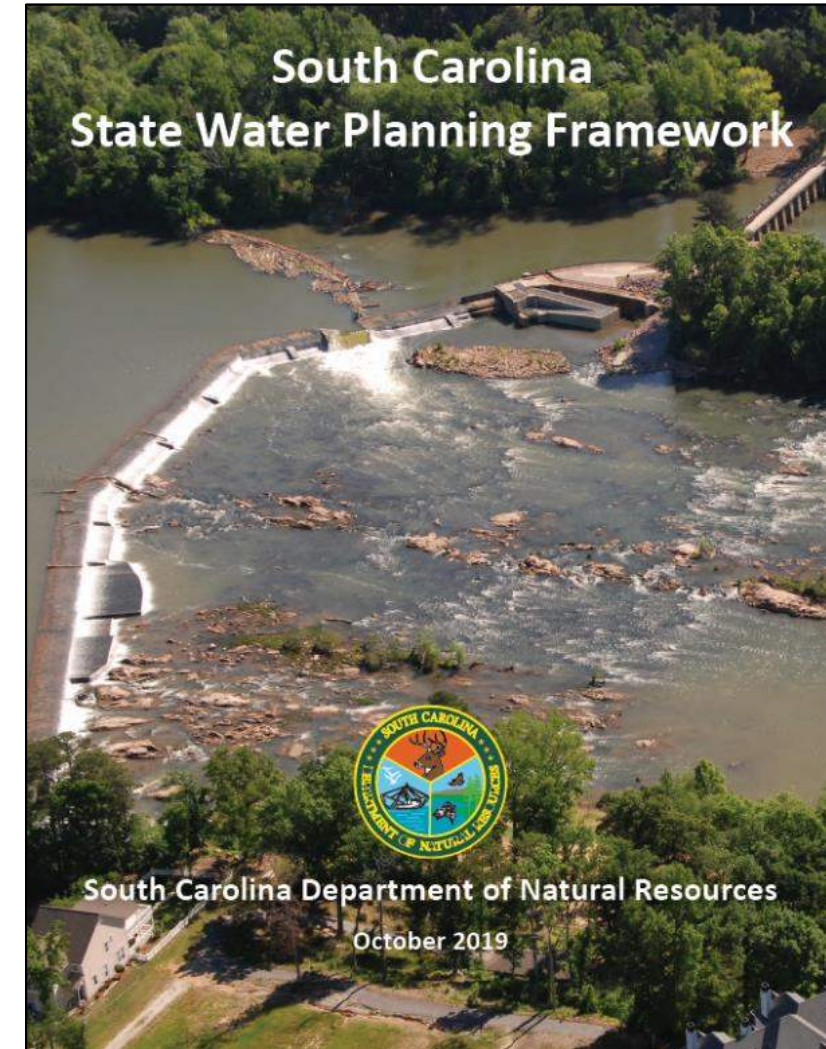
What is a River Basin Plan?



What is a River Basin Plan?

A River Basin Plan answers four questions:

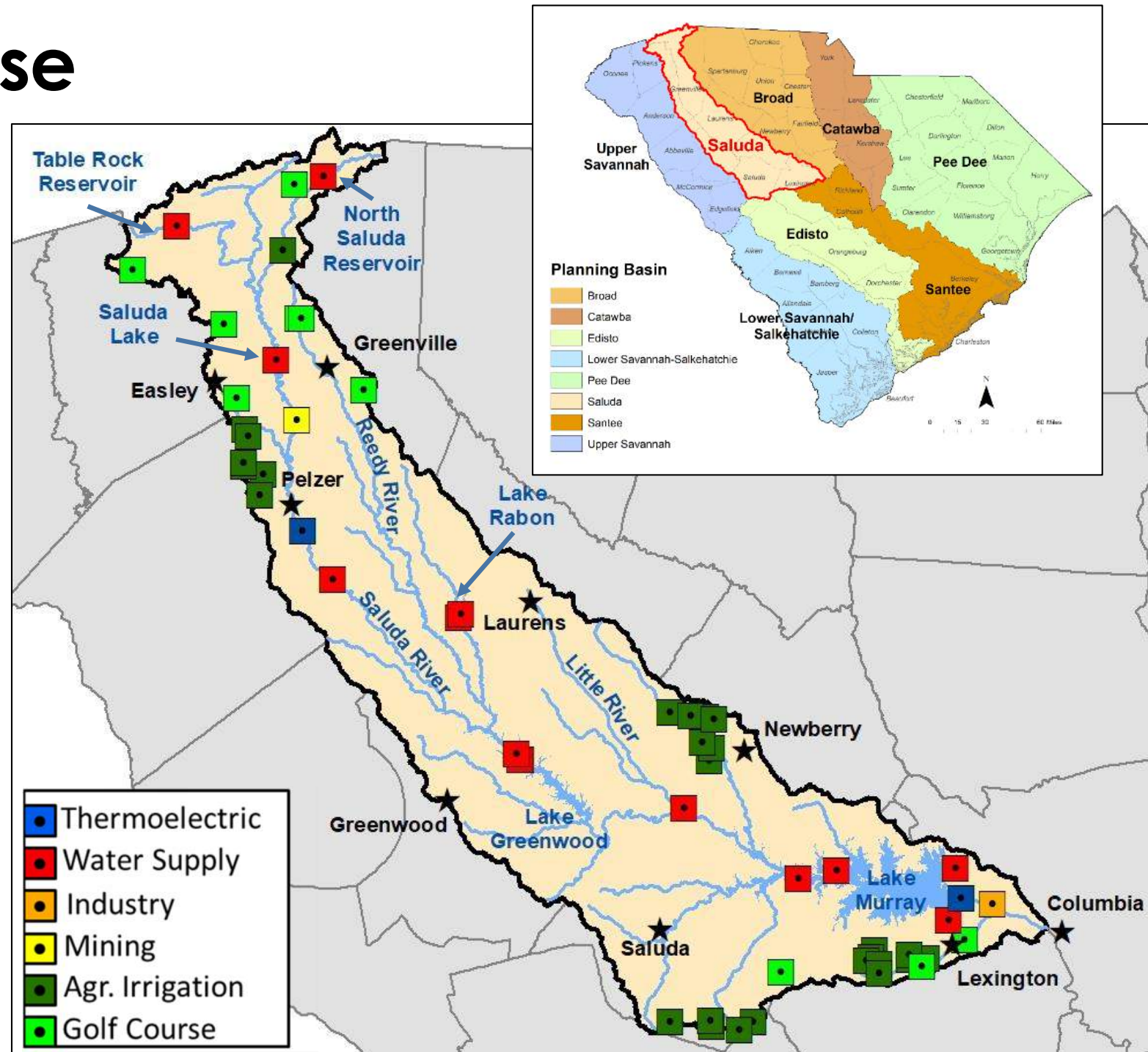
1. What is the basin's current available water supply and demand?
2. What are the current permitted and registered water uses?
3. What will be the basin's water demand over the Planning Horizon, and will the water supply meet the demand?
4. What water management strategies will be employed to ensure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



