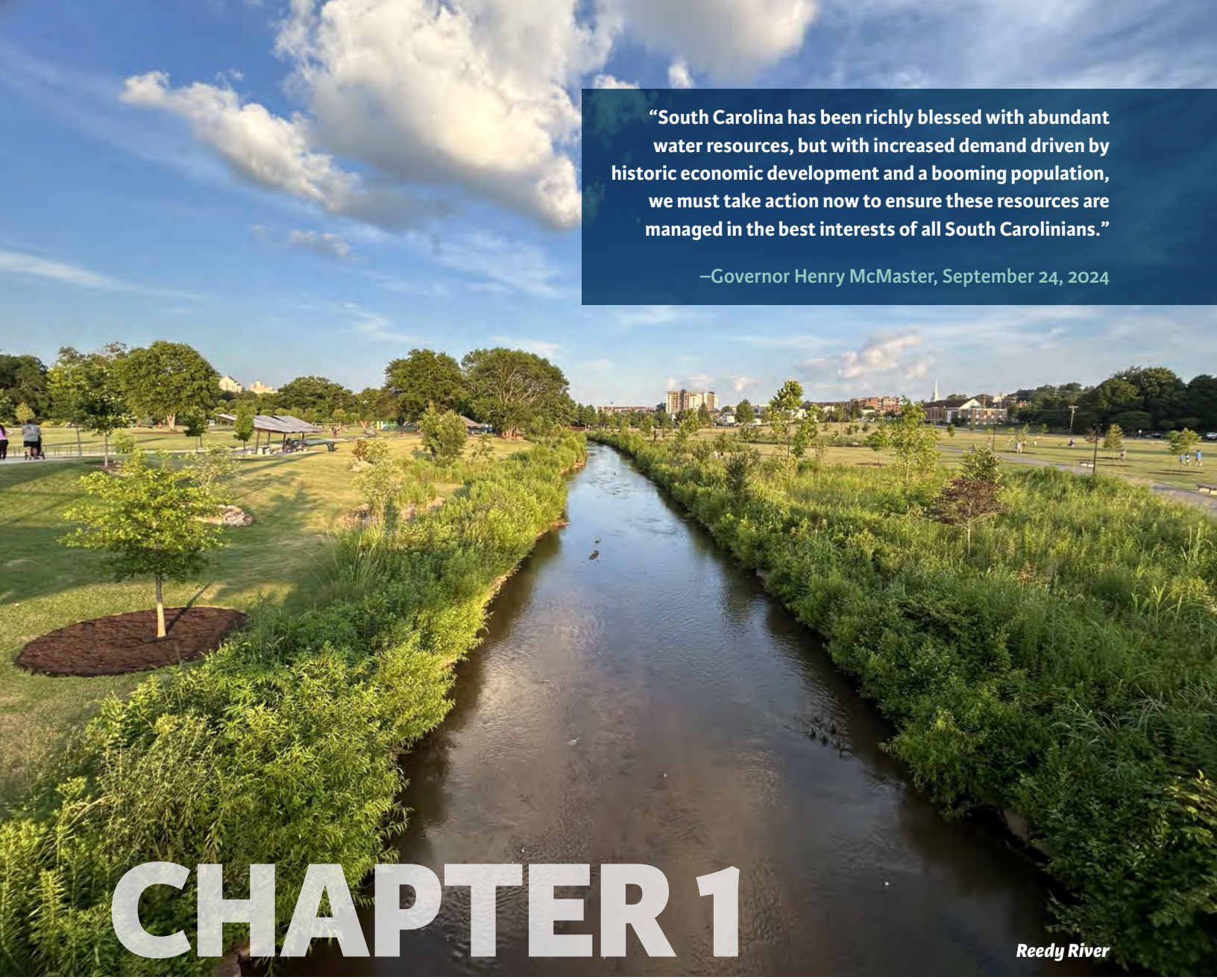


> **"South Carolina has been richly blessed with abundant water resources, but with increased demand driven by historic economic development and a booming population, we must take action now to ensure these resources are managed in the best interests of all South Carolinians."**
>
> –Governor Henry McMaster, September 24, 2024

CHAPTER 1

Reedy River

Introduction

1.1 BACKGROUND AND OBJECTIVES

The South Carolina Water Resources Planning and Coordination Act requires the South Carolina Department of Environmental Services (SCDES) to develop a comprehensive water resources policy for the state. Prior to the creation of SCDES in 2024, the water planning activities for the state were the responsibility of the South Carolina Department of Natural Resources (SCDNR). SCDNR developed the first state water plan—the *South Carolina Water Plan*—in 1998. In 2004, the plan was updated following one of the worst multi-year droughts on record (which ended in 2002), resulting in the *South Carolina State Water Plan Second Edition* (2004 Plan).

Motivations for This 2025 Plan: In a state that has historically been considered to have abundant water, the plan update emerged from these key motivations to support a healthy and prosperous state through a changing future:

- **Support Responsible Population Growth:** South Carolina is one of the fastest growing states in the country, and water demand is increasing.

- **Support Prosperous Agriculture:** Agriculture is vital to the state's economy, as it constitutes the largest industry sector. Much has been accomplished to improve irrigation efficiencies, but future access to irrigation water must continue.
- **Preserve Ecosystem Health:** South Carolina has long enjoyed thriving and diverse aquatic ecosystems, but increased water demands could threaten the environmental health and quality of certain water bodies.
- **Sustain Energy:** All South Carolina residents and businesses rely on sustainable, reliable, resilient, clean, affordable, and efficient energy, which depends on comprehensive and adaptive water management and planning.
- **Support Economic Prosperity:** Many industries have expanded or moved into South Carolina in recent years, including automotive and aerospace manufacturing, tourism, agribusiness, and others. As this growth continues, so will the industrial demand for water.

