Minutes of the Edisto RBC Meeting
Wednesday, October 21, 2020
9:00 a.m. until 12:00 p.m.

Meeting was held virtually via Zoom Meeting Application

RBC Members Present: Mark Aakhus, Laura Bagwell, John Bass, David Bishop, Joel Duke, Johney Haralson, JJ Jowers, Hugo Krispyn, Mike Moseley, Eric Odom, Charles Shugart, Hank Stallworth, Jason Thompson, Jeremy Walther, Landrum Weathers, Kirk Bell, Alta Mae Marvin, Alex Tolbert, & Trey McMillan

RBC Members Absent (Excused): Richard Hall (Amanda Sievers, alternate, present) & Jerry Waters

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

Total Present: 72

1. **Agenda Item: Call Meeting to Order (John Boyer, Facilitator)**

John Boyer called the meeting to order at 9:00 a.m.

John asked members participating together to identify themselves.

John calls a quorum.

John highlights this meeting will be three hours while reviewing meeting objectives.

John reviewed the Agenda and asked for approval or revisions from RBC members. Agenda was approved unanimously.

John asked members to approve or suggest revisions to last meetings minutes and summary. John notes that Alex Pellet request change to minute meetings and to strike “typically there isn’t a computational model for calculating projections.” Minutes were approved unanimously.

John reminds members of meeting decorum and raising hand when wanting to talk.

2. **Agenda Item: Public Comment (John Boyer)**

John invited members of the public to submit comments via Zoom raise hand feature. No comments were submitted.

No comments noted from previous meeting.

3. **Agenda Item: Follow-up on Water Demand Presentation and Q & A (Alex Pellett, DNR)**

John introduced Alex Pellett, hydrologist at DNR, to review water demand projections.

Alex Pellett reviews follow up on water demand presentation and discusses projections following update and feedback including high demand scenario with modifications. He encourages the stakeholder input process and notes that where we are going is largely up to the community and there is the possibility for iterations and there can be flexibility with models depending on requests from stakeholders. He reviews his completed recent task following feedback from the last RBC meeting including routine updates, recommended adjustments, and review of other potential enhancements. He reviews changes to the high demand scenario noting additive vs. multiplicative changes while noting that high impact factor is not used for the groundwater model. He reviews the possibility of differing models depending on how stakeholders want to review the model specific to data requests but notes that statistically there is no extreme significance. He reports updated thermo-electric electricity demand projections to include baseline and high demand scenario. He presents results of using updated values – high demand scenario is higher than the old scenario as a result of increasing the annual totals. He reviews Edisto public supply results and notes that figures may change with 2020 census. He notes that Edisto manufacturing results presented 2020 US annual outlook does not include the effects of the pandemic. High impact scenario presents a difference, he notes the hypothesis that manufacturing data is much more unexplained month to month. Most of the variability in other water use sectors is due to seasonality but this is not the case for manufacturing because there is not much variation for day to day business. He reports Edisto agriculture results and notes a lot more unexplained variability for the model, like manufacturing, results in high spread for business as usual.

Alex P. request questions at this time.

Landrum Weathers asks, Alex we may need to think about other areas of agriculture such as aquaculture as a use under the agriculture umbrella. Simply using irrigation as Ag's only use may be misleading. I believe some of the newer Ag registrations are for aquaculture.

Alex P. agrees and will follow up with aquaculture and new users. Alex notes possibilities for future work and will include recommendations in review of process of refining the model and encourages stakeholder input. He notes that after agreeing on general scenario we can look at specific intakes.

John suggests moving to the breakout groups and to discuss demand and return to highlight reports from groups.

4. **Agenda Item: Edisto RBC Member Water Demand Breakout Discussions and Report Outs (John Boyer & Planning Team)**

Break out groups were utilized for the considerations of the water demand framework and reviews of DNR developed projections. RBC members were tasked with discussing projection

concerns with the understanding that the RBC may request revisions based on new information. RBC must document proposed revisions for DNR consideration.

Breakout consisted of three formal groups and an informal group of public attendees. Group 1 – local government and water utilities – tasked with public and domestic supply projections; Group 2 Agriculture, forestry, irrigation – tasked with agriculture projections; Group 3 - Electric industry and Environmental – tasked with thermoelectric and manufacturing. Public attendees were to discuss all other concerns.