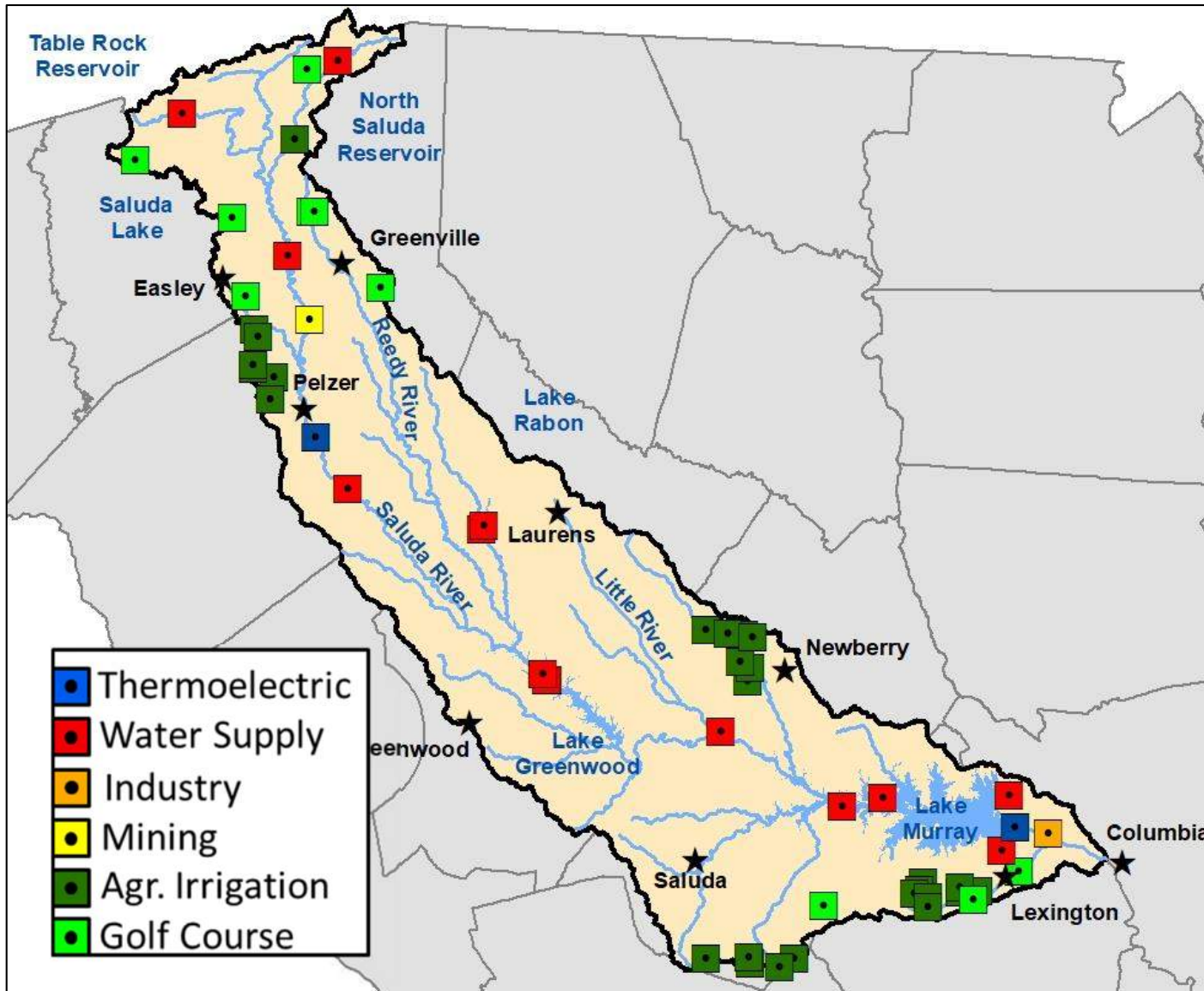
Proactive Water Management, not Reactive!

Saluda Basin Water Use

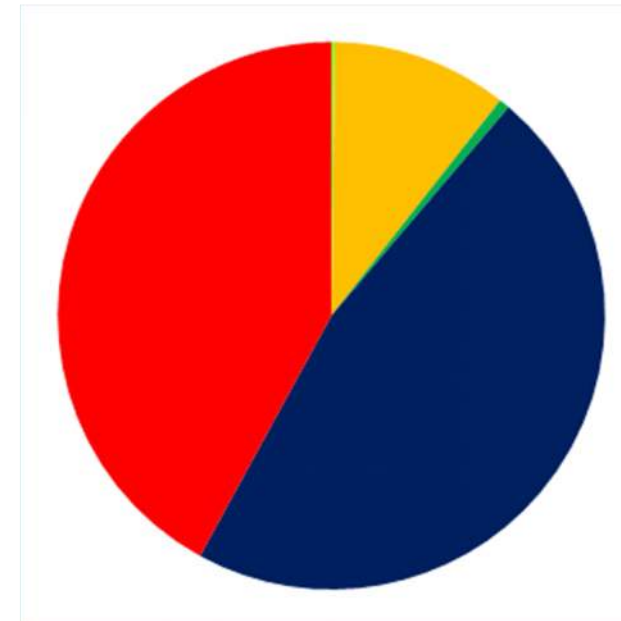
- Area = 2,523 sq. mi.
- Basin entirely within SC.
- Major subbasin of the greater Santee basin.
- More than 99% of withdrawals are from surface water.
- Planning will focus primarily on the basin's surface water resources.



2021 Reported Water Withdrawals



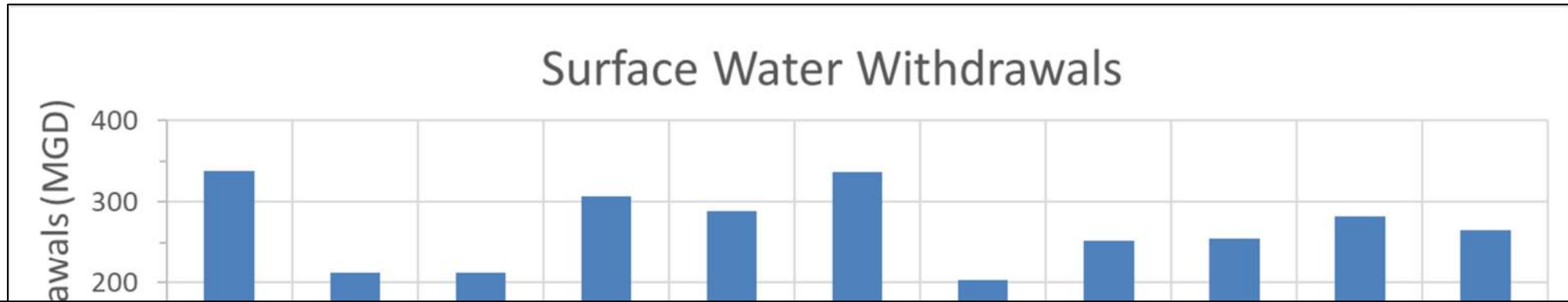
- Thermoelectric (47%)
- Water Supply (42%)
- Industry (10%)
- Agr. Irrigation (< 1%)
- Golf Course (< 1%)