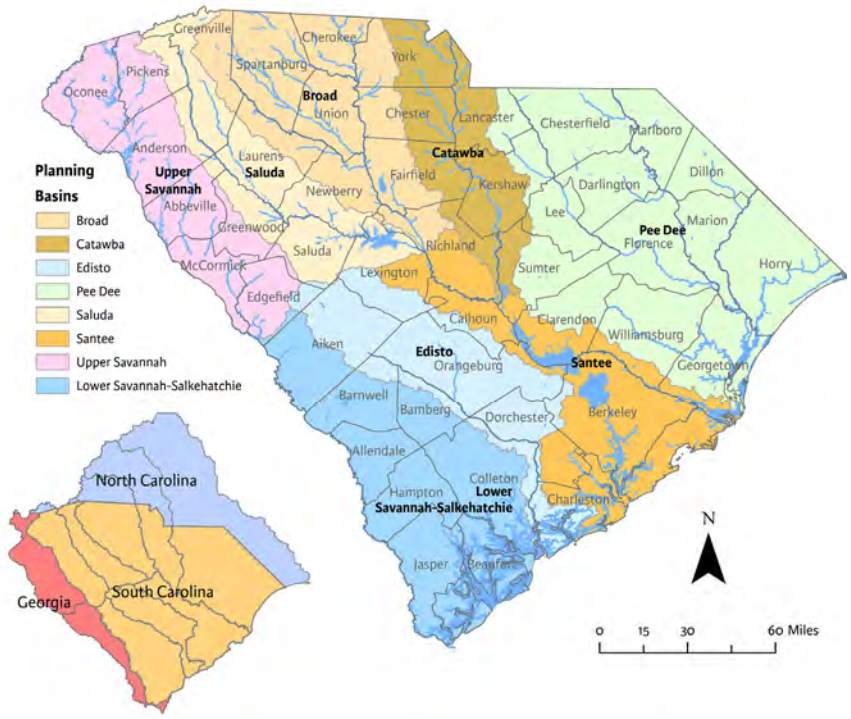


Figure 1-1. Major planning basins of South Carolina. *The inset map shows the basins' extents into adjacent states. Throughout this plan, the terms "river basin" and "planning basin" are used somewhat interchangeably. The term planning basin was created based on differences in the geographic extent that basin-level water planning has being conducted. For planning purposes, the Savannah River basin was divided into an upper and lower basin, and the lower basin was grouped with the Salkehatchie River basin to form the Lower Savannah-Salkehatchie River Basin. Also, the Santee River basin was extended to include the Congaree River, which had originally been assigned as part of the Saluda River basin. The map delineates the eight major planning basins, which are also referred to as river basins in chapters of this plan.*

- **Protect Against Drought:** Following severe droughts in 2007 to 2008 and 2011 to 2012, there has been a recognized need for increased drought resilience and planning.

Goals of This Plan: As prescribed in the South Carolina State Water Planning Framework (SCDNR 2019a), a collaborative guide for water planning in each river basin, River Basin Councils (RBCs) were formed in the state's major planning basins (**Figure 1-1**). Each RBC was charged with supporting the development of a River Basin Plan as "a collection of water management strategies supported by a summary of data and analyses designed to ensure the surface water and groundwater resources of a river basin will be available for all uses for years to come, even under drought conditions." By extension, ensuring the availability of water resources even during drought becomes the overarching goal of this State Water Plan.

This clear objective was reinforced by the Governor Henry McMaster's Executive Order 2024-22, which emphasizes the need for the State Water Plan:

"In furtherance of the State of South Carolina's significant interests in the development of a state water resources policy and plan that will balance the state's economic, environmental and social needs; ensure the reliability, resiliency, sustainability, and sufficiency of the state's water resources for all existing and future uses, while simultaneously protecting the environment; and support and facilitate additional collaboration with ongoing efforts and existing initiatives..."

Therefore, the State Water Plan was formulated around a series of relevant goals, as listed here:

Goals of the State Water Plan

1. **Balance the state's economic, environmental, and social needs**
2. **Concisely assess water availability through 2070: Supply and Demand**
3. **Focus on water quantity: reliability, resiliency, sustainability, and sufficiency for all existing and future uses**
4. **Consider recommendations from RBCs and the newly formed advisory group: WaterSC**
5. **Identify pathways for implementation**
6. **Highlight multiple perspectives on key water management issues**
7. **Serve as a foundation for continued collaboration and planning**

The Planning Process and its Timeline: In 2014, with funding allocated by the state legislature for the development of water quantity models, SCDNR began the work of updating the State Water Plan. The 2004 Plan recognized that, because of the uniqueness of each of the state's major watersheds, future water planning should be done initially at the basin level and established a goal of creating advisory groups for each river basin.