Breakout groups were to review five items – understanding of projection methodology, comfort with projections for business as usual scenario, comfort with projections for high demand scenario, need for adjustments to projections, and need for more information or questions.

John Boyer reconvenes RBC from breakout groups to review and present discussions.

John Boyer presents question and comment feedback from Group 1. John notes that not too many questions were raised. The group is on board with modeling assumptions and water use report projections match their own concepts of future use. The major discussion point is high demand. The group had a comment regarding demand use was based on historical use, but this approach needs to account for the fact that Charleston Water System can pull their full supply from both or either the Edisto or Santee rivers. Members would like that pointed out and that high demand projection is not projected low but for full demand of the Edisto. Jason Thompson will include a letter explaining this in more detail.

John Boyer notes that Jason's letter was included in the planning team meeting and will include letter given from Jason (Appendix 1).

Group 2, of Agriculture and irrigation felt that high demand scenario may be over-estimating agricultural demands for a couple of reasons. First it is unrealistic that agriculture will grow with high demand projections and there is a need for more conservative projections with it being unlikely that all farmable ground will be used. Furthermore, there are currently trends for more solar energy which takes over lands and other land use. Secondly, there have been a lot of advances and study to improvements to nozzles and there is an argument for projecting a reduction in water use if technology improves.

Landrum Weathers notes, Rob Devlin has said they are seeing a decrease in agricultural water use. Alex is requested to expand on model. Previously it was multiplicative and seems reasonable to take a step back on projection.

Alex Butler responds that there is an increase in reported water use and an increase in compliance is likely what is causing increase. Individual water use does appear to be going down and water use per well is reducing but new wells are also going in.

Alex Pellett will review if efficiency is a blind spot and we can work on discussion of land that is not used for irrigation.

Hugo Krispyn presents Group 3. Hugo notes that the group is onboard with DNR projections with understanding that they can be adjusted. The group feels that what is there is a good faith attempt to make use of available data. He notes that they did have a side discussion about the methodology including that demand projections would be better with assessment of availability projections and a way of being able to assess what availability looks like with projections, and

the relation of groundwater and surface water. He notes that Dominion is moving to surface water when they had been using groundwater. Groundwater capacity use compliance and the need to return to surface water at the Cope plant offers the argument of how ground and surface are joined and not put together in the “same bucket.”

Larger group with Alex Butler as mediator presents discussion. Alex B. notes the overarching theme that projections are built on trust that sectors are truthful in demand reports. Additionally, there was concern that users under 3 million gallons/month and exempted users (i.e. duck ponds and reporting requirements) are a blind spot in models. Questions include if agriculture and the federal farm policies are used as a driver or is it only drought? Also, is peaking factor based on drought projections? Averages on time scale monthly? Annual time scale? Emerging water demands like aquaculture are they being taken in to account?

Alex P. responds that users under 3 million gallons/month and exempted users are not included because of lack of data. Alex P. will look at possible work arounds for ways to quantify water use, but it appears small. Permitted users use most of the water.

John B. notes with modeling sensitivity analysis maybe we can do estimates to add small percentages to see if this is something that we need to look in to.

Alex P. responds that modeling difficulties in water recirculation and ponds are already “baked in” to SWAM model.

5. **Agenda Item: Review of Edisto River Basin Climatology and Q & A (Hope Mizzell & Elliot Wickham, DNR)**

Hope Mizzell opens the presentation and presents the DNR State Climatology Office job duties and reviews employees and mission of climatology office. Hope introduces Elliot Wickham as a new hire who specializes in climatology and state issues.

Elliot Wickham presents climatology reports of the state of South Carolina. He presents graphs noting average normal temperature for South Carolina based on a 30-year period. He presents historical records and notes average annual temp has variations and reviews descriptive presentation of graph temperatures. He reviews monthly average temperature noting more range in temp in winter months. He presents extreme values of temperature that occur in the state for max and min levels in various places in the state to highlight state range of temperature. He reviews annual precipitation and describes state map of precipitation. He also reviews precipitation annual trends. He reviews monthly average precipitation graph and specifically reviews Bamberg Monthly precipitation graph to highlight basin precipitation.

