Saluda RBC Meeting Minutes

April 17, 2024

RBC Members Present: Tate Davis, Larry Nates, Rebecca Wade, Katherine Amidon, Rick Huffman, Kevin Miller, KC Price, Robert Hanley, Eddie Owen, Jay Nicholson, Devin Orr, Brandon Grooms, Josie Newton, Rett Templeton, Jeff Boss, Melanie Ruhlman, Thompson Smith, Patrick Jackson, Paul Lewis, Phil Fragapane, & Charlie Timmons

RBC Members Absent: Kaleigh Sims (Haley Denison, alternate, present), David Coggins, Jason Davis, David Lawrence, Justin McGrady, & Michael Waddell

Planning Team Present: John Boyer, Scott Harder, Joe Koon, Tom Walker, Leigh Anne Monroe, Alexis Modzelesky, Kirk Westphal, Andy Wachob, & Jeff Allen

Total Present: 40

K.C. Price called the April 17th, 2024, meeting to order. The Saluda RBC's April 17th meeting objectives included discussing and making decisions on surface water conditions and potential hydropower operating recommendations and learning about stream restoration and visiting restoration sites.
K.C. Price called for approval of the meeting agenda. Kevin Miller – 1st made a motion to approve the meeting agenda with Tate Davis – 2nd, which was approved unanimously.
There was a motion to approve the last meeting minutes and summary from March 20th, 2024. Jeff Boss – 1st – made a motion which was seconded by Kevin Miller – 2nd .
Members unanimously approved the last meeting minutes and summary.
John Boyer introduced SCOR planning coordinators who were in attendance.

Housekeeping Items and Announcements:

- Engagement of the public with this process-what, when, how, who- (Status- Ongoing)
- Engagement of public officials (pertinent municipalities) to promote the plan when we get to the public comment period and beyond- (Status-Not started)

- 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 emails state and federal agencies ahead of each council meeting)- (Status-Ongoing)
- Development and maintenance of a public facing data clearinghouse for all things water with Saluda Basin-(Status-Not Started)
- Funding for implementation- (Status-Not started)
- We have discussed some data gaps-making sure we acknowledge those in our final report and determine how to mitigate those in the future- (Status-Started, e.g., fish data in Blue Ridge)
- If we want to request additional surface water demand scenarios we need to decide when?- (Status-Last call)
- Determine how and when we will coordinate with other basin councils- (Status-Ongoing)
- What recommendations do we need to consider for non-FERC regulated dams and how they impact recreation- (Status-Discussing today)
- Visit and learn more about NRCS buffer and restorations- (Status-April-May possibly)
- Keep apprised of the Surface Water Withdrawal Act- (Status-Ongoing)
- John to share general PPT with RBC for council member customization and sharing with networks
- Idea for public engagement, create a ppt that is student-friendly (need age groups desired and a better understanding of who would have use for this)
- Optional idea for a talk-Ask our state representative to speak to us about current policies? Maybe with Megan Chase from Upstate Forever (Rebecca Wade's suggestion regarding policies)?
- Legal petition for safe yield conversation-add to discussion with policy and legislature
- EnerSys is coming to Greenville-New industry.

Beginning to Consider Plan Recommendations: these are Plan recommendations for the RBC to consider as we start to develop and discuss recommendations for inclusion in the plan, which include;

1. When updating Drought Management Plans, encourage water utilities to use the SWAM model to evaluate the potential effectiveness of drought triggers.
2. Consider use of the River Basin Plan as a tool for smart growth and economic development. The plan can highlight areas where water resources are abundant and are more amenable to growth.
3. Encourage more fish and macroinvertebrate data collection in Blue Ridge province to support development of flow-ecology relationships.

Public Comment: the Senate Finance Committee (State) established a seven-member legislative committee to study surface water and provide a report for March 2025.

Review of March Meeting Highlights:

John Boyer facilitated this session by reviewing the March meeting highlights, including Notes of Greenville Water Demands, where we settled for 33.8 million gallons per day for both our moderate and high scenarios for demands in year 2070 for Table Rock and North Saluda and Lake Keowee. We ended up with 105.5 for high-demand scenario for Keowee. We further plugged those outcomes into the model and presented results that didn't show any difference. This is because we didn't see any shortages in the upper part of the basin. We discussed Comparison to Minimum Instream Flows using the regulatory approach of 20%, 30% or 40%, depending on the month. The data used for this comparison included Saluda River near Greenville (80 years), Saluda River near Williamston (27 years), Saluda River near Ware Shoals (83 years), Reedy River above Fork Shoals (29 years), Bush River near Prosperity (32 years) and Saluda River at Chappells (96 years).

