Memorandum

To: *Georgia Regional Water Planning Councils – Coastal Georgia*

From: *CDM Smith*

Date: *February 24, 2022*

Subject: *Coastal Georgia Regional Water Planning Council Meeting Summary*

This memorandum provides a summary of the items presented during the February 24, 2022, Coastal Georgia Regional Water Planning Council Meeting, held 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, welcomed Council Members and guests, and Benjy 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. The Council approved the agenda and the July 15, 2021, meeting summary.

As part of the 5-year Regional Water Plan (RWP) update, the Visions and Goals of the Council are reviewed and modified as agreed upon by the Council. The vision of the Council was established in 2009 and revisited during the 2016 RWP update. The PC posed several questions for the Council to consider for revisiting the visions and goals including:

- Are there any major water issues that have surfaced in the region?
- Has what you hoped to see for this region regarding water resource changed substantially over the past 5 years?
- Is there anything on the horizon that may influence the vision for the region?

Comment: Chairman Thompson stated that there are three main couplets within the vision being conserve and manage, sustain and enhance, and environment and economy. Through the iterations of creating the vision the Council decided these couplets are unique to the Coastal Georgia Region.

Question: A CM asked if the vision is congruent with the State of Georgia's vision?
Discussion: The discussion with the council members indicated yes, the Coastal Council's vision is congruent with that of the State Water Plan's vision.

Question: A CM asked if the Council would consider communication a piece of the vision?

Response: Chairman Thompson replied that was a good thought, and that the Council may want to review the goals to see if that can be worked in there.

The PC then reviewed the existing goals.

Comment: A CM stated that the set of goals for the Council mostly relate to the industrial/developmental side of the region and suggested that maybe a goal to reference habitat protection and water quality should be considered.

Comment: A CM pointed out that floodplain management is not listed in the goals but is becoming a bigger issue and should be included when reviewing the Best Management Practices (BMPs).

Comment: An attendee added that salt marsh migration and sea level rise will affect infrastructure/septic systems and fresh water sources.

Comment: Chairman Thompson requested for a list of vision and goal topics to be created based on the meeting discussion. A subgroup of Council Members can then get together to come up with some points to discuss at the next meeting.

2) Updates from EPD (Reid Jackson, GA EPD)

The PC discussed the planning process, upcoming meeting timeline, and how the technical work is folded into the process. Reid Jackson added that EPD has been working with the PC and others for the past two years to develop the demand forecasts and resource assessments. For the forecasts, the plan will use the updated projected demands through 2060 for the four major sectors (municipal, industrial, energy, agricultural). This Council Meeting will include updates from Mark Masters on the agricultural water demand, Bill Davis with details on the municipal forecasts, and the state demographer for the population projections methodology. Dr. Wei Zeng with EPD will also be sharing updates from the surface water availability effort. In the future, the Council will also hear about groundwater availability. Throughout the remaining process, the PC team will be working to incorporate the technical work results into the plan for the Council to review.

3) Updates on Technical Work Supporting the 2021-2022 Regional Water Plan Update Cycle (Taylor Hafley, Bill Davis, Mark Masters, and Dr. Wei Zeng)

Review and Discussion of Population Projections (Taylor Hafley, UGA Carl Vincent Institute)

Taylor Hafley, with the University of Georgia Carl Vincent Institute of Government, provided an overview of the population projection methodology. Some initial questions from the Council were submitted in advance:

- It seems there are some fairly significant differences between the projections published in 2019 versus the projections published in 2020. Can you explain?
- Tourists and day trips into the Coastal Region throughout the year have an impact on water demand. How is that impact considered?

The population projection equation is as follows:

$$\Delta Population = Births - Deaths + Migration + Group\ Quarters$$

Where group quarters represent special populations such as military, college dorms, or prisons where the population is more stable causing the rate of change to be calculated differently. The census, which is an official count or survey of a population, is used to get the base population count of a county, the region and the State. Any time change in between the official population count is when the population is being estimated. The period between two census' is called intercensal, the most recent census versus current population is called the censual estimate, and the population between the current estimate and the future is called the population projection. Each year on July 1st, a new population estimate is released. It should be noted that only a partial set of data has been released for the year 2020.

For the State of Georgia, the population has grown nearly 4 million during the 1990 to 2020 timeframe. In the most recent population projection, the population was shown to grow at 10.6% which exceeds the national 7.4% growth rate. Over the past decade, Georgia has been in the top four fastest growing states. In addition, birth rate in Georgia has declined and death rate has increased with about 8,000 additional deaths due to COVID-19.