The Planning Process Advisory Committee (PPAC) established and delineated eight planning basins in the *State Water Planning Framework* in 2018 and 2019. With the formation of RBCs for seven of the eight planning basins, a key objective of the 2004 Plan update was realized. The Catawba-Wateree Water Management Group (CWWMG), established in 2007, had previously been established and continues its planning effort to update its Integrated Water Resources Plan (IWRP), therefore an RBC was not established for the Catawba basin. The RBCs—composed of stakeholders from industry, water utilities, agriculture, environmental groups, recreational interests, local government, and energy utilities—used water quantity models to assess water resources availability, identify where demands may outpace supplies, and help formulate policy and water management recommendations for South Carolina's major planning basins.

Broad River near Columbia

On September 24, 2024, South Carolina Governor Henry McMaster issued Executive Order 2024-22, requiring SCDES to issue an updated State Water Plan by the end of 2025. The WaterSC Water Resources Working Group (WaterSC) was formed to advise and assist SCDES in this task. **Figure 1-2** illustrates the timeline of activities leading up to this State Water Plan update.

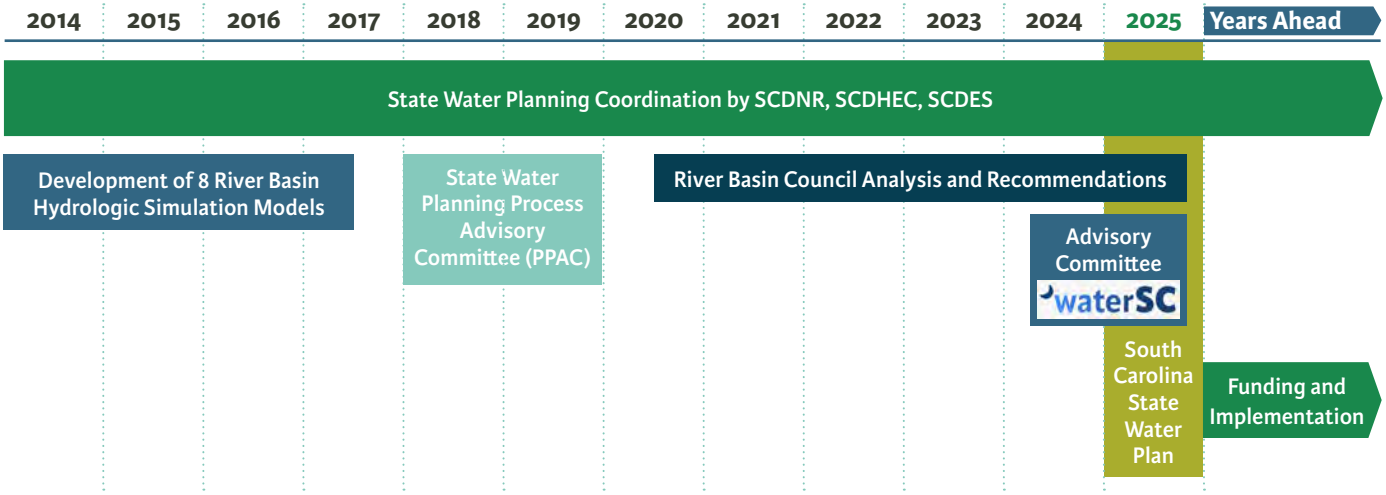


Figure 1-2. Over 10 years of investment leading to a stakeholder-driven State Water Plan.

This State Water Plan update builds on the recommendations of the 2004 Plan, highlighting accomplishments by legislators, agencies, and others who implemented those recommendations. It furthers the understanding of water demands and availability in South Carolina and summarizes actionable recommendations through collaboration with the RBCs and WaterSC.

Key accomplishments of the 2004 Plan include:

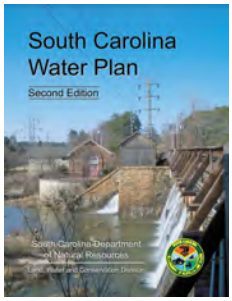
- Established River Basin Advisory Committees (now termed "River Basin Councils") for each of eight planning basins.
- Water use has been effectively monitored to the extent that current river basin models account for many years of documented water use patterns for all permitted and registered water users.
- To protect the groundwater aquifer systems, the entire Coastal Plain has been designated as six Capacity Use Areas and are routinely evaluated for permitting new groundwater use and renewing existing use permits.
- An updated groundwater flow model of the coastal plain is under development. The current model was used in the Edisto basin to improve understanding the effects of future groundwater pumping. The updated model will be used for the Lower Savannah-Salkehatchie, Pee Dee, and Santee basins, and to reevaluate the Edisto basin.
- Potentiometric maps are routinely developed and made available to understand the impacts of current groundwater pumping patterns.

These accomplishments would not have been possible without continual support from the state legislature, SCDNR, the former South Carolina Department of Health and Environmental Control (SCDHEC), and the newly created SCDES. All of these accomplishments required funding, a dedicated commitment to implementing plan recommendations, and deliberate prioritization of the protection of the state's water resources.

1.2 PLANNING PRINCIPLES

The major planning principles for the State Water Plan include the following, each of which is discussed in the subsections that follow:

Addresses 2004 State Water Plan Goals | **Sound Science** | **Collaborative Process** | **Stakeholder Engagement** | **Advisory Committee**



1.2.1 Address 2004 Plan Goals

This plan builds on the work of the 2004 Plan, through ongoing stakeholder collaboration and associated technical analysis and recommendations. Meeting the key goal of the 2004 Plan, advisory groups (the RBCs) have been established and funded in each of the planning basins. Additionally, each RBC has applied technical models of its basin to examine water availability and management strategies. This plan is authorized, administered, and orchestrated through coordinated actions of the government, water utilities, advocacy groups, academia, agricultural representatives, industry, energy producers, and citizens of South Carolina.