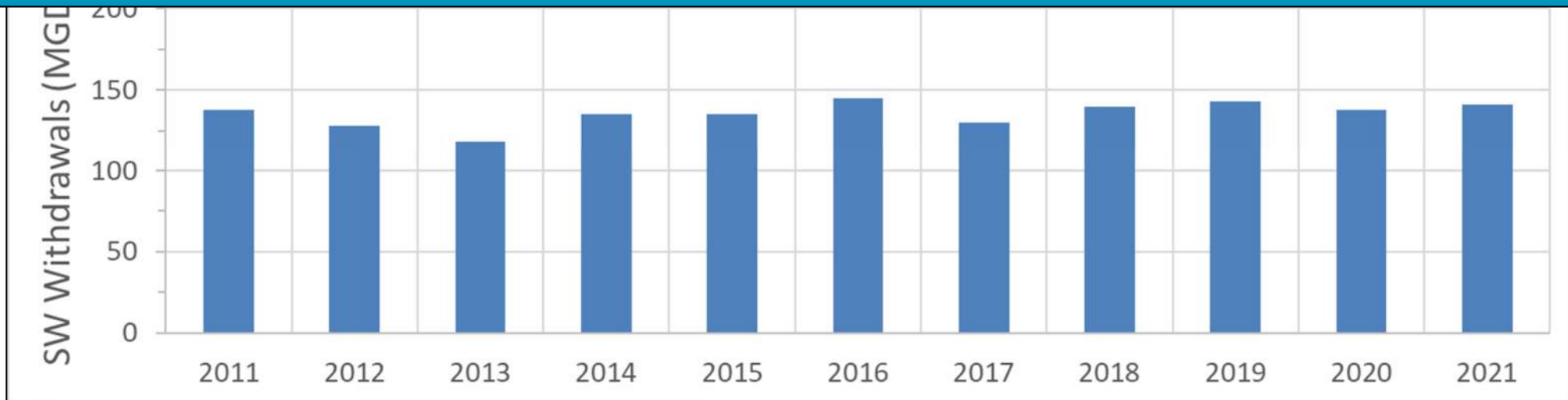
Source: SCDHEC Water Use Database



Reported Surface Withdrawals (2011-2021)



- How will these demands change over the next 50-years?
- Will we have enough water to meet those demands?
- If not, how can we manage our water resources to meet future demand?





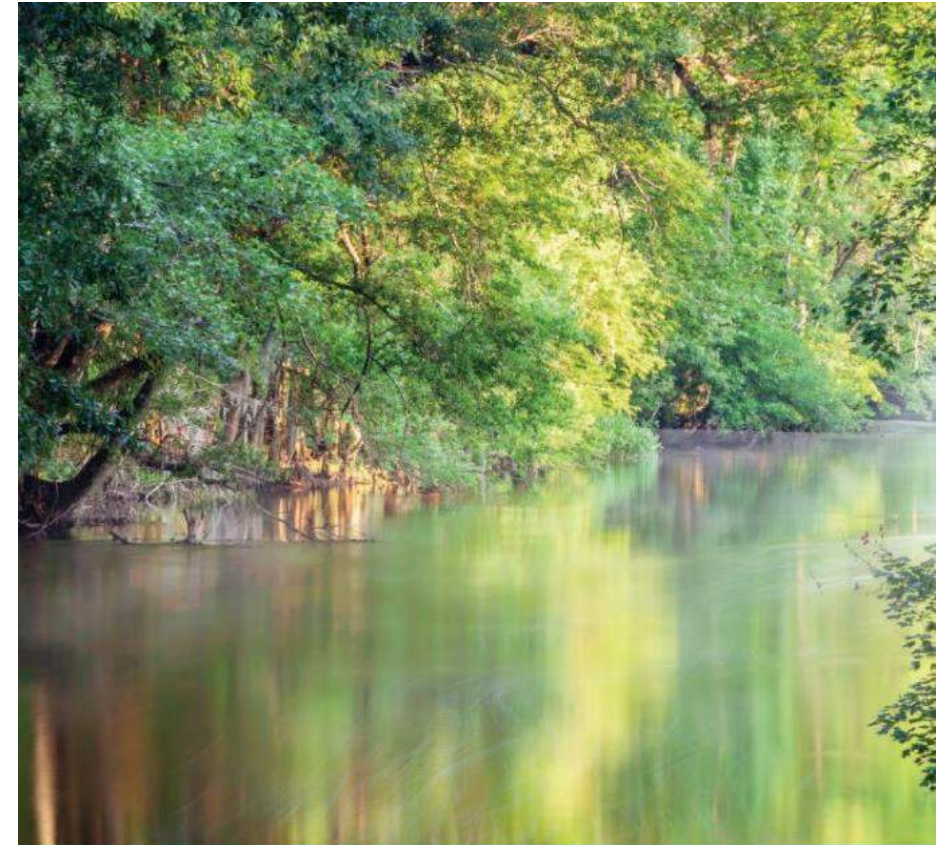
Guiding Principles

- Water is a limited natural resource and is a major factor for economic development and environmental protection.
- River Basin Plans should strive for the equitable use of water resources with the goal of ensuring water is available for all uses, when and where needed, throughout the Planning Horizon and under drought conditions.
- River Basin Plans should protect the public's health and well-being and should balance social, economic, and environmental needs.



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





River Basin Plan Table of Contents

1. Introduction
2. Description of the Basin
3. Water Resources of the Basin
4. Current and Projected Water Demand
5. Comparison of Water Resource Availability and Water Demand
6. Water Management Strategies
7. Water Management Strategy Recommendations
8. Drought Response
9. Policy, Legislative, Regulatory, Technical, and Planning Process Recommendations
10. Implementation Plan

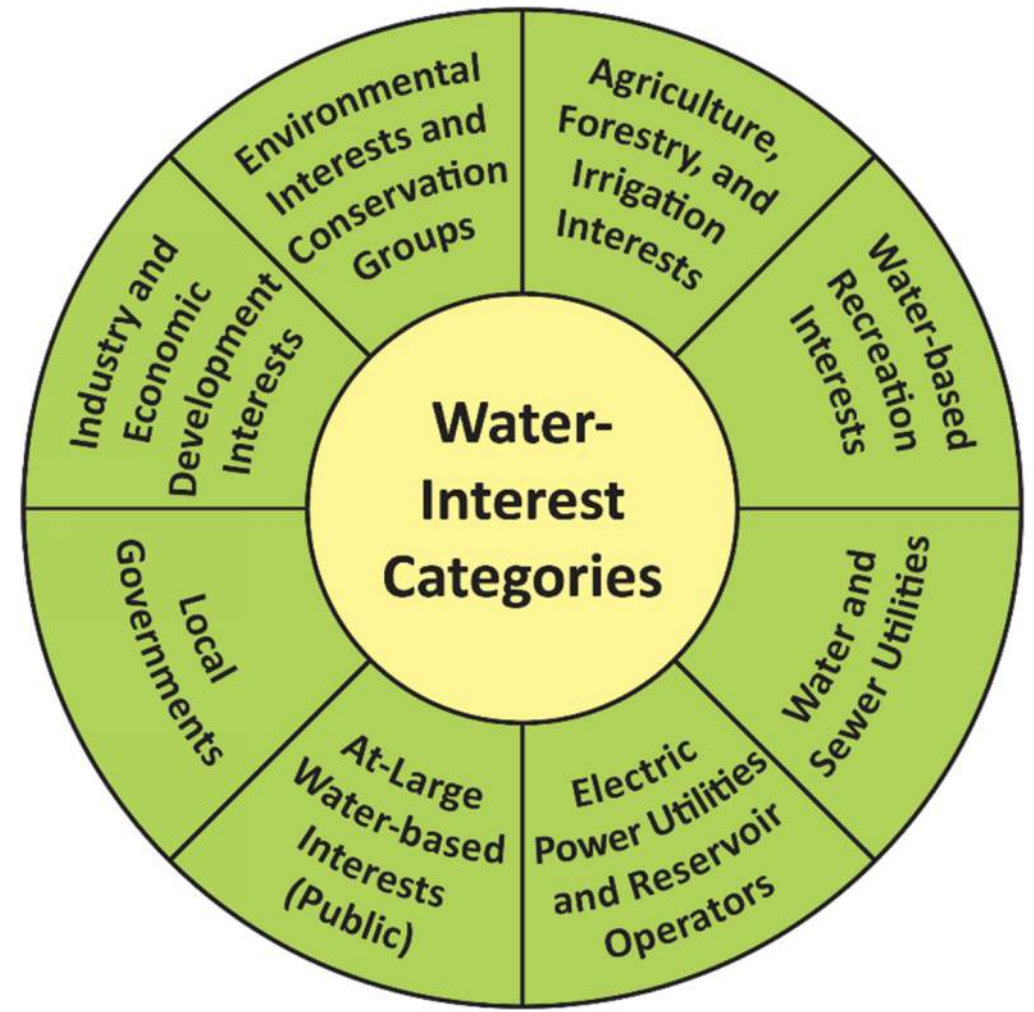


How will the River Basin Plan be Developed?