The natural increase for a population is defined as the births minus the deaths. If that number is positive, then the natural increase is also positive. As deaths have increased and births decline, the natural increase for the Coastal Georgia region is just over 10,000, meaning 10,000 more births than deaths. About 20,000 people from outside the State of Georgia migrate to the state each year, causing the main Georgia population driver over the last 5 years to be domestic migration. Without that, the migration increase would have been much lower. When looking at the counties of Georgia, the growth is mostly seen in the north Georgia, metro Atlanta, and coastal areas, and as an example, in the Coastal Georgia area, Bryan County grew 48% between 2010 and 2020.

Looking at the Coastal Georgia Region trends, growth was 18% between 2000 and 2010 and 10% between 2010 and 2020. The natural increase for the region was almost 6,000 in 2012, but there has been some decline over the past few years. International migration is not a large contributor in the region; however, domestic migration fluctuates and does not seem to show any pattern. In 2010 and 2013 the domestic migration natural increase was negative, but in 2011 there was a positive spike. The influence of population growth and population projections becomes complicated in this case since there is not a strong pattern with domestic migration.

Question: While there may not be an obvious trend in domestic migration fluctuations, there must be a reason. Do you look for the reason why that might happen?

Response: Taylor responded that the biggest reason may be the recession fallout around the 2012/2013 timeframe. That's where the fluctuation seems to be the most drastic, then it stables out.

Question: If there isn't income because of lack of employment, then why or how would people be moving out?

Response: Taylor replied that it is hard to say exactly why. Some possibilities may be cost of living, or seeking employment elsewhere, of moving in with families, etc., but he would need to take a closer look at the trend.

Question: Would the student and/or military group quarters have an impact on the negative domestic migration in 2013?

Response: Taylor replied that group quarters would not have an impact as they are dealt with as a separate component.

The process also involves looking into different demographics including age, race, and sex where each group has its own growth rate. Through 2050, it is anticipated Georgia will grow 1 million people per decade.

Question and Answer (Q&A) Session with Demographer (Taylor Hafley, UGA Carl Vincent Institute)

Question: An attendee asked if the information presented can be found online?

Response: Taylor replied that the data can be found on the Governor's Office of Planning and Budget website (https://opb.georgia.gov/census-data/population-projections). The information is broken out by county, age group, and race group out to 2060, and a new round of projections will be posted soon.

Question: Chairman Thompson recognized that the further away from the census the more difficult it is to project population and asked if the team will feel more comfortable about the projections when the 2020 data comes out?

Response: Taylor responded yes, so in 2011, the team was more confident about what they projected for 2019. He added that there is a lag in the system due to the pandemic, but each year the team improves the model and understanding of the state.

Comment/Question: Chairman Thompson commented that for Bulloch County, there was a difference between the 2019 and 2020 projections where the 2019 projections showed a loss in population of 5% and the 2020 projections showed a big gain of 64%. There is qualitative information in the county saying the fluctuation in population isn't true.

Response: Taylor replied that he was not with the department at the time of the projections. Since projecting out can be tricky, so an upper bound, lower bound, and 50th percentile is provided. Also, there was a difference in fertility rate calculation between 2019 and 2020.

Comment/Question: The PC requested for Taylor to come back with some information and examples that may help the CMs understand the spikes in migration and how migration is estimated. Chairman Thompson added that migration is an important factor to the Coastal Region.

Comment: Jennifer Welte added that for the permitting and withdrawal folks, there are usually meetings with the permittees where the permittees bring more specific information for their water demand. In the plan, the population projections are used to forecast the water demand.

Question: A CM asked if there isn't a lot of confidence in the population projections and that data is used for the water demand, is it possible for potential permits to be rejected because of that?

Response: Jennifer Welte replied that the permittee information will take precedence over the water plan information because typically the permittee has more detailed specific information associated with their service territory and customers/users served, etc.

Comment: An attendee added that from their experience the water demand has a big factor in the permit process. If projections aren't right the first time, it could be a problem.

Response: The PC brought up an example regarding utilities where the number of customers and water use is known, so if that information is being used in the permit application it will take precedence since it is more specific data.

Response: A CM added that the water plan numbers had a negative impact on a recent withdrawal permit.

Response: Chairman Thompson stated that before the meeting the Council was asked to weigh in with some questions for the demographer, but not much response was received. Since this conversation sparked more questions, Chairman Thompson requested for the Council to gather county specific questions so that they can be brought back to Taylor.