1.2.2 Foundation of Sound Science

Funding was authorized in 2014 for SCDNR to develop and calibrate river basin surface water models to simulate surface water hydrology and water management strategies in each of the state's eight major planning basins. An example river basin surface water model is shown in **Figure 1-3**. Groundwater models were also commissioned to support planning in the Coastal Plain region of the state.

Detailed information on the surface water models can be found in the River Basin Plans, and at the SCDES Surface Water Models webpage. More information on the groundwater models can be found at the SCDES Groundwater Models webpage.

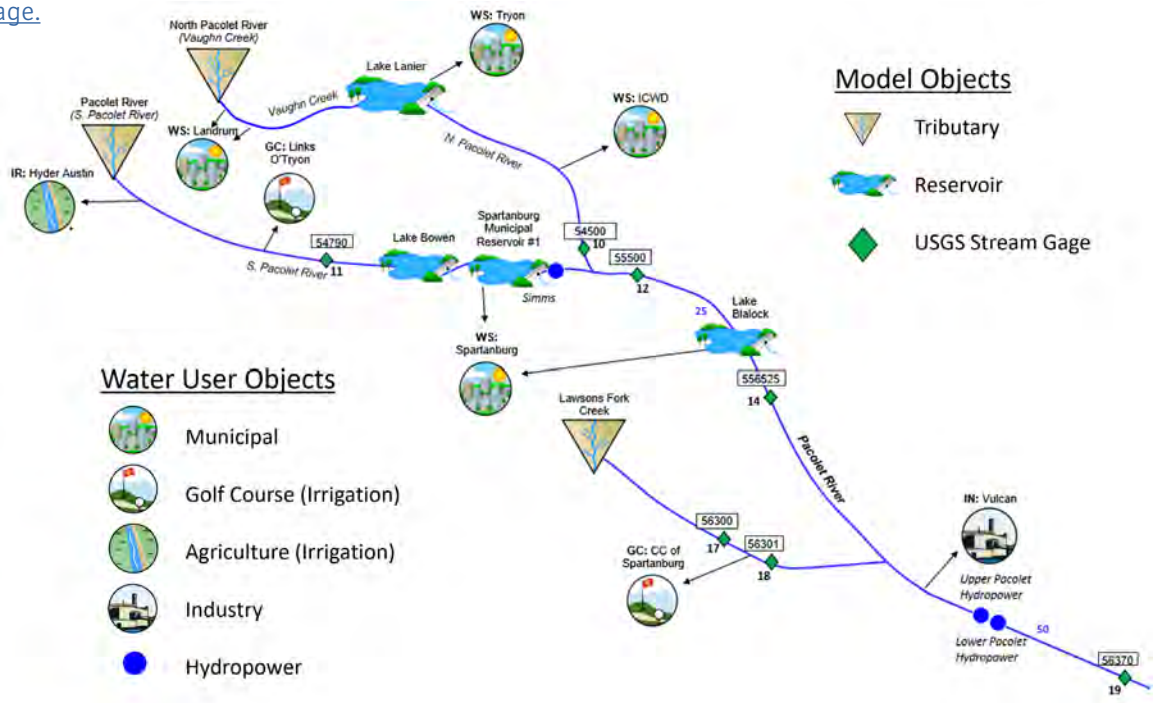


Figure 1-3. Example river basin surface water model. *(The Pacolet River portion of the Broad River basin model is shown. Refer to the individual River Basin Plans for details on these models).*

1.2.3 Collaborative Planning Framework

In 2018, the PPAC was formed to produce the Planning Framework (**Figure 1-4**), a guidance document with a template for RBCs to use in the development of comprehensive River Basin Plans. Membership included representation from water utilities, business groups, agriculture, energy utilities, conservation and environmental groups, recreational interests, state agencies, and academia.

The mission of the PPAC was to:

- ***Advise SCDNR on the process for including stakeholders in the development of River Basin Plans.***
- ***Produce the Planning Framework, which provides a consistent template for River Basin Plan development, including process, plan content, specific conditions to evaluate, and categories of recommendations.***
- ***Develop guidelines for achieving consensus among stakeholders.***
- ***Develop a strategy and template for assembling the RBC information into a State Water Plan.***

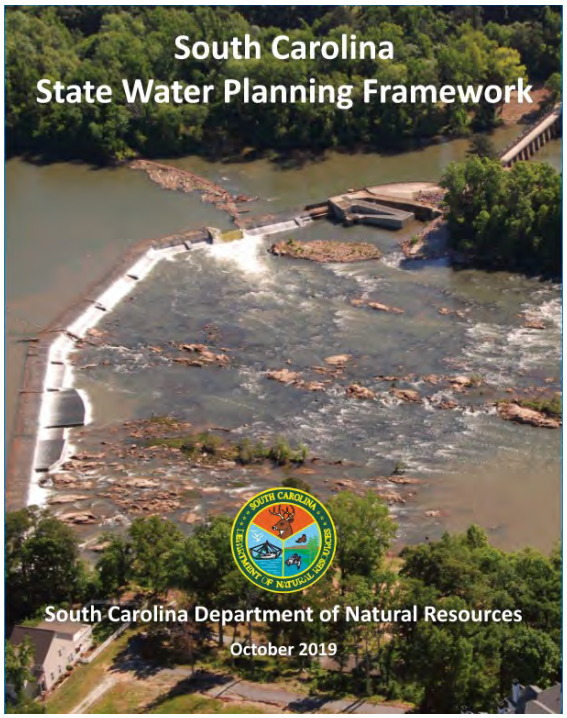


Figure 1-4. State Water Planning Framework.

