

Memorandum

To: Suwannee-Satilla Regional Water Planning Council

From: Shayne Wood, CDM Smith

Date: March 9, 2022

Subject: Suwannee -Satilla Regional Water Planning Council Meeting

This memorandum provides the meeting summary of the Suwannee-Satilla Regional Water Planning Council (Council) Meeting held on March 9, 2022 at Coastal Pines Technical College (Main Campus) in Waycross, Georgia. This meeting also included participation virtually via the MS Teams platform. This memorandum provides a summary of the major items discussed at the Council Meeting. The meeting began at 10:00 AM to 2:00PM and followed the agenda outlined below.

1) Welcome and Introductions

Council Chairman Scott Downing, initiated the meeting, welcomed Council Members and guests, and asked each Council Member (CM) and attendee to introduce themselves. An outline of the agenda items that would be covered during the Council Meeting was then presented. Chairman Downing called for a Motion, which was seconded and a vote from other council members in attendance to approve the previous meeting summary. Chairman Downing then asked Council Members (CM) to review the agenda. A motion was made to approve the agenda, followed by a second and a vote passed to approve the agenda.

2) Updates on Seed Grants (Megan Parker)

Ms. Parker provided a general update on the Seed Grant funding projects, timelines, and things to be looking ahead. It was noted that for the Lake Beatrice project is was a little slow to start but, they are now on a good path forward. Ms. Parke noted that for the Lake Beatrice project the next stage would be to conduct soil borings at the project site to be completed by the U.S. Army Corps of Engineers.

3) Updates from EPD (Cliff Lewis, Georgia EPD)

Mr. Lewis provided a general update from Georgia EPD. He went through the general Planning Process Diagram, highlighted the technical work that has been completed and what technical work is on-going. It was noted that much of the technical work provided to the Councils by EPD has been underway the last two years including updates to the demand forecasts and resources assessments. For the demand forecasts, Mr. Lewis noted that the Plans will incorporate all the latest information on the projected water demands over the 40-year study period through 2060 on Agricultural, Municipal, Industrial and Energy sectors. For the Resource Assessment Category, Mr. Lewis noted that availability of surface water and groundwater to support future water demands and the water bodies that would receive any future wastewater effluent

discharges would be included in the modeling results (Dr. Wei Zeng's and Dr. Booth's presentations would cover this in the latter part of the agenda of today's council meeting). It was noted that during the next council meeting, more technical results will be shared regarding the groundwater availability assessments that will be included in the Plan update later this year. Mr. Lewis closing remarks that included that the council's support team would continue drafting the updates to the sections of the Plan (Forecasting and Resource Assessment Results) that would be reviewed and commented in the next upcoming meeting as well. No questions were brought up by council members in the room nor virtual participants.

4) Review of Regional Water Planning Schedule and Review and Revision Process

Mr. Wood (CDM Smith) provided a general update on the regional planning schedule and review of the visions and goals and discussed the Regional Water Planning Overview/Schedule in support of the 2022 update. Over the next few months, the plan is to have two additional meetings that will work towards having a draft plan in place that has been reviewed and approved by the Council by September 2022. Once the draft plan is approved by the Council, it will go through a 30-day public comment period while also being reviewed by EPD. The goal is to have an adopted Regional Water Plan Update by the end of 2022. Information for the plan update includes the updated resource assessment, water and wastewater demand forecast technical information, and management practices. Mr. Wood elaborated that every 5 years, the goals and vision should be revisited with the council to assure that no additions or adjustments in the vision and goals are needed before the Water Update Plan by the end of the 2022. The group reviewed the vision and goals and the floor was opened on any occurrences or developments that would warrant such changes. Some of the dialogue that was brought up during this portion included as follows:

- A CM noted that the region in south Georgia is experience a new species of weeds that are becoming an issue. It wasn't clear where the species was coming from, but suspecting from animal life or the northeast part of Tifton (and its headwaters). It was noted that this may also cause issues with recreation and also demands to farmers in using chemical to control and remove it.
- A CM noted that runoff of nitrogen in Florida is a large contributor to the aquatic issues they are seeing and that Georgia is trying to avoid these issues from a best management practice standpoint.
- CM noted that a great deal of citrus is making its way to South Georgia and this should be weighted in with respect the water management and future water planning.
- Mr. Lewis (GaEPD) noted that the council should talk to Gary Hawkins regarding soils management and if a future goal would need to be tweaked.
- Chairman Scott acknowledged all the feedback and did note that the council does need more involvement from the public side as it relates to management practices. He cited that the recent coordination and interaction with the Public Works Association provided meaningful feedback on the elements of water planning that this sort of participation should be sought. He did note that when there is excess and plentifulness of rain in the region, water management and planning tends to not be a huge concern, rather it's

during a drought that it tends to get more broad attention from stakeholders and the public.

After feedback and review around the room, Chairman Downing acknowledged and agreed that the vision statement and goals still captures the essence of Suwannee-Satilla Water Planning Council. All remaining council members were in agreement and it was agreed to keep the existing vision and move towards the goals. The Council approved to keep the Visions and Goals at that time, which will be reflected in the updated plan later this year.

5) Surface Water Availability Resource Assessment (Wei Zeng, Georgia EPD)

Ms. Jennifer Welte (GaEPD) provided a general overview of the BEAM model and what it can do for the resource assessment process. She noted that the model provides the ability and flexibility to individual water supply providers or suppliers and performance results. She noted that we would be now watching the video presentation by Dr. Wei Zeng that would show the examples of resource example results and performance measures for the council's feedback. The video was played by Mr. Wood for the online attendees and room participants.

Dr. Zeng's presented, titled "Examples of Surface Water Availability Resource Assessment" was started and the intent was to showcase the modeling results and performance measures of the BEAM model. The presentation was structured as follows:

- Overview of some of the performance metrics that could be considered for use by the council
- Water Supply Challenges Example (Macon Water Authority)
- Wastewater Assimilation Challenges Example
- Performance Metric Examples (Recreation Boating at Macon Gage and Fish Habitats)

Example 1: Dr. Zeng provided an overview the BEAM modeling that was done to evaluate a scenario looking at the Macon Water Authority permit. The model setup includes provisions for the permit withdrawal limits, low flow requirements and the reservoir storage and operations. Dr. Zeng showed an example 9-year period (2010 to 2018) that included some wet years and some dry years and that the overall average of the period was a near drought condition, but not a full drought. This type period can be used as a baseline demand curve to evaluate average or baseline water supply needs. The modeling results for today's scenario showed the Town Creek Reservoir (exceedance curve) showed that at all times remaining at full pool which indicates adequate supply and no/low challenges. Dr. Zeng noted that the team has not completed the future water supply modeling for this example and it will be completed to show the council members how it compares against the baseline results.

Example 2: Dr. Zeng provided a second example (City of Hazlehurst's Bully Creek WPCP) for as it relates to the wastewater assimilation challenge for NPDES Permits. He noted that effluent limitations serve as a primary mechanism in NPDES Permits for controlling discharges of pollutants to receiving waters and that permit writers must account for technology-based effluent limits and water-quality based limits. Dr. Zeng noted that 7Q10 (7-day average flow

with a 10-year return period) is the representative flow threshold for a receiving body and used in the model. For Bully Creek WPCP, the model incorporates the permitted month discharge flow of 1.5 mgd and the 7Q10 flow at the discharge location is 1,219 cfs. Dr. Zeng showed the simulation exceedance graph on this example and noted that the exceedance would happen 5% of the time at the location of the facility.

Example 3: Dr. Zeng also discussed the additional performance measures that were originally requested, which related to the general impacts to recreation. He displayed the general performance measure for boating in Macon, Georgia. He slowed the general water elevation at the Macon gate across the number of days with river stage above 6 feet. He summarized how the recreational cycle performance curve can be used with the future projection curve to make conclusions about water level and how it can affect recreation.