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.
- **25-30** members representing **8 interest categories**.
- Governed by a set of Bylaws.
- **Consensus based** decision-making process.
- Chair and Vice-Chair elected by RBC.



Saluda River Basin Council

Planning Team

- Clemson
 - Coordination
 - Public Outreach
- CDM Smith
 - Facilitation
- SCDNR
 - Oversight
 - Education
- SCDHEC
 - Education



Name	Organization	Interest Category
David Coggins	Laurens County Soil & Water Conservation District/Farmer	Agriculture, Forestry, and Irrigation
Jason Davis	Saluda Valley Farms, LLC	
Robert Hanley	Greenville County Soil & Water Conservation District	
Paul Lewis	Holly Tree Country Club	
Thompson Smith	SC Farm Bureau and Twin Oaks Farm	
Katherine Amidon	Bolton & Menk Inc.	At-Large
Rick Huffman	Earth Design	
Devin Orr	SC Rural Water Association	
Charlie Timmons	Timmons Commercial	
Ed Bruce	Duke Energy	Electric-Power Utilities
Eddie Owen	Dominion Energy SC	Environmental Interests
Josie Newton	Friends of the Reedy River	
Melanie Ruhlman	Save Our Saluda	
Rebecca Wade	Upstate Forever	
Mark Farris	Greenville Area Development Corporation	Industry and Economic Development
Brandon Grooms	Colonial Pipeline Company	
David Lawrence	Shaw Industries Group Inc., Plant 8S	
Patrick Jackson	Laurens County Soil & Water Conservation District/Farmer	Local Governments
Jim Moore	Saluda County Council	
Larry Nates	Lexington County Soil & Water Conservation District	
Rett Templeton	Greenwood County	
Sharon Appell	Renewable Water Resources (REWA)	Water and Sewer Utilities
Jeff Boss	Greenville Water	
Joel Ledbetter	Easley Combined Utilities	
Jay Nicholson	(Lexington) Joint Municipal Water & Sewer Commission	
K.C. Price	Laurens County Water and Sewer Commission	Water-Based Recreation
Justin McGrady	The SC River Guide	
Kevin Miller	Foothills Paddling Club	
Michael Waddell	SC Trout Unlimited	



RBC Roles and Responsibilities

- Identify water shortages or conflicts using hydrologic models.
- Recommend strategies to mitigate or eliminate water use conflicts or water shortages.
- Help draft River Basin Plans.
- Communicate with stakeholders and the public on water planning activities.
- Recommend changes to water policy or legislation or to the water planning process.
- Update River Basin Plans every 5-years and amend the plans as needed.





RBC Support

- **Contractors** (solicited and hired by SCDNR):
 - Meeting Facilitation (CDM Smith, Inc.)
 - Meeting Coordination (Clemson University) – administrative and logistical support
 - Surface Water Modeling Technical support (TBD)
 - Public Outreach (Clemson University)
 - River Basin Plan report writing (CDM Smith, Inc.)
- **Other State and Federal Agencies:**
 - RBCs can request agencies to serve as Advisors.
 - Participate in RBC meetings and subcommittee meetings as requested.
- **RBCs can request input from other outside Advisors.**

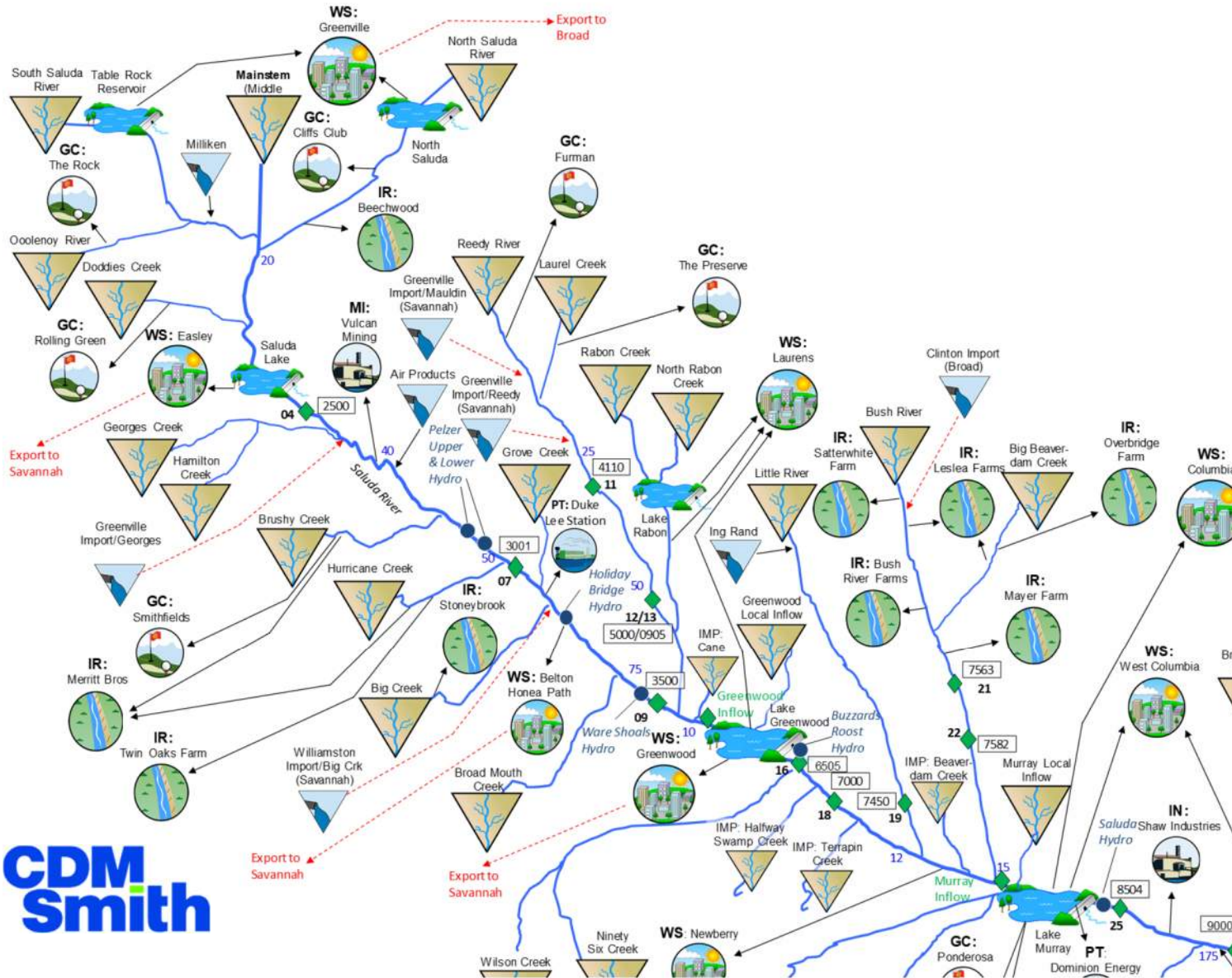
PPAC and SCDNR will continue to provide oversight of the river basin planning process.