Comment: The PC added that some information was pulled together on how the new projections impact water demand and provided slides to the Council before the meeting. The thought is that the 2020 numbers would be preferred by the Council; however, the full dataset is still being released.

Question: A CM asked if COVID-19 could influence and compound the numbers?

Response: Chairman Thompson answered that the pandemic could be a factor, but the shifts in numbers are not being seen everywhere.

Question: A CM asked how serving a population influx is determined? The process takes 2-3 years to build a treatment plant, but the Regional Water Plan is 5-10 year out.

Comment: Chairman Thompson commented that the information isn't perfect, but the Region will need to make the best of what is available. Growth rate is being looked at, so the 2019 growth rate for Bulloch County was -5% meaning there is a 5% loss in population. For the purposes of time and what needs to be accomplished, the county level issues should be identified. This conversation helped identify some of the issues, but the Council will need to make a decision on what to use.

Review and Discussion of the Water Demand Forecasts (Bill Davis, CDM Smith)

The PC shared the municipal water demand forecast by County using the newer 2020 population projections. In the past, the Coastal Council has used a set gallon per capita per day (gpcd) value to represent the entire region rather than county specific numbers.

Question: Chairman Thompson asked why there is a large difference in public supply per capita? Bulloch County is forecasted for 88 gpcd while the neighboring county is forecasted for 189 gpcd. Are water audit reports submitted by public water supply systems showing the total water withdrawal?

Response: Jennifer Welte responded that the municipal team looked at more recent information (2014 to 2019) per capita which from audit reporting for systems serving 3,300 people or more. The team also did two rounds of contacting systems with seemingly high per capita values and adjusted industrial customers and removed water usages of 0.2 MGD or greater. The per capita value developed for this round of updates may have resulted from those shifts. There are also systems that transfer water to other counties, and the team investigated those and made sure they weren't being counted. Per capita values that are decreasing may be due to a variety of reasons, like newer systems (less water loss in distribution), newer developments served and better efficiency and conservation efforts.

Question: Long County shows a per capita value that is exceptionally large. Where is that number coming from?

Response: An attendee responded that Long County has always been small but has grown over the past 10 years including the construction of a new school. Water used by the school would be included in the water use, so that would inflate the gpcd. Restaurants would also increase gpcd as the equation used has water use in the numerator and population served in the denominator.

Question: An attendee asked what the difference would be when using a fixed gpcd value versus the county specific value, and how the gpcd value is applied?

Response: The PC replied that the gpcd values by county by decade are multiplied by the county population by decade. If the county gpcd values were changed to be the same, the counties with higher water use would then show as having lower water use and the lower water use counties would show as having a higher water use.

Question: An attendee followed up by asking if the gpcd numbers were used to determine the water use in any particular county at any given time?

Response: The PC replied yes, and that there may be challenges seen if a county applies a lower gpcd value than what was calculated. The PC also added that different scenarios can be analyzed on the back end to see the 'what-if' cases. The next step will be for the gap analysis to be prepared for the Region where demand and available water resources are compared. If there is a county flagged as having an issue, the team will look more closely.

Question: A CM asked how can we verify this information is accurate enough to use?

Response: Jennifer Welte responded that more information can be provided. The per capita value is a weighted average per county starting with the 2015 to 2018 audit data.

Question: A CM asked if other Councils are seeing these spreads and if similar questions are being asked?

Response: The PC replied that other Councils are seeing similar spreads in data and that the Savannah Region had some similar questions. The industry standard for a very efficient system is probably around 75-80 gpcd, and there were more than a dozen counties in the state that had a per capita value of over 200 gpcd. Since the goal is to have draft updated plan by September, it would be good to have 3-4 people get together to work through the data so that council workgroup can come back to the council with some recommendations on what should be considered for used in the plan.

Review of the Agricultural Water Demand Forecast (Mark Masters, GWPPC)

Mark Masters with the Georgia Water Planning and Policy Center then provided a review of the Agricultural Water Demand Forecast. Similar to the previous update cycles, the driver for the Agricultural Demand Forecast is acres of irrigation. Field mapping and remote sensing were used for data collection for the team to pull together water needs under normal, wet and dry conditions. In addition, meter data from the Agriculture Meter Program was incorporated for calibration. One fundamental change in the methodology is that the assumption that groundwater use is 70% surface water was removed. In previous Agricultural Forecasts, it was assumed that farmers irrigating with surface water sources were using 70% less than what the crop needed compared to when irrigating with ground water sources. In the current forecast, groundwater and surface water are weighted the same.

