Minutes of the Edisto RBC Meeting

Wednesday, January 27, 2021

Meeting was held virtually via the Zoom application

Members Present: Mark Aakhus, Laura Bagwell, Kirk Bell, David Bishop, Danny Burbage, Joel Duke, J.J. Jowers, Hugo Krispyn, Alta Mae Marvin, Mike Mosley, Eric Odom, Mike Shugart, Hank Stallworth, Jason Thompson, Alex Tolbert, Jerry Waters, and Landrum Weathers.

Members Absent: John Bass, Richard Hall (Amanda Sievers, alternate, present), Johney Haralson (Becky Davis, alternate, present), Trey McMillan, and Jeremy Walther

Planning Team Present: Jeff Allen, John Boyer, Alex Butler, Rob Devlin, Scott Harder, Chikezie Isiguzo, Joe Gellici, Vincent Leon Guerrero, Andy Wachob, Tom Walker, and Andrew Waters.

Total Present: 58

1. Call the Meeting to Order (John Boyer, Facilitator)

John Boyer calls the meeting to order at 9:01am and announces a quorum. He thanks Dr. Thomas Walker for assistance with coordinating and chat moderation. He encourages RBC members signed in on a shared account to announce shared account. He also notes that alternates should announce themselves to be recognized. Becky Davis and Amanda Sievers were alternates for this meeting sitting in for their RBC member.

   a. Review of Meeting Objectives

John Boyer reviews meeting objectives for today.

   b. Approval of Agenda

John Boyer requests a vote for approval of the agenda. Agenda is approved with 8 - yes, 0 - no vote.

   c. Approval of January 6th Minutes and Summary

John Boyer requests a vote for approval of minutes and summary documents from the January 6th meeting. Minutes and summary approved with 10 - yes, 0 - no.
John Boyer raises concern for change in zoom function and request confirmation of RBC members ability to utilize yes and no function. John Boyer and Dr. Thomas Walker reviews the change in zoom update and that RBC members may have different usability for yes/no functions.
John Boyer reviews a recent SWAM training meeting and Scott Harder offers to post the meeting on the DNR website but notes that it will be posted next week. John Boyer highlights the necessity to complete the Phase 1 progress report from RBC and request RBC members to make changes or comments as soon as possible with John Boyer planning on turning in the progress report to DNR next week.
John Boyer reviews schedule over the next coming months. He notes that Jason Thompson has offered to give a presentation regarding Edisto river basin hydrology at the next meeting and

encourages RBC members that want to make future presentations to notify the planning team and RBC members will be worked in to meeting slots. Should an RBC member want to address the RBC let Dr. Thomas Walker and John Boyer know before this Friday.
John Boyer notes that we are moving into assessment of surface and groundwater but that DNR and USGS are working to release the groundwater model in March and the RBC planning process may need to slow down until the model is ready for use.
John Boyer notes that the Nature Conservancy is also working on completing flow metrics for biological concerns of the basin.
David Bishop notes that efforts will be made to complete the study by March.
John Boyer request RBC members to provide input if there is concern for the next coming months.
Hank Stallworth comments that we should take advantage of all the information we need so postponing the next meeting is acceptable.
Jason Thompson comments if we need to pause that makes sense but keep the next meeting as scheduled.
John Boyer reviews concern and feedback noted in a recent PPAC meeting. PPAC noted concern that there is no elected chair or vice chair for the RBC. RBC has not elected chair by requesting to not hold the vote until physical meetings occur but there is a need to have a greater voice of RBC on the planning team. John Boyer is requesting two members to serve as temporary liaisons until chair and vice chair can be elected based on PPAC suggestions. JJ Jowers and Landrum Weathers will act as Edisto RBC liaisons. John Boyer requests comment for this approach (due to yes/no zoom limitations). John Boyer notes comments in chat are positive but encourages RBC members to reach out to Dr. Thomas Walker and John Boyer if there are any concerns.

2. Public Comment (John Boyer)
    a. Public Comment Period

Open floor to public comment. John Boyer notes none and closes public comment.

