Edisto River Basin Council

Minutes (September 15th, 2021)

Members Present: Jason Thompson, Hank Stallworth, Laura Bagwell, Hugo Krispyn, Jeremy Walther, Will Williams, David Bishop, Landrum Weathers, Alan Mehrzad, Mike Mosley, Eric Odom, Mark Aakhus & Joel Duke

Members Present Online: Trey McMillan, JJ Jowers, Alta Mae Marvin, John Bass, Danny Burbage & Johney Haralson

Members Absent: Kirk Bell, Richard Hall, Jerry Waters & Alex Tolbert

Staff Present: John Boyer, Tom Walker, Scott Harder, Joe Gellici, Andy Wachob, Rob Devlin, Andy Wachob, Murray Dodd, Leigh Ann Monroe, Kaleigh Sims, Chikezie Isiguzo, Greg Cherry, Matt Petkewich & Bruce Campbell

Others Present Online: 21

Total Attendance: 54

1. Call the Meeting to Order (Hank Stallworth, RBC Chair)

   Hank called the meeting to order at 9:05 and a quorum was present.

- Review of Meeting Objectives
    - Hank discussed groundwater, capacity use areas and how it factors into basin planning across the Edisto basin, going to look at GW modeling results from pre-development to current use areas, breakout groups, talk about progress made so far (satisfied or dissatisfied), what we hope to do and when
    - Review of agenda items
- Approval of Agenda - Laura Bagwell made motion & Hugo Krispyn Second – all in favor
- Approval of August 18th Minutes and Summary
    - Jason Thompson makes motion to approve Will Williams second

- Hank is asking for those that do not speak up as much to try to speak up during breakout session – encouraging others to share their knowledge during breakout

2. Public Comment (John Boyer)
    - No public comments

3. Groundwater Availability Evaluation Methods and Considerations

- Joe Gellici - area of concern, condition, supply, shortage- reminded all that this info is in planning framework
- Reviewed GW scenarios predevelopment simulation – GW level prior to any pumping dating back to 1900, how much was there pre pump. This would represent normal conditions / baseline "natural flow" steady state

- High water demand- after 50 year major increase in pumping due to increased population growth
    - likely this will be the scenario they use for the plan
- Reviewed hydrogeologic framework
- Showing where aquifers are located and where recharge areas are
- Explained major cones of depression – water levels measured in different aquifers relative to sea level- showing where levels have declined due to long term pumping
    - Georgetown has major cone of depression
- Impacts of lowering GW- provided examples- great uncertainty with knowing how low we can go before seeing negative impacts and what they might cause
- Pumping must be monitored so levels can be measured and managed to prevent cones of depression
- **RBC can make recommendations** to designate certain areas as "areas of concern" - once designated then RBC can recommend monitoring or conduct technical study to ID alternative sources of water- they can also determine if GW condition needs to be applied (physical limitation)
- Example- Texas developed regional water plans using a similar approach and is updated every 5 years they use "desired future condition" long term management goal for each aquifer such as limiting drawdown
- Any questions?
    - Hank: how does Texas define remaining water in aquifer?
        - Joe: start with predevelopment GW levels, then would have to come up with trigger level for aquifer
    - Hank: how do you measure remaining water?
        - Joe: Texas had thickness and porosity so they could calculate total volume of aquifer then calculate difference when declining
    - Will: what is recharge rate like in SC?
        - Joe: Recharge to shallow aquifer. Determine using model and are around several inches/year on average and does depend on soil type. Highly variable – depends on precipitation rates, slopes, etc. (~3- 5 inches/yr). Lowest recharge would be 0 and highest would be 20-30 inches (depends on rainfall)

- Does the aquifer in Texas recharge?
    - Yes they do – so they factor in recharge rates in calculations

- Hugo- Texas at mercy of 7 other States so what extent is SC at the mercy of other states?
    - Joe: Yes we will see similar issues in SC
- Fred Palm- If withdrawal uncertain how is desired future condition expressed to indicate the taking
    - Joe: In order to do something like this you would have to know the withdrawal so they should not be uncertain

- Joe provided example of management strategies
    - Conjunctive water use
    - Storage and recovery- injection of water
    - Reverse osmosis
- **<u>Any GW recommendations by RBC will need to be vetted by capacity use area stakeholder group (GW management group) and approved by SCDHEC</u>**
    - Jeremy statement: When using Texas examples remember that SC receives much more precipitation
    - Question: in your opinion, in Edisto basin- are there any areas of concern?
        - Joe: Not currently, but need to look at high demand projections but nothing of major concern
    - Question: what cause drawdown in Georgetown?
        - Joe: have not been able to figure that out- maybe a fault or something structural
        - SCDHEC: could be something structural or geological structure causing that but still unsure and still looking – can't find a user that is large enough – little users in a condensed area can add up can cause drawdown
    - Comment: John- domestic wells can be shallow has there been reports in state in cones of depression of domestic well going dry?

