

Memorandum

To: Coastal Georgia Regional Water Planning Council

From: Rick Brown, Shayne Wood and Brennan Schneider, CDM Smith

Date: March 3, 2017

*Subject: Coastal Georgia Regional Water Planning Council Meeting 4
Regional Water Plan Review and Revision Process*

This memorandum provides the meeting summary of the Coastal Georgia Regional Water Planning Council (Council) Meeting 4, held on February 24, 2017 at the Richmond Hill City Center in Richmond Hill, GA. This memorandum provides a summary of the major items discussed at the Coastal Georgia Council Meeting 4. The meeting began at 9:30 AM and followed the Council Meeting 4 Agenda.

1) Welcome and Introductions

Council Chairman Benjy Thompson opened the meeting, welcomed Council Members and Guests, and asked each Council Member (CM) and attendee to introduce themselves. CDM Smith, the Planning Contractor (PC) provided an outline of the topics that would be covered during the Council Meeting. The Council approved the Meeting Agenda and the Council Meeting 3 Meeting Summary.

The PC continued with an outline of the Regional Water Plan (RWP) update review and revision schedule, which has been extended through June 2017. The PC highlighted the expectation to submit a completed public comment draft of the updated RWP to the Georgia Environmental Protection Division (EPD) by March 30, 2017. The remainder of the meeting followed the agenda, and the key points and major discussion topics are summarized below.

2) Regional Water Plan Deliverables

The PC reviewed the Demand Forecast Technical Memorandum (TM) with the Council and explained that the TM is a supplemental material to the RWP that includes additional detailed documentation and information on the demand forecast assumptions and methodologies. The PC highlighted some of those details and circulated a copy of the TM for additional review by the Council. The PC noted that consistent with the original water plan development (Round 1) a region-wide average of gallons per capita per day (gpcd) is being used to develop the water demand forecasts for the region, instead of using a county-specific gpcd value for each county. The Council confirmed their support with this approach given the discussion during Round 1, factoring in input from new council members, and discussing the advantages and disadvantages of this approach. In the end, the Council deemed it appropriate to remain consistent with the

regional approach and at this time they did not see a need to change the methodology or reconsider their original recommendation.

The PC also noted that no changes have been made to the industrial demand forecasts. This forecast is based on employment data and no new or updated employment data are available at this time. The PC noted that, given available information and standard water planning practices, employment data was deemed the best method for forecasting industrial demand without getting into production numbers and proprietary information. The Council had previously expressed some concern with a methodology that relies on employment data and recommends that EPD consider convening an Industrial Water Demand Ad-Hoc Committee during the next plan update to further evaluate other potential methodologies to be considered in future rounds of planning.

Next, the PC reminded the Council of population projection results for the region, and noted that the updated projections are more in line with historic trends for the region and the state as compared to those projections that were completed during Round 1 (2011 RWP).

Question/Comment: A Council member (CM) expressed concern that the population projections are underestimated and asked how often the projections are updated.

Response: The PC indicated that the population projections are developed by the Governor's Office of Planning and Budget (OPB). The PC will find out how often the population projections are updated, but it was believed to be once every 5-years. [*Post Meeting Follow-Up: In review of OPB's web site, it appears that OPD updates population projections every 3 to 5-years. The most recent updates were completed by OPB in 2012 and 2015*].

Question/Comment: A CM asked how the population projections were used to calculate water demand forecasts through the year 2050.

Response: The PC responded that the water demand forecasts through 2050 are calculated by multiplying the county population projection by the gpcd of the region (public/municipal supply and self-supplied water use are calculated using different gpcd values), and this provides an average daily rate of water use.

Question/Comment: A CM felt that the water demand forecast for Chatham County was rather high and asked for further explanation.

Response: The PC stated that Chatham County is one of the counties that has a fairly large transient water use associated with activities such as tourism. These transient water users are not included in the base residential population of Chatham County. As a result, the gpcd values tend to be higher to account for these additional demands.

Question/Comment: A CM asked how the gpcd value of 157 was determined for Glenn County, and if private wells were included in the water demand.

Response: The PC explained that the gpcd value was determined by dividing the total water use for Glenn County (based on the reported water use by the major water providers in the County)

by the total population served in Glenn County. The total water demand does not include data from self-supply (private wells), which was calculated separately.

Question/Comment: A CM asked if residential development activities were considered industrial water uses and therefore included in the industrial water demand forecasts.

