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South Carolina State Water Planning

Ken Rentiers
Deputy Director
S.C. Department of Natural Resources
Land, Water and Conservation Division

Pee Dee River Basin Planning – Public Meeting #2
Pee Dee Research and Education Center-
Clemson University
Florence, SC
March 22\textsuperscript{nd}, 2022
Why Are We Here?

“The effective management of South Carolina’s water resources is beyond the scope of any one agency or organization and will require cooperation and shared responsibility among federal, state, and local agencies, as well as public and private parties.”

- South Carolina Water Plan (2004)
Why Are We Here?

- Energy Production
- Fishing
- Public Water Supply
- Manufacturing/industry
- Agriculture
- River Recreation
- Wastewater dischargers
- Fish and wildlife
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.

Why State Water Planning?

**Drought**


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
• SCDNR published the first edition of the State Water Plan in 1998.


• One recommendation was to develop a regional water plan for each major river basin in the State.

• In 2014, SCDNR and SCDHEC initiated the first step towards these regional water plans, now formally called *River Basin Plans*.
South Carolina’s Eight Planning Basins

• River Basin Plans will be developed for the State’s 8 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.
1. **Surface Water Assessments** – completed in 2017 for each basin (CDM Smith, Inc).

2. **Groundwater Assessment** – completed in 2021 (USGS).

   - Edisto projections completed in 2021.
   - Broad projections in progress.
   - Pee Dee projections slated for spring 2022.

4. **River Basin Plans**
   - South Carolina State Water Planning Framework published in October 2019.
   - Edisto and Broad basin planning in progress.
   - Pee Dee basin planning is now initiated.

5. **State Water Plan** – River Basin Plans will form the foundation of a new State Water Plan.

Cooperators: [Logos]
Planning Process Advisory Committee (PPAC)

- Convened by SCDNR in March 2018.
- Purpose: develop a guidance document (Planning Framework) for developing River Basin Plans (Step 4) and for updating the State Water Plan (Step 5).
- South Carolina State Water Planning Framework (Planning Framework) was published in October 2019 after an 18-month process.
- PPAC continues to meet quarterly for planning oversight purposes.

**PPAC Vision Statement:**

“Reflecting our values of water as a shared resource with a shared responsibility, we will work together to develop and maintain an actionable State Water Plan balancing economic, environmental and social needs of South Carolina for generations to come.”
Jeffery Allen – Clemson University
David Baize – SCAWWA/WEASC
David Bereskin – Greenville Water
Jesse Cannon – Santee Cooper
Fred Castles, III – Catawba-Wateree Water Management Group
Clay Duffie – Mt. Pleasant Waterworks (retired)
Steve Hamilton – The Dunes Golf and Beach Club
Erika Hollis – Upstate Forever
J.J. Jowers, Jr. – Bamberg County citizen, Edisto Engineers and Surveyors, Inc.
Eric Krueger – The Nature Conservancy
Jeff Lineberger – Duke Energy
Jill Miller – South Carolina Rural Water Association
Dean Moss, Jr. – Beaufort Jasper WSA (retired)
Myra Reece – South Carolina Department of Health and Environmental Control
Ken Rentiers – South Carolina Department of Natural Resources
Bill Stangler – Congaree Riverkeeper
Landrum Weathers – Farmer
Scott Willett – Anderson Regional Joint Water System
Charles Wingard – Walter P. Rawl and Sons, Inc.

For more information, visit: https://www.clemson.edu/public/water-assessment/State_Water_Planning_Process_Advisory_Committee.html

http://hydrology.dnr.sc.gov/ppac.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:
Where are we now?