Details of the PPAC can be found at the SCDES PPAC webpage and the Planning Framework can be downloaded from the SCDES Water Planning webpage.

1.2.4 Stakeholder Engagement

Committed to going beyond routine stakeholder engagement, SCDNR and SCDES determined the Water Plan would be stakeholder-driven. RBCs were formed in the state's major planning basins (**Figures 1-1** and **1-2**) and initiated the process of developing River Basin Plans in accordance with the Planning Framework. Each RBC consists of approximately 15 to 25 members, representing eight water interest categories, as shown in **Figure 1-5**. According to the Planning Framework, each plan was to be "a collection of water management strategies supported by a summary of data and analyses designed to ensure the surface water and groundwater resources of a river basin will be available for all uses for years to come, even under drought conditions". This update of the State Water Plan considers the analyses and recommendations developed in the RBCs, which can be found at the SCDES River Basin Planning webpage and in the CWWMG's IWRP.

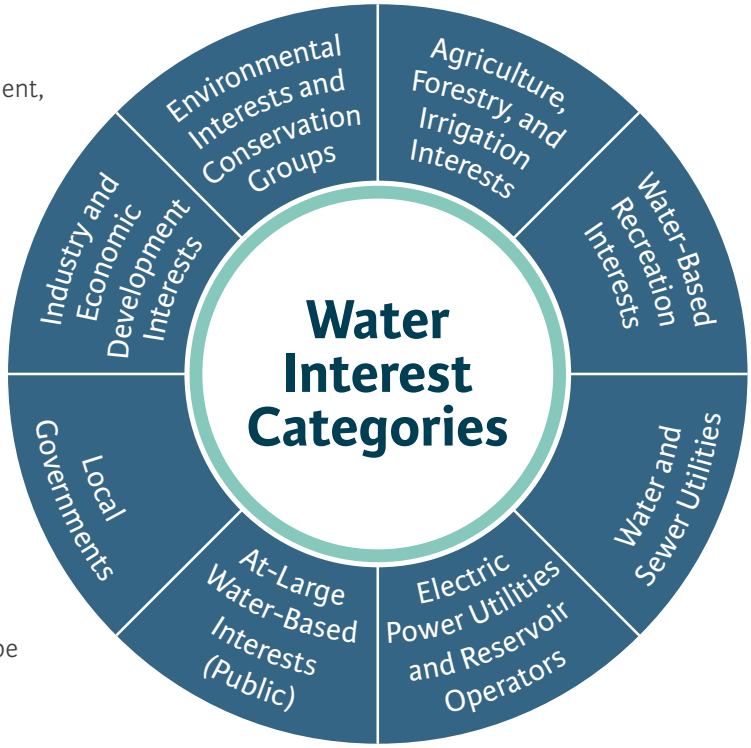
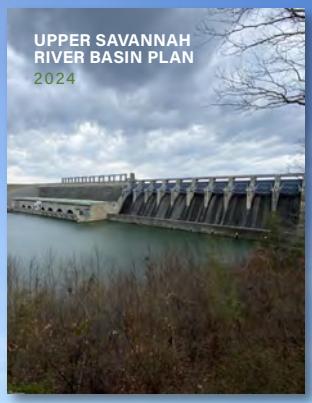


Figure 1-5. Water interest categories represented in the RBCs.

CONTENTS OF A RIVER BASIN PLAN

- Description of basin features, including land use and water resources
- Demand projections and scenarios
- Supply-demand comparisons and availability assessment
- Recommended water management strategies
- Drought response recommendations
- Policy, legislative, and regulatory recommendations
- Technical and planning process recommendations
- Implementation plan



RBC Tour of the Lake Jocassee Dam

1.2.5 Advisory Group: WaterSC

To combine more than 10 years of work together into a comprehensive State Water Plan, Governor Henry McMaster issued Executive Order 2024-22 in September 2024, requiring SCDES to develop the new State Water Plan by December 2025. To provide SCDES with advice and recommendations on water law and regulations, the executive order established WaterSC, composed of members representing academia, public water suppliers, conservation interests, agriculture, forestry, industry, energy, tourism and hospitality, and overall professional water expertise. Their charter, according to the executive order, is to: *"...Advise and assist DES regarding the comprehensive water resources policy for the state such that DES may issue an updated State Water Plan..."*

WaterSC began meeting monthly starting in October 2024, in facilitated sessions to hear from a diverse spectrum of speakers, discuss water resources policy, review recommendations from the RBCs, and prioritize issues and recommendations for SCDES to include in the State Water Plan. Further information on WaterSC can be found at the SCDES WaterSC Water Resources Working Group webpage.

Excerpts from Governor McMaster's Executive Order

"...In furtherance of the State of South Carolina's significant interests in the development of a State water resources policy and plan that will balance the State's economic, environmental, and social needs; ensure the reliability, resiliency, sustainability, and sufficiency of the State's water resources for all existing and future uses, while simultaneously protecting the environmental and support and facilitate additional collaboration with ongoing efforts and existing initiatives, I hereby authorize and direct DES to convene, and to coordinate the activities of the WaterSC Water Resource Working Group ("WaterSC"), which shall...advise and assist DES regarding the comprehensive water resources policy for the State such that DES may issue an updated State Water Plan on or before December 31, 2025. WaterSC shall inform DES concerning recommendations regarding any changes in law or regulation that may be required to implement the updated State Water Plan, including any changes related to the use and control of surface water and groundwater in the State."