Coordination with other Planning Bodies

- Planning Framework recognizes the existence of other formal water planning groups and drought management groups.
- Planning Framework emphasizes coordination with such groups and provides general guidelines.
- Inter-basin River Councils (IRCs):
 - Made up of RBC members from two or more basins.
 - A forum for adjoining basins to communicate and coordinate on mutual interests and to resolve conflicts.

Saluda Surface Water Model (SWAM)



Model is a decision-making tool used to assess water availability and management strategies, and will support the development of River Basin Plans

<https://hydrology.dnr.sc.gov/surface-water-models.html>



Water Demand Projections

- Water-demand methodology report released in October 2019 and available at:
 - <https://hydrology.dnr.sc.gov/water-demand.html>.
- Projections will be used in surface water model to assess future water availability and will support the development of River Basin Plans.
- Water-demand projections for the Saluda basin are currently being developed (Clemson/SCDNR).
- RBC will have opportunity to review and provide feedback on the Saluda basin's water-demand projections.



US Army Corps
of Engineers



CLEMSON
UNIVERSITY



Stakeholder/Public Participation Guidelines

- Guidelines for stakeholder and public participation described in Section 3.7 of Planning Framework.
- Public meetings (3 to 4 per basin):
 - Prior to first RBC meeting – “kickoff” meeting(s).
 - After *draft* River Basin Plan is released.
 - After *final* River Basin Plan is released.
- Draft River Basin Plan public review period (30 days).
- RBC meetings:
 - Open to the public.
 - Each meeting will include public comment period.



SCDNR Hydrology Website

Water Planning

The SCDNR Hydrology Section is responsible for formulating and establishing a comprehensive water resources policy for the State of South Carolina.

Public Notice: SCDNR will host two public meetings in Anderson, SC on April 10th and in McCormick, SC on April 11th to kick-off river basin planning activities in the Upper Savannah basin.
Meeting dates, locations, and agendas can be found on the [Upper Savannah Basin Planning](#) website.

Public Notice: SCDNR is accepting public comments on the draft Edisto River Basin Plan.
Public comments on the draft plan will be accepted through March 17th, 2023. The draft plan, along with comment submission instructions, can be found on the [Edisto River Basin Plan](#) website.

[Water Planning Overview](#)
[South Carolina State Water Planning Framework](#)
[River Basin Planning](#)

Water Planning News

- [Next Pee Dee River Basin Council Meeting Scheduled for March 28th, 2023](#)
- [Public Meetings Scheduled for April 10th and 11th to Kick-off Upper](#)

Hydrology Calendar

Upcoming events

- [Saluda River Basin Council Meeting #1](#)

<https://hydrology.dnr.sc.gov/water-planning.html>

Saluda Basin Planning

Activities and reports on water planning in the Saluda River basin.

Overview

River basin planning activities in the Saluda basin were recently initiated under the guidance of the [South Carolina State Water Planning Framework](#). Two public meetings were held on November 1st in Columbia, SC and on November 3rd in Greenville, SC to kick-off planning activities (presentations given at each meeting can be accessed on the [meetings page](#)). An overview of the South Carolina State Water Planning Framework was provided to the basin's stakeholders and applications to serve on the Saluda River Basin Council were solicited. River Basin Council members were appointed by SCDNR in February 2023 (see the [council page](#) for a list of members). Formal Council meetings will begin in March 2023, and meeting agendas, presentations, recordings, and summaries can be accessed [here](#). Please visit this website for periodic updates and new information regarding Saluda river basin planning activities.

The first Saluda River Basin Council meeting is scheduled for March 22nd, 2023 from 10:00 AM to 2:00 PM (draft agenda).

The Council will meet in-person at The Ridge in the City of Laurens ([301 Exchange Dr., Laurens, SC 29360](#)). The meeting may be attended virtually as well. Please contact Scott Harder (harders@dnr.sc.gov) for virtual meeting access information.

[Saluda Basin Planning Meetings](#)
[Saluda River Basin Council](#)
[Saluda SWAM Model Access](#)

Saluda Planning News

- [First Saluda River Basin Council Meeting Scheduled for March 22nd, 2023](#)

Hydrology Calendar

Upcoming events

- [Saluda River Basin Council Meeting #1](#)

<https://hydrology.dnr.sc.gov/saluda-basin-planning.html>

Site will host:

- Announcements/Calendar of Events
- Access to water planning documents – Planning Framework, technical reports
- RBC meeting materials – agendas, presentations, recordings

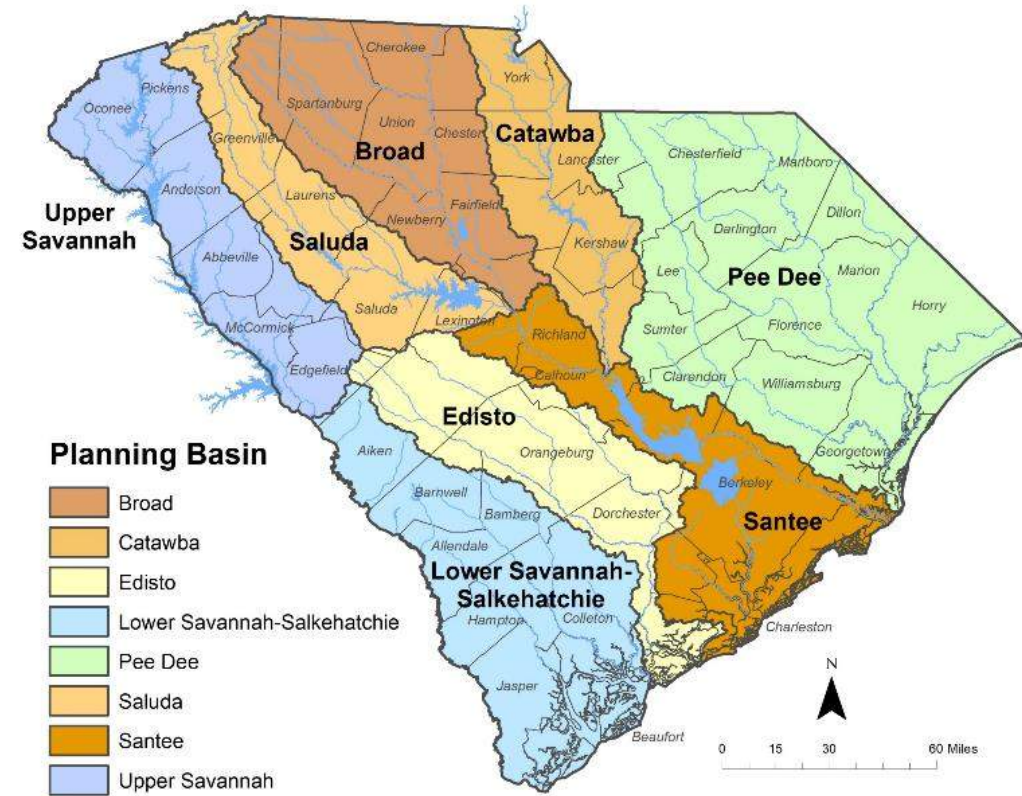


SC River Basin Planning: Status and Long-term Schedule

River Basin Planning Current Status



Basin	Status
Edisto	June 2020 – present
Broad	March 2022 – present
Pee Dee	June 2022 – present
Saluda	Scheduled to begin March 2023
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



Basin	2021	2022	2023	2024	2025	2026
Edisto	[Orange bar]					
Broad		[Orange bar]				
Pee Dee			[Orange bar]			
Catawba		[Orange bar]				
Saluda			[Orange bar]			
Upper Savannah				[Orange bar]		
Lower Savannah/ Salkehatchie				[Orange bar]		
Santee				[Orange bar]		
State Water Plan					[Orange bar]	



River Basin Planning Phases & Examples

John Boyer, CDM Smith

The Four Phases of the Planning Process

Phase 1

- Learn about the basin's water (and related) resources
- Become familiar with rules and laws governing water use
- Develop a vision statement and goals
- Review water demand projections
- Become familiar with the modeling tools

The focus of Phase 1 is on *learning*.