Response: The PC indicated that residential development activities are not considered in industrial water demand forecasting. Instead, the residential water use and projections are included in the municipal demands (or self-supplied demands if they are served by individual wells).

Question/Comment: A CM asked where Long County gets their water from.

Response: The PC stated that Long County primarily gets its water from the Floridan Aquifer.

Question/Comment: A CM asked if the TM was going to include information on overall water supply.

Response: The PC answered yes, but not as a separate TM. Water supply information will be summarized in the Surface Water and Groundwater Resource Assessments and general information will also be included in the RWP document and Gap TM.

The PC requested that the Council consider approval of the Demand Forecast TM. The Council Chair asked for a motion and a second, which was followed by a unanimous voted to approve the TM.

The PC informed the Council that Sections 3, 4 and 5 of the updated RWP have been completed and noted that these sections have been shared with the Council via e-mail, and encouraged the members to review and provide comments.

3) Report on January Shared Resources Sub-Committee Meetings on Surface Water and Groundwater

The PC started the discussion of the January shared resources subcommittee meetings by providing background on the formation of the regional subcommittees, one on Surface Water and another on Groundwater. These subcommittees were formed to provide a more focused discussion on shared resources and brought together Council Members from neighboring Councils that shared these resources. The groundwater subcommittee also included some of the larger groundwater permit holders and/or sectors of use that share the resource.

The PC first reported out on the groundwater shared resource subcommittee meeting that was held in Savannah, Georgia on January 23, 2017. This included a discussion on the changes in assumptions in the RWP, including the Floridan aquifer permit limit reduction process for Red/Yellow Zones. In addition, the subcommittee served the purpose to encourage discussion among Council Members and permit holders regarding possible updates to the regional management practices. The PC asked the Council Members who served on the groundwater shared resource subcommittee for their thoughts on the discussions that took place during the groundwater subcommittee meeting.

Question/Comment: A CM shared that the level of attendance for the groundwater subcommittee meetings was encouraging.

Question/Comment: A CM shared that discussions included shared resources, aquifer storage and recovery (ASR) and a recommendation to continue to update data and modeling in the region.

Question/Comment: A CM shared that it is difficult for the Council to dictate how one provider operates with other providers to close a gap, and that the best approach is for the EPD to set the rules and let the water providers adjust accordingly to meet the regulations.

Question/Comment: A CM shared that it is difficult to trust the groundwater aquifer model entirely, due to doubts about methodology and assumptions of the model, and being separated from the real problems being experienced in each County.

Question/Comment: A CM inquired about language in the updated RWP regarding water conservation.

Response: The PC indicated that water conservation will be addressed in more detail later today, but noted that water conservation language was drawn for several sources including the Coastal Permitting Plan, the State Water Conservation Implementation Plan and the Water Stewardship Act.

Question/Comment: A CM asked about what percentage of water conservation is due to plants or a plant process going offline.

Response: The PC and a CM mentioned that in many cases industry has implemented water conservation measures and reuse, and have been successful in reducing their demands while expanding production.

Question/Comment: A CM shared that the Red/Yellow Zones will need to improve treatment/better manage their wastewater, as the Total Maximum Daily Load (TMDL) process has established more stringent requirements for wastewater entering the Savannah River/Harbor.

Question/Comment: A CM encouraged the Council to consider what actions are within the scope of the regional planning process that could be used to generate support from EPD as we update our water management practices.

Question/Comment: In light of the effects of water reuse on reducing demands from the Floridan Aquifer, can wastewater be reused to irrigate golf courses?

Response: The PC noted that reuse was discussed during the subcommittee and was part of the requirements of the Coastal Permitting Plan. Reuse is a valid consideration for all use sectors, but due to public perception, it might be more readily implemented for outdoor irrigation, including: residential lawns; landscapes; golf courses; as well as some industrial processes.

A CM commented that in some cases wastewater reuse can actually be of better quality than raw groundwater. The CM noted that one management practice to consider would be to require new

developments to install irrigation with reclaimed wastewater. There is much progress to be made in educating the public about the benefits of water reuse and water conservation, inspiring state-level reform to encourage wastewater reuse, and studies on the effects of reclaimed wastewater on aquifer storage and recovery.

The PC also reported out on the surface water shared resource subcommittee meeting that was held in Statesboro, Georgia on January 25, 2017. This included an overview of the participants that were invited to serve on the subcommittee and the PC noted that the effort was designed to get people to think about resource on a regional basis and from a more holistic perspective (use and management of the resource to meet both off-stream uses and instream needs).