Lake Jocassee

1.3 OVERVIEW OF THE PLANNING PROCESS

The process of formulating an actionable, updated State Water Plan builds on the accomplishments of implementing the prior State Water Plan recommendations and continued stakeholder collaboration. The process used is outlined in **Figure 1-6**. Specific activities and products of the RBCs, WaterSC, and SCDES are discussed in Sections 1.3.1 and 1.3.2.

The planning process was intended to be flexible and adaptive. The relevance of each planning group and activity serves as an important roadmap. This process has benefited from lessons learned in other states in terms of both process and ultimate recommendations.

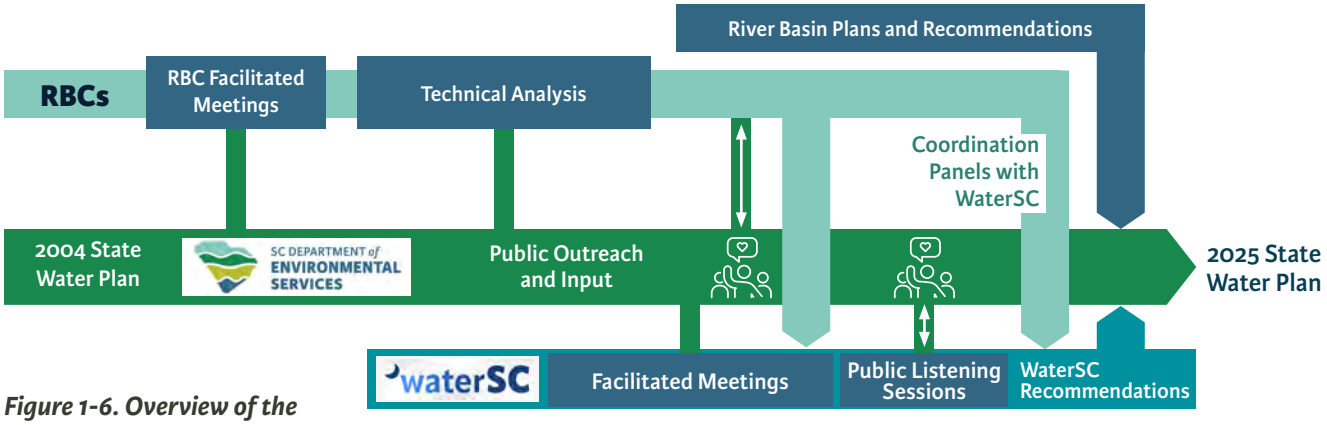


Figure 1-6. Overview of the water planning process.

1.3.1 RBC Planning Process

Stakeholder engagement was the foundation of this plan—it drove the technical analysis and ultimately the development of a broad array of recommendations. In each of the major planning basins in the state, RBCs met monthly for approximately 2 years to follow the steps outlined in the Planning Framework. Exceptions to this included the Santee RBC, which accelerated the process because of the executive order deadline of December 2025, and the Catawba River basin, for which a commensurate IWRP is being developed by the pre-existing CWWMG.

Facilitated RBC Meetings: During the planning process, facilitated meetings, as shown in **Figure 1-7**, were conducted as outlined in **Table 1-1**. The goals were to understand the water availability, needs, and vulnerabilities throughout each basin and recommend actions in response to the technical assessment. While some variation occurred to accommodate schedules or the need for further discussion, the outline of each RBC process was generally consistent. Each of the four phases spanned approximately 6 months on average, with monthly meetings throughout.

Figure 1-7. Broad River Basin Council meeting.

Table 1-1. Typical facilitated RBC meeting discussion topics and activities.

PHASE 1 Orientation, Vision, and Goals	PHASE 2 Water Availability	PHASE 3 Water Management Strategies	PHASE 4 Recommendations and River Basin Plans
Orientation / kickoff	Surface water model analysis scenarios:	Overview of water management strategies and evaluation methods	Development of drought management, planning process, technical, policy, legislative, and regulatory recommendations
Vision and goals	Current Use		
Basin hydrology and water legislation	Moderate Demand – 2070	Evaluation of water management strategies	
Water demands	High Demand – 2070		Preparation of draft and final River Basin Plans
Other topics / field visit	Fully Permitted and Registered Use		
Preview of methods to examine water availability, demands, etc.	Unimpaired Flows	Water management strategy recommendations and prioritization	
	Groundwater model analysis (where applicable)		

Technical Data and Modeling: To support these meetings, and in direct response to the 2004 Plan, the RBCs furthered the technical understanding of water availability and management options in each basin through surface water modeling. The Simplified Water Allocation Model was used in seven of the eight basins. A pre-existing model with specialized software was used for the Catawba River basin. Each model simulated the flows (water quantity) throughout the river network in the basin, considering water withdrawals and discharges.

Additionally, the groundwater model of the aquifers in the Coastal Plain is being updated by the U.S. Geological Survey. Its intent is to examine the potential impacts of current and future groundwater pumping patterns on groundwater levels. The current version was used to support the planning process in the Edisto River basin, and the updated version will be used in the Lower Savannah-Salkehatchie, Pee Dee, and Santee River basins.