What is expected of the RBC in Phase 1:

- Be inquisitive. Ask questions. Keep an open mind.
- Suggest and participate in field trips.
- Identify additional topics that the RBC should explore and learn.
- Select an alternate. Select a Chair & Vice Chair.

Phase 1 Examples from the Edisto, Broad, and Pee Dee

Information Topics Covered

- Summary of Current Water Use
- Population and Water Demand Projections
- Basin Climatology and SC Drought Response Act
- Surface Water Resources and Low Flow Characteristics
- Groundwater Resources
- Water Law
- Aquatic Resources and Flow-Ecological Health Relationships
- Overview of the Surface Water Models

Field trips

- **Edisto:** Walthers Farm, Edisto River Canoeing, Charleston Water System Intake, Aiken State Park Groundwater Monitoring



- **Broad:** Columbia canal and WTP, diversion dam and fish passage, Fairfield Pumped Storage Facility, Parr Shoals Hydroelectric Facility, Lake Blalock Canoeing, Spartanburg Water System Advanced Oxidation System, Cooley Farms.



The Four Phases of the Planning Process

Phase 2

- Evaluate current and future water availability issues
- Evaluate the safe yield of water supply reservoirs
- Consider and evaluate flow-ecology relationships

Phase 2 answers the question “***is there enough water to meet current and future needs?***”

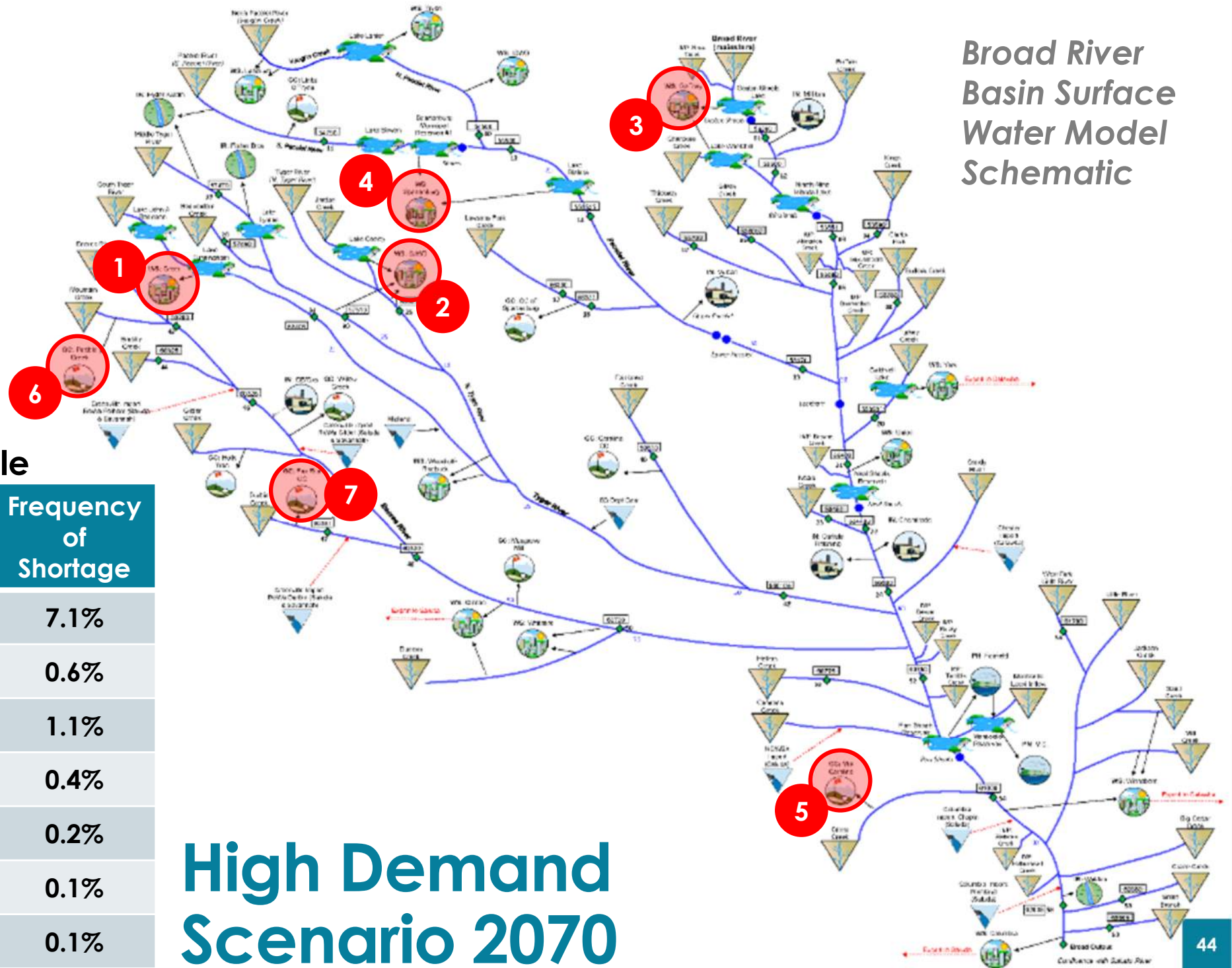
What is expected of the RBC in Phase 2:

- Take a critical look at the surface water model inputs and outputs.
- Request additional analyses where warranted.

Phase 2 Example from the Broad

Evaluating future
water availability
issues

Broad River
Basin Surface
Water Model
Schematic



Surface Water Shortage Table

Map ID	Water User	Frequency of Shortage
1	WS: Greer	7.1%
2	WS: SJWD	0.6%
3	WS: Gaffney	1.1%
4	WS: Spartanburg	0.4%
5	GC: Mid Carolina	0.2%
6	GC: Pebble Creek	0.1%
7	GC: Fox Run	0.1%

High Demand
Scenario 2070

The Four Phases of the Planning Process

Phase 3

- Develop and evaluate **water management strategies**
- Recommend and prioritize strategies

The focus of Phase 3 is on finding ***solutions***.

What is expected of the RBC in Phase 3:

- Provide direction to the modeling team on water management strategies to evaluate.
- Identify strategies that support a water conservation and water efficiency ethic.
- Recognize and consider the potential for changing conditions and select strategies appropriately.
- Begin reviewing and commenting on draft chapters of the Plan.

Phase 3 Example from the Broad

Evaluating water management strategies by modeling

“What if” Simulations...

- Water Utilities Drought Management Plans were triggered, and targeted demand reductions were achieved?
- Reservoir releases were optimized based on the (higher) projected demands (withdrawals)?
- Long-term reductions in per capita water demand were achieved through a portfolio of water conservation, water loss control, and water efficiency strategies?