Additionally, given that the broad majority of the surface water gaps are associated with areas that have agricultural surface water use, the subcommittee included representatives from the agricultural water use sector, including farmers from the Altamaha, Coastal Georgia, Savannah-Upper Ogeechee, Suwannee-Satilla, and Upper Oconee Regions. During the subcommittee meeting more detailed hydrology and demand information was reviewed with the purpose of increasing the participants understanding of water use, flow conditions, and the discretization of demands geographically. The meeting also included an update from Chris Ward with the EPD Agricultural Permitting Unit. Chris highlighted the permitting program and noted that the metering program will now be combined with the permitting program and both programs will be administered by EPD. Although the subcommittee members did not give a lot of feedback regarding management practices, there were a number of questions regarding data and modeling including: How is flow measured? How farm ponds are accounted for? And several questions about the modeled gap results and whether they are real flow shortages?

Question/Comment: A CM pointed out the need to engage the farming community for better discussion about water resources of the region, because there has not been much representation from the farmers in the Coastal region and a few other regions.

Question/Comment: A CM stated that farmers tend to be concerned with their water use as a "property right" and to question the validity of the model results. The Council needs to be understanding and cooperative with the farmers, but at the same time work with the farmers in addressing their concerns related to accuracy of the data and the models. The farming community must get involved and be in the room for these conversations.

Question/Comment: A CM asked if the EPD was telling the farmers to discharge from their farm ponds to increase stream flow under low flow or drought conditions.

Response: No. EPD has been investigating farm ponds to determine how their presence may impact potential gap calculations, not to see how they could be used to mitigate potential gaps in stream flow.

The PC concluded the discussion with action items to encourage the Council to consider the following; how to increase community education and involvement, how to build relationships with the farming community, and how can we better utilize water of conservation practices to help meet future water demands.

The Council proceeded to a lunch break and presentation by Spencer Davis with the U.S. Army Corps of Engineers, Savannah District. Mr. Davis provided an excellent presentation updating the Council of the progress of the Savannah Harbor Expansion Project (SHEP).

4) Review of 2011 Decision Making Process

The PC resumed the Council Meeting by defining the purpose of management practices and outlined the management practice selection process utilized in 2011 RWP process. The PC noted that in the Round 1 planning effort Council elected to utilize a consensus based decision process but also developed a scoring process that could be used if an impasse was encountered. The PC briefly reviewed the 2011 scoring process and criteria for decision making, including selection of proposed management practices. The PC asked the Council if they were comfortable using the same selection process for management practices as the 2011 RWP process, which was to use a consensus based approach and fallback to the scoring process only if the Council came to an impasse. The Council agreed to continue to use a consensus based approach when reviewing and selecting management practices.

5) Review and Discussion of Management Practices

The PC began the discussion on management practices by first reviewing several of the “drivers” for needing management practices to address potential gaps and advance the Coastal region’s vision and goals. The “drivers” reviewed included examples of potential surface water gaps, groundwater gaps and water quality gaps. The first gap discussion focused on surface water quantity which included review of a figure that showed the location of the Claxton, Eden, and Kings Ferry planning nodes, and their local drainage areas (LDAs). Kings Ferry was chosen as the example for this discussion. The PC provided a table showing land acreage/percentage of each county contributing to the LDA, the land acreage/percentage irrigated with surface water in each county contributing to the LDA, and the related water gap in million gallons per day (MGD). The purpose of the figure and table was to illustrate to the Council how to identify the areas that would benefit the most from properly selected management practices, such as surface water management practices associated with existing agriculture use. An example was discussed which showed that management practices focused in Bulloch County would be more beneficial than one’s focused in Effingham or Bryan County because the latter counties do not have any agricultural surface water use while Bulloch County is one of the higher surface water use counties in the Region.

Question/Comment: A CM asked what the surface water is being used for in Bulloch County.

Response: The PC indicated that the water use is associated with crop irrigation.

Question/Comment: A CM asked how we can have one management practice for the entire Floridan Aquifer when each county is different.

Response: The PC stated that EPD was able to use several model tools one that focuses on the overall region, one that is specifically focused in the Savannah Hilton Head area, and one that focused on the Brunswick area. This is needed to allow for local considerations and unique hydrogeology while maintaining a regional perspective. Management Practices can be general or they can be more specific if Council supports a more detailed approach.