Ready to start the Pee Dee River basin planning process under the guidance of the Planning Framework.
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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!
2020 Reported Surface Water Withdrawals

- Area = 17,940 sq. mi.
- Largest basin in the Carolinas with headwaters in NC and VA.
- 7 Lakes in NC along the mainstem.
- Major subbasins in SC: Little Pee Dee, Lynches, Waccamaw, and Black (freely flowing).
- Basin relies on both Groundwater and Surface Water.
2020 Reported Water Withdrawals

Including Energy Withdrawals:

- Thermoelectric (74%)
- Water Supply (14%)
- Industry (9%)
- Agr. Irrigation (2%)
- Golf Course (<1%)
- Mining (<1%)

- Surface Water (90%)
- Ground-water (10%)

Excluding Energy Withdrawals:

- Water Supply (53%)
- Industry (37%)
- Agr. Irrigation (7%)
- Golf Course (2%)
- Mining (<1%)

- Surface Water (61%)
- Ground-water (39%)

Source: SCDHEC Water Use Database
Reported Water Withdrawals (2011-2020)

Total Water Withdrawals – Surface Water and Groundwater (Excluding Energy)

Source: SCDHEC Water Use Database
• 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

- Covers a **50-year** Planning Horizon.
- Considers both surface water and groundwater resources.
- Current focus is on water *quantity* not water *quality*.
  - **Emphasis is 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 and models along with water demand projections.
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
10. Implementation Plan
How Will the Pee Dee River Basin Plan be Developed?
River Basin Council (RBC)

- **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.

*RBC will develop the River Basin Plan over a 2-year period with meetings on a monthly basis*
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 planning activities.
• Coordinate with other formal planning bodies (including those in North Carolina).
• Recommend changes to water policy or legislation or to the water planning process.
• Update River Basin Plans every 5-years and amend River Basin Plans as needed.
SWAM is a decision-making tool used to assess surface water availability and management strategies, and will support the development of River Basin Plans.

http://hydrology.dnr.sc.gov/surface-water-models.html
Groundwater Model

- Developed by the USGS with support from SCDNR and SCDHEC.
- Completed in 2021 and currently supporting Edisto river basin planning.
- **Model is a decision-making tool used to assess groundwater availability and management strategies and will support the development of River Basin Plans.**
- More information can be found at [http://hydrology.dnr.sc.gov/groundwater-models.html](http://hydrology.dnr.sc.gov/groundwater-models.html).

• Stakeholder meetings to review draft projections scheduled for Spring/Summer 2022.

• Projections will be used in surface water and groundwater models to assess future water availability and will support the development of the Pee Dee River Basin Plan.
The Pee Dee RBC will develop the plan with support from:

- **Contractors** (solicited and hired by SCDNR):
  - Meeting Facilitation
  - Meeting Coordination (Clemson University) – administrative and logistical support
  - Technical support – surface water modeling
  - Public Outreach (Clemson University)
  - River Basin Plan report writing

- **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 outside Advisors**

  PPAC and SCDNR will continue to provide oversight of the river basin planning process.
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<table>
<thead>
<tr>
<th>Time Period</th>
<th>Events</th>
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<tbody>
<tr>
<td>Feb – Apr 2022</td>
<td>• Public kick-off meetings</td>
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<tr>
<td></td>
<td>• Solicit RBC applications</td>
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<tr>
<td></td>
<td>• Solicit Contractors (in progress)</td>
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<tr>
<td>Apr – May 2022</td>
<td>• Appoint RBC members</td>
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<td>• Finalize contractors</td>
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<td>• Planning Team (SCDNR, SCDHEC, Clemson, contractors) begins to meet</td>
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<tr>
<td>June 2022</td>
<td>• First RBC meeting</td>
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<tr>
<td>Jun 2022 – May 2024</td>
<td>• Monthly RBC meetings</td>
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<tr>
<td>May – June 2024</td>
<td>• Completed River Basin Plan</td>
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</tbody>
</table>
SCDNR appointments based on the following criteria:

- Applicant’s credentials
  - Knowledgeable and experienced in their interest category.
  - Must either reside, work or officially represent an entity having a significant water resource interest in the basin.
  - Additional qualifiers – membership on the State Drought Response Committee, for example.
- Recommendations and endorsements submitted by various interest groups or organizations.
- Geographic Diversity.
- PPAC recommendations.