Supply-Side Strategies Being Evaluated:

- Increasing dam height to increase reservoir storage
- Adding an off-line quarry for additional storage
- Adding a second intake and renegotiating average annual withdrawals allowed by FERC
- A new regional water supply reservoir



The Four Phases of the Planning Process

Phase 4

- Develop legislative, policy, technical and planning process recommendations
- Prepare the **River Basin Plan** that:
 - Includes an *implementation plan*
 - Identifies *drought response initiatives*
 - Considers *public input*

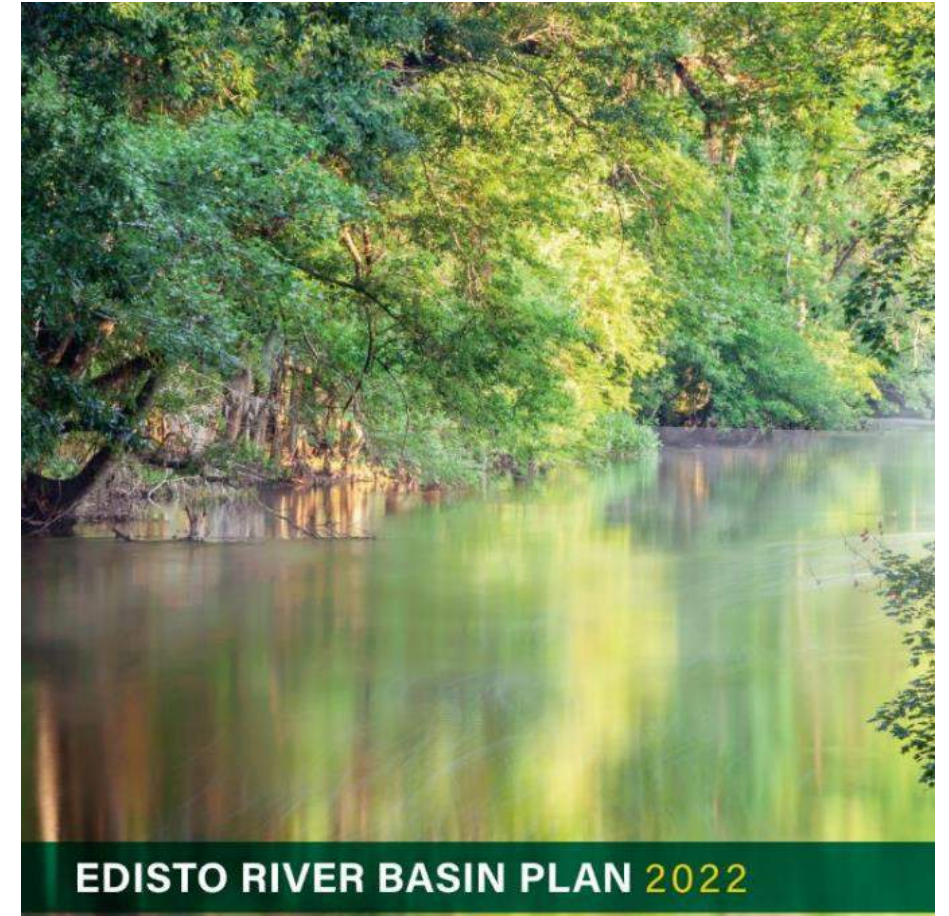
Phase 4 focuses on ***achieving consensus and writing the Plan.***

What is expected of the RBC in Phase 4:

- Make timely decisions and recommendations
- Review and comment on draft chapters of the Plan. Make sure the Draft Plan accurately represents your sector's water-related interests.
- Participate in public outreach

Phase 4 Example from the Edisto

- The Edisto RBC has prepared a Draft River Basin Plan that:
 - Recommends **management strategies** to eliminate projected surface water shortages.
 - Recommends **monitoring and additional groundwater modeling** in identified Groundwater Areas of Concern.
 - Includes a **Low Flow Strategy** that aims to maintain a minimum amount of flow in the Edisto River during drought.
 - Includes a detailed **Implementation Plan** with specific short-term (5-year) and long-term strategies and actions to address six major objectives .
 - Includes **technical, policy, legislative, regulatory, and planning process recommendations.**

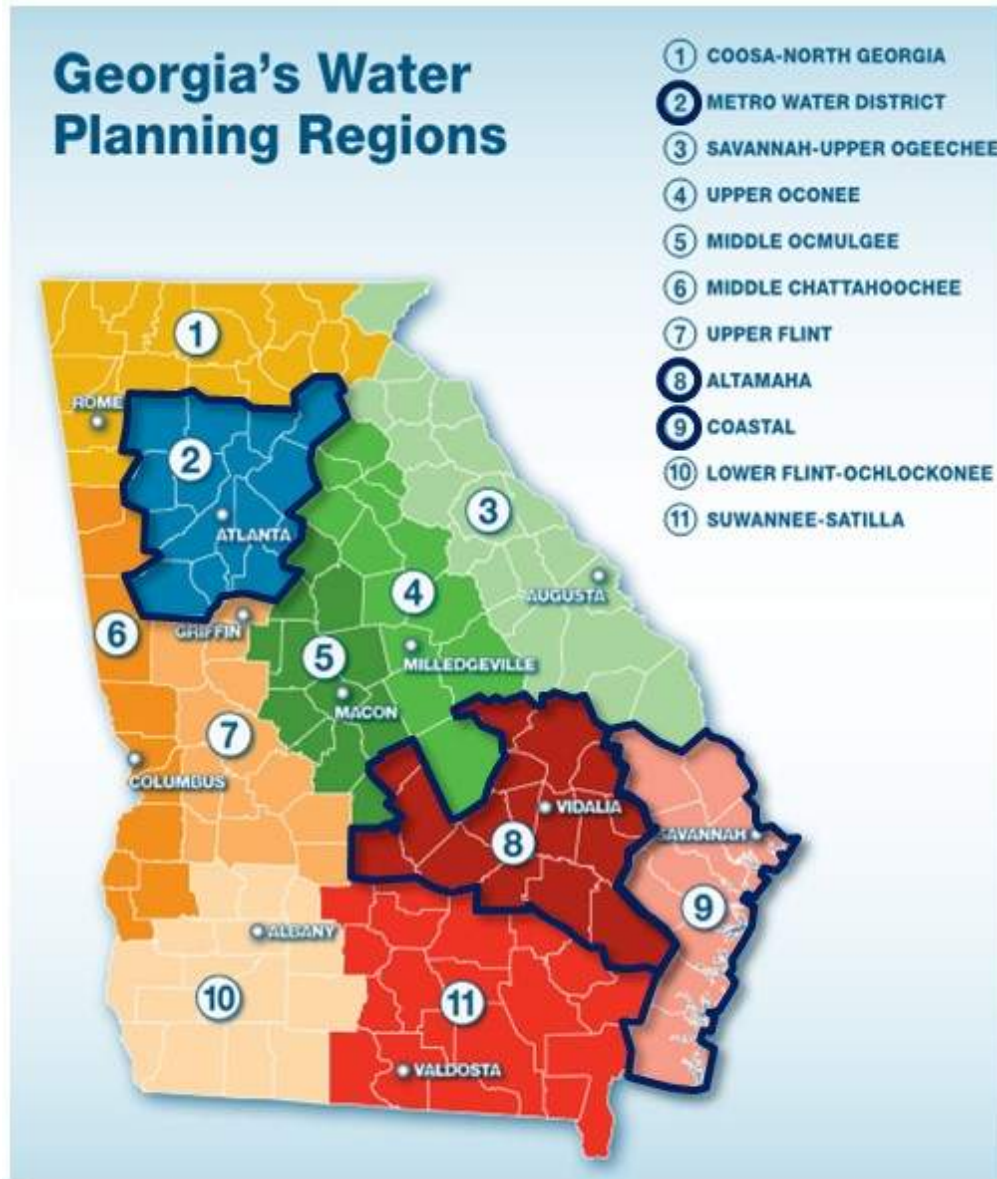


Important Things to Remember

- **River basin planning is an ongoing process.**
 - Not all stakeholder needs and desires can be addressed during the first phase of planning.
- **The process is not intended to resolve issues associated with South Carolina water laws and regulations.**
 - But, through discussion, RBC recommendations on policies and regulations can be documented and summarized for agency and legislature consideration.
- The process is intended to be **stakeholder-driven** and leverage the knowledge of those that use, recreate, and seek to protect the water resources of the basins.
- The process provides **transparency** and uses the best-available science and tools to assess water availability and identify strategies to meet water demands 50 years into the future.