        - SCDHEC: we do see that something during drought can take some of the shallow wells out of water (about 15 a year during a dry year)

4. Groundwater Management Areas (SCDHEC)

- Review of capacity use areas and management plans
- Overview of regulations in the state

- SCDHEC can designate an area if they find that there is enough interest and there is a problem
- What are capacity use areas in SC? Waccamaw, Lowcountry, Trident, Pee Dee, Western, Santee-Lynches
- Overview of SCDHEC process – public meeting and comment etc.
- Groundwater plan reports- they will look at everything every 5 years to determine what might be changing
- Plans will have goals and strategies specific to the area
- Questions?
    - Which of the capacity use areas are within or influenced by Edisto?
        - SCDHEC Western (bulk of basin), Lowcountry, and Trident
        - SCDHEC had large stakeholder meeting to have table top discussion at the request of the region -- these are SCDHEC lead , SCDHEC are required to finish process if the groups do not
    - John: RBC is going to look at demands 50 years in future and applying to GW model to project into the future
        - SCDHEC: the models will be used but currently they will rely heavy on data they have but they will eventually use models when they can
    - How do you use the plan?
        - SCDHEC: use plan to look at data they review through permit renewals so they can address if areas are now of concern, determine if they need to modify permit etc.
    - RBC will we create GW management for this basin? How much time will we spend on this when there are 3 plans already established?
        - Scott: long range planning process so I don't think current plans are looking out 50 years and not using model- so what we are doing is long range planning and would have to be vetted by the capacity use area- we have additional tools and resource to use for long term planning. These would be recommendations to incorporate into the existing plan then vetted by appropriate parties.
        - Before we start making recommendations, we need to know what their plan is- so might be good to address that plan as RBC develops plan
    - Presentation on all three plans is requested Jason made motion- RBC members agree

- SCDHEC says plans available online to review but they could talk about the plans themselves then talk about the review of plan
- Jason expresses he does not want the RBC to re-create work if it has already been done, so they would like to be aware of what is already done
- SCDHEC will work with John and Scott to coordinate a presentation and come back to the group

- Hugo, Laura, and Jeremy Walther have participated in those plans with SCDHEC

- Hugo- asked could they see any trends from the plan- answer was they are still in the process of gathering data from implementation of plan
    - SCDHEC said it can take 8-10 years to notice significant changes from the plan implementation – large part of success is the education and outreach

5. Groundwater Planning Scenario Results - Predevelopment and Current Use 9:55–10:25 (Matt Petkewich and Greg Cherry, USGS)

- Reviewed what data is going into the GW model and modifications to the model
- Decreased model cell grid size
- Primary outputs: GW levels, budgets – can help get a handle on recharge
- Predevelopment condition
- Current GW model based on 1900-2020
- Focus on Gordon layer and Crouch branch and McQueen branch
- Gordon- pre-development condition, important note is that strong interaction between aquifer and streams – contours indicate strong gaining reaches
- Gordon- 2015 slight shifting in contours but not a whole lot (minor shifting)
- Gordon-2020 has been some evident movement in contour
    - Hugo question: what do numbers reflect on gradient lines?
        - USGS: those are saying level in aquifer is some ## of ft above sea level etc.
    - John: in the future there will be maps with comparisons between all of the scenarios to provide frame of reference
- Crouch branch- pre-development, interaction decreases as you get to the lower part of Edisto- looks to be disconnected
- Crouch - 2015 if you look at contour there is some slight shifting in 50, 75, and 100 (shape has changed)
- Crouch 2020- some pumping going on the 100 ,75, 50 shifted and shape changed – direction of GW movement has changed
- McQueen pre- upper part of basin shows not a strong connection b/w stream and aquifer, as you move down the basin still not influenced by river
- McQueen- 2015- some shift in the 150 ft
- McQueen 2020- direction of GW has changed influenced by pumping and contour shifting
    - Question: is there a chart for surficial aquifer? is the data available?
        - USGS: It is simulated in model but would need to show RBC next time
        - Alex Butler- there is modeled surficial but there Is very limited data
        - Jason would like to see the data for surficial aquifer if possible
            - USGS will provide the simulations for surficial next RBC meeting
            - SCDHEC, majority of coastal plain does not have a lot of surficial layer and are not used as much
        - Jason What are baseline contributions lower in basin?
            - USGS would have to look it up

