

Pee Dee River Basin Council (RBC) Meeting #28 Minutes
September 24th, 2024

RBC Members Present: Jason Gamble, Megan Hyman, Michael Hemingway, Jeff Steinmetz, Mike Bankert, Cynthia Walters, John Crutchfield, Cliff Chamblee, Lindsay Privette, Hughes Page, John Rivers, Eric Krueger, & Doug Newton

Absent: Debra Buffkin (Dylan Coleman, alternate, present), Everett Allen, Tim Brown, Frances McClary, Bob Perry, & Buddy Richardson

Planning Team Present: JD Solomon, Matt Lindburg, Joe Koon, Scott Harder, Brooke Czwartacki, Andy Wachob, Alexis Modzelesky, Hannah Hartley, Thomas Walker, & Chikezie Isiguzo.

Total Attendance: 32

1. Call the Meeting to Order (J. D. Solomon - Facilitator)

a. Review of Meeting Objectives

J. D. Solomon (the Facilitator) called the meeting to order at 9:02 AM and welcomed the members to the 28th Pee Dee RBC meeting. He highlighted the meeting's objectives, including learning about Drought Monitoring, receiving Chapter Updates, discussing changes to the River Basin Plan to Incorporate Groundwater, learning about Capacity Use Area Recommendations, and discussing additional Groundwater Areas of Interest, implementation, and next steps.

b. Approval of September 24th Meeting Agenda and the August 27th, 2024, meeting Minutes and Summary

The members unanimously approved the agenda for the September 24th, 2024, Pee Dee RBC meeting.

Michael Hemingway moved, seconded by Jeff Steinmetz, to adopt the August 27th, 2024, Pee Dee RBC meeting minutes.

2. Public/Agency Comment (JD Solomon)

There was no public/agency comment.

3. Drought Monitoring/Outcome in South Carolina (Elliott Wickham, DNR)

Elliot Wickham, Water Resources Climatologist at the South Carolina State Climatology Office, discussed the drought monitoring processes in South Carolina and compared them to national practices. He emphasized the importance of these processes in managing water resources across the state, particularly in light of recent drought conditions.

He explained the State's Drought Monitoring efforts noting that the South Carolina State Climatology Office leads drought monitoring through the South Carolina Drought Response Committee (DRC). The DRC is responsible for county-level drought designations and coordinating water conservation efforts with public water suppliers. The committee includes members from various sectors, including water utilities, agriculture, industry, and

local government.

Elliot also explained the indicators used in Drought Monitoring. Seven primary indicators are employed to assess drought levels: Palmer Drought Severity Index (PDSI), Crop Moisture Index (CMI); Standardized Precipitation Index (SPI), Keetch-Byram Drought Index (KBDI) Streamflow levels, Groundwater levels, and U.S. Drought Monitor map.

On drought designations and responses, Elliot explained that the DRC evaluates conditions and assigns drought severity levels ranging from normal to extreme. At severe and extreme drought levels, the DRC can recommend non-essential water use curtailment, particularly for public water suppliers. He noted that public water systems must have drought management plans that are triggered based on these designations.

Elliot also compared South Carolina's drought response with the U.S. Drought Monitor (USDM), a weekly national product developed by federal entities such as NOAA and the USDA. The USDM is used to assess drought on a broader scale, including its impacts on agricultural, meteorological, hydrological, and socioeconomic sectors. While the USDM helps inform South Carolina's drought response, state-specific designations are based on local indicators and county lines, which may differ from the USDM's broader polygons.

Discussing the challenges in drought monitoring, Elliot mentioned the difficulty in aligning all drought indicators, as different components may respond to drought at different times. He noted that the process of making drought designations is highly data-driven, but local reports from committee members and residents play an important role in validating and interpreting data.

Elliot discussed the outcomes of drought monitoring. The U.S. Drought Monitor influences agricultural aid programs such as the Livestock Forage Program (LFP). In South Carolina, the DRC's recommendations are used to manage public water use and provide context for fire management and agricultural decisions.

Elliot noted gaps in data availability across the state, particularly for long-term historical data, streamflow, and groundwater monitoring. He emphasized the importance of having robust data collection systems to respond more effectively to future droughts, including the growing concern about flash droughts.

Elliot concluded by discussing the ongoing efforts to improve drought data collection and management. Elliot also addressed questions about the frequency and coordination of drought monitoring, acknowledging the need for improved local data inputs and community engagement.

Discussion:

Q: How often do the 7 indicators line up?

A: Some judgement in there. State level vs USDM it is rare to get perfect agreement. Short term usually as it takes hydrology a while to match up. With DRC, SC is one of the only ones with local representation. Having local condition reports from the ground can help move

the stick sometimes. A lot of moving pieces.

Q: How much does that stick get moved? Get it changed often?

A: Depends how often we are meeting. Depends on how severe the drought is. Moderate or incipient and short-term impacts. May be move to moderate but DRC not making curtailment recommendations. Data drives the process but requires ground truthing.

Q: In our state do we have adequate reporting of this data? Good data in and good data out

A: There are some holes in data points. USDM is in perspective of historical data and less data in history. There are gaps in long-term stations – KBDI forest stations – long-term stream gaging. We do have some areas with good data and some areas with gaps.

C: From a science perspective we could always use more data. Cost associated. Narrative is growing in general with need for more information across the state. Flash droughts require fast response and data associated with it vs a more traditional drought.

Q: Experience serving on DRC?

A: Meetings are about an hour and as needed. Live in a farm community. When I explain why drought needs to be declared and crop insurance. It's an interesting experience and amazing how different conditions can be in the same county.

4. Chapter Status Discussion (Matt Lindburg, BC)

Matt provided an update on the status of the River Basin Plan and discussed the progress of various chapters of the Basin report. The presentation covered the development, review, and anticipated completion of chapters on water resources, current and projected water demands, and water management strategies.

Progress on the Basin Chapter:

- The introductory chapters have been preliminarily approved, with minor edits pending, such as updating agency names and public meeting schedules.
- Chapter 2, which describes the basin's characteristics (land use, waterways, economic factors), has also been approved.
- Chapter 3 (Water Resources) is being modified to reflect changes due to the absence of a groundwater model. Initially, the plan was to evaluate impacts on groundwater, but a new approach will now be used.
- Chapter 4 (Current and Projected Water Demands) is in development. Due to delays in groundwater modeling, this chapter will be completed soon and sent out for review.
- Chapter 5 (Comparison of Water Resource Availability and Demand) also requires revisions, particularly related to groundwater issues. Surface water analysis showed no significant shortages.

Water Management Strategies and Recommendations (Chapters 6 and 7):

- Matt highlighted the importance of both demand-side and supply-side water management strategies, including water conservation, recycling, and reuse. He noted that while reuse and recycling are important, their feasibility varies across sectors.
- For example, recycling on golf courses, though discussed, may not be cost-effective due to infrastructure limitations.
- Matt explained the committee's focus on balancing conservation with innovative strategies like aquifer storage and recovery. Prioritization exercises helped identify the most practical and impactful strategies.

Concerns and Revisions:

- One significant concern raised was the inability to use a groundwater model to test recommendations. Despite this, Matt noted that the committee remains focused on water recycling and conservation where feasible.
- A recommendation to drill deeper wells in stressed aquifers was also discussed, but concerns about overuse and potential contamination (e.g., saltwater intrusion) led to additional caveats being added to the language in the report.

Future Focus:

- Chapters 9 (Policy, Legislative, Regulatory, Technical, and Planning Process Recommendations) and 10 (Implementation) will be reviewed next. These chapters will consolidate recommendations and outline steps for long-term water management.

Discussion:

C: There is a need for improved data collection systems across South Carolina (referencing the state's current challenges in collecting accurate data on weather and water conditions). Compared to other states, South Carolina lacks comprehensive systems to measure critical parameters like wind direction, humidity, and rainfall. I'm concerned that decisions made on sparse or poor-quality data could lead to suboptimal outcomes in water resource management. Improving data collection should be a key recommendation in the Basin Plan, allowing for better-informed decisions in the future. I discussed with Elliot Wickham about the lack of a mesonet system in South Carolina, which could provide more accurate and frequent data. Only 12 states do not have such a system and implementing one could significantly improve data collection for drought monitoring and water management. Although the initial setup cost for a mesonet system (estimated at around \$5 million) might seem high, it is a small investment compared to infrastructure projects like water pumping stations, which can cost over \$20 million for a single location. Better data would ensure more efficient use of resources across the state. Urge the River Basin Council (RBC) to prioritize data improvement in their recommendations. Good decisions depend on reliable data, and improving data collection infrastructure should be a high priority for long-term water resource management.

C: (Mesonet) One per county is a start. Orangeburg having one is not enough, but we need at least one in every county and in some states they have multiple in counties.

Q: Does NC have it?

A: Eco-net and not in every county. UGA does it through extension.

C: We use climate.com and field by field it gives a good estimate of rainfall. Could we use that instead of the mesonet?

5. **River Basin Plan Chapter Modifications for Groundwater (Matt Lindburg, BC, Brooke Czwartacki, DES)**

Matt provided an update on modifications being made to the River Basin Plan, particularly addressing the absence of a groundwater model and how the team plans to adjust the chapters that cover groundwater analysis and management. The primary chapters undergoing revisions are Chapters 3, 5, 6, and 7.

Key Modifications:

Chapter 3: Groundwater Resources

Previously, Chapter 3 included detailed descriptions of surface and groundwater resources. However, given the absence of a groundwater model, some of the groundwater content will be shifted to Chapter 5.

The chapter will be streamlined by reducing the focus on the incomplete groundwater model and instead rely more on existing groundwater level monitoring data. This includes well network data and potentiometric surface maps.

The aim is to characterize groundwater trends and highlight areas that have experienced groundwater issues in the past.

Chapter 5: Groundwater Concerns

Initially intended to present the results of groundwater model simulations, this chapter will now focus on the technical analysis of existing groundwater data.

Without the model, the team will identify "preliminary areas of concern" based on existing monitoring data, including groundwater levels and pot maps. These areas will help the River Basin Council (RBC) identify potential future risks.

Matt sought input from the RBC on the term "preliminary areas of concern" as it slightly deviates from the terminology used in other basin plans but is necessary to reflect the absence of a model.

Chapter 6: Groundwater Management Strategies

This chapter presents various water management strategies. For surface water, there is an extensive analysis of effectiveness, but such discussion has been missing for groundwater.

The revision will include an assessment of supply-side groundwater management strategies, such as case studies of where these strategies have already been applied in areas with known groundwater issues.

The goal is to demonstrate how these strategies can be used effectively in the future, even without a model, as many of the current approaches will likely continue to be relevant.
Chapter 7: Updates Based on New Findings.

As the team completes their revised analysis of groundwater data, any additional findings will be integrated into Chapter 7.

The team plans to discuss preliminary areas of concern and other groundwater issues with the RBC, and any outcomes from these discussions may further refine Chapter 7 in the near future.

Matt invited the members of the Pee Dee RBC to send their comments to his team.

6. Summary of Capacity Use Area Recommendations (Joe Koon, SCDES, Ashley Carothers SCDES)

Joe Koon, SCDES, briefly discussed the reorganization of DHEC and the formation of DES. Joe discussed the structure of the organization and that it was mostly the same as the Environmental side of the former DHEC. Each bureau has divisions and sections. The reorganization has brought the state's water quantity permitting, capacity use areas, and hydrology monitoring under one division.

Q: Is there an org chart at lower levels?

A: Higher levels have been released, lower levels should be released soon.

Ashley Carothers, Hydrogeologist at the South Carolina Department of Environmental Services provided an update on groundwater management in South Carolina's Capacity Use Areas, focusing on the Pee Dee and Waccamaw areas. These regions have extensive monitoring networks and groundwater management plans designed to ensure sustainable water use.

Ashley described the Pee Dee Capacity Use Area. The Pee Dee area covers six counties: Marlboro, Darlington, Dillon, Marion, Florence, and Williamsburg. It is one of the six designated capacity use areas in South Carolina's coastal plain. Monitoring data for the Pee Dee area is compiled in groundwater evaluation reports, which are updated every five years. These reports include information on water withdrawal limits, trends in aquifer stress, and recommendations for future water management.

Discussing the groundwater trends, Ashley noted that declines have been observed in the

Crouch Branch aquifer, which accounts for about 12% of water withdrawals in the Pee Dee area. Significant declines were noted in specific monitoring wells:

- Dillon 1-72: A decline of 7.3 feet since 2014.
- Marion 77: A decline of 47.3 feet since 1982.

The McQueen Branch aquifer, which accounts for 75% of water withdrawals, also shows varied declines, including 4.8 feet per year in Dillon 1-21.

Ashley presented to the members of the Pee Dee RBC Aquifer Stress and Potentiometric Surface Maps. The maps show significant declines in water levels, particularly in Marion, Florence, and Williamsburg counties. The water flow has shifted due to heavy pumping in certain areas, resulting in a depression in groundwater levels in Florence and Georgetown counties.

Discussion:

Q: Green shading?

A: System – green means in a wetting period and brown/tan drought period

Q: Feet above sea level?

A: Yes, feet above mean sea level

Q: Can we look forward to stabilizing the withdrawals we had in 2021 next year?

A: Yes, it looks like that shouldn't be a problem

C: Want to keep some capacity

Q: During hurricane years with sharp increase and sharp decrease – where did the water go?

A: Depends on the well

Dillon

A: Probably moved down gradient. This is a recharge zone. Generally, on a decline and went back to the trend. Dillon 172 – first data 52 feet above sea level and last data 45 feet with a loss of 7 feet

Q: Is this adjusted data? Could be bad data? Technology problem. Would you adjust data?

A: There are some gaps and we've done hard measurements

C: More to do with the pressure of the aquifer and water pressure will move it through the aquifer

Q: What is the deal with Williamsburg County?

A: Shallow aquifer and impacted by climate influences. Water moves freely and we lost data in one spot

C: Water quality? Farm sludge in fields?

C: Largely in surficial aquifers in coastal plain and they are confined

C: WQ monitoring looks at salinity primarily

C: Gave some regulatory actions – working on a planning document

C: Limitations were Williamsburg and Florence County(ies)

Discussing the Waccamaw Capacity Use Area, Ashley presented the area overview. The Waccamaw area includes Georgetown and Horry counties and is one of the oldest capacity use areas in the state. Like the Pee Dee area, it has a well-developed monitoring network and undergoes a groundwater evaluation every five years. The Crouch Branch aquifer, which provides 66% of reported water withdrawals in the area, monitoring wells show a general

trend of decline. In Georgetown 3-82, for example, water levels have dropped 17 feet since 2014. The McQueen Branch aquifer, although utilized less, also shows stable trends with seasonal fluctuations influenced by local climate conditions.

Ashley discussed some challenges and recommendations. Significant declines in water levels, particularly in Georgetown County, have resulted in the formation of a pumping cone, which has reversed the natural groundwater flow in the region. This change in flow dynamics raises concerns about saltwater intrusion along the coast.

Recommendations for the Crouch Branch and McQueen Branch aquifers include a halt on new wells and increased groundwater withdrawal rates in Georgetown and Horry counties. The use of surface water as a primary source for future water needs is also encouraged to mitigate stress on the aquifers.

Ashley recommended that for both the Pee Dee and Waccamaw areas, emphasizing the importance of shifting to surface water sources where possible and limiting groundwater withdrawals, particularly in areas with significant declines in water levels.

She also recommended more collaboration between local, state, and federal partners to expand the groundwater monitoring network was also highlighted. This will involve utilizing abandoned wells to fill data gaps and improve overall management strategies.

Ashley concluded by stressing the need for continued evaluation and adaptation of groundwater management practices in South Carolina's capacity use areas. With ongoing monitoring and updates to the groundwater evaluation reports, the goal is to ensure sustainable water use and mitigate risks such as aquifer depletion and saltwater intrusion.

Discussion:

Q: How far south are those wells?

A: Don't have great coverage

A: 1326 is south of Myrtle Beach. MB is to the right of 1326

C: Large gap between the counties

C: Even with the cone to the northeast it is a significant decline

Q: Is there no pumping of the Middendorf near Florence?

A: This is Waccamaw so not showing Florence info

Q: I write a lot of grants – thinking of large number of wells for SKIP funds. How does it work – behind the curtain to decide to fund new wells? Chesterfield County is anticipating growth and needs more water. Put cart before the horse with permitting

A: That's why education is so important. Pee Dee evaluation is new. We work hard to coordinate with water supply program. Ongoing area of continuous improvement

Q: Rain event – does that water that infiltrates – does it make it to deeper aquifers?

A: Generally, recharge for deeper aquifers happens at the fall line. It does replenish surficial aquifers

C: The deep aquifers don't get it, but use is less with more rainfall which impacts aquifers

Q: Hung up on the spikes on the chart. Does it really have something with infiltration with lower aquifers?

A: It does matter – confining are less confining toward the fall line. GW is difficult to interpret.
Not like surface water
C: Looking at surface pressure as well

7. **Implementation (Matt Lindburg, BC)**

Matt Lindburg discussed the contents and importance of Chapter 10 of the River Basin Plan, which focuses on the plan's implementation strategies. The chapter outlines the roles, activities, timelines, and budgetary considerations needed to achieve the objectives of the River Basin Plan. This chapter serves as a roadmap for how the River Basin Council (RBC) and other stakeholders will move forward with executing the recommendations and strategies outlined in earlier chapters.

Purpose and Focus of Chapter 10:

- Chapter 10 outlines how the RBC will proceed with the plan's implementation. It addresses the actions necessary for the short-term (within 5 years) and long-term implementation.
- The chapter will be sent out for review by the RBC members, and a detailed discussion will be held in October to gather feedback and refine the chapter further. The council plans to break into smaller groups to review specific aspects of the plan.

Implementation Objectives: Matt identified five primary objectives for implementation, which serve as the foundation for the actions outlined in Chapter 10:

- Objective 1: Improve water use efficiency and conservation to sustain water supplies (demand-side strategies).
- Objective 2: Develop and implement supply-side strategies to enhance water availability.
- Objective 3: Focus on drought management and develop strategies to address water shortages during droughts.
- Objective 4: Broaden technical understanding of water resources and expand the data used for planning.
- Objective 5: Communicate the findings of the RBC and the conclusions of the River Basin Plan to the broader public and stakeholders.

Strategy Prioritization:

- Matt emphasized that certain objectives, particularly demand-side and supply-side strategies, are considered high priority. Communication and outreach to stakeholders were also identified as crucial, while other objectives, such as technical understanding and drought management, are categorized as medium priorities.

- The RBC will need to decide if they agree with this prioritization or if adjustments are necessary.

Details of the Implementation Table:

- A key component of Chapter 10 is an extended table that lists implementation strategies categorized by objective. The table includes:
 - Specific activities (e.g., demand-side strategies like water conservation and efficiency programs).
 - Timeframes (short-term or long-term).
 - Responsible parties for each action.
 - Budget estimates and potential funding sources.
- The RBC itself will not directly implement projects but will collaborate with basin stakeholders to promote and support the activities outlined in the plan.

Challenges and Stakeholder Involvement:

- One of the main challenges highlighted was the need for widespread stakeholder acceptance and collaboration to implement the plan effectively. The RBC is not a regulatory body, so its success will depend on partnerships and education efforts to engage basin stakeholders.
- There is a strong focus on developing an education and outreach program to raise awareness about water conservation, technical needs, and the goals of the River Basin Plan.

Long-Term Planning:

- While the initial focus is on short-term (5-year) actions, Chapter 10 also outlines longer-term strategies that will extend up to 50 years. These long-term goals build upon the short-term activities and are essential for ensuring the sustainability of water resources in the basin.
- The long-term table focuses on monitoring the success of short-term actions, adjusting strategies as needed, and continuing the education and outreach programs.

Metrics for Success:

- Metrics will be established to monitor the success of the plan over the next five years. For example, one metric might be a reduction in gallons per capita per day (GPCD) water usage or the implementation of recommended water conservation strategies across municipalities and agricultural sectors.

Discussion:

Q: How recommendations line up with other basins and how it would make sense to have

common objectives

A: A lot of commonalities

C: High level metrics will be similar at the state plan level and sub metrics will be different between basins

C: Governance is going to be important. Write checks to DES or is it going to be a private entity? How to bring resources in and make decisions as a body with partnerships.

Q: What about summaries?

A: In process, it will be part of the draft. We're working through it.

Q: October agenda?

A: These chapter reviews primarily – we may do it online then vote in November.

8. Next Steps (Matt Lindburg/ JD Solomon)

J. D. Solomon indicated that the goal is to have all chapters, including Chapter 10, fully drafted by October. The RBC will then review and finalize the draft, with the hope of reaching a consensus by November.

Once a consensus is reached within the RBC, the plan will go through a public review process, anticipated to begin in December. The RBC will ensure that any concerns or significant changes raised during the public review are addressed before finalizing the plan for implementation.

9. Closing Comments and Upcoming Topics (Buddy Richardson/JD Solomon)

J. D Solomon concluded by encouraging the RBC members to review Chapter 10 carefully and provide feedback at the upcoming October meeting. He highlighted the importance of stakeholder collaboration and public engagement in the successful implementation of the River Basin Plan. The overall goal is to ensure that the plan not only addresses current water resource needs but also sets a sustainable path for future water management in the basin.

The next meeting of the Pee Dee RBC will be held on October 22nd, 2024.

The meeting concluded at 11:52 AM

Minutes: Chikezie Isiguzo and Tom Walker

Approved: 10/22/24

RBC Chat:

09:33:45 From Eric Krueger to Everyone:

Thomas -- Jason had his hand up for a question on Drought...

09:33:59 From Thomas Walker to Everyone:

he asked it, thank you

09:34:20 From Eric Krueger to Everyone:

Ah..okay.. thought that was question #2

09:34:35 From Thomas Walker to Everyone:

maybe, Jason did you have another question?

09:36:12 From Jason Gamble to Everyone:

Would like to address can RBC ask for a better data collection system across the state

09:37:19 From Thomas Walker to Everyone:

that can be a technical recommendation, I'll mention it to JD and Matt here once there's a good break

09:38:06 From Jason Gamble to Everyone:

thanks

09:38:23 From Thomas Walker to Everyone:

you bet

10:15:07 From Thomas Walker to Everyone:

10 min break - 10:25 return

10:52:35 From brooke czwartacki to Everyone:

the water level in marion MRN-78 is above msl, this is a flowing well

11:52:25 From Thomas Walker to Everyone:

meeting adjourned