Examples - Regional Water Plans in Georgia



Georgia's Regional Water Plans

<https://waterplanning.georgia.gov/regional-water-plans>

Coastal Georgia Regional Water Plan Fact Sheet

2017 REGIONAL WATER PLAN

COASTAL GEORGIA REGION

BACKGROUND

The Coastal Georgia Regional Water Plan was initially completed in 2011 and subsequently updated in 2017. The plan outlines near-term and long-term strategies to meet water needs through 2050. The Coastal Region covers the lower portion of five major river basins, including Savannah, Ogeechee, Altamaha, Satilla, and St. Marys Rivers. The Coastal Region encompasses several major population centers, including Brunswick, Hinesville-Fort Stewart, and Savannah.



OVERVIEW OF COASTAL GEORGIA REGION

The Coastal Georgia Region includes nine counties in southeast Georgia. Over the next 35 years, the population of the region is projected to increase from approximately 680,000 to 1,000,000 residents. Key economic drivers in the region include port, industry, business, tourism, trade, government facilities, and transportation, especially associated with the Brunswick and Savannah Harbors and Interstate 95. Energy production, manufacturing and silviculture are also significant to the region.

Groundwater, mainly from the Floridan aquifer, is needed to meet about 62% of the municipal, industrial, and agricultural needs, with the municipal and industrial uses being the dominant demand sectors. Surface water is needed to meet about 38% of these needs, with industry as the dominant demand sector. Thermoelectric energy is a major user of surface water, but most of the water withdrawn is returned to the surface water source.

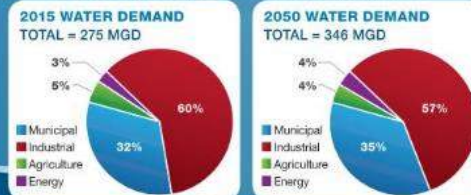


COASTAL GEORGIA WATER PLANNING REGION

KEY WATER RESOURCE ISSUES ADDRESSED BY THE COUNCIL

1. Long-term sustainable water supplies for municipal and industrial growth in the region while protecting the unique coastal environment
2. Current and potential future groundwater withdrawals in and around Effingham, Chatham, Bryan and Liberty counties for future water supply
3. Integration with ongoing efforts including salt water intrusion, Savannah River 5R Process, demands for water upstream of the region, and interstate activities with South Carolina and Florida
4. Low dissolved oxygen in Savannah and Brunswick Harbors and other water quality issues

FORECASTED REGIONAL WATER DEMANDS



For more information, please go to:

waterplanning.georgia.gov/coastal-georgia-water-planning-region

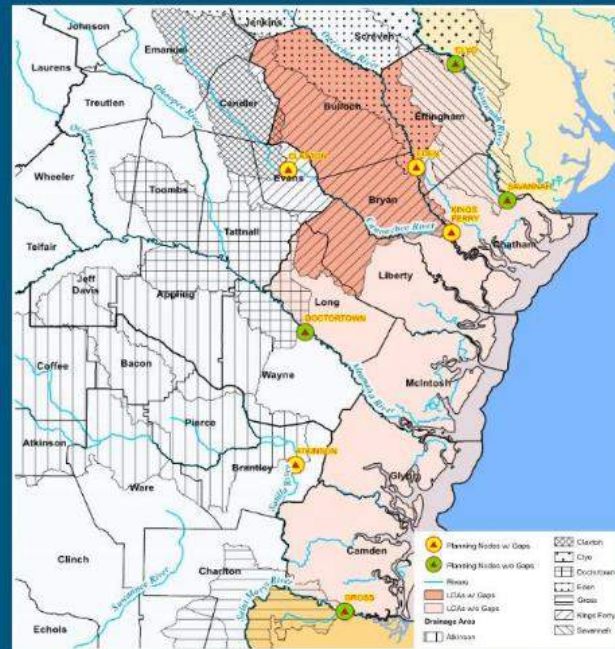
SUMMARY OF 2017 RESOURCE ASSESSMENT RESULTS

GROUNDWATER: At the regional level, for modeled aquifers, there is sufficient groundwater to meet forecasted needs over the planning horizon; however, meeting the increase in demands in areas where groundwater supplies may be limited due to salt water intrusion is a significant challenge. The outcomes from the Bi-state Stakeholder process regarding salt water intrusion will need to be considered in determining groundwater use in some portions of the region.

SURFACE WATER QUALITY: Assimilative capacity assessments indicate the potential need for improved wastewater treatment within the Ogeechee, Altamaha, and St. Marys river basins. Addressing non-point sources of pollution and existing water quality impairments will be a part of addressing the region's future needs.

SURFACE WATER AVAILABILITY: Over the next 35 years, the modeling analysis indicates that forecasted surface water demand within the Coastal Georgia Region is projected to cause stream flows in the Canoochee River (at the Claxton planning node) and Ogeechee River (at the Eden and Kings Ferry planning nodes) to fall below targets for support of instream uses (resulting in "potential gaps"). A map of the node locations, their drainage areas, and a summary of the potential gaps are provided below.

POTENTIAL 2050 SURFACE WATER GAPS IN THE COASTAL REGION



SUMMARY OF MODELED 2050 PROJECTED SURFACE WATER GAPS

Node	Duration of Gap (% of total days*)	Avg. Flow Deficit (MGD)	Long-term Avg. Flow (MGD)
Claxton	15	3	292
Eden	3.3	16	1,430
Kings Ferry	3	24	2,364

*Model simulation period is 1939 - 2013

COASTAL GEORGIA MANAGEMENT PRACTICES

The Coastal Georgia Plan describes over 80 management practices targeted toward current and future needs. Actions for surface and groundwater are grouped and listed by the water use sectors that will implement them. The Plan also includes practices for resources shared with other regions. Representative practices are summarized here.

WATER CONSERVATION: The Coastal Council supports the 25 water conservation goals contained in the 2010 Water Conservation Implementation Plan (WCIP), including adherence to Tier 1/Tier 2 measures. Other recommendations include use of reclaimed water, water audits, irrigation metering, and water loss control.

WATER SUPPLY: Multi-jurisdictional groundwater development outside red/yellow zones, surface water storage, use of additional regional and local aquifers and other additional/alternate sources.

WASTEWATER & WATER QUALITY: Increase permitted wastewater capacity; data collection on loadings; and construct new or expanded and/or replace/upgrade existing treatment facilities.

INFORMATION NEEDS: Acquire additional data/information on agricultural consumptive use to confirm or refine if it is less than 100% consumptive; Refine surface water agricultural forecasts & Resource Assessments to improve data on source of supply and timing/operation of farm ponds. Research to determine the feasibility and potential benefits and limitations of aquifer storage and recovery.

RECOMMENDATIONS TO STATE: Focus on education, incentives, collaboration, cooperation, and enabling and supporting plan implementers; institutionalize and fund water planning; focus funding and assistance on areas with shortfalls.

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