        - USGS says gradient is much lower so less interaction between surface water and aquifer as you move downhill
        - SCDHEC: swamps act more like surficial layer in upper part that's more of influence than deeper aquifer
    - Hugo: as heads drop mean less interconnection between SW and GW because GW has receded?
        - USGS : correct

- USGS discussing simulated water levels in Gordon, Crouch, and McQueen aquifer
- Future scenarios
    - Current use
    - Permitted
    - Business as usual
    - High water demand

- Question Hugo: GW under reasonable use so is it okay to assume that fully permitted scenario could be realistic?
    - SCDHEC: newer users will be permitted

- USGS will continue to provide simulations at the next RBC meetings

6. Review of River Basin Planning John B

- Provided examples of what we are doing and where we are going
- Reminder of the four phases
- Strategies demand and supply
- Drought conditions and low flows will likely be a focus in the Edisto basin
- Plan will include technical, legislative, and process recommendations
- Provided Georgia examples and going over recommendations- follow similar process

7. RBC Group Breakout Session to Receive Feedback 10:55–11:35

1. Do you feel you have adequate understanding the river basin planning process?

   RBC Breakout group responses

- Yes, I think we do have an understanding and lots of tech documents to look at
- Yes, and the quick review today helped
- Yes

- Yes, info is presented well

2. Do you feel that you have an adequate understanding of the technical info presented, any topics to review?

   RBC breakout group responses

- Generally, say hydrology is something we all have to work to understand especially those that are not hydrologists, but info presented has been good. Suggestion is at end of each tech sessions provide a synopsis of important high levels facts. Would like to understand a little better area of concern and why they are area of concern and any potential solution
- Would like consolidated tech review and include model with output minimum instream flow then include high use scenario to give big picture overview – review the take home messages. Summary of all technical info presented thus far
- Maybe just one presentation on capacity use areas to bring everyone's baseline knowledge up
- Would like a cheat sheet, what information do we need to take away

3. Are there any topics that you feel more information is needed before moving to Phase 3, where we will identify and evaluate management strategies?

- Need to know more information about recharge and would like to spend time with the expert to understand better – we would love to provide a list of questions to the tech team to get them answered maybe outside of the meeting
- Where is the problem, what are the potential solutions? Let's start identifying where the problems are

4. Do you think that all water use interest groups are equally represented and have had sufficient opportunity to contribute?

- Yes
- Commerce
- Concerned about commerce and municipal systems
- Try to find better representation for minorities

5. Do you think a subcommittee might be needed to address a specific topic (name the topic) and make the planning process more efficient?

- Subcommittee might look into minority representation
- Committee to start consolidating all the info to start ID of all the central issues
- Committee might appear as we get into phase 3
- Subcommittee group by sector – each water use sector and what management strategies apply to them

6. Do you have suggestions for improving the planning process?

- Suggested that you provide more milestones and more project management to keep them moving forward
- No suggestions

John comment: encourage you to send your questions to us after meetings

8. Surface Water Discussion (John Boyer, CDM Smith) 11:35–1:50

Consideration for establishing:

- Surface Water Conditions (proposal by Jason Thompson, CWS)
- Reaches of Interest
- Additional Performance Metrics

John:

- Reaches of interest- may have no ID surface water shortage but experiences undesirable impacts like noticed unacceptable impact to ecology, must be agreed upon by RBC- this is not addressing shortage
- Surface water condition is for planning it is not legally binding
- Shortages you see in first round not things to be worried about
- 2070 business as usual – not much difference just that shortage got a little greater
- 2070 high demand- shortage shows up <10% of the time
- Full allocation scenario- a lot of shortages start to show up > 50% of the time
- Full allocations but did not include some newer allocations- moves to < 10% in Charleston remove Lois Ann and Williams and Son then the water shortage drops for Charleston

    - Comment: Lois Ann farm- one registration is enough to irrigate over 60K acres, frivolous registration, ill will to agriculture, not legitimate in any shape- registration is over 30x more than what Jeremy Walther has for his farm

Jason presentation

- River has seen decreasing flows over time
- Is there a reach of interest at Givhans?
    - Save yield is 80% mean flow ~1940 cfs
    - Min ~490 cfs
    - 7q10 ~347 cfs
- Increasing withdrawals lead to lower flows

