

## Memorandum

To: Georgia Regional Water Planning Councils – Coastal Georgia

From: CDM Smith

Date: November 15, 2022

Subject: Coastal Georgia Regional Water Planning Council Meeting Summary

This memorandum provides a summary of the items presented during the November 15, 2022, Coastal Georgia Regional Water Planning Council Meeting, held at the Richmond Hill City Center in Richmond Hill, GA with a Microsoft Teams call-in option. The Council Meeting was held from 10:00 AM to 2:00 PM.

### 1) Welcome and Introductions

CDM Smith, the Planning Contractor (PC), and Benjy Thompson the Council Chairman, initiated the meeting, welcoming Council Members and guests.

Council Members (CM) reviewed the draft meeting minutes from the July 12, 2022 Council Meeting. Chairman Thompson called for a Motion, which was seconded and a vote from other council members in attendance to approve the previous meeting summary. Chairman Thompson then asked Council Members 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) Coastal Georgia Region – Vision and Goals (Shayne Wood, CDM Smith)

Mr. Wood reviewed Coastal Georgia's vision and goals and noted that suggested edits from the workgroup were shown in red.

- A CM asked if any other regions adopted climate changed related goals. Mr. Wood was not aware of any.
- A CM asked if climate change could be referred to as sea level rise instead. The Council decided to not limit climate change to sea level rise – instead, the following draft language was offered for consideration, *"Identify opportunities to prepare for and respond to climate variability and extremes as it relates to water resources and providing resiliency"*.

The Council approved the revisions to the vision and goals.

### 3) Updates on Technical Work Supporting the 2021-2022 Regional Water Plan Update Cycle – Review and Discussion of Water Demand Forecasts (Shayne Wood, CDM Smith)

Mr. Wood reviewed that in 2011 (original plan) a uniform gallons per capita per day (gpcd) of 138 was used for all counties in the coastal region. He explained that in 2017, an adjustment factor was applied for each county, resulting in a range of 132-140 gpcd. A CM asked the PC to review Effingham and Long Counties, as they are outliers. A CM also asked to include Water Utility Management's (WUM) data. These data included outliers too, and they were investigated. A revised table of gpcds by county were presented. Average values without the WUM data and average values including the WUM data were included.

- A CM noted that Camden's 213 gpcd appears low. The PC explained this value is from the WUM average data for Camden County which represented a portion of the county population, which was then weighted in with average gpcd.
- A CM asked what the implications of these numbers are and the most advantageous value from a policy standpoint. The PC explained that the numbers are used to forecast the volume of water each county will need by each of the planning year milestones. The gpcd numbers would be expected to slightly decrease over time as active and passive water conservation management practices are continued for implementation.
- A CM noted that 70 gpcd for the flushing of a line does not seem accurate.

Ms. Welte commented on regional planning and how to determine a reasonable gpcd number for planning versus how permitting, for a local utility, is more specific to a particular service area of a utility seeking a permit. She explained that if we project with a planning number, this will be used in concert with the resource assessments and characterizing if there are any water resource challenges that may need to be addressed. Mr. Wood added that permitting is based on actual need for each particular utility and service territory, whereas for planning purposes the RWP estimates/forecasts are broader, county by county aggregates developed for the region to support regional planning. Chairman Thompson emphasized that permitting will be informed based on the Planning Council's recommendations for gpcd estimates.

- Chairman Thompson asked the Council to decide on an approach today. The Council adopted 113.3 gpcd as the straight region-wide average including the adjusted WUM data.
- Mr. Wood suggested that the council may want to consider encouraging a seed grant applicant to take a deeper dive into the data, which could help future forecasts/estimates and RWP updates.
- A CM noted that 260 gpcd is the average use in a home with 2.2 people. This is in line with the decided 113 gpcd x 2.2.
- Chairman Thompson asked if there are counties in other regions with widespread gpcd. The PC confirmed other regions have widespread gpcd values across counties.
- A CM asked what the 113.3 means and where the Council goes from here. The PC explained that the Council will use that number versus population to determine the overall expected demand for municipal supply.