Hope Mizzell presents rainfall for the state of South Carolina and specifically notes times of extreme rainfall. She reports on the October 2015 event and the possibility of 100- and 1000-year probability event occurrence in specific areas of South Carolina. She also presents on October 2016 Hurricane Matthew that also was a significant flooding year event with some places experiencing a 100-year to a 1000-year event. She notes that 2018 Hurricane Florence also had some extreme rainfall events. She reviews 4 day 100-year or high rainfall events in and around the basin and notes times in history over 100 years that there was 1000-, 500-, 200-, 100-, and 50-year events in the basin. She reviews drought and presents the Palmer drought severity index while reviewing drought periods on a bar graph. She reviews localized Palmer drought severity index for Edgefield 3 NNE and Orangeburg 2 to highlight basin area droughts.

Next she discusses tornado events and highlights that South Carolina is within the top 25 for tornados in the US. She reviews the map of South Carolina tornados with Orangeburg County having the most tornados and South Carolina seeing increased tornado events being identified since the mid 1990's due to more sensitive detection technology and use of social media leading to better sensitivity of weaker tornadoes. She reviews hurricane climatology including descriptive statistics of hurricanes in South Carolina. She reviews descriptive graphs of monthly breakdown of hurricane events in South Carolina. Finally, she reviews South Carolina tropical cyclone track density by county (when eye of hurricane was over county).

No questions or comments are asked at this time

John Boyer calls for a scheduled 15-minute break.

John resumes the meeting and reminds RBC of drought response recommendation expectations and section for drought response for RBC document.

6. **Agenda Item: Review of the SC Drought Response Act and Q & A (Hope Mizzell, DNR)**

Hope Mizzell presents drought response and planning in South Carolina. She notes that updated presentation slides will be sent to Dr. Thomas Walker and can be requested. She reviews the drought monitoring and response efforts in South Carolina with South Carolina drought response program as mandated. She reviews the goal of carefully and closely monitoring, conserving, and managing the state's water resources in the best interest of all SC managed by the Drought Response Committee and DNR-State Climatology Office. She discusses state and local members' role in drought planning while highlighting "red flags" of over 40% vacancies of local membership. She reviews how the state monitors indicators and indices to monitor drought. She notes four levels of drought including incipient, moderate, severe, and extreme while also noting the actions implemented for all levels. She reviews components of the South Carolina drought response program while highlighting potential "red flags" in the regulations where parties have the right to appeal action within 5 days and operates as an immediate stay of notice and a major choke point. She notes that to go around this requires the use of the Governor's mandatory restriction authority. She reviews essential and non-essential water use during drought. She reviews severe and extreme drought mandatory curtailment as designated in the act. She reviews another "red flag" of water system implementation of drought response ordinances and that the Drought Response plan has not been updated since 2000 and excludes private water from the requirement of drought planning. Since the committee asked for a summary, drought related red flags are: the first being the drought committee structure and appointment process that leads to numerous local member vacancies, the second being the appeal process and the immediate stay of the declaration, and the third being private water systems are excluded from the requirement to have a drought ordinance or plan.

While the act has not required parties to update their drought plans, some water users such as Mount Pleasant Waterworks have updated their drought management and response plan and used Mount Pleasant Waterworks as an example of drought management planning activity. She discusses a recent drought tabletop exercise to identify strengths and break points and reviewed areas that need updating and addressing for drought response planning. She reviews confusion of drought categorization of the US drought monitor categories and the state declaration. She concludes her presentations and request questions.

Hugo Krispyn comments on map of DMAs and identifies that Edisto watershed is in three DMAs and watershed boundaries. He asks, do you have anything to say about what these various maps are said to do, what's up with the mapping is my question?

Hope responds that revision of map is based on climate divisions and attempts to revise it for river basin. In some basins it works but for the Edisto not so much that would be something we can address as we re-visit the drought response act.

Hugo continues, what can we to do make recommendations for the committee?

Hope notes, as far as realigning it would be beneficial, but we have to take in to account drought membership needs.
Scott Harder re-iterates role of RBC and notes RBC is welcome to evaluate inconsistencies and discuss and make recommendations if they have any.

John Boyer notes that other states have identified drought vulnerabilities based on economic impact by sector with assignment of risk scores. Is there a discussion about the impact of drought vulnerabilities?

Elliott Wickham notes that this is a difficulty not just with South Carolina but with many other states and identifying all the issues will take time to figure out.

Landrum Weathers comments that he would like to echo what Hugo and Scott have said that there needs to be consistencies with maps and requests Hope to review her "red flags."

Hope notes I can also encourage you to review our executive summary for our drought tabletop exercises.

Michael Mosley comments, I thought the PPAC had not attempted to tackle drought scenarios for the RBC. If this is a problem, then why not have this built in?

John Boyer responds that models will include drought conditions on the surface water side.

Scott would like to re-iterate what John said about the surface water. As far as groundwater we will be looking to the future of historical recharge rates. For the groundwater model we will be looking at historical and long-term rates because recharge rates take longer. We will review this more in December with a presentation of groundwater models.

Jason Thompson comments that follow up concerns regarding delineating drought management areas and he would vote to favor of one or the other because of the differences and complexities of mapping.

7. **Agenda Item: City of Orangeburg Watershed Based Plan for the Lower Caw Caw Swamp, North Fork Edisto River (Jason McMaster, Katie Ellis, McCormick Taylor)**

Jason McMaster presents the Lower Caw Caw Swamp Source Water and EPA Nine Element watershed-based plan to the RBC. He is contacted by Orangeburg as a provider to make a plan for watershed. He reviews area of Caw Caw Swamp and existing water quality data in map. He notes SCDHEC proposals for WBP development and how plans are formulated including climate change and an understanding of in-depth knowledge of watershed. He reviews eligibility

for the grant and nine elements of EPA structure. He reviews benefits of watershed-based planning including allowance of funds in grants that are made available.

Katie Ellis presents successful watershed-based plans including the Gills creek watershed management plan: Jackson creek, lower gills creek, and upper gills creek. She reviews the Middle Horse Creek and erosion in Aiken, SC. She reviews the watershed treatment model for current and future land use conditions and other sources. She offers and requests watershed assessment assistance with stakeholder survey to understand how stakeholders engage with the watershed while presenting watershed assessment interactive web map and reviewing potential best management practices identified by focus groups. Finally, she reviews ways that the RBC can cooperate and requests a letter of support for watershed based plan and inclusion in planning and meetings.

John Boyer request a vote for if we should be a supporting and cooperating member and request that all no votes make a comment.

Jason Thompson votes no and comments that this may cause a distraction from water quantity with water quality and also the issue of having limited time commitments away from water planning.

Katie Ellis offers response that she does not anticipate the need for excessive time commitments and also that RBC's water quantity understandings would be helpful.

Alta Mae Marvin votes no and comments that she is reluctant to set a precedent that SCRBCs would be supporting for-profit organizations and expectations for future RBCs. RBCs may get asked to endorse other watershed plans and be expected to give equal opportunity.

Hugo Krispyn notes that FRED has been making attempts to get these watershed plans going and that FRED can be helpful but agrees that he is not sure about the RBC's role to do this and maybe RBC members can offer help on an individual/non-RBC level.

John Boyer notes to Jason McMaster and Katie Ellis that we will get back to you. We are concerned about setting a precedent, but we can potentially offer individual help.

8. **Agenda Item:** Overview of River Basin Planning and Q & A (John Boyer, Danielle Honour & Shayne Wood, CDM Smith)

John Boyer presents an overview of river basin planning in general. He reviews goals of the RBC to develop a plan including four phases and identified that the RBC is in the first phase of planning while reviewing the various phases.

Danielle Honour offers a big picture understanding of water planning as evidenced in Georgia and a review of phases as described by John Boyer. She notes that Georgia has eleven water basins and reviews the need for continued and ongoing support of water planning in Georgia. She discusses utilized steps in developing the Georgia regional water plans. She highlights gaps of demands and locations where there are possible issues and gap analysis.

Shayne Wood reviews management practices with implementation of water plan. He reviews coastal Georgia region plans including short-, mid-, and long-term goals and updates. He highlights the specifics of the Georgia regional water plans implementation including raising

awareness, coordinating partners, addressing funding, grants and need for review. He identifies recent and on-going implementation in coastal Georgia region of seed grants and funding. Finally, he discusses recent and on-going implementation in the coastal Georgia region.

John Boyer concludes presentation and request questions or comments.

Jeffery Allen thanks John, Danielle and Shayne for the presentation. He comments, do you know if the GA RBCs are still made up of Governor appointed members or have they changed up membership?

Danielle notes, yes, it is still made up of members appointed by the Governor's office, but some councils have had new appointments made.

Hugo Krispyn request, can you talk a little bit about how this is funded and the importance of funding.

Shayne responds they do get legislative funding. A majority of funding is derived from constituents and municipalities in the Metro water district. Having funding is important, Georgia does it through legislation.
Hugo comments, we need to recommend funding on a regular basis.

9. Meeting Conclusion (John Boyer)

In closing, John previews the next meeting's objectives.

Meeting officially adjourned at 12:15 p.m.

Minutes by: Vincent Leon Guerrero and Tom Walker

Approved: 11/18/2020

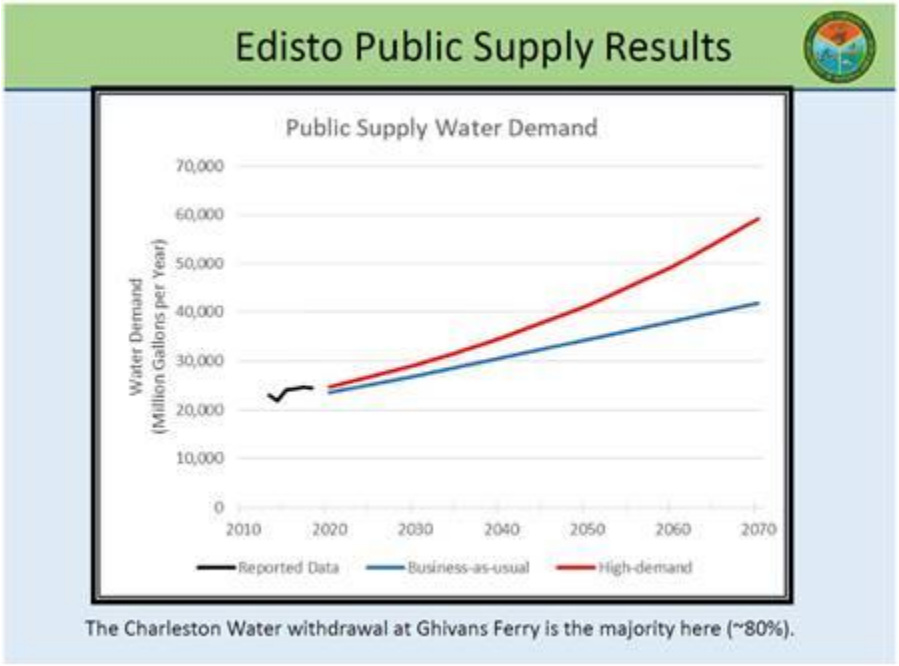
Appendix:

1. Charleston Water System to Edisto RBC RE: CWS Water Demand

RBC Committee 10/01/20,

As the RBC is in the process of digesting all of the water demand projections from all the users and stakeholder groups, we wanted to take this opportunity to explain a little more detail about the operational resiliency that is inherent in the way CWS manages its withdrawals from the Edisto and Santee Basins. These details are already known by SCDNR and SCDHEC, but are crucial to help the RBC committee better understand the demand projections presented, but also help the committee when it considers scenarios and works on the Edisto River Basin Plan.

SCDNR covered many of the details of the water demand projections to the RBC on 9/30/20 including the following graph (slide 58) showing the water demand projections specific to the public water supply. Alex also correctly pointed out that about 80% of the public supply demand is from CWS.



Charleston Water System (CWS) has had its intake on the Edisto at Givhans Ferry since the late 1920's and has utilized this source as a primary and/or secondary source ever since to serve our customers. CWS typically satisfies its total demand (drinking water production demand) from a ratio of raw water from the Edisto and Santee Basins. However, the demand projections shared in slide 58 only reflect the portion CWS withdrew from the Edisto River Source since this presentation is tailored for the Edisto Basin RBC. The demand projections shared do not capture the overall CWS demand (met by both the Edisto and Santee Basin sources) or the fact that we can meet our current drinking water demand from only one source (Edisto or Santee Basin).

This operational flexibility (ability to change the raw water ratio/blend or switch to one source entirely) is very important to the resiliency of our operations which benefits the half a million customers we serve, but also benefits both the Edisto and Santee Basins as we can take into

account any extreme flow circumstances (such as drought) in these basins. We believe it is important the demand projections, SWAM model and basin plans for the Edisto (and Santee Basin) reflect the potential for us to satisfy our total demand from one source (Edisto or Santee Basin) at any given time and for a sustained period of time if circumstances warranted it.

Sincerely,

Jason Thompson
Source Water Manager
Charleston Water System
843-714-3945 Work Cell