Question/Comment: A CM asked if our regions neighbors should be included in our plans, if their water consumption would affect our water resources, as well.

Response: The PC reminded Council that the Resource Assessment evaluated the conditions of the resource (surface and groundwater) at a regional level. The results provide an overall assessment of the availability of the resource to meet county level demands. Each region has developed management practices and we have looked at the practices to identify if they are complementary of each other or if any are conflicting. Overall, the practices appear to be complementary of each other, but as the Coastal region seeks solutions to groundwater gaps it will be important to help ensure that solutions are coordinated within the Red/Yellow Zones, in the Green Zone, and as needed, with other regions that are adjacent to the Coastal region.

The PC then reviewed the drivers for the groundwater gaps and shared figures of water demand forecasts shown in relation to Floridan Aquifer permit limit reductions in the Red/Yellow Zones. This information showed a groundwater gap likely to occur within the 2050 planning horizon. Addressing these gaps will be vital for the economic development and social wellbeing of the Red and Yellow Zones and the region as a whole.

Question/Comment: A CM asked if the figure for the Yellow Zone suggested that the region would not be in trouble until 2050.

Response: The PC noted this is one of the challenges in presenting regional data in comparison to water provider specific permit limits. If water demand grows in the areas where providers have permit capacity then gaps may not be experience until further into the planning horizon. However, if the water demand is in an area where there is not a current provider or there is no permit capacity, then the gap could be experience as early as the present time. This is a significant challenge to efforts to bring new industrial, commercial, or residential development to areas of the region that do not have existing infrastructure or permit capacity.

The PC then reviewed the water quality gaps and ended with a review of estuary model results showing updated data on DO compared to information from the 2011 RWP. The PC discussed changes in assumptions for the modeling, which resulted in the Brunswick Harbor being projected to have acceptable water quality, while the St. Mary's Estuary is projected to have lower water quality.

Question/Comment: A CM asked why the DO levels in the St. Mary's Estuary are modelled to be lower, and if activities in Florida were affecting the DO levels of the water body.

Response: The PC stated that the drivers of this are not fully known and that Dr. Booth and her team are continuing to look into this issue and what the contributors are.

Question/Comment: A CM noted that Florida's DO regulations were different than Georgia's, and asked how the states could work together to improve the water quality in the St. Mary's watershed.

Response: The PC noted that there has been discussions between the two states, and that the level of communication has varied over time and was likely influenced by the recent litigation in the Flint River basin.

The PC then engaged the Council in discussion and review of each of the 86 Management Practices from the 2011 RWP. The PC discussed the framework that was developed to facilitate this review, which included and initial categorizing of the Management Practices into three groupings:

- Green = no revision needed,
- Yellow = additional discussion required, and
- Red = revise or eliminate.

The following is an overview and brief summary of the discussion of Management Practices that were categorized as either yellow or red:

Category	Color	Management Practice	Discussion
Water Conservation (WC)	Yellow	WC-2: Tier 3 and 4 Measures for Municipal and Industrial Users in the Red and Yellow Zones	Clarify language about wastewater reuse, and emphasize the importance of public education and building support for conservation programs.
Additional/Alternate Sources to Present Groundwater Source(s) in Gap Areas (AAGS)	Red	AAGS-1: Cross-Jurisdictional Collaboration	PC and Council to discuss language during subcommittee meeting on March 10
		AAGS-2: Increase Surface Water Supplies	
		AAGS-3: Additional Reservoir Storage	
		AAGS-4: Study Aquifer Storage and Recovery in Addressing Gaps	
		AAGS-5: Surface Water Storage in Aquifers	
		AAGS-6: Additional Aquifer Use	
		AAGS-7: Reuse	
		AAGS-8: Determine Desalination Feasibility	

		AAGS-9: Determine Reverse Osmosis Feasibility	
		AAGS-10: Inter-basin Transfers	
		PROPOSED AAGS-11: Monitor Aquifer for Potential Additional Sustainable Yield and to ensure up-to-date resource status and condition	
Institutional Practice(s) to Help Meet Water Needs in Groundwater Gap Areas (I)	Red	I-1: Cross-Jurisdictional Groundwater Coordination Group	PC and Council to discuss language during subcommittee meeting on March 10
Engineered Solution(s) to Address Salt Water Intrusion and Help Meet Water Needs and Gap Areas	Red	ES-1: Engineered Solution	Council proposed to delete this practice due to higher cost in comparison to other viable options
Data Collection/Additional Research (DCAR)	Yellow	DCAR-3: Better Understand Demand and Impacts on Projected Gaps	PC and Council to discuss language during subcommittee meeting on March 10
		DCAR-4: Improve Data Quality and Analysis	
		DCAR-8: Analyze Addressing Extreme Conditions	
		DCAR-10: Restoration Impact on Low Flow Conditions Analysis	