- Georgia's Environmental Protection Division (GA EPD) added that they evaluate the County's current use and then these factors are applied and projected out over each five year planning horizon as we look to the 40 year planning horizon. The 113.3 value is used to project water usage for the current 5-year planning horizon.
- The PC added that the previous value was 138 for reference. Over the last 10 years, the average has decreased from 138 to 113 which likely reflects continued improvements through active and passive conservation.

Mr. Wood noted that the technical team will update the Regional Water Plan accordingly in tracked changes and send to the CMs.

#### **4) Review Results of Surface Water Resource Assessments (Dr. Wei Zeng, GA EPD)**

Dr. Zeng reviewed the Surface Water Resource Assessments and explained that the model was revised to provide better resolution. He explained that the model evaluates water supply challenges and wastewater assimilation challenges for baseline and future scenarios. Dr. Zeng noted that GA EPD can evaluate additional performance measures, such as recreational interest, if any councils request this.

Dr. Zeng then reviewed the Coastal region and model domain. He explained the hatched area is downstream of nodes in this model. Dr. Zeng reviewed the 5 spatial resolutions for the BEAM Node types and the following model settings:

- The model includes a lengthy period of record with a variety of hydrologic conditions (1939-2013)
- All facilities can include their permit conditions in the model
- For water supply reservoirs, their configuration and operation are included in the model

Dr. Zeng also reviewed municipal and industrial facilities in the model. He explained that Savannah's industrial and domestic water system is the only water supply provided with a surface withdrawal permit. It does not have an existing water supply challenge, but it does have one pending application for a permit modification. He added that there are no discharge facilities with wastewater assimilation challenges.

Dr. Zeng explained wastewater assimilation challenges. He noted that technology or water quality standards are used to determine effluent limitations. 7Q10 flow is used as the low flow threshold for determining wastewater assimilation for the water quality standards approach. A wastewater assimilation challenge example was reviewed.

- A CM asked why the City of Port Wentworth was not included in the municipal discharges and why there were only five facilities listed. GA EPD explained that the facilities must discharge to a freshwater system and there is a minimum size that has to be modeled. Savannah facilities that discharge into the harbor (brackish water) will not be on here. If a

facility is located below lowest node on model geographically, it will not be included either.

## 5) Review Results of Water Quality Resource Assessment (Dr. Elizabeth Booth, GA EPD)

Dr. Booth provided an overview of her role at EPD. She explained that she sets water quality standards for the State of Georgia. There are staff in Tifton, staff in Brunswick, etc. who assess water bodies and their ability to meet water quality standards. If water bodies do not meet the standards, EPD has to evaluate total maximum daily loads (TMDLs) and permit limits for wastewater treatment plants. EPD is reviewing flows set in the 1970s. Dr. Booth then reviewed the following items:

- 2019 Triennial Review:
  - The United States Environmental Protection Agency (EPA) recommended EPD adopt EPA's herbicide and pesticide standards (acrolein and aquatic life criteria and carbaryl and aquatic life criteria).
  - Dr. Booth reviewed the following EPD changes that have been adopted by EPA:
    - *Replaced "use classifications" with "designated uses"*
    - *Primary and secondary recreation definitions were added*
    - *Added water effect ratio for metals criteria*
    - *Revised the bacteria indicator for Drinking Water and Fishing designated use waters from fecal coliform to E. Coli (freshwater) and enterococci (tidal water)*
  - Dr. Booth added that 14 streams' designated use was changed to recreation. She then reviewed bacteria for drinking water and fishing designated uses. She noted that non-human source bacteria criteria were removed as well.
  - *A CM commented that when you have a large wastewater system, there is a lot of wildlife at the effluent.*
    - Dr. Booth agreed and added that bacteria degrade the organic matter, so the wastewater facility probably has to chlorinate. The question is where monitoring occurs and where chlorination occurs. Facilities that chlorinate have to dechlorinate, so the fish are not killed.
  - Dr. Booth noted that water bodies were changed to include recreation. Most water bodies are located in south GA.
- 2022 Triennial Review:
  - Dr. Booth reviewed the following items that are being considered:

- *Revising the human health ambient water quality criteria*
- *Considering microcystin and cylindrospermopsin pathogens and harmful algae*
- *Considering aquatic life contaminants, including selenium and aluminum*
- Dr. Booth reviewed the State Water Planning Process, including process flow and land use changes. She also reviewed the following items related to the Surface Water Quality Resource Assessment and Modeling:
  - Climate change affects the 7Q10 flow, and water quality standards may change as a result.
  - Watershed models for the whole state have been developed.
  - The assimilative capacity of waterbodies for current and future assessments must be determined. Models are developed, and available data and conservative assumptions are used to determine the assimilative capacity.
  - Primary parameters of concern are biological oxygen demand, ammonia, total nitrogen, and total phosphorus. Affected water quality standards include dissolved oxygen (DO), Chlorophyll a (algae) and nutrients.
  - Dr. Booth reviewed GA DOSAG models and current and future conditions. GA EPD did not use to model water bodies less than 0.1 MGD, but EPD is going back to review these systems.
  - DO in small creeks is low, and is below average. Regulations do consider natural conditions though and set permit limits based on these natural conditions.
  - Radar is being used in areas where rain gauge data are not available.
  - Watershed models evaluate total nitrogen loads. Nitrogen limits will likely be added for wastewater treatment plants in the next 5-10 years.
- 2022 listed segments:
  - Dr. Booth reviewed impairments such as pathogens, biological integrity, mercury, DO, polychlorinated biphenyls, metals, etc.
  - A CM noted that there are examples where artesian well water flow has resulted in a static water level 30 ft above sea level. When the paper plant stopped operations in St Marys, the same effect was observed. He asked if this was factored into the calculations for the loss of artesian water flow. Dr. Booth explained that she her focus in on surface water quality. The Council asked that this information may be considered for future evaluations.
  - A CM asked if there is a volume component for assimilative capacity. Dr. Booth explained that typically there is on a small creek. GA EPD is trying to maintain the

original water levels, and GA EPD is encouraging people to discharge to bigger waters too, when feasible. Coastal limits encourage reuse, but the question becomes where the reuse water will go. In California, they are irrigating with beneficial reuse water.

## **6) Updates on Bryan County Mega Site – Including Expected Water Needs (Trent Thompson, Matthew Frazier, Bryan County Mega Site)**

Mr. Thompson and Mr. Frazier provided background of the Bryan County Mega Site. They explained that Governor Kemp announced the Hyundai facility would construct their new electric vehicle plant at the Bryan County Mega Site. The Hyundai facility is expected to bring 8,000 new direct jobs and would be a large water user in a short time period. Most of the impact will be experienced in North Bryan County, but there will other regional impacts too.

Mr. Thompson and Mr. Frazier reviewed projected water and sewer demands. They explained that a regional WWTP will be constructed, and it will be a membrane bioreactor (MBR) facility. Construction is expected to begin in November 2022 and final completion is set for January 2025. Testing will begin in October 2023.

The proposed water withdrawal and water transmission system was also reviewed. The goal is to bring short term water to the site initially.

- A CM asked if geomorphology was evaluated. Mr. Thompson and Mr. Frazier explained that they are working with GA EPD to get this information.

Mr. Thompson and Mr. Frazier noted that Bryan County is permitted for 1.6 MGD and is currently using 300,000 gallons per day. Before it was confirmed that Hyundai was coming, they began talking with EPD. Mr. Thompson and Mr. Frazier tried to push Hyundai as far away from cone of depression as feasible. The goal is to get what is needed temporarily while obtaining funding to move surface water from the Savannah I&D Water Treatment Plant to the Mega Site. By 2025, 6 MGD will be required. EPD is still reviewing information and has not issued any permits yet.