- John: If RBC wants to see daily flow the planning committee can provide that
- Jason believes the resource is fully allocated – knowing how low the flow gets during the drought is important
- Jason thinks there should be a surface water condition – we do not need the river to be 0 flow to say the river is constrained
- Jason comment: If you want a resilient plan you act before you get to 0 flow. Explained why mean and median matter in surficial discussion – how you define them can affect what is typical flow. Median might be the more conservative value to use to ensure safe yield
- What flow should determine if what shortage exists, ideally not zero
- Propose to the group today that "what if this or that happens"
- Jason would like to have other surface withdrawers weigh in and have equal voices subcommittee with more voices at the table to talk about the goal of how to minimize impacts of drought
    - Questions: I thought safe yield would be higher than 1940
        - Yes if there a legally enforceable minimum flow
    - If 20 + 80 is 100 to show the mean of 2,400
    - Alex Butler: safe yield is independent of normal in stream flow it's that 80% all the way to zero
- John: subcommittees are voluntary – up to chair and vice chair to have final say on subcommittee

    - Jason- propose group subcommittee that would discuss at least among surface withdrawers a surface condition and for the committee to be more resilient with contingencies in place and talk about types of things withdrawers can do have a resilient plan – would like to be assured that there is at least some flow even during drought
        - Eric, David, Jason, Michael and Hugo would be on the withdrawers committee
        - David Bishop- point of confusion is let's try not to cherry pick types of law we don't want to follow but what is realistic do we pick things we don't like and come up with a plan or come up with recommended strategies in existing laws and figure out what is reasonable – feel like we are creating a hybrid approach- we have existing laws that we need to come up with solutions now
        - Jason: there are legislative things we can do but those are not management strategies – but us let's start talking about management strategies and these should become before legislative recommendations
        - David: let's make sure we don't have confusion in the process - confused where we are headed
    - John: before we address low flows- let's get consensus of what RBC wants to address, a subcommittee would be a great way to do this, but we want to hear more about what others have concerns with. Any other areas in basin that we

want to keep a certain amount of water in the river? Have not heard concern in other parts of the basin - is this heard in Ag community?
    - Hank: if future SW withdrawal permits are based on 20/30/40 mean annual flow have we looked at those conditions- RBC would like to look at that so that we could say anytime we go below that and we want to put a new factory in area can we even put them there today on what we use right now. For future economic development consideration. Look at 20/30/40.
- John: RBC would like to see certain location model what 20/30/40 is and do we drop below – we will want to pick strategic points to look at-CDM Smith DNR and DHEC can pick a few nodes
- Hank: what can we do about low flows so we are likely going to be talking about low flow and we get the water users together to talk about drought, what can we do or offer up to help
- Jason: just represent drinking water- would be nice if we could have a good discussion around management strategies – would like to have a diverse subcommittee, power, drinking water, ag etc. In regard to not having all the right people at the table Jason would like to take his proposal off the table feels the time is not right. We want it to be meaningful so that this is not a plan that just sits on the shelf. Would like to wait to get there
- John: where are there problems in the basin, where would you put a condition
- Jason: he would like all the right people at the table before he proposes a condition would like the group input for more impactful and meaningful strategies
- Scott: Jason's concern is that we need to have all the surface water withdrawers at the table to start having these discussions around management strategies
- Landrum: agree that we need subcommittee to have these discussion, everyone has seen what management strategies we can bring to the table (AG) do use water but we also show how we use it well – I do not know if we would get the right balance of all withdrawers
- Jason: would like to share what has been done so we can get the details in plan to inspire others to look at their resiliency and contingency – that way we are not waiting on drought committee or governor to tell us what to do
- John: we had some hands for people for subcommittee Jason, Michael, David, Hugo, Eric, Jeremy, Laura, (Landrum?) take a look at some of the modeling simulations and have a discussion around it
- **Send Hank and Landrum an email in the next few days if you want to volunteer yourself for this subcommittee (water withdrawals)**
- Subcommittee Meetings in-person or virtual? Hank said if you volunteered add in the email if you would like in person or virtual
- Also let us know if a meeting like this is too long
- Suggestion is a working lunch save an extra half hour

9. Upcoming RBC Schedule (John Boyer)
    1. Next meeting October 20
    2. GW scenarios and more output

3. Surface water follow up and possible subcommittee meeting
4. Table management strategies for later
5. Request for DHEC to come back to talk about GW management areas

10. Meeting Conclusion (Hank Stallworth, RBC Chair)

Meeting concluded at 2:00 pm

Minutes: Kaleigh Sims and Tom Walker

Approved: November 17, 2021

RBC Meeting Online Zoom Chat:

09:01:20 From Thomas Walker to Everyone:

we will get started in about 5 minutes. waiting for a few more to arrive

09:01:34 From John to Thomas Walker(Direct Message):

ok thanks

09:09:37 From Thomas Walker to Everyone:

I'll be helping with the virtual breakout session when the time comes

09:09:57 From John to Thomas Walker(Direct Message):

ok thanks

09:10:54 From Thomas Walker to Everyone:

we should be able to allow members to unmute and speak for themselves

09:11:09 From John to Thomas Walker(Direct Message):

ok thanks

09:28:37 From Alex Butler (SCOR) to Everyone:

The declines would need to be very location specific. A 20 ft decline in one area may have more negative impacts than in a different area.

09:29:43 From Fred Palm / Laura Campbell to Everyone:

My audio is not clear so please disregards if it is answered.

If the withdrawals are uncertain how is the desired future condition expressed to manipulate the taking?

09:30:08 From Thomas Walker to Everyone:

people are wearing masks so it is a little muffled. i'll try and get it turned up a bit

09:30:21 From John to Thomas Walker(Direct Message):

ok thanks

09:32:29 From Fred Palm / Laura Campbell to Everyone:

Withdrawal impacts and consequence negatives

09:40:17 From Alex Butler (SCOR) to Everyone:

Unknown.. May be combination of missed water use and unique geology

09:44:15 From Alex Butler (SCOR) to Everyone:

Hampton County

10:02:27 From Alex Butler (SCOR) to Everyone:

Note that the plans are updated every five years so they can be modified a new data becomes available

10:08:11 From Alex Butler (SCOR) to Everyone:

https://scdhec.gov/sites/default/files/media/document/Final_BoardApproved_WCUAGMP.pdf

10:08:44 From John to Everyone:

thanks for the url

10:08:50 From Thomas Walker to Everyone:

thanks alex

10:27:02 From Matthew Petkewich to Everyone:

It is the updated model.

10:40:15 From Alex Butler (SCOR) to Everyone:

There is a modeled surficial. There is very limited collected data

10:46:47 From Alex Butler (SCOR) to Everyone:

Most of the withdrawals from the shallow system are returned by septic systems

10:46:47 From Alta Mae to Everyone:

Thank you

10:50:54 From Alex Butler (SCOR) to Everyone:

Increased recharge do to a wet period in the 1990s caused the increased water levels in Lex-1671

10:52:09 From Matthew Petkewich to Everyone:

Lex-1671 was a drawdown of about 3 feet from pre-development.

10:56:57 From Alex Butler (SCOR) to Everyone:

They are adjusted based on demonstrated need

10:57:52 From Alex Butler (SCOR) to Everyone:

Some areas of the state have areas of the aquifer that are not allowed to have new or increased permits

11:54:46 From Priyanka More to Everyone:

Regarding the difficulty in understanding hydrology or technical aspects in the presentations. RBC members or non members can submit their questions following the presentation to maybe John or the speaker and maybe the speaker can address these questions either via email or address them in the next meeting, if time permits. Just a suggestion.

13:27:53 From Alex Butler (SCOR) to Everyone:

I can help

13:28:56 From Alex Butler (SCOR) to Everyone:

SY is independent of MIF

13:37:00 From Alex Butler (SCOR) to Everyone:

https://scdhec.gov/sites/default/files/media/document/Safe_Yield_Workgroup-Meetings_Summary_Report-2020.pdf

13:46:57 From Alex Butler (SCOR) to Everyone:

Under Current Law in the Edisto Basin. No new Ag registrations can be issued. Technically permits can still be issued but it is likely the required permit conditions would make it very difficult in practice.

13:52:49 From Laura Bagwell to Everyone:

John just took the words outta my keyboard! Let's first agree whether/where/when to establish a surface water condition. Then discuss methods and management strategies to help achieve that goal.

13:58:14 From jowersj to Everyone:

I see no harm in Jason's proposal. Landrum and Allan need to be included even though they do not withdraw surface water.

13:58:56 From Thomas Walker to Everyone:

ok, will mention that thanks JJ

13:59:41 From Laura Bagwell to Everyone:

Laura would like to be included on the withdrawal subcommittee.

13:59:50 From Thomas Walker to Everyone:

ok

14:00:06 From Thomas Walker to Everyone:

thank you

14:00:36 From Thomas Walker to Everyone:

this chat session will all be in the minutes as well

14:05:30 From Thomas Walker to Everyone:

thanks all