Example 4: Dr. Zeng also discussed the general habitat assessments and habitat availability for certain types of fish (species include Spottail Shiner, Bluehead Chub and Largemouth bass) with respect to the level of flow in the Ocmulgee River. He demonstrated the performance metric curve for shallow/fast habitat frequency and suitability for different species of fish (statistical measure) that would establish how habitats are affected for fish. The future water-supply scenario analogously will be plotted over the Shallow/Fast habitat curve to make prediction about how flow within the Ocmulgee River affects fish habitats. During this part of the presentation, a note was made by one of the on-line participants (Merrill Varn), stating that “St. Mary’s Riverkeeper and St. Mary’s River Management Committee can supply recreational use information.”

Dr. Zeng closed his presentation highlighted the four performance measures and requested whether the councilmembers would like to see any additional measures or things that can think of to characterize water resources assessments. Dr. Zeng provided his email Wei.Zeng@dnr.ga.gov and noted that he can be reached on it should any additional questions come up. Mr. Wood and Chairman opened the floor for any questions and none were noted at the time.

6) Water Quality Resource Assessment (Dr. Booth, Georgia EPD)

The video by Dr. Booth was played by Mr. Wood for the online attendees and room participants. The copy of the presentation is located as **Attachment A**. The presentation specifically discussed the modeling, the water quality criterion being applied, including recreation definitions (for example, direct and indirect contact). The 2019 Triennial Review (Ga EPD identified changes) were reviewed and explaining all these definitions. Other criteria reviewed include Bacteria Criteria (E. Coli and Enterococci) for Drinking Water and Fishing Designated Uses. Non-Human sources for bacteria were removed as a criteria. Dr Booth also reviewed the designate use changes across the state of Georgia – EPD prioritized 804 river miles for changes in designated uses. Dr. Booth also noted that the EPD also recommended 14 waterbody segments (407 miles) based on evaluation of nomination packages received that met all the requirements for designated use change to recreation.

Dr. Booth also reviewed the triennial review timelines. She noted that March 22, 2022 is an upcoming kick-off hearing meeting. The 2022 Triennial Review will consist of the following items that will be considered:

- 2015 EPA Human Health Criteria
- 2016 EPA Aquatic Life Criteria for Selenium
- 2018 EPA Aquatic Life Criteria for Aluminum
- 2019 Human Health Recreational Criteria for Swimming Advisories for Microcystins and Cylindrospermopsin

Dr. Booth reviewed EPD's Harmful Algal Bloom Swimming Advisories and discussed the informational flyers that were drafted for the public for awareness. Dr. Booth also reviewed the assessment of State Waters with some summary statistics. Specifically, it was noted that approximately 2/3 of the water in Georgia are classified "impaired" for different parameters under the 2022 305(b)/303(d) Listed Segments (included in the Plan in Section 3). Specifically, approximately 10,092 miles of water bodies are impaired, 1,492 miles is currently pending assessment and 5,686 are not impaired.

Dr. Booth reviewed the purpose of the Surface Water Quality Resource Assessment process that her team leads – this includes developing Assimilative Capacity Assessments and the parameters of concern and the water quality standards. Dr. Booth also reviewed the different WQ Models that are used to evaluate the WQ Resource assessments, including DOSAG, EFDC/WASP models. Dr. Booth noted that the models are linked together for the entire watershed to provide a cumulative view for evaluating resource assessments. Dr. Booth also reviewed how the models and resource assessments are developed for different water bodies, including lakes, estuaries and rivers.

Dr. Booth also reviewed PFAS monitoring of Drinking Water Source. There are three phases to this process. These include:

Phase 1: Focus on the drinking water sources in the Coosa and Tennessee River Basins.

Phase 2: Will focus on the all-surface water systems serving a population of 100,000 or greater and all groundwater system in and around military bases.

Phase 3: If PFAS is detected in any groundwater systems around military bases, Phase 3 will focus on sampling all neighboring small groundwater systems.

That concluded Dr. Booth's video presentation. The concluding slide noted her contact information, should any additional comments or questions need to be sent in, she can be reached at Elizabeth.booth@dnr.ga.gov. Mr. Wood and Chairman opened the floor for questions from council members and participants.

Question: A CM asked how they set E.Coli? EPA did not approve EPD's original proposed criteria. So instead, EPD proposed use of 2.1 multiplier which was based on a study that showed that individuals engaging in primary contact recreation activities ingested 2.1 times more water

than individuals engaging in secondary contact recreation activities. EPD used these calculations to derive secondary contact recreation criteria for E. coli by multiplying the primary contact recreation criteria by 2.1.

Question: Flesh eating bacteria. What are doing about Flesh Eating bacteria?

Response: Dr. Booth not that unfortunately bacteria naturally occur everywhere and that some people are more sensitive than others.

Question: How is 7Q10 determined?

Response: It's typically calculated by analyzing historical data from USGS gages. It was also noted that USGS has a tool called StreamStats that can help with data analysis and can also help estimate 7Q10 for ungagged streams.

Dr. Booth went through slides on the water quality resource assessment modeling results. She started with the DOSAG models for Dissolved Oxygen (See Figure 3-6 and 5-3 in the plan). Also, note Table 5-6 in the plan. Dr. Booth reviewed the legend for the assimilative capacity "heat maps": "Blue" are Very Good, "Green" is Good, Moderate is "Yellow", "Orange" is limited and "Red" is None or Exceeded.

Upper Suwannee Basin DO results were reviewed. Some smaller facilities were added to the model (like schools, prisons, nursing homes, etc.). They have also added some additional tributaries. This is the 1st time they've modeled some of these sections. Dr. Booth then reviewed the Western Suwannee Basin. Lower portion is showing improvement. The Eastern Suwannee – some improvement in the lower reach. Then Satilla Basin – added some tributaries. Satilla looks a more towards orange. St. Mary's is similar as last round. Smaller facilities are going to be included with tighter standards too.

Question: DO in St. Mary's is Naturally low? Is there ever a time that that stream would not be red? You can be good, not very good. They allow 10% drop in DO. If you drop it .44 mg/L you are orange. The models tell us more now that they are linked.

Question: A CM asked - Who's improving low DO? Mixing, then it starts dropping again. Then you have freshwater coming down the river. About 15-miles inland. When the freshwater and the still water is where the DO gets the lowest.

Question: For example, we've had requests from growers in California – they want to know where options are available. So by looking at these "heat maps" would I tell them St. Mary's is out? Not necessarily, you could get permitted there, it just depends. Clean Water Act says you can't have streams that don't meet Water Quality standards. As permits come up for renewal, tighter limits are coming to some of the facilities. TN and TP limits from Florida are going to have to get incorporated into resource assessments.

CM: Moderate on top of good and then bad – how do you sort through this overlap? At some point we'll be use one model that gives us the results for all the parameters of concern. For now, we are using separate models. We have Watershed Models that are getting updated – with land use changes over time. This is important for urban areas. Those land use models will feed into a

hydrodynamic models and EFDC models for lakes and estuaries. Watersheds were not updated this round. Review from previous round of results. Intensity of storms is changing – bigger storms in shorter periods of time. The overall total rainfall looks similar as past history.

Question: Dr. Booth – are there other times in the past? This past summer seemed more like the 70s. Several farmers only irrigated 1 day a year in Ben Hill County. We are going back to some historical weather patterns. It does seem like that. Weather patterns have definitely changed. EPD did not monitor Ch(a) until starting in 1996.

Question: What was the source of ag land use for Florida side in St. Mary's Watershed? 2017 FDACS data?

Response: Ms. Welte responded in that she looked at the Georgia Land Use Trends (GLUT) legend descriptions. Looks like the "crop" vs. "Irrigated crop" coverage descriptions are no longer being used, so I'm unsure how they were determined and the distinction was likely not critical to the land use/runoff assumptions made in the water quality modeling. The GLUT characterization has not been updated to Class 81, Row Crops and Pastures (Row crops, orchards, vineyards, groves, horticultural business. Pasture and non-tilled greases)

7) Agricultural Water Demands (Mark Masters, GA Water Planning & Policy Center)

Mark Masters provided a general overview of the Agricultural Water Demand Forecast with his presentation for the group. He explained that the forecast methods are based on acreage (updated 2020 wetted acreage data used), crop projections through 2060 (modeled based on remote sensing and USDA projections and other models), crop water needs (wet, normal and dry years and animal agricultural/nursery. One fundamental change in the methodology is that the previous methodology to estimate surface water use was revised to remove the "70% assumption." In previous agricultural forecasts, it was assumed that farmers irrigating with surface water sources were using 70% less than compared to when irrigating with ground water sources. Based on information from the metering program, surface water use is much more closely aligned with groundwater; marginal surface water acreage is no longer being irrigated or it has been converted to a groundwater source. In the current forecast, groundwater and surface water are weighted the same. A series of key graphics were presented by Mr. Masters that showed various agricultural demands throughout the state. As an example, Animal Agriculture amounted to 43.8 mgd (statewide) and 4.1 mgd for 2020 in the Suwannee-Satilla region. Similarly, a figure was shown with the daily water uses by horticultural nurseries across the state, which totaled to 41.76 mgd (statewide) and 1.8 mgd for 2020 in the Suwannee-Satilla region. Mr. Master also reviewed the total irrigated acres of 17 counties in the Suwannee-Satilla Water Planning Region between 2015 and 2020 (all showing increase) and review of the different type of irrigation systems being implemented (center pivot, drip, solid set, solid set/drip and traveler). Additionally, he provided a general overview of the baseline crop mix by RWPC and how crops are assigned water use values specific to that crop. Mr. Masters completed his presentation by providing the Ag Demand curves (75th percentiles) for the different regions for 2011, 2015, 2020 demands as well as the 2060 forecasts. Following the presentation, the floor was open for questions.

Question: Chairman Downing asked about annualized AG pumping for State of Georgia. It was noted that Suwannee-Satilla was 241 MGD. Scott noted that this value was beginning to increase over time.

Answer: Mr. Masters noted that the total statewide ag use in 2020 baseline is 1,498 MGD, which includes both groundwater and surface water.

8) Public Comments

Merrill Varn) from the St. Mary's River Management Committee asked if the Suwannee-Satilla Council had received their letter to the council stating their position to not consider the St. Mary's River as a future water supply source, given how small that tributary is. Chairman Downing noted yes that their letter and concerns had been shared with the council. No other comments were received locally or over the phone and the public comment period concluded.

9) Next Steps

Mr. Wood noted that groundwater resource assessments would be ready by the next council meeting, which is tentatively going to be scheduled either May or June 2022. Management practices would also be re-visited at the next meeting as well. He noted that the major heavy lifting of the plan would be occurring in the interim portion of this year, with a draft plan due in September 2022 and the final plan by the end of the calendar year. Mr. Wood noted that the general emails with links on the updated word and PDF versions of the plans will be provided to councilmembers for their review comments (in tracked edits). Mr. Lewis noted that the ARPA awards and documents will also be made available to councilmembers, so everyone can see where the awards to water infrastructure projects in the State went.

10) Meeting Attendance

Suwannee- Satilla Regional Water Planning Council members in attendance:

- Scott Downing, Carroll H. Coarsey, Rusty McCall, and Brittney Hull

Georgia EPD Representative in attendance:

- Cliff Lewis, Jennifer Welte, Wei Zeng, Elizabeth Booth

Regional Water Planning Council contractors in attendance:

- Shayne Wood, Yanni Polematidis (CDM Smith)

Public/Agency attendees:

- Megan Parker (Southern GA Regional Commission)
- Sean King
- Merrill Varn (Guest)
- Bert Earley (GFC)
- Emily Ducker (SRWMD)
- John Joiner (USGS)
- John Milam (PCA)

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- Jim Hague (Florida Wildlife Fisheries)
- James, H. Brent (Georgia Power)
- Mark Masters (Albany State University – Georgia Water Planning & Policy Center)