In the near term (2023), Bryan county will develop water conservation and reuse policies to reduce impact to groundwater resources. Bryan County will also promote the use of reclaimed water that would be sourced from the new water reclamation facility, noted above. To plan for the long term, some pipes have been oversized and constructed to accommodate future flows. The system could push 16 MGD in the future.

Mr. Thompson and Mr. Frazier reviewed the sewer service plan map.

- A CM asked if an expansion has been proposed for the Bryan County Industrial Park since it only has small plant. Mr. Thompson and Mr. Frazier explained that the small plant was expanded already and will remain in operation when the new MBR facility comes online.
- A CM asked if wastewater will be sent beyond the Mega Site. Mr. Thompson and Mr. Frazier explained that right now, the focus is the Hyundai site, but it is unknown where

wastewater will go from there. This is being evaluated from a regional standpoint now. A wastewater treatment plant construction management at risk (CMAR) bid has been released

- A CM asked if the reuse plant will have a cold weather discharge. It was explained that part of reason to leave the existing system in place is because land application is currently permitted. There will be some ability to keep spraying on those spray fields.
- A CM asked how far the pipe will run south of the Ogeechee. Mr. Thompson and Mr. Frazier responded 5,600 linear feet.
- Chairman Thompson noted that there has been discussion to use the green zone as a supplier for red and yellow counties and Savannah I&D as a supplier for red/yellow zones. Mr. Thompson and Mr. Frazier explained that surface water transfer did not start because of Hyundai, but Hyundai has been a catalyst.

Mr. Thompson and Mr. Frazier discussed that Savannah does not have any immediate plans to move their raw water intake. Their plant can handle 70 MGD overall. The impoundment was created as a buffer to protect salt water from moving upriver.

- The PC summarized that this buffer applies to the industrial forecast, so the Council should consider adding about 4 MGD to the industrial forecast, 3.25 MGD of groundwater to the Bulloch County forecast, and 2.5 MGD of surface water to the Effingham County forecast. In addition to MBR, about 3 MGD of sewage from Hyundai's facility will be discharged. Industrial pretreatment and recycling on site will be done as much as possible. Industrial water will go through industrial pretreatment at Hyundai then it will go to the municipal wastewater treatment plant.
  - A CM added that the Ogeechee River receives that discharge.
  - A CM noted that up to 8 MGD of reclaimed water could be utilized in the future.
  - The PC asked if reclaimed water will be used for industrial or municipal purposes. Mr. Thompson and Mr. Frazier responded that reclaimed water will be used for anything that comes up on a first come first serve bases. Right now, Hyundai would like some reclaimed water for irrigation.
- Mr. Wood noted that as a management practice, sometimes there can be a need for an ordinance that would require the use of reclaimed water for irrigation, as part of new developments. Usually, these ordinances are specific to new development as it can be costly and infeasible to retrofit existing developments.
- A CM added that new subdivisions and golf courses are required to use reclaimed water. Mr. Thompson and Mr. Frazier agreed that this shift to indirect reuse is being observed all over.

- A CM explained that from Savannah's perspective, cost is the biggest factor related to reclaimed water. Customers do not want to pay for costs associated with treatment, so it puts municipality at a disadvantage.
- Mr. Thompson and Mr. Frazier asked the CMs what Savannah's take on purple pipe ordinances are and if there is a fee in lieu of developers putting in purple pipe. A CM responded that it is better for Savannah to package reclaimed water to large users and manage cost. If a large user comes along that can use reclaimed water, Savannah can pay for the infrastructure to put it in place.

### **7) Georgia Southern University Water Dashboards Seed Grant Project Update (Asli Aslan, Georgia Southern University )**

Ms. Aslan provided an overview of the Coastal Georgia Water Dashboard development. She explained that in phase 1, groundwater levels on 8 wells in Coastal Georgia were evaluated. Eventually, this number increased to 16 wells in total. Data date back to 1955. The dashboard allows the user to select different wells and see different water levels. Ms. Aslan explained that the goal is to add precipitation and stream flow and complete a pilot by March 2023.