Q: (MIF) That's the number at the bottom?

A: 20-30-40 definition – percent of days below MIF

Q: Remind me again of P & R?

A: Permitted and Registered

Q: Why was Saluda so high?

A: Downstream of Lee Station will never need that much water

Q: Dependent on Lake Greenwood too?

A: Yes

Discussion of Proposed Reaches of Interest and Surface Water Conditions:

Kevin led this discussion and started with the Proposal for Base flow In Saluda River Basin, which includes:

Alternative 1: 20% of unimpaired Mean Annual Daily Flow (MADF)- This alternative modifies and simplifies alternative 3 based on information presented to the Saluda River Basin Council that did not indicate varied floes were needed to maintain aquatic diversity in the river basin.

Alternative 2: unimpaired 7Q1- Given that a river may not naturally maintain 20% of MADF, this minimalistic alternative merely maintains annual minimum flow without consideration for aquatic diversity or recreational needs

Alternative 3: 0% of the unimpaired mean annual daily flow for the months of January through April; 30% of the unimpaired mean annual daily flow for the months of May, June, and December; and 20% of the unimpaired mean annual daily flow for the months of July through November.

However, the most complicated of the alternatives presented here, this alternative is based on existing SC code of law definitions.

Discussion:

C: UIF that takes out withdrawals

Q: Do you know what those CFS numbers are?

A: Depends on the site

C: Interested to see compared to the 1988 study. Good test point

C: Documented in hydrologic impairment document – 35-38% stretch below Saluda Lake

C: We can crunch the numbers if you are interested

Q: What is the way you see to improve the impaired flow?

A: I really don't. Only way is to stop drawing water which isn't realistic

A: Purpose was to see what the risk is. Gives us description of the risk. Probably other places that are at higher risk. Quantify the risk

C: Big driver could be Greenville Water pulling out of Keowee

C: 140 inches of rainfall doesn't hurt

Q: Comfortable not going with a basin-wide proposal?

A: Yes, I think so

C: 1988 study – downstream of our impaired reach for navigation need 300 – 340 cfs which is 35-38% respectively. The USGS gaging station dips well below 300. 2023 got as low as 60

C: We don't know about the Holiday Dam and Boyd Mill pond stretches – ungaged

Q: In SWAM – have you looked at the difference between mean and median values?

A: Mean can skew with high values. 10-15% difference with median below mean at the gage at Saluda Lake

C: Merit in considering that in modeling

C: We can show that if interested. Edisto RBC looked into that topic

Q: Can we review Edisto discussion on the topic?

A: Yes I can show you the chapter in their plan

Proposal for Negotiations of Northbrook Hydroelectric Operations: it is proposed that the Saluda RBC seek to work with Northbrook Hydroelectric to obtain operations meeting the below criteria at its hydroelectric operation facilities at Saluda Lake, Holiday Dam and Boyd Mill Pond. The idea was not to force them to release more that's coming in despite the fluctuations up and down for a better economy. However, conversations are still ongoing.

The criteria is to maintain a minimum release of the lesser of;

- Instream flow to the operation
- 30% of MADF.

Discussion:

C: They have no bypass. If they can't sell the power they won't run the dam. They won't release unless selling power

C: Run of river would be more consistent with DNR

C: Run it as run of river when it gets below 30%

Q: RBC comfortable with us setting up this meeting and the recommendation?

A: RBC – yes

C: Spirit of it is to get it delisted

C: Impact on aquatic life. Petition for listing/listed due to recreational needs and not aquatic life

C: What percentage should it be? Went with in between number (30%)

C: Rec releases – Duke Energy does those releases

C: Public notice for drawdowns would be great. More transparency from Northbrook – more public awareness

C: We just need to have a meeting and get the conversation going

Wait for Northbrook to get back to KC

Additional gages? In the basin –South Saluda @ 186 used to be there – no longer there – put that in

*Q: This go in the parking lot?

A: Yes

C: Feel free to send them now if you have ideas

Low Tech Process-based Stream Restoration- (For small, incised creeks in the Southeastern Piedmont):
Alex Pellett led the first segment of the discussion by explaining that stream restoration is usually about natural channel design, which includes protecting utility or agricultural land. The primary source of this discussion is the works of Joshua Robinson of Robinson Design Engineers, "Uncertainty Analysis of SC Piedmont Regional Hydraulic Geometry Curves." He further highlighted the design manual, which is available online and shows diagrams of widening stages, including periodic variations of 10 years and a thousand years.

Beavers are a keystone species, creating habitat for other native species. In addition, beavers can damage buildings, septic systems, roads, and culverts, dam spillways, agriculture, forestry, etc. A beaver that is habituated to humans could be aggressive if approached, and a rabid beaver could attack you, but that is not common.

According to the diagram, we have lost roughly a foot of soil; we could say over 6 inches of soil erosion throughout Piedmont, SC. So, when we are calculating our baseline for water quality, water availability, and shape of the channel in the absence of beaver, we have what is called natural impact of soil. Also, Kings Mountain is where a lot of the calibration data comes from so we can know what the natural channel design should look like.

Some of the (LTPBR) Riverscapes principles include 1) stream needs space, 2) structure forces complexity and builds resilience, 3) the importance of structure varies, and 4) inefficient conveyance of water is often healthy.

Restoration Principles include: 1) it's okay to be messy, 2). There is strength in numbers, 3) use natural building materials, 4) let the system do the work, 5) defer decision-making to the system, 6) self-sustaining system ate the solution.

Moving forward:

- Guidance on USACE NWP 13-Bank stabilization
- Guidance on USACE NWP 27-Stream Restoration
- Watershed Based Plans
- River Basin Plans
- Forestry BMPs

- Adopt-a-stream
- NRCS funding
- Research, monitoring, and evaluation

Discussion:

C: NRCS funding is available to farms and farmers. A farmer needs to request the funds (EQIP).

C: Forest owners as well

C: Fencing streams (cattle)

C: Lots of others as well – crossings, streambank restoration

C: All for low-tech low-cost projects for smaller systems if lacking vegetation could use staking or native vegetation. After a hard rain/flood the dam could be gone. Or bank could be gone. The steam isn't static. Interesting approach for smaller streams

Q: Throw wood in streams is good? Is that the big idea?

A: Stream ecologists have said we lack woody debris in our streams. USACE might be involved or clogging culverts. Needs to be appropriately secured. 1.5 times the width of the creek. Weighted will keep from loosening

C: There is a limit to this but it is important. Could also be used for sediment in some areas. Promote for out of blue line streams

C: Specify downstream limit

C: What is a healthy amount of wood to throw in? Don't want paddling obstructions. Doesn't create bad obstructions downstream

C: Any structure in a channel will slow water down and it will accumulate sediment but let the water come through – trapping the sediment. Silt and sediment are the number 1 pollutant in SC

Q: Did you encounter connection restoring to natural habitat and flood damage? Would that lessen the impact? Any evidences?

A: Complicated. The tributary will flash out before the pulse gets there. Do we compound the flood pulse? If they are leaky dam we are increasing storage

C: Glad to see reference to Trimble – looked at old mill dams and crossings. How channels changed since Trimble. Upper reaches were gouged out. Still seeing mid and lower reaches widening. Topsoil didn't disappear (legacy sediment) it is still in play. Made a lot of previous farms unfarmable in late 1800s – early 1900s

C: Affect on floodplains as it might make floodplains larger. Keep FEMA in mind and possibly affecting floodplains

Protecting and Restoring the Upper Saluda Watershed:

Melanie facilitated this session by expanding on the Upper Saluda Watershed Program for Sediment in the South and North Saluda Rivers with over 20 organizations.

Why Sediment?

- Impairs water quality
- Affects drinking water sources
- Effective pollutant carrier
- Degrades aquatic habitat
- Impacts recreation
- Loss of land

In 2011, Saluda Lake Dredging (built for hydropower used for drinking water) included $8,000,000+, 366,000 yd3 sediment removed, completed in 2012, and already filled in again.

Some of Watershed Planning efforts include:

- Historic Land Use
- Accelerated erosion and sedimentation
- Legacy sediments Effects

Watershed Plan for Sediment in the North Saluda River and Saluda Lake:

This involves data collection, land use, water quality data, identification of sediment sources and causes. For sediment, we identified goals, best management practices, milestones and measures, identified technical assistance and funding needs. We also started our public outreach and education during the planning process, which proved very valuable. We engaged stakeholders' representatives for the implementation phase, called Task, which means Technical Advisory Stakeholder Committee. We met regularly throughout the planning process.

Program Objectives:

- To fund soil conservation projects in priority watershed areas using BMPs that most effectively reduce sediment loading and protect water quality.

- To effectively leverage 319 funding and partner match with USDA-NRCS EQIP funding for more BMPs on the ground in priority areas.

Watershed Plan Implementation Best Management Practices (BMPs)

1. Crops Farms BMPs include; cover crops, intercropping, vegetated Riparian Buffers, conservation Tillage, Culvert/Ditch stabilization, Terracing and Contouring, Farm Access Road stabilization and Streambank Stabilization.
2. Livestock Farm BMPs include; Exclusion Fencing/Well/Water Trough, Loafing Shed, vegetated Riparian Buffers, Stream Crossing, stabilization of streambanks, Cross fencing/pasture planting and heavy-use area Stabilization.
3. Urban/Rural BMPs include stream bank stabilization, public education, muddy water watch, land conservation, watershed signs, and recommendations for Post Construction Design Regulations.

Critical areas we have identified are intensively managed Crops in floodplains, which is our priority. Priority 2 is cultivated Crops, and Priority 3 is pasture.

Upper Saluda Program Assistance for Soil Conservation Projects:

- 60% Federal 319 Grant (319 stands for section 3 19 of the Clean Water Act)
- 30% Partner Match
- 10% Landowner/operator

What we have done so far includes:

- Cover crops
- Culvert stabilization
- Riparian buffer/Field border
- Sediment basin
- Streambank stabilization
- Farm road stabilization
- Tillage management
- Heavy use area stabilization
- Intercropping

River Falls Floodplain and Riparian Restoration Project: Project Value =$16,053, 319 federal funding =$5,007, partner funding =$1,166 and in-kind =$9,880

- 10-ac floodplain area seeded with 16 species native grasses and forbs + cover/nurse crop

- 200+ native trees and shrubs (16 species) planted in 0.5-acre riparian wetland area
- Middle Saluda River

Public Outreach Education/Involvement:

- Cover Crop/Soil Health workshops
- Online Surveys
- Postcards
- Social Media
- Farmer Scientist Video (translated to Spanish)
- Direct Landowner outreach

In addition, we did the Streambank Stabilization Workshop highlighting the importance of riparian buffers to protect your property. We did trials for the Cover Crop- No-Till Transplanter Trials.

Land Conservation for Source Water Protection: we work closely with the Natural Land Trust to help fund and other partners to help fund land conservation projects. And identify properties that are of high value for water quality and source water protection in the watershed. These are properties, such as mountains, wetlands, floodplains, etc., that help to protect waters. We promote local policies for land protection.

Some of Riparian Actions include:

- Enhance property values and reduce flooding impacts
- Support recreation and local economics
- Provide space to view nature and relax along the banks
- Sequester carbon and improve air quality
- Create green jobs
- Provide wildlife habitat
- Stabilize stream banks
- Shade and cool streams

Stream and Riparian Restoration Projects: We looked at the model used in agricultural systems, which include stream restoration, bioengineering, and riparian buffer.

Stream Restoration Preparation Needs:

- Design

- USACE 401/404 permitting 9if disturb below OHW and >500 feet)
- No rise analysis
- Floodplain permit (if in mapped 100-year flood area)
- Maintenance Plan

Terry Creek Stream Restoration #1: Terry Creek is a tributary to the North Saluda River with 9.2 square miles (5,900 acres).

- Restored over 1,000 feet of stream
- Established riparian buffer
- Relocated and stabilized farm road
- Built 2 heavy use areas

The Toe Rock is a low structure of rock placed along the water's edge of a shoreline.

Rock Cross Vane helps to center the flow into the middle of the channel and off the bank, which is beneficial for product habitat. J Hook helps to turn the water off of the bank so it's not slamming into the bank and eroding the bank and getting that flow. We also argument the stream bank vegetation with native plugs. We also have a volunteer day where volunteers plant trees.

Project Cost: total is $255,281

- Federal $145,992
- Partner Match $92,812
- Landowner $3,306
- In-kind $13,172

After the historic February 2020 flood, we established a North Saluda River Project with the following actions:

- Streambank grading
- Boulder toe rock and 3 boulder J-hooks
- Streambank seeding and coir matting
- Native live stakes, bare root seedlings (100), and herbaceous plus (625), planted on streambank slopes
- Containerized native trees and shrubs (60) planted in riparian buffer
- 2 Rock-lined waterways (2,625 ft2)
- Stabilized farm access road (~2,300 feet)

The North Saluda Stream total value Project for 160 feet cost=$118,400 and comprises USDA NRCS EQIP funding, partner funding, 319 federal funding, landowner cash contribution and in-kind match.

Terry Creek Stream Restoration #2: total cost of this project value =$256,000

~120 feet restored where we partner with USDA, includes:

- Streambank grading
- Boulder toe rock and 14 single-arm rock vanes
- Streambank seeding and coir matting
- Native live stakes and herbaceous plugs (2,115) planted on streambank slopes
- Containerized native trees and shrubs (270) planted in riparian area
- 4 Rock-lined waterways (1,680 ft2)
- 1 heavy use area
- Stabilized farm access road (~1,300 feet)

Railroad Creek Stream Crossing, Cattle Exclusion, and Watering Project: tributary to the North. We did some streambank stabilization, NRCS+319 fence, access road and water line.

Railroad Creek Cattle Project: total project value =$109,000

- Rock armored low water stream crossing for cattle (1,080 ft2)
- Streambank stabilization (160 feet grading, boulder toe, rock vane)
- Rock-lined waterways (~2,900 ft2)
- Exclusion fencing (1,795 feet)
- Native live stakes plugs on streambank slopes

Middle Saluda Stream and Riparian Restoration:

- Streambank stabilization (350 feet)
- Boulder toe rock and single-arm rock vanes
- Streambank seeding and coir matting
- Native live stakes and herbaceous plugs on streambank slopes
- Riparian buffer enhancement along ~4,000 feet of Middle Saluda
- Floodplain reconnection

The estimated project cost is $151,250, comprising NRCS EQIP $32,370, federal $24,675, partner cash match $31,191, Landowner $10,814 and partner in-kind $52,202.

Terry Creek #3 Stream and Riparian Restoration:

- Streambank stabilization on Terry Creek and Short Branch (900ft)
- Boulder toe rock and single-arm rock vanes
- Streambank seeding and coir matting
- Native live stakes and herbaceous plugs on streambank slopes
- Riparian buffer enhancement

The estimated project cost is NRCS EQIP $97,887, Landowner match $8,905, and Federal and Partner Match $1114,848, totaling ~$221,640.

Discussion:

Q: That was for 160 ft?

A: Yes, a lot of cost was the road

The meeting adjourned at 12:35 pm so the RBC could attend the field trip locations.

Motion to adjourn – Brandon Grooms and Paul Lewis

Minutes: Iffy Ogbekene and Tom Walker

Approved: 6/19/24

RBC Chat:

10:01:09 From Thomas Walker to Everyone:

will get started here in a few minutes

10:15:53 From Scott Harder to Everyone:

is there supposed to be something on the screen?

10:16:42 From Jeffery Allen (SC) to Everyone:

i see the comparison to min instreamflows graphic

10:16:51 From Josie Newton to Everyone:

I can see the presentation

10:51:23 From HarderS to Everyone:

microphone is not working, just wanted to remind people that a new gage has been installed above Saluda lake, but probably isn't recording discharge yet

10:51:58 From HarderS to Everyone:

I'll check

10:52:18 From HarderS to Everyone:

Hunts bridge rd

10:55:58 From HarderS to Everyone:

have to drop off for another meeting

11:35:01 From Thomas Walker to Everyone:

5 min break

11:59:23 From Thomas Walker to Everyone:

10 mins for lunch here

12:34:36 From Thomas Walker to Everyone:

meeting adjourned. thanks all