South Edisto River from Bobcat Landing

RBC Recommendations: Based on the technical needs assessment and facilitated dialogue, the RBCs formulated recommendations for their own planning basins, while also considering ideas that could provide value to the whole state. Five key types of recommendations were made and are discussed further in Chapters 7, 8, and 9 of each River Basin Plan. The recommendation types are summarized below; recommendations are discussed further in Chapter 7 of this State Water Plan.

Drought Management Recommendations: In accordance with the South Carolina Drought Response Act of 2000, SCDNR developed a statewide drought mitigation plan. To supplement this, and to help coordinate drought preparedness and response across the state, RBCs developed specific recommendations on drought communication, regional coordination, and utility-level plan updates. Their recommendations and a discussion of drought history, impacts, and response are included in Chapter 3.

Water Management Strategies: Most RBCs and WaterSC recommended both demand-side strategies (e.g., conservation and efficiency) and supply-side strategies (e.g., source expansion, new sources, alternative operations). These were often divided into municipal (including industrial) and agricultural measures and were frequently categorized by time horizon (short-term, meaning in the next 1 to 5 years, or longer-term, meaning in more than 5 years). The strategies are summarized in Chapter 6.

Planning Process Recommendations: Each RBC identified ways the planning process can improve and evolve in future phases. Recommendations included process improvements and expanding the scope of topics that should be considered in future planning phases.

Technical and Program Recommendations: RBCs identified data or information gaps that would be helpful in future phases of planning.

Policy, Legislative, and Regulatory Recommendations: The RBCs engaged in discussion about issues and concerns with the existing policies, laws, and regulations governing water withdrawals and water use. Most RBCs made recommendations in their plans that garnered either full consensus or majority consensus for further consideration.

Savannah River at Augusta

1.3.2 WaterSC Planning Process

WaterSC was formed in 2024, in response to the governor's executive order. Its specific charges were to:

- Report to the General Assembly's Surface Water Study Committee (functionally expanded to also consider groundwater) on the state of surface water in South Carolina and make any consensus-based recommendations on additions or changes to current water law.
- Advise and assist SCDES regarding statewide water resources policy and recommendations for changes in law or regulations required to implement this updated State Water Plan.

Throughout the meetings, the group adopted the following as its guiding principles to help focus discussion and evaluate potential recommendations:

- Water is a shared resource with shared responsibility.
- A collaborative approach to develop and implement a science-based actionable plan.
- A plan that balances economic, environmental, and community needs.
- A plan that secures reliable and resilient water resources for the future.

WaterSC, shown in **Figure 1-8**, is composed of largely the same water interest groups as the RBCs (**Figure 1-5**). The group's process is characterized by a series of facilitated meetings intended to develop recommendations for SCDES by blending participants' knowledge about water needs in South Carolina with the comprehensive technical information and recommendations in the River Basin Plans developed by the RBCs.

Figure 1-8. WaterSC with Governor McMaster.

Figure 1-9 summarizes the general activities that WaterSC performed to formulate practical and comprehensive recommendations. Like the RBCs, the group's deliberations were grounded in science, and early meetings included informative presentations on hydrology and water needs throughout the state. The group then developed recommendations, which are summarized in Chapter 7.

Figure 1-9. WaterSC activities throughout 2025.