- Dr. Zeng asked if the user could determine who maintains monitoring of the wells. Ms. Aslan explained that the user can hover over the map and view the hydrological unit, depth, etc. All of the wells are USGS wells.
- Mr. Wood explained that the box and whisker plot provides a range of data for the whole period of record. The box shows the 25<sup>th</sup>, 50<sup>th</sup> and 75<sup>th</sup> percentiles.

Reid Jackson from GA EPD provided a summary of the seed grants. He noted that the application and submittal deadline passed. Eight applications were received in Georgia, and GA EPD is able to fund four. Two applications were received from the Coastal Georgia region, including Ms. Aslan's work and the web portal work for Coastal and Savannah upper Ogeechee.

### **8) Overview of Regional Water Plan Update Process and Schedule Moving Forward (Shayne Wood, CDM Smith)**

Mr. Wood reviewed the following path forward:

- Vision and goals can be checked off and the gap analysis will be wrapped up.
- The Council needs to revisit management practices, but this could be done during another meeting.
- Chairman Thompson agreed it would be more efficient to get a small group together over a virtual meeting to review these practices between now and January 2023. Then, the Council will decide if another in-person meeting is required or if there will just be one March 2023 meeting. Mr. Thompson confirmed that he would coordinate future meetings with Ms. Welte and Mr. Wood.



- Mr. Wood added that the team is aiming for March 2023 to submit the draft plan and June 30<sup>th</sup> for final plan.
- Mr. Thompson noted that the PC previously mentioned that additional demands need to be added to the forecasts. He asked the team if a buffer for industrial use was already accounted for previously. The PC explained that this buffer was applied regionally, not in specific counties. The PC confirmed that specific counties that are expecting growth will be captured in the plan, and edits will easily be viewed in tracked changes.

**9) Public Comment/Local Elected Official Comments**

Mr. Wood asked if there were any public comments, but no local elected official comments nor public comments were received in person or virtually.

Mr. Wood wrapped up the meeting, and thanked everyone for attending. He added that he will work with Chairman Thompson to get a workgroup to review the best management practices.

Mr. Wood asked CMs to add any edits/comments to the draft plan.

- A CM noted that the last stakeholder meeting/permit reduction process was in 2017 and asked if there has there been a public forum since then. It is a good idea to target a regional key holder meeting to get red/yellow permit holders and stakeholders together. The Armstrong Campus at GA Southern is being targeted for that meeting.
- The Council agreed to make this request and ask that Council can attend the meeting.

The meeting was adjourned at 2:00 PM.

**10) Meeting Attendance**

Affiliation	Name
<i>Coastal Georgia Regional Water Planning Council</i>	Benjy Thompson Michael Browning Eddie Deloach Russ Foulke John Godbee William Guthrie Michelle Liotta Heath Llyod Reginald Loper Brian Nease Phil Odom Pete Peterson Mark Smith Jim Thomas Jim Vaughn, Jr. Randy Weitman Monty Parks (Proxy for Shirley Sessions)
<i>Regional Water Planning Council Planning Contractors</i>	Bill Davis Emory Gawlik

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Affiliation	Name
	Shayne Wood
<b>Georgia EPD</b>	Clete Barton Elizabeth Booth Reid Jackson Anna Trusczyznski Jennifer Welte Dr. Wei Zeng
<b>Public/Agency Attendees:</b>	
Altamaha Riverkeeper	Maggie Van Cantfort
St. Marys River Management Committee	Scott Brazell
Glynn Environmental Coalition	Rachel Thompson
Georgia Southern University	Asli Aslan
Colonial Group Inc	Megan Corley
Thomas and Hutton	Matthew Frazier
	Trent Thompson
Bryan County	Kirk Croasmun
Water Utility Management	Ellis Kirby