Georgia Department of Natural Resources

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M E M O R A N D U M

TO: Council Members

FROM: Jeff Larson, GA EPD
Bill Martello, JJG

SUBJECT: Council Meeting 5 Summary
Savannah-Upper Ogeechee Water Planning Council

Georgia Comprehensive Statewide Water Management Plan
Regional Water Planning
Council Meeting 5 Summary

Meeting Date: March 25, 2010
Location: Richard B. Russell State Park
2650 Russell State Park Rd
Elberton, GA 30635
Attendees: See list

(1) Welcome and Introductions

Chairman Cross welcomed everyone. He asked guests and public attendees to introduce themselves.

(2) Updates from the Council Chairman

Chairman Cross reviewed a meeting he had with EPD Director Allen Barnes. Mr. Cross indicated that Mr. Barnes and he discussed South Carolina's potential allocation of the Total Maximum Daily Loading (TMDL) in the Savannah River. Mr. Cross said that a plan for

sharing the TMDL will be done jointly with Georgia and South Carolina. Jeff Larson noted that South Carolina is working with EPD to find a TMDL allocation that both states can live with.

Mr. Cross gave an update on the progress of the Governor's Task Force. The latest Task Force meeting dealt primarily with conservation. During the current legislative session, a bill was passed establishing new water conservation standards and incentives including toilets, showerheads, daytime watering, and separate water meters for apartments. Mr. Cross noted that interbasin transfer legislation is not likely to be passed this year.

EPD has done extensive resource assessment concerning surface water availability. There is no negative gap shown at Lakes Hartwell, Russell or Thurmond, meaning that with current permitted withdrawals, there is plenty of water in the basin to meet demands. Mr. Cross expressed that while this is good news, the concern is more than just for the total amount of water, but also what the lake level must be for these demands to be met in a drought condition. The EPD model assumes full use of the conservation pool. No minimum lake level was established for the conservation pool. If economic development were included as a consideration, then the future condition would become a different scenario. Under current drought conditions, the worst-case is 13% reserve in Thurmond and 37% reserve in Hartwell. The conservation pool at Thurmond extends to an elevation of 312 ft. The council needs to consider what elevation is a satisfactory level. What is the minimum point at which meeting water quality during a drought should be weighed against protecting future economic development?

1. Council asked what the lowest point reached during the most recent drought was. (*315 ft-msl in Clarke Hill).*

2. Council asked if there are any studies on the impact of lake levels on economic development. He expressed concern about wildlife habitat with lake level being too low. *(The USACE indicated that the Strom Thurmond Institute at Clemson University is conducting an economic study and is gathering data for Georgia and South Carolina, hoping to produce a correlation between lake levels and economic impact at Hartwell. The next meeting related to that effort is at Clemson University on Friday, April 16th.)*

3. Council suggested that based on water availability and projected usage, the council produce a set of steps to take to meet demand in 2050; however, it is also desirable to maintain the economic viability of the lakes, meaning there should be two sets of recommendations. Chairman Cross concurred.

Chairman Cross showed to the council the profile view depicting how the reservoirs "step down" and he recommended that everyone find and observe it online. The profile is located here: http://water.sas.usace.army.mil/dams/dams1Z.htm.

Mr. Cross observed that the Task Force bill does not prohibit interbasin transfers, but it puts a lengthy review process onto them which is better than current law. Jeff Larson mentioned that EPD can grant an interbasin transfer by public notice according to the Georgia State Water Plan, adopted in 2008, which was produced under state law and approved by the state legislature. Chairman Cross noted that the general complaint has been that EPD could grant an interbasin transfer without any public input, which is a main concern of Tom McCall. He noted that current legislation prohibits interbasisn transfer into the Metro North Georgia Water Planning District. The bill under consideration right now would potentially create a process for allowing such transfers.

Concerning funding and government involