

Saluda RBC Meeting Minutes

November 15, 2023

RBC Members Present: KC Price, Katherine Amidon, Rebecca Wade, Michael Waddell, Tate Davis, Larry Nates, Kevin Miller, Jeff Boss, Brandon Grooms, Thompson Smith, Ed Bruce, Jason Davis, Rett Templeton, Melanie Ruhlman, Kaleigh Sims, Charlie Timmons, Rick Huffman, Josie Newton, Robert Hanley, & Eddie Owen

RBC Members Absent: David Lawrence, Jay Nicholson (Guy Schmoltze, alternate, present), Justin McGrady, Devin Orr, Paul Lewis, & Patrick Jackson

RBC Planning Team Present: John Boyer, Tom Walker, Joe Koon, Scott Harder, Leigh Anne Monroe, & Alexis Modzelesky

Total Present: 40

K.C. Price called to order the November 15th, 2023, meeting of the Saluda RBC at 10:00 a.m. He introduced the meeting structure and reviewed the meeting objectives, including receiving and discussing concepts for improving the Surface Water Withdrawal, Permitting, Use and Reporting Act, Learning about legislative and regulatory recommendations made by the Edisto and Broad RBC, Learning about the hydrologic impairment designation for the Saluda River below Saluda Lake and receiving an overview of the Draft Broad River Basin Plan.

He requested motions to approve the agenda, minutes, and summary documents from the previous meeting. The Saluda RBC members unanimously approved the RBC meeting agenda – Michael Waddell – 1st and Tate Davis – 2nd, the last meeting minutes, and the summary – Michael Waddell – 1st and Jeff Boss – 2nd. The housekeeping items include the use of the new facility for our meetings. Katherine announced that members are the best attendees at state meetings and acknowledged members for their commitments. The Parking Lot items include:

- Update and revise water use projections with utilities

- Engagement of the public with this process-what, when, how, who
- Engagement of public officials (pertinent municipalities) to promote the plan when we get to the public comment period and beyond
- Identify and engage stakeholders that are not involved in the basin council, but have an overlapping or adjacent connection to our efforts. For example, NRCS, SC Forestry, SCEMD, etc. (SCDNR e-mails to state and federal agencies ahead of each council meeting)
- Development and maintenance of a public-facing data clearinghouse for all things water with the Saluda Basin.
- Hydrological impairment of the Saluda, acknowledgement of this within the final report and within our recommendations.
- Funding for implementation
- Report on which watersheds have watershed-based plans and the status of those plans (this will be documented in Chapter 1 of the Plan)
- We have discussed some data gaps- making sure we acknowledge those in our final report and determine how to mitigate those in the future.
- If we want to request additional surface water demand scenarios we need to decide when? (ideally, before we start Phase 3, but could be as late as midway through Phase 4, per CDM Smith)
- Determine how and when we will coordinate with basin councils.

However, one other housekeeping item is more of a schedule update

(Phase 1: Understand Baseline), which includes:

- Develop a vision statement and goals
- Learn about the basin's water resources and modeling tools
- Evaluate water demand projections.

Phase 2: Assess Future Availability

- Evaluate current and future water availability issues
- Identify and quantify potential water shortages through year 2070 for several water demand scenarios.

Phase 3: Develop Strategies.

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

Phase 4: Develop the Plan:

- Develop legislative, policy, technical and planning process recommendations
- Prepare the River Basin Plan that includes an implementation plan, identifies drought response initiatives, and considers public input.

C: Maybe we could set up an online meeting to discuss the Blue Ridge Mountains data – need about 30 sites to make the results statistically significant.

C: Fish data and macroinvertebrates data based on statewide data and there isn't much for that region.

C: Homework assignment to reach out to see if the data exists somewhere.

Public and Agency comment: no comment.

Safe Yield and Surface Water Law and Regulation

Joe Koon facilitated this session by introducing the topics: Safe yield discussion, Overview of SC Water Resource Law, Overview of Water Quantity programs, and Surface Water Law Concepts. Leigh Anne Monroe further discussed.

Safe Yield- where did it come from?

The Safe Yield is “the amount of water available for withdrawal from a particular surface water source in excess of the MIF or minimum water level for that surface water source.”

MIF is based on the minimum instream flow. However, MIF is calculated at 20-30-40 as defined, and the lowest of these was 20%- hence 20% became 20% mean of annual daily flow(MADF). We looked at other metrics suggested by an outside panel based on established MIF, for example, 7Q10, 20% of MADF, and 5th percentile monthly.

Safe Yield in Stream Segments:

The Safe Yield is also calculated differently depending on the flowing stream versus impoundment.

For Stream segment not influenced by impoundment:

- 80% of the MADF at the point of withdrawal (MADF-20% of MADF)
- Considering natural and artificial replenishment of the surface water and affected downstream users.

- Remove all permitted and registered volumes upstream of the withdrawal point from the 80% MADF.

Stream segment influenced by impoundment:

- If influenced by a licensed or otherwise flow-controlled impoundment
- SY is the difference between MADF and the lowest release.

Safe Yield Impoundments for licensed or otherwise flow-controlled impoundment have the maximum amount that would not cause a reservoir water level to drop below its minimum water level or be able to achieve their release. Safe Yield, not considered a licensed or otherwise flow-controlled impoundment, is the maximum amount that would not cause the impoundment water level to drop below its minimum water level, confirmed by the department with input from the applicants and owner/operator.

Safe Yield Workgroup Summary:

- Consistent comments received from stakeholders about SY and how it was calculated
- Met with diverse group of stakeholders to discuss SY, how other states permit withdrawal limits, and other ways of calculating SY
- Final comments were inconclusive, and no change to the SY was determined or submitted by stakeholders.

We brought a diverse group of agencies and stakeholders to come and talk about how we arrived at the calculation of the SY, and other ways were proposed by using the median instead of the mean. We could not come up with an alternative or consensus on the calculation.

SW Regulation Workgroup Summary: after a 10-year regulation review, three unintended consequences, which include: Overallocation limits availability, Flow standards do not apply to the majority of permits and registrations, and Basin planning activities and regulatory framework are not working together for effective implementation. However, the final comments could have been more conclusive, only that changes needed to be made to the law and not just the regulation.

Question: why do you have to go back and change the law?

Ans: the law is prescriptive; the regulation has to be based on the law, and if there is anything that we need to change, we have to change the law first, and then we would go back and make those changes in the regulation.

Question: prior to enacting the withdrawal law, is the law still not subject to regulation, especially considering the intake capacity?

Ans: No, but they are based on whatever intake capacity was constructed prior to the law. So that is the law.

Q: They were grandfathered in?

A: Yes and it is based on intake structure. About 5% it applies to. The intake capacity far outweighs their use.

C: If you make changes to the law it would impact 95% of users.

A: Yes but we could permit based on use and reasonable use.

C: Agricultural registrations too?

A: Yes, based on acreage, crops irrigated, inches applied, and have a discussion with the farmer. What is 2 inches of irrigation a week for corn (example). Part of our decision for historical users.

Q: Regulatory basis?

A: Permits and registrations aren't based on use.

C: Under the impression it was under pump capacity.

A: No, if its within the Safe Yield it is registered once applied for.

C: In other basins people were able to register large amounts without intending to use.

C: The law is so prescriptive the regs reflect the law those registrations are legal. One thing the law allows is future use.

C: Lower end and on upper end.

C: Everything above that 20%.

C: Existing users are exempt, ag doesn't have to abide, no minimum instream flow requirement.

C: Piedmont 20-30-40 was the compromise. Coastal 20-40-60.

C: So is 80% the high end half of the time that 80% isn't in the rivers.

C: 2011 – DNR – safe yield definition comment.

C: 2022 SELC – on behalf of orgs – proposal to sue DHEC SWWA – developed a flow standard which was inconsistent with the Clean Water Act.

C: EPA agreed with SELC.

Question: why was it so inconclusive with both these 2 meetings?

Ans: we have done our review and found these unattended concepts, which are big deals. So, we brought the group together to find ways to reach a consensus. And we did know that when you have so many different opinions about it, and you know so folks don't think things need to change, They did like what is now while some people think things need to change.

Question: can you change the Safe Yield regulation without changing the law?

Ans: yes, we can change the Safe Yield all we want. But then 95% permits, and users are not subject to it.

SCDNR Water Resources Law: SC Water Resources and Coordination Act:

- Since the 1960s-Non-Regulatory
- Planning and guidance for beneficial use, conservation, and management of South Carolina's water resources (Groundwater monitoring network, well drilling, potentiometric mapping, geophysical logging and publications, telemetry network, drought monitoring)
- Planning Process Advisory Basin Committee (PPAC)- SC State Water Planning Framework
- River Basin Councils develop Basin Plans.
- State Water Plan developed from Basin Plans
- Moves to new Department of Environmental Services (DES) on July 1, 2024.

SCDHEC Water Law and Regulation:

- SC Groundwater Use and Reporting Act- (Since the 1960s -Regulation 61-113, and Issues permits in designated areas of the coastal plain over 3 million gallons in any month 100,000 gallons per day).
- SC Surface water Withdrawal, Permitting Use, and Reporting Act: (Since June 2012, Regulation 61-119 and issue permits statewide if over 3 million gallons in any month)

- Water Use Reporting: (All registered and permitted groundwater and surface water withdrawers report their annual water use to the department and Produce water use reports for public use).

In addition, the groundwater permits are evaluated every 5 years, and those 5 years permits are renewed based on that evaluation of the groundwater.

Question: is the PPAC created by law or by the regulatory agency? And is it just an advisory function?

Ans: I don't believe they have any regulatory authority. I think it was created in 2018, responsible for developing the planning process framework.

C: The Water Resources Coordination Act allows us to convene such bodies.

Question: under the groundwater permitting system, when coming for permit renewal. Does the department do a permit review to see if someone has requested more groundwater allocation than they use? Does the department have the authority to check the withdrawal capacity?

Ans: Yes, they do. The department has the groundwater management plan and evaluation report to utilize and then make educated decisions on withdrawal capacity or volume requests through increase or reduction.

C: Since 2004 DNR was intending to do this planning approach. The PPAC helped us decide how to do it.

Surface Water Law Concept Development

- During February 2, 2023, PPAC round table meeting, the group discussed ideas and concepts for potential changes to the Surface Water law.
- The group requested that statutory language be drafted to guide further comments and discussion on these concepts.
- On March 17, 2023, and again on October 26, 2023, statutory language was circulated.

Summary of Concepts:

Resource Driven program:

- Current management is industry-specific, with different criteria
- Change to resource-driven program where all industries are permitted on same criteria

Declaration of Policy:

- Utilizing guiding principles outlined in the SC State Water Planning Framework
- Strengthen bond between regulation and state water plan.

Permits for All Users:

- All users must meet 20/30/40 minimum instream flows (MIF)
- All evaluated for reasonableness criteria
- If approaching MIF-reduce use in a stepwise approach

Safe Yield:

- Removed as metric entirely
- River withdrawals would be guided by minimum instream flows

Permit Duration:

- 30-year permits with 10-year evaluation
- Permit evaluated on reasonable use, future need, and processing capacity.
- 10-year review cycle may line up with river basins

River Bains:

- Reduce from 15 to 18 river basins
- The 8 river basins mostly planning efforts.

Impoundments:

- Withdrawals guided by information provided by the owners or operators of the impoundments.

Public Notice Platform:

- Public notice accomplished by online platform
- No longer use newspapers ads.

C: These are concepts but haven't acted on them as of yet?

A: True.

C: The role of the PPAC – brought into being by DNR but also coordination w/ DHEC. My opinion is they should have been dissolved. Defacto – we are the stakeholder group for all water users/water systems. Doesn't represent my utility. We would need to be cautious w/ our discussions and groups we are representing.

C: Great point – I've read them and I agree that I don't agree with all those points.

C: If someone picks it up and introduces it there'll be time to debate it then in addition to our discussions/debates.

Q: Weren't you looking at changing mean to median for Safe Yield?

A: At one time that was discussed.

C: For water utilities 30 years isn't long enough for us to plan.

C: Look at industrial use and reasonable amount.

Question: who determines the reasonableness and where to control it, or does it control based on population growth?

Ans: Processing and future growth would be part of that discussion.

C: Only using 25% but our pumps can use that capacity but in this scenario we might lose our amount.

A: If you have the ability to process the volume then that is in the discussion.

C: We applied for our registration by pump capacity.

A: That's how we did it pump capacity and historical use.

Q: What is processing capacity?

A: Those details would be worked out in a promulgated regulation.

C: Secure raw water was the first step for us. Came up with 18 mgd we can pump 9 mgd and the plant can do 4 mgd. To get full capacity we based the intake on 18 mgd intake.

A: In that scenario we would go with what was granted by FERC process.

C: Compounding factor there isn't enough water to meet the permitted and registered amounts.

Q: My biggest concern through PPAC and RBCs - the plans would help guide DNR in making these recommendations.

A: Timeframe to accomplish this lines up well with the state water plan. The processes are running in parallel.

C: PPAC is ready to make a recommendation early when they haven't had a chance to weigh in.

C: RBCs would be developed to make recommendations. Seems premature and the SELC and EPA is pushing this as well.

C: There is time to add more recommendations.

C: We'll pay for the sins we've made for more years.

C: Unlikely any changes will take in the larger committees in the legislature/GA.

C: That's isn't the group that should make recommendations.

C: Are we wasting our time here if the PPAC is pushing things forward?

C: If there needs to be changes to the PPAC – the group should come up with those.

Q: Getting rid of grandfathered users permits and subject to MIFs to enforce those and mitigation in the permits.

C: Is anyone a member of the PPAC?

C: I'm on the PPAC and there isn't consensus on the PPAC. Jill Miller is chair of the USBAC. PPAC members are on all RBCs. Probably won't happen before 2026. DHEC has been involved heavily and they know the feelings.

Q: Within our group can we look at recommendations and come up with our thoughts?

A: Yes, let's look at other info first and we'll look at that later in later phases.

C: This puts a lot of faith in the legislature. Lobby interests are heavily involved.

Legislative and Regulatory Recommendations Made by the Edisto and Broad RBCs

John Boyer facilitated this session with the introduction of the RBC's Recommendations, which include:

- When considering permit application, reasonable use criteria should applied to surface water withdrawals, like they currently are for groundwater withdrawals.
- Laws that allow for regulation of water use need to be enforceable to be effective. The current water law, which grandfathers in most users, can be improved to support effective management of the state's water
- Water law and implementing regulations should not distinguish between registrations and permits. All water users that withdraw above the identified threshold should be required to apply for a water withdrawal permit.
- The water withdrawal permitting process should specifically assess the permit application's alignment with the current River Basin Plan, particularly regarding proposed withdrawals, returns, resource conservation, and drought response.

The Edisto RBC's Legislative and Regulatory Recommendations:

Some conceptual changes were made, recommendations were provided by individual members after a debate and discussion, and still, unable to arrive at a consensus. The RBC decided to document where they stood on each of these issues, which are;

- The Surface Water Withdrawal, Permitting, Use, and Reporting Regulations should use 80 percent of median annual daily flows instead of 80 percent of mean annual daily flows to determine safe yield at a withdrawal point. A vote was cast 75% in favor, 4.2 against, and 1.5 abstain.
- The Surface Water Withdrawal, Permitting, Use, and Reporting should use median annual daily flows instead of mean annual daily flows to determine seasonal minimum instream flows at a withdrawal point. 65% were in support, 4.2% were against, and 3.15% were abstained.
- Reasonable use criteria should be applied to all water use requests. 90% are in favor, 1.5% are against, and 1.5% are abstained.
- A user's actual water use and water needs, accounting for growth, should be periodically reviewed to prevent locking up water that is not needed. 65% in favor, 5.25% against, and 2.10% abstained.
- All water withdrawers should be subject to the same rules. 9.47% in favor, 8.42% against, and 2.11% abstained.

Discussion:

Q: One set of rules governing everybody?

Q: Is that for surface and groundwater?

A: Generally for both surface and groundwater.

Q: Was there discussion of priority?

A: No discussion of prioritization.

C: One size doesn't fit all.

C: Different uses need to be prioritized.

C: Too broad.

C: Reason KC and I were passionate about this topic is to allow people to think about these issues for later in the process. If anyone develops anything send it in and we can start refining those.

Saluda River below Saluda Lake Dam Hydrologic Impairment Designation:

Melanie Ruhlman facilitated this session and discussed the Hydrologic and the Clean Water Act definitions, which are;

- The Clean Water Act defines water quality according to the physical, chemical, and biological quality of water.
- Hydrologic alteration affects the physical quality of streams, wetlands, and other waters and can also affect their chemical and biological quality.

Hydrological Alteration and the Clean Water Act: In 2015, the EPA issued new guidance on “water impaired due to pollution not caused by pollutants” under Category 4C of their integrated Reporting Guidance. The guidance says that if a state has data or information that a water is impacted due to hydrological alteration, those causes should be identified. That water should be assigned to Category 4C. The CWA defines pollution as a human activity that causes water quality impairment. The State does water quality monitoring regularly, and every 2 years, they put out a list of those water that are not standard and integrated a report called the 303 list. The total maximum daily load (TMDLs) is not required for Category 4C waters; however, watershed restoration tools and approaches are needed to address the sources of the impairment.

Listed impaired or Threatened Waters (CWA 303(d) list):

- Category 5- impaired for threatened without TMDL completed.
- Category 5- alternative impaired without a TMDL completed but assigned a low priority for TMDL development because an alternative restoration approach is being pursued.

Not Listed but Still Impaired Waters:

- Category 4a-impaired with an approved TMDL
- Category 4b- impaired without TMDL and with appropriate 4b plan
- Category 4c-impaired due to pollution

Unpaired or Restored Waters (i.e., meet water quality standards):

- Category 1- meets all designed uses
- Category 2- meets some designed uses.

Examples of hydrological alteration include;

- a perennial water is dry, no longer has flow, has low flow; has stand-alone pools; has extreme high flow; or has other significant alteration of the frequency, magnitude, duration or rate-of-change of natural flows in a water.
- A water is characterized by entrenchment, bank destabilization or channelization, and
- Both low flow and high flow alteration are covered.

EPA and USGS issued a technical report in 2016 providing information on hydrologic alteration, impacts to aquatic life and authorities under the CWA to protect flows (EPA Report 822-R-16-007, USGS Scientific Investigations Report 2016-5164).

SC Rivers Forever is a network of conservation organizations, businesses, and citizens with a mission to protect the state's surface and groundwaters.

SCR4E Guiding Principles:

- South Carolinians must be pro-actively engaged as stewards of our waters
- The surface water and groundwater of South Carolina are public resources that are entrusted to the state to be managed in the public interest and a sustainable manner that protect natural systems while meeting human and economic needs.
- Effective water management must achieve long-term sustainability through transparency and meaningful citizen input with rigorous ongoing planning, implementation, and enforcement and
- Water policy and management should reflect the public interest in maintaining and supporting the health and abundance of our water resources for future generations.

SCR4E Approach to Addressing Hydrological Alteration and Impairment:

- Meet with DHEC and EPA
- Develop template for hydrologic impairment
- Develop list of 5-10 priority waters according to geographic distribution, type of impact
- Submit petitions to DHEC for listing waterbodies that are impaired due to hydrologic alteration under Category 4C of South Carolina's 2018 integrated Reporting Document.

SCR4E representatives developed templates for listing waters as impaired to due hydrologic alteration that included organization information about the impaired water, the impairment, evidence (data and information period(2011-2016), hydrologic data from USGS, water quality reports, water management plans, scientific studies, remote sensing), photographs and testimony.

Five river segments were proposed for listing due to hydrologic impairment. Only one, Saluda River below Saluda Dam, was approved by DHEC and is included in Appendix A in the SC 2018 Integrated Report under IR Category 4C Waters as being impaired due to operation of the Saluda Lake Dam.

Saluda River below Saluda Dam:

The section of the Saluda River listed as impaired due to hydrologic alteration:

- 14-mile section of the Saluda River lake in Greenville, Pickens, and Anderson Counties.
- Saluda Lake Dam at Saluda Dam Road to the headwaters of the Piedmont Dam impoundment
- Classified freshwater
- Designated uses include contact recreation, aquatic life, and industrial uses.
- Popular section for fishing, boating, tubing, and swimming.

Saluda Lake dam was built in 1905 for hydropower, is not regulated by the Federal Energy Regulatory Commission (FERC), and is a drinking water source for Easley.

About the Impairment:

- Recreational uses are impaired in the proposed reach of the Saluda River primarily due to hydrologic alteration caused by the hydropower operation
- This results in the lack of flow downstream for certain periods, which is increasing with severity and frequency, and which restricts the use by boaters, anglers, tubers, and swimmers.
- Aquatic life use may also be impaired due to this hydrologic alteration.

We looked at flow data from USGS, which include USGS gaging station 02162500 (Saluda River near Greenville), period of record from 1942 to 2017, data: gap from 1978 to 1990, the average daily flow for the period of record is 605 cfs and frequency and severity of low flows has increased in recent decades, particularly in more recent years.

The evaluation of the impacts of hydrologic alteration on Recreational Use:

- The SC surface water withdrawal law establishes a minimum instream flow criterion to meet designated uses for recreation and navigation at 20% of the mean annual daily flow.
- Using this criterion, the resulting flow of 121 cfs was used for analysis-based
- The percentage of days the average daily flow falls below the 20% criterion.

We also looked at some of the studies done back in 1988 by the South Carolina Water Resources Commission in the Stream Flow Study Report to the South Carolina General Assembly, which include:

- A site-specific study at 2 sites conducted in the Saluda River just downstream of the reach proposed for listing
- Suggests that flow > 20% may be needed to meet navigation for boating and fishing recreation uses
- Flows of 300 and 340 cfs were needed for navigation, representing 39 and 25 %, respectively, of the mean annual flow calculated at that time.
- Analyzed if 35% of the mean annual flow for the current period of record (212 cfs) is used as a minimum threshold.

She further discussed agency correspondence and testimonials, which include Saluda River Yacht Club (increasing impact on tubing business) and Anderson County Parks department (increasing impact on recreational use and Special Olympics Annual Saluda River Rally).

Land Use Urban Watershed Hydrology:

Increase: runoff (rate/velocity/volume, peak streamflow levels and flooding frequency.

Decrease: baseflow, subsurface storage and lag time to peak flow.

Evaluation of streamflow data from 1942-2006 for the Reedy River near Mauldin revealed a significantly increasing trend in peak flow and a corresponding significantly decreasing trend in baseflow over the same period, both attributable to the effects of urbanization.

A section of the urbanized area of the Reedy River was proposed for listing as impaired due to hydrologic alteration. DHEC agreed with the technical merits of the proposal but ultimately did not approve the listing.

Discussion:

Q: Who owns it? The dam and the power generation facility?

A: Northbrook.

Q: Have you resubmitted - they were denied?

A: We did resubmit some I think, will have to get back to you.

Follow-up: We did resubmit the other petitions for listing the four other river segments , but DHEC did not approve them for listing.

Q: With Saluda anything been done since 2018? What does 4c mean?

A: If anyone wants to petition Northbrook.

Q: How have these conversations gone?

A: We haven't, nobody has reached out to them.

C: So they're holding back water for peaking.

Q: What's a modified peak?

A: When they can sell it they'll run it.

C: Solar farms have screwed the grid up to the max and brings more of the peaking issues.

C: Back in the 80's there's a history why it doesn't have a FERC license. Modified peaking for smaller facilities. Other extreme is run of river keeping the pond at full pond. When Duke owned Holiday's Bridge it fell into a category where projects were voluntary. Northbrook bought unlicensed projects: Boyd's Mill, Holiday's Bridge, Saluda Dam. Taum Sauk FERC project when it was built. Specialized regulatory group. Commerce clause navigability relationship.

C: US courts relates getting a log to a lumber mill.

C: Navigability was challenged about 10 years ago.

C: FERC less w/ physical - upper areas may not have had commerce.

C: Some of others are required to have license.

Q: When FERC doesn't regulate, who does and how are they regulated?

A: Hydro dam of certain capacity DHEC regulates by height, risk, etc. High hazard dams.

C: DHEC regulates the dam and does not require minimum releases/flows.

C: We're missing something here in how to manage these dams.

C: DHEC has some MOUs I believe. Blalock isn't FERC licensed but has a MOU w/ DHEC.

Q: Is water level in Saluda Lake fluctuating?

A: They keep it within 1-2 feet of full pool.

C: Operations from Piedmont seemed to be problematic.

C: Haven't been communicated with those releases.

C: Over the last 3-5 years there seem to be less fluctuations.

C: Wet years maybe?

C: Run it again w/ more recent data.

Overview of the Broad River Basin Plan Findings and Recommendations:

John Boyer facilitated this session and discussed some of the findings and recommendations.

Current Water Demands in the Broad River Basin:

Currently, thermal electric demands dominate surface water, and the vast majority returns to the river for a public supply of 95.1%. At the same time, Agriculture, Golf Course, Mining, and Manufacturing are just a fraction of the total.

Comparison of Current Surface Water Demand in the Saluda and Broad

We have a total of 342MGD in Saluda and 809MGD in Broad. So most of the Broad is thermal electric. Saluda Basin has higher surface water demands with almost 171MGd compared to 98MGD of Broad, most of which is publicly supplied. One of the key findings is that Only 52% of the Permitted and Registered surface water is currently being used in the basin.

Future Water Demand Scenarios for the Broad Basin:

Moderate Demand Scenarios: demand increase from 809 MGD currently used to 932 GD by 2070. We found out that Surface Water increased by 15% and groundwater increased by 0%. In 2017, surface water demand for this scenario are 60% of the Permitted and registered amounts.

High Demand Scenarios: demand increased from 809MGD (currently used) to 1,113 NGD by 20270. Surface water increased by 38%, while Groundwater increased by 0%. 20270 surface water demand for this scenario is 72% of the Permitted and registered amounts.

Current and Future Water Availability Assessment: Using the Simplified Water Allocation Model (SWAM):

The surface water model was used to compare available supply to current and water projected water demands. Some of the key findings of Surface Water include:

- Surface water resources of the Broad River basin are generally sufficient to meet current needs
- Potential public supply shortages seen in the high-demand scenario can generally be avoided by optimizing the operation of existing water supply reservoirs.
- Cherokee County BPW's (Gaffney) existing supplies may be insufficient to meet projected 2025 high demands during drought conditions. A variety of surface water strategies assessed in the plan may reduce this risk.
- While unlikely to occur, if fully permitted and registered amounts were withdrawn, the basin would be unsustainably stressed with frequent shortages and more severe low flows.

Streamflow-Ecology relationships:

Key finding: Simulated flow regimes of the Current Use and Moderate Demand 2070 Scenarios demonstrate low risk to aquatic ecology. While simulated flow regimes of the Permitted and Registered and High Demand 2070 Scenarios suggest greater reductions in mean daily flow, which may lead to reduced fish species richness.

The evaluation suggests low risk to other aquatic ecology metrics (besides fish species richness) for all four planning scenarios. Ecology risk was only assessed in primary and secondary tributaries of the Broad River basin.

Questions:

Surface Water Management Strategies: Portfolio of Demand Side Strategies

Municipal Strategies (Examples) include; update and implementation of drought management plans, public education about water conservation, conservation pricing structures, residential water audits, landscape irrigation programs and codes, water efficiency standards for new construction, leak detection and water loss control programs, reclaimed water programs, car wash recycling ordinances and time of day watering limit.

Agricultural Strategies (Examples) are water audits and nozzle retrofits, irrigation scheduling, soil management, crop variety, type and conversion and irrigation equipment changes.

On the Supply Side Strategies:

Public Water Suppliers with Reservoirs- adjust reservoir operation for higher demands as needed (often reservoir in series).

Cherokee County BPW (Gaffney)-seasonal distribution of Gaston Shoals allocation, renegotiated allowance from Gaston Shoals, raised Lake Whelchel dam, new quarry storage, new Broad River intake, connection to SWS, new reservoir on King's Creek, and new regional reservoir.

Question: Where would the new regional reservoir be?

Ans: for modeling purposes, it is situated in Fair Forest Creek, which was considered decades ago. And it was more of a demonstration.

Recommended Supply Side Strategies for Cherokee County BPW (Gaffney):

Short-Term strategies:

- Distribute Gaston shoals allocation seasonally to be proportional to demand

- Explore feasibility of a new intake on the Broad River
- Develop adaptive management plan for mid- and long-term strategies.

Mid-and Long-Term Strategies:

- Raise dam height of Lake Whelchel
- Further evaluate feasibility of converting a quarry to a supply reservoir
- Explore an interconnection with SWS
- Explore option of new local or regional reservoir.

Planning Process Recommendations

1. Conduct regular (e.g., annual) reviews of the RBC membership to make sure all interest categories are adequately represented.
2. Consider developing and executing a communication plan early in the initial 2-year planning process and conducting education and outreach prior to completion of the River Basin Plan.
3. SCDNR should take lead in organizing an annual state-wide meeting of the RBCs with the Agriculture and Natural Resources Committee of the State Senate and the Agriculture, Natural Resources and Environmental Affairs Committee of the State House to communicate the value of water planning, highlight progress and recommendations, and share ideas among RBCs.

Technical and Program Recommendations

1. Consider incorporating future climate projections into modeling analyses to better address potential supply-side changes in hydrology. Consider incorporating historical climate information such as tree ring data to inform drought risk and/or drought scenarios.
2. Identify the financial impacts of increased sedimentation on reservoirs and water resources and communicate the results to local governments to demonstrate the value of riparian buffers, sedimentation and erosion control measures, and other policies and controls that reduce sediment generation and transport.
3. Identify funding mechanisms to support continued USGS efforts to maintain and expand streamflow gages.
4. Funding and establishment of a mesoscale network of weather and climate monitoring stations in South Carolina.
5. Evaluate the impact of future land use changes on water resources quantity and quality.

6. Identify potential pinch points where current and projected low flows may lower the assimilative capacity of the streams.
7. Future planning efforts in the Broad River basin should include evaluation of surface water quality, including nutrient loading and sedimentation.
8. Further investigation and potential piloting of low-tech, process-based approaches to stream restoration.
9. Create an online library of, or a catalog of links to, technical information that will enhance the RBC's technical understanding of water resources concepts and issues.

Drought Management Recommendations

1. Water utilities should review and update their drought management plan and response ordinance every 5 years or more frequently if conditions change.
2. Water utilities should look for opportunities to develop drought response actions that are consistent with those of neighboring utilities.
3. To the extent practical, water utilities should coordinate their drought response messaging.
4. Water utilities in the basin should consider drought surcharges on water use during severe and/or extreme drought phases.
5. Water users and those with water interests should submit their drought impact observations through the Condition Monitoring Observer Reports (CMOR).

Other Policy, Legislative, and Regulatory Recommendations -The Broad RBC or the PPAC should develop a model riparian buffer ordinance for local jurisdictions to consider.

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

1. Improve water use efficiency to conserve water resources
2. Optimize and augment sources of supply
3. Improve drought management
4. Effectively communicate RBC findings and recommendations
5. Improve technical understanding of water resource management issues

Example Implementation Strategy: The objective is to improve water efficiency to conserve water resources through public education on water conservation. Some of the strategies of Municipal Conservation include:

- Identify funding opportunities year 1-5
- Establish a baseline of residential per capita water use (year 1) by system
- Implement outreach and education programs about recommended water management practices and funding opportunities (year 1-5)
- Individual water users implement conservation practices

Discussion:

Q: When you say may lead, why?

A: It was statistically significant but at 1 or 2 sites which is why we left it vague.

C: May have to do with river access. There is no public access to that river.

C: The Tyger also has limited access.

Q: There's guides aren't there for canoe trips?

A: Not really on the Broad. The minimum flows are fine it's the high flows that's the issue.

Q: How accurate is Paddle SC?

A: Fairly reliable.

Q: Any mention of where?

A: Fairforest Creek was for the modeling exercise.

C: USACE thought that was unreasonable.

C: Riparian buffers are first and last line of defense. *Parking lot item*

C: Riparian buffers help protect land loss.

C: He wouldn't have lost that land.

Q: Who pays for it?

A: We have projects for land owners and they have to put in a little of the total cost.

C: What if it is affected by upstream users/development?

C: Roots hold the bank together and sediment will run downstream.

C: The science is there but the buffer takes land out of operation.

C: Soil and water conservation program? EQIP \$?

C: The buffer doesn't have to be 100 ft. Riparian buffers protect the investment.

C: Funds aren't there from DNR soil and water conservation anymore.

C: Some recommendation around farmers keeping land in operation.

C: NRCS does have some money maybe need a talk from them?

C: There are conservation districts as a partner and it is possible.

C: Availability depends on funds available from the Farm Bill.

Q: Is Broad the 2nd plan and Edisto was 1st?

A: Yes.

Broad Public meeting Information: November 29th, 2023, 6.00 pm-8.00 pm at Spartanburg County Office of Emergency Services.

The upcoming meeting is on January 17th, 2024:

Informational topics:

- Moderate and High Demand Scenarios results (Kirk Westphal and John Boyer)
- Reservoir safe yield results (Kirk Westphal)
- Introduction to water management strategies (John Boyer)
- SC Resilience and Risk Reduction Plan (Hope Warren, SCOR).

Meeting adjourned: 1:17 PM – Rick Huffman – 1st and Robert Hanley – 2nd.

Minutes: Iffy Ogbekene and Tom Walker

Approved: 2/21/24

Chat:

11:24:42 From Kirk Westphal to Everyone:

Even when full consensus cannot be achieved, it can be equally valuable to decision-makers to see thoughtful rationale on both sides of important issues - the Edisto RBC felt that these pie charts, supplemented with narratives on both sides, were an effective output from their body of work.

11:29:32 From Thomas Walker to Everyone:

10 min break

12:07:41 From Kevin Miller to Everyone:

What South Carolina agency regulates hydroelectric facilities and how?

12:08:22 From Thomas Walker to Everyone:

one second kevin

12:26:47 From Thomas Walker to Everyone:

be back at 12:40

13:17:05 From Thomas Walker to Everyone:

meeting adjourned