3. Review of Changing Land Use Impact on Water Supply and Recharge and Q & A (Alex Butler, SCDHEC)

Alex Butler presents on the impact of land use / land cover on water availability. Alex reviews water balance and hydrologic budgets and “buckets”. Addresses question of re-forestation leading to reduced streamflow while noting caveats of study differences from Edisto and studied sites. He reviews differences of precipitation and plant root depth that affect water availability as a big driver for water budgets. He reviews differences between crop average root depth and forest. Root depth is determined by land cover data sets and this is a coarse expression of root depth. Reviews graph of SFE basin land use trends from 1992 -2011. Reviews subjective change from google earth maps. Reviews testing LU/LC impacts of the SWB model.
John Boyer requests questions from the RBC.
Jason Thompson notes that forestry cover has less runoff conditions and ask for insights about how to put it in to perspective. Requests clarification of conflicting data for runoff reduction and reduced flow.
Alex Butler reviews the SWB model “buckets” and notes that there are different issues including slope and landscape/soil type that also affects flow and runoff.
Hugo Krispyn asks does topography between the Piedmont and Coastal plain make a difference?
Alex Butler responds the high point is actually in the coastal plain and your main difference is in the soil type. So the topography is less important than the soil type is.

John Boyer requests to clarify SWB model. Alex Butler notes SWB model is to calculate recharge using gridded data and maps and rainfall coefficient to calculate ground water recharge.
Eric Krueger comments there isn't a good or bad just a continuum of differences with tradeoffs regarding forested land or barren land and impact on SWB.
Jason Thompson states would you say that there would be less variation or more variation from the mean as the difference.
Alex Butler comments you would have a higher mean in that barren/urban landscape versus that forest landscape.
Hugo Krispyn asks a question about when we conceive of this recharge it's not just falling down its making its way miles down grade does that have meaningful consequences?
Alex Butler responds it has meaningful consequences but the vast majority of water that we call recharge is shallow in the system and is there at the scale of years. It's a very small percentage that enters into the deep system. The concern is for pressure in the system.

4. RBC Discussion – Finalize Goals (John Boyer & Planning Team)

John Boyer notes the last meeting was the six goals and one final opportunity to tweak the goals. He notes emails from Michael Mosley and Laura Bagwell. He notes Laura's suggestion is minor wordsmithing. He moves on to Michael's suggestion to consolidate and have bullets and add one more communication goal.
Michael Mosley notes that it is supposed to be simple and smart and notes that he does not see why we can't simplify and consolidate the goals. Also adding the goal of communicating the plan and strategies is important to make recommendations.
Hugo Krispyn agrees and notes simpler is better.
David Bishop likes the words of best available science and stakeholder wording.
John Boyer encourages video chat of concerns rather than chat box.
Jason Thompson comments that Mike and David bring up some great points and notes that there are some things in the original goals that isn't captured in Mike's goals.
Hugo Krispyn comments if we did want to save the best available science wording we can put it in.
Jason notes we can put in 1E (goal).
John Boyer comments let's take a vote for consolidated approach and tweaking or the original 6 goals?
Dr. Thomas Walker notes there is an issue with zoom yes staying on with new update.
John Boyer ask let's do a roll call vote.
Mark Aakhus can we look at the original goals for a second then he notes, I voted yes for the consolidated and tweak.
John Boyer notes in the chat box consolidated and tweaking is the agreed way.
Jason Thompson comments I think that the best available science and stakeholders are the only wordsmithing thing.
Michael Mosley comments put it in the very first line.
Hugo Krispyn notes that is what I suggested too.
Jason Thompson comments I will third that.
John Boyer notes that in chat Laura says I like it. Can we vote and wrap the goals up. Let's use the chat box.
Dr. Thomas Walker ask do you want to make motion?
Jason Thompson comments I motion that we use the new goals.
Mark Aakhus responds I second.
John Boyer ask does anyone oppose? Alright done.

Break

5. Review Surface Water Model Results for all four Scenarios and Q & A (John Boyer)

John Boyer introduces Tim Cox. John Boyer outlines discussion of topics.
Tim Cox reviews increase in agricultural demands. He reviews the assignment of projected agricultural demand increases at the outlet of sub-basins on map noting numbers of boxes represent additional ag demand that was added at nodes. He notes areas in red there are no HUC 10 ag demands and we assume that we won't have demands. Next, he notes the same but with high demand scenarios in red boxes (years 2030 and 2070). Next is choices for when demand exceeds permit, he asks do we want to make assumption on supply when there are multiple sources or when it has reached the limit? The assumption is that groundwater is stable and surface water is variable with different scenarios.
Rob Devlin comments on Aiken, 9.23 mgd is the permit limit for GW in the city of Aiken. This was done this past year and there will be a 5-year review.
John Boyer comments because the limit is not exceeded here, we can bump up the GW use for the model.
Laura Bagwell comments I wonder if the GW and SW systems operate almost independently. I'm not sure the extent that they can make up the shortages of one category with the other.
John Boyer responds there is a limitation of where the city grows and that will affect where the city draws water.
Laura Bagwell responds that is correct growth models are focused on the northside.
Rob Devlin comments I agree with Laura but when we are looking at long term scenarios that is an engineering problem that we don't need to have to get too bogged down on and do the models first then go back on the micro scenarios later.
David Bishop ask John Boyer, I wanted more clarity on the question you were asking.
John Boyer responds how do you want us to set up a model when demand exceeds a permit limit? Do you tell them to stop or do we continue unconstrained assuming that the user may get a new permit?
Jason Thompson comments if we are looking at high demand scenarios we shouldn't constrain it.
Hugo Krispyn asks is it possible to flag for a permit if it exceeded but still go unconstrained?
Tim Cox responds we can do that and we have been focused on flagging where permit limits are exceeded.
Scott Harder comments I think going back to the planning framework the projection scenarios would be exceeded in the high demand scenarios.
Tim Cox comments, and the second question is we have these increasing demand and different sources and thought of a rule of thumb for the modeling. Currently we've said the first preference is to go to permit limit then to go the next source.
David Bishop ask, I have a question because the Edisto wells run so deep do we ignore the relationship.
John Boyer responds we should get some information out of the GW model and how that might impact base water flow to streams.
Rob Devlin comments looking at the construction the wells are deep.
John Boyer comments looking at the construction there would generally be no impact because they seem pretty deep. The second thing we mentioned is the changes in demands and sources for select water users including water utilities and Dominion Energy Cope Station.
Michael Mosley notes that the model needs to include limits of permits to model for Dominion and the need to include a Canadys station that is not being used currently but may be used in the future with no plans at this time.

Scott Harder comments in another projection scenario maybe some of the energy projection goes to Canadys.
Michael Mosley notes we don't have current plans for the next 15 years.
Scott Harder notes best guess for the next 50 years it's just something to think about.
John Boyer notes that they can use some logic based on flow to address low flow using groundwater to address conditional needs.
Michael Mosley notes, I can send all the information of our current protocol for ground and surface water use.
John Boyer notes that the next thing is changes in performance measures and calculations for percentage of water users that experience shortage and average frequency of shortage revisions. He presents the surface water shortages: current conditions water/2070 business as usual scenario use and scenario map differences and lack of changes.
Jason Thompson request to return high demand scenario and questions the assumption that there is no shortage, and if we can run down to zero flow in reality.
Tim Cox reviews preliminary results of model.
Jason Thompson comments, I would disagree, shortages should include droughts that are not identified. I am going to say that when shortages already happen it is important to understand what the potential is as the demands increase.
Tim Cox offers a closer look at exceedance graphs for Givhans, SC flow for current use, 2070 business as usual and 2070 high demand scenarios.
Jason Thompson notes that this presentation is with the assumption of no surface water condition.
Hugo Krispyn comments, if we are doing this without the constraint of surface water condition how does this reflect on the surface water sustainable use?
John Boyer, I guess you are asking if we set surface water conditions do we set constraints.
Jason Thompson comments, we are not stipulating the constraints of a river basin. My point being that we need to run the model with a surface water condition. I am saying for us to truly understand what the realistic shortages look like if we agree that we might want to leave a little more that 0 flow in the river.
Tim Cox notes that the only thing with running a model with flow conditions as described is that we would have to apply them to every user point.
Jason Thompson replies, it can be done at strategic nodes I like that and that way we are not picking on any one user that would be my suggestion.
Tim Cox reviews daily flow summary and ability to model daily flow. He also reviews preliminary conclusions and concludes presentation.
Chat question (Cindy Cooksey) Does the model allow for an assessment of the movement of the salt wedge in the lower ACE Basin relative to predicted demand?
John Boyer responds, no.
Jason Thompson also responds, keep in mind that the average location of salt water wedge doesn't necessarily capture the robust ability of the fish life. Changes in chloride is dependent on runoff more than it is on flows.
John Boyer asks, any questions of the model information? No questions.

6. RBC Discussion – Further Consider and Identify: Strategic Nodes, Surface Water Conditions, Performance Measures, & Additional Scenarios (John Boyer & Planning Team)

John Boyer reviews 5 strategic nodes and notes the possibility of adding 8-9 strategic nodes based on the HUC 10 locations. He asks, any other thoughts on where you want to see the strategic gauges?

Jason Thompson asks, am I right that the further up the stream and further from the mainstream you get less accurate data.
Tim Cox yes that would be correct.
Jason Thompson notes, we want to balance the nodes and make sure we don't have too many?
David Bishop comments, I don't feel like I know enough on this I would like to hear form the experts
John Boyer responds, I think what we've shown here is that we want to measure at these points and the points that Jason pointed out but we don't want too many points. Are there key points in the system that we may want to monitor that anyone in the RBC may know?
David Bishop asks, nothing that jumps out to me but the bio-data, that can be pointed out by the Conservancy model.
Eric Krueger notes, I just want to highlight that Black Creek, Bull Swamp Creek, and Indian Field Swamp all have high native field diversities and Shaw Creek falls into that bucket too in case that resonates with other people.
Tim Cox responds, it is definitely good to add more nodes the issue is that we don't want to add too many nodes that it becomes unsustainable.
Jason Thompson asks, adding the 10-12 nodes for the HUC 10 does anyone feel that it is too much?
Laura Bagwell notes, looking at the HUC 10 increase that will add double the data to that.
Hugo Krispyn asks, do any of these strategic nodes coincide with any of these gauges?
John Boyer notes, so if any of our nodes coincide with any gauges then they are already in the model.
Hank Stallworth asks, I had a question about adding gauges and the cost for adding gauges at the HUC 10 sites.
Scott Harder responds, we can look at that but I want to remind folks that we have added 5 gauges and re-gauged 2 sites and those gauges may be reporting live but there might be a number of years before it can be added to the model.
John Boyer notes, additional surface water scenarios that are not specified one was an unpaired base model and see what flow conditions are like under natural conditions. Any thoughts or feedback about seeing other scenarios?
Jason Thompson asks, so running it without withdrawals?
John Boyer yes.
Hank Stallworth notes, if we run something like 20-30-40 it would be good to know shortages.
Jason Thompson, I would propose we run business as usual and high scenario case with surface conditions at 20 percent.
Tim Cox, I like the idea of the unimpaired flow scenario I think it presents a useful comparison and I wonder if we calculate.
Jason Thompson responds, I recommend we calculate the minimum flow data based on historical data not modeled data.
Tim Cox, we have some areas that do not have data that is what I am referring to. There is prioritization that we talked about a little bit in the SWAM training that is something that can be done with the model.
Rob Devlin comments, I wanted to chime in about the 20-30-40, the model has that, with what the annual data is that is a very simple input there is just a button and we just input it and I've calculated those for every water user. If you and John want I can send it to you Tim.
Jason Thompson notes, we need to look at all users for the models and not base it on politics of grandfather, etc users.
Rob Devlin notes, that's what I did and there is a lot of pressure on those small ag users.

7. Meeting Conclusion (John Boyer)

John Boyer comments, does the RBC want to move forward with including the unimpaired scenario? Yes, Jason and yes, Laura? Okay we will add that to the suite of options for scenarios. That is generally what I have for today. I would like to review the next Edisto RBC meetings coming up. Jason Thompson will discuss the hydrologic statistics. John Boyer reviews the SWAM training schedule and concludes the meeting at 11:42 AM.

Minutes by: Vincent Leon Guerrero, Andrew Waters, and Tom Walker

Approved: February 17, 2021