The Coastal Georgia region has the lowest agricultural water use compared to the neighboring councils. The largest number of irrigated acres within the Region is in Bulloch County with the majority of acres being irrigated with center pivots. The crop breakdown was derived from 2020 satellite derived USDA data, with over half the crops in the region being cotton followed by peanuts and corn. Crop information is useful in understanding how much water will be required. To give an accurate water use over time, a composite acreage was developed excluding crops that will not change (i.e., pecans). It should be noted that agricultural water use depends on the time of year and weather conditions where the highest water use is in the summer.

Question: Chairman Thompson asked if the increase in water use over the next 40 years is due to an increase in acreage?

Response: Mark Masters answered that yes but also farmers are getting better at getting more crop per drop of water.

Question: An attendee asked if a lot of urbanization is seen in agricultural counties?

Response: Mark Masters replied that urbanization mostly seen in southwest Georgia. One item that wasn't anticipated was the conversion of irrigated acres to solar farms, so there has been a decrease in acreage in rural areas.

Question: A CM asked what percent of total agriculture acres are irrigated at farms? Of the acres that are dry land, what percent of those could become irrigated acres?

Response: Mark Masters replied that he would be able to grab some information from USDA and circle back with that information. A mass increase in acreage is not anticipated as a lot of the region is not conducive to agriculture.

Question: The PC asked if golf course irrigation is being accounted for?

Response: Mark Masters answered that yes, if a golf course has agriculture water use permit, then that is captured in the forecast. Golf courses without an agriculture water use permit is not included.

Review of the New Surface Water Modeling Approach to Support Resource Assessments (Dr. Wei Zeng, GA EDP)

Dr. Wei Zeng with Georgia EPD then provided a demonstration of surface water assessment within the other Regions as the portion of the Altamaha River Basin within the Coastal Region does not have water supply or wastewater discharge permittees. The original model was broad scale with a limited number of planning nodes. For the update, a new modeling tool was created, and an order of magnitude of new nodes were established at surface water discharge locations, gages, and reservoirs. With the new level of detail, EPD can analyze withdrawal user water quality limits (set at worst case scenario conditions) during low flow scenarios. The model uses unimpaired flows over an 80-year period from 1939 to 2018 so that all major drought or wet periods are captured. The 2010 to 2018 timeline shows an average period with a borderline dry condition.

The team looked at two types of challenges where the water supply or low-level flow was used to determine the NPDES flow threshold and how often the threshold could be breached. The first example is for Plant Hatch where the 2010 to 2018 data was looked at to come up with a monthly demand trend. Even in the dry years, there was no water supply shortage seen in the model. The facility has a permitted discharge with a limited discharge of 1.5 MGD (2.3 cfs) and a 7Q10 flow of 1,219 cfs. The 7Q10 flow is used as the regulatory flow for permittees and is defined as the 7-day average flow that is not to be exceeded 10% of the time. For the Plant Hatch example, what is being seen is that the flow is not being exceeded 5% of the time. The percentage of breaching the 7Q10 flow may increase if a future scenario is used. If that is the case, EPD would go back to the permitted facility to tweak the parameters so that breaching can be reduced.

Question: An attendee asked if water quality is affected if the 7Q10 threshold is reached?

Response: Dr. Zeng replied that when the NPDES flow is calculated it is not the absolute minimum flow at that location, and there is a percentage of time when that flow might be even lower than the 7Q10 flow. If the water pollutant concentration is calculated where the discharger is discharging at their permitted flow, then an incursion of pollutants will be seen.

Question: An attendee asked if the number of breaches includes natural disasters?

Response: Dr. Zeng answered that on the high flow end natural disasters are not being considered. That would be a part of the water quality modeling done by Elizabeth Booth with EPD.

Another type of information that is being collected is fish habitat where the team is looking at what habitat qualities certain species of fish prefer. The moderate to low flow conditions is where the most favorable habitat is seen. Bathymetry data collected by UGA students was used to identify where fish habitat can be developed. Using that information, the team converted the everyday flow into the amount of available habitat which changes from year to year and month to month. Once future scenarios are developed, a curve can be developed to determine where the ideal habitat conditions are. Dr. Zeng noted that help from a biologist is recommended to understand the curves for the future scenario.