1.3.3 Focus on Actionable Recommendations

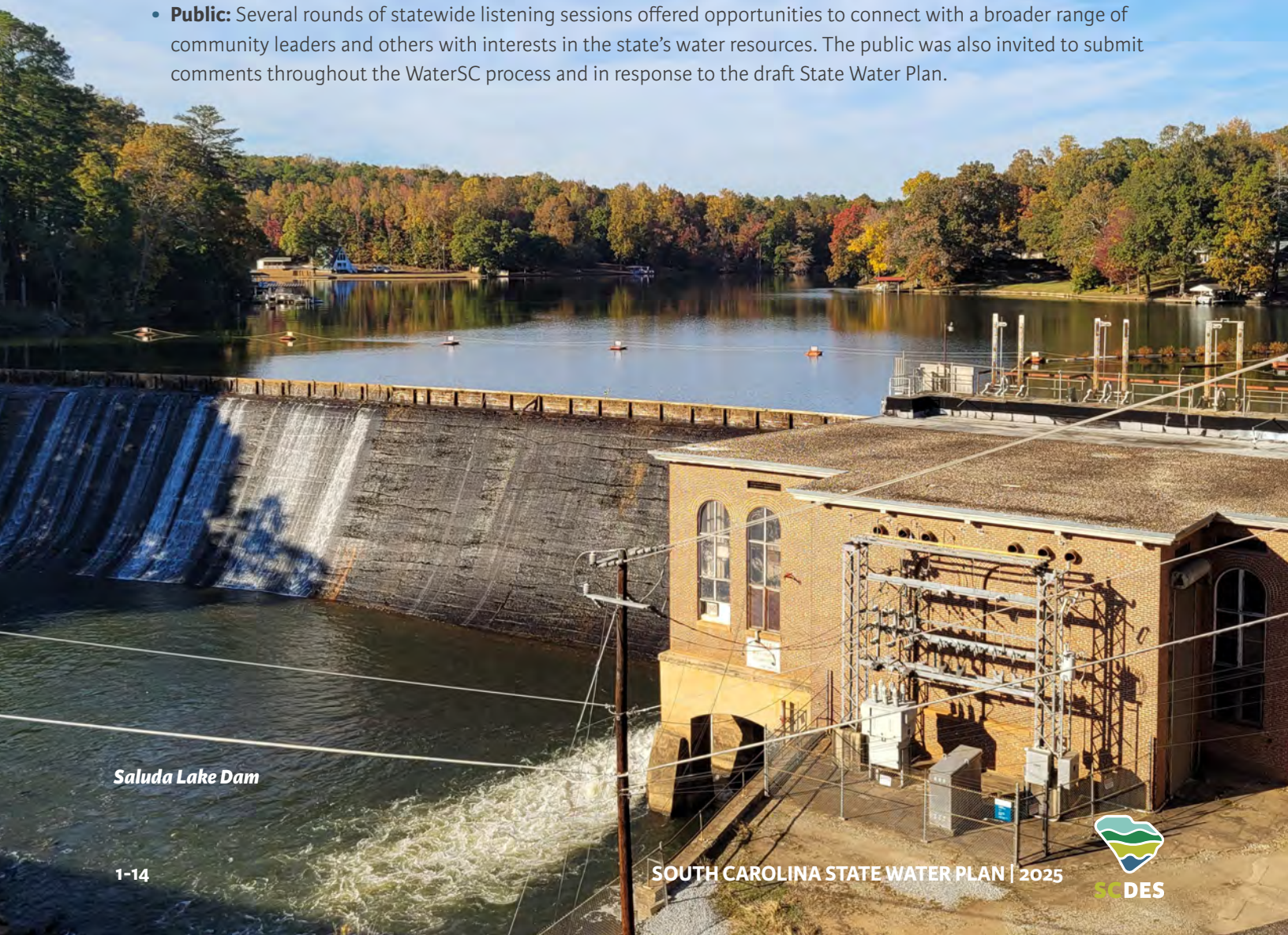
As with any comprehensive planning process, not all issues are fully reconcilable because of limited time and differing opinions and values. For this reason, this plan focuses its summary of recommendations on those that are actionable and broadly supported. The individual River Basin Plans provide additional recommendations and a discussion of diverse viewpoints that can aid decision-makers now and in the future.

Lake Marion Dam and Santee River

1.4 ROLES AND RESPONSIBILITIES

This plan has been developed by SCDES, with substantial guidance and input from the RBCs and WaterSC. The public was also invited to participate during plan development. The roles of each group involved are noted below, for context while reading the document:

- **SCDES:** Responsible for developing a stakeholder-driven plan that embodies the recommendations of the RBCs and WaterSC, and the strategic vision and goals of the agency. The State Water Plan will incorporate recommendations for water management; drought response; the planning process; data needs; and conceptual changes to water policy, laws, and regulations that extend across the eight river basins within the state.
- **River Basin Councils:** Each RBC has drafted a River Basin Plan that includes condition assessments on the balance between supply and demand; impacts of water use on users and ecological conditions; and recommendations for water management, the planning process, data needs, and conceptual changes to water policy, laws, and regulations. RBC leadership has interacted with WaterSC and SCDES to help explain the key priorities in each basin, and the level of support from RBC membership.
- **WaterSC:** Advises and assists SCDES regarding the comprehensive water resources policy for the state such that SCDES may issue an updated State Water Plan on or before December 31, 2025. WaterSC will inform SCDES concerning recommendations regarding any changes in law or regulation that may be required to implement the updated State Water Plan, including any changes related to the use and control of surface water and groundwater in the state.
- **Public:** Several rounds of statewide listening sessions offered opportunities to connect with a broader range of community leaders and others with interests in the state's water resources. The public was also invited to submit comments throughout the WaterSC process and in response to the draft State Water Plan.



Saluda Lake Dam

1.5 NAVIGATING THIS PLAN

This plan is generally structured per the recommended guidelines in the Planning Framework, with adaptations to effectively report on the process, its findings, and a list of actionable recommendations. It stands as both a summary document and a directive for action. **Table 1-2** outlines the contents of each chapter.

Table 1-2. Organization of the State Water Plan.

	Chapter Title	Description
1	Introduction	Drivers for this plan, aspirational goals, basis of this plan in prior and ongoing work, and overview of the planning process.
2	Water Resources and Management	Description of the state's water resources/climate, water law and management, and data and modeling tools.
3	Drought and Drought Response in SC	Summary of current drought management practices and advisory groups, and overview of RBC-developed recommendations to improve communication, coordination, and the implementation of drought management strategies.
4	Current and Future Water Demand	Summary of RBC assessments of past, current, and projected sectoral water demands, including aggregation into statewide statistics.
5	Water Availability Assessment	Summary of RBC assessments of vulnerabilities, potential for shortages, and impacts of water use on river flows and reservoir and groundwater levels, including aggregation into a statewide characterization of water availability and supply.
6	Water Management Strategies	Summary of water management strategies recommended by the RBCs and WaterSC, including the priorities per basin and recommendations for statewide strategies.
7	WaterSC Recommendations	Recommendations made by WaterSC focusing on water planning, interstate water management, drought response, permitting, and other topics.
8	River Basin Council Recommendations	RBC recommendations for enhancing the water planning process, improving technical information to support better decision making, and changes to policy, regulation, and law.
9	Next Steps and Considerations	SCDES's next planning steps and considerations to sustain water planning efforts and improve water resource management and resilience.
10	References	List of cited references used throughout the State Water Plan.

Bushy Park Reservoir