SCDNR appointments will strive for a balanced representation
Applicants should carefully consider the time commitment and workload required to an RBC member.
Initial terms are 2, 3 or 4 years.

Subsequent terms of 3 years (each additional term subject to SCDNR approval).

RBC members can serve up to 3 consecutive terms.

Considerations for RBC applicants:

- Multi-year commitment.
- Monthly in-person meetings.
- Subcommittee meetings.
- Review of various technical reports and other documents.
- Help write and review the River Basin Plan.
- Annual meetings between iterations of the River Basin Plan (possibly higher frequency).
• Application period: **March 21\(^{st}\) – April 30\(^{th}\).**

• Application forms available on SCDNR website:

http://hydrology.dnr.sc.gov/peedee-basin-planning.html

• Application forms and recommendations should be sent to *Ken Rentiers* (see application for contact information).

• Application review period: **May 1\(^{st}\) – May 31\(^{st}\).**
  
  • *PPAC will review applications and make recommendations to SCDNR.*

• Final selection and notification by **May 31\(^{st}\).**

• Applicants not appointed for membership may be placed on a waiting list.
• 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
Site will host:

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

• First basin selected for implementing Planning Framework.
• Public kick-off meetings held in November 2019.
• First RBC meeting - June 2020.
• Completed 21 meetings – due to Covid, first 11 meetings were held virtually, in-person meetings began in May 2021.
• River Basin Plan scheduled for completion in summer 2022.
Edisto RBC Representation

Interest Categories
Agriculture, Forestry, and Irrigation (4)
At-Large (5)
Electric-Power Utilities (1)
Environmental (3)
Industry/Economic Development (2)
Local Governments (3)
Water and Sewer Utilities (3)
Water-based Recreational (2)

Organizations Represented
Aiken County Government
Aiken Soil & Water Conservation District
Bamberg Board of Public Works
Bamberg Soil and Water District
Charleston Water System
Dominion Energy South Carolina
Dorchester County Government
Edisto River Canoe and Kayak Trail Comm.
Friends of the Edisto & Edisto Riverkeeper
Lowcountry Oyster Company, LCC
Orangeburg Country Club
Orangeburg County Government
Orangeburg Department of Public Utilities
Palmetto Realty and Land Co.
RBM Forestry LLC
General Public
The Nature Conservancy
Town of Edisto Beach
Walther Farms
Weathers Farms/ Circle W Farms
Western SC Economic Development Council

Planning Team
CDM Smith
Facilitation and Surface Water Technical Support
Clemson University
Meeting Coordination and Public Outreach
USGS
Groundwater Technical Support
dhec
Oversight and Education
Broad RBC Representation

Interest Categories
- Agriculture, Forestry, and Irrigation (5)
- At-Large (3)
- Electric-Power Utilities (2)
- Environmental (3)
- Industry/Economic Development (2)
- Local Governments (1)
- Water and Sewer Utilities (5)
- Water-based Recreational (2)

Organizations Represented
- Black's Peaches
- Cherokee County Development Board
- City of Clinton
- City of Columbia
- City of Columbia Parks
- Congaree Riverkeeper
- Dominion Energy SC, Inc.
- Duke Energy
- Gaffney Board of Public Works
- His Harvest Partners LLC
- Inman-Campobello Water District
- Milliken & Company
- Public
- SC Farm Bureau
- SC Rural Water Association
- Caroland Farms NPA
- Spartanburg Water
- The Nature Conservancy
- The SC River Guide
- Upstate Forever
- Weyerhaeuser Company
- York County

Planning Team
- CDM Smith
  - Facilitation
- Clemson University
  - Meeting Coordination and Public Outreach
- DHEC
  - Oversight and Education
- Surface Water Technical Support (to be determined)

First RBC meeting held March 3rd, 2022
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Contact Information:

Scott Harder

harders@dnr.sc.gov