Dr. Zeng explained that the Middle Ocmulgee triggered the analysis of additional metrics used in the model when local users/experts were interested in the recreation on the Macon River. Stakeholders were asked to identify areas along the river with the type of interest at each location and the ideal conditions for each interest. Gage information was then used to look at how often boating was available for recreation to help make a balanced decision between water supply and interest of use. The Coastal Georgia Council can also have an opportunity to develop their own metrics when the other models are ready.

4) Overview of the Regional Water Plan Update Process and Schedule Moving Forward (Shayne Wood, CDM Smith)

The PC will work with a small subgroup to go over the items discussed earlier in the meeting regarding modifications to the Region's visions and goals. A virtual meeting will then be set up before the next meeting for the Council to get together and hash out the updated visions and goals. The PC requested for the Council Members to review the meeting slides and come to the virtual meeting ready with ideas. The PC will then work to get the gap analysis started to iron out the technical items discussed earlier. The goal is for the visions and goals to be updated by the next meeting which is anticipated to be during the May or June timeframe. Then, the Council will meet again in the July or August timeframe to go over the management practices. For the last round, the management practices were put into a slide deck and the Council Members indicated 'Red', 'Yellow', or 'Green' where green practices are screened for staying/good, yellow may need to be discussed, and red may need to be reevaluated. For this round, a technical committee may be formed to refine the management practices as needed. The draft plan will be pulled together by September, and the Council will reconvene in November to talk about incorporating comments.

The PC added that the sections of the plan update are being worked through now, so the idea is to get sections out to the Council as they are drafted. This will allow the Council to be familiar with the content along the way. Revisions being made mostly affect the numbers, so the content is largely the same as what has been seen in the past. All revisions are being made in Track Changes so that the Council will be able to see what exactly has changed. For the Coastal Region, the Water Demand Technical Memoranda and Section 4 of the plan will not be able to be released until the Council decides on the population projections.

Question: Chairman Thompson asked if there will be major changes to the plan?

Response: The PC answered that the majority of the heavy lifting was done in Round 1. This time, the changes are mostly updates and tweaks based on the technical information and input from the council.

5) Next Steps/Public Comment/Local Elected Official Comments

Damon Mullis with the Ogeechee Riverkeeper then shared updates on an ongoing project called "Know Your River". This goal of this project is to have a GIS based website to collect all water quality data from all agencies and municipalities in the state. The effort is in its second year with Seed Grant Funding and is being led by the Savannah River with the City of Savannah as the municipal partner. There are over 6,000 sites where data is being collected with 35 public layers available. In addition to water quality sites, live stream gages, state parks, and precipitation forecasts are planned to be added. The dashboard is being worked on now which will allow the user to search for certain parameters and download data. The intent will be for the dashboard to be updated every five minutes. The website can be found at https://www.knowyourriver.com/ and it should be noted that some of the items discussed are a work in progress and are not live yet. The next steps are to create the standardized dashboard and create a manual for expansion beyond the existing basins.

Chairman Thompson then turned the discussion to the next Council Meeting. Before the next meeting, the Council will need to have a conversation about goals, population projections, and per capita values. It was requested for the new members to familiarize themselves with the current plan that is on the website so that they can be involved for this round of updates.

The meeting was adjourned at 2:00 PM.

6) Meeting Attendance

Affiliation	Name
Coastal Georgia Regional Water Planning Council	Benjy Thompson Ken Durand Russ Foulke Brian Nease Phil Odom Pete Peterson Jim Vaughn Randy Weitman John Godbee William Guthrie Ken Lee Michelle Liotta Jim McGowan Monty Parks (Proxy for Shirley Sessions)
Regional Water Planning Council Planning Contractors	Danielle Honour Bill Davis Shayne Wood Emma Sutherland
Georgia EPD	Reid Jackson Jennifer Welte Dr. Wei Zeng
Public/Agency Attendees:	
Altamaha Riverkeeper	Maggie Van Cantfort
Georgia DNR	Joel Flemming Alex Lummins
Georgia Forestry Commission	Bert Earley
Georgia Water Planning & Policy Center	Mark Masters
GWES	Cohen Carpenter
Hussey Gay Bell	Jessica Hargrove George Kimbrell Trent Hodges
Ogeechee Riverkeeper	Damon Mullis
Public	John Clarke Ellis Kirby
Simonton Engineering	Paul Simonton
St. Mary's River Management Committee	Elizabeth King
UGA	Gary Hawkins
UGA Carl Vincent Institute	Taylor Hafley