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	Red	DCAR-9: Study Potential Use of Aquifers to Address Gaps	Intra-basin transfers may be an alternative to aquifer storage and recovery (ASR).
Additional/Alternate to Existing Surface Water Supply Sources (ASWS)	Yellow	ASWS-2: Incentives for Dry-Year Releases from Ponds	PC and Council to discuss language during subcommittee meeting on March 10
		ASWS-4: Substitute Existing Surface Water Use with Groundwater in Dry Years	
		ASWS-6: Ecological Restorative Incentive Program	
		ASWS-10: Intra-basin Transfers	
	Red	ASWS-1: Consider Low Flow Conditions in Future Surface Water Permitting	PC and Council to discuss language during subcommittee meeting on March 10
	ASWS-5: Opportunities and Incentives for Dry-Year Releases from Ponds		
Municipal Wastewater Permit Capacity (MWWPC)	Red	MWWPC-1: Increase Wastewater Permit Capacity	PC and Council to discuss language during subcommittee meeting on March 10
Industrial Wastewater Permit Capacity (IWWPC)	Red	IWWPC-1: Collect Additional Industrial Permit Data	PC and Council to discuss language during subcommittee meeting on March 10
Municipal Groundwater Withdrawal Permit Capacity (MGWPC)	Red	MGWPC-1: Increase Municipal Groundwater Permit Capacity	PC and Council to discuss language during subcommittee meeting on March 10
Industrial Groundwater Permit Capacity (IGWPC)	Red	IGWPC-1: Increase Industrial Groundwater Permit Capacity	PC and Council to discuss language during subcommittee meeting on March 10

Utilize Groundwater to meet Current and Future Needs (GW)	Yellow	GW-3: Research and Analyze Sustainable Groundwater Management	PC and Council to discuss language during subcommittee meeting on March 10
	Red	GW-1: Develop and Practice Sustainable Groundwater Use	PC and Council to discuss language during subcommittee meeting on March 10
Water Quality Non-Point Sources (NPS)	Red	NPS-2: Monitor and Address NPS Nutrient Loading	PC and Council to discuss language during subcommittee meeting on March 10
Nutrient Watershed Models (NUT)	Yellow	NUT-1: Link Nutrient Loading with Current Land Use	PC and Council to discuss language during subcommittee meeting on March 10

6) RWP Schedule

The PC then highlighted the remaining schedule for the RWP review and revision process. Council agreed that it would be advisable to form an editing subcommittee and Chairman Thompson indicated that he would reach out to members to solicit participation. It was agreed that the editing subcommittee meeting will be held on March 10th to discuss the draft RWP.

7) Public Comments

The PC concluded the Council Meeting by asking the public/agency attendees if they would like to provide any questions or comments regarding the meeting. One attendee from the City of Garden City provided a comment to remind the Council of the “Red Zone Management Plan” update effort for Chatham County and Effingham County (corresponding with Management Plan AAGS-1: Cross-Jurisdictional Collaboration).

8) Meeting Attendance

Coastal Georgia Regional Water Planning Council members in attendance:

- Benjy Thompson, Michelle Liotta, Mark Smith, Phil Odom, Mike Browning, Jimmy Burnsed, Tom Edenfield, Jay Kaufman, Randal Morris, Pete Peterson, John Sawyer, and James Thomas

Georgia EPD Representative in attendance:

- Christine Voudy and Beth Stevenson

Regional Water Planning Council contractors in attendance:

- Shayne Wood, Rick Brown, and Brennan Schneider (CDM Smith)

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Public/Agency attendees:

- Lauren Walker, City of Savannah
- Braye Boardman, Savannah-Upper Ogeechee Regional Council and Savannah River Clean Water Fund
- Deatre Denion and Ebony Simpson, Department of Community Affairs (DCA)
- Paul Phillips, Georgia Soil and Water Conservation Commission (GSWCC)
- Jackie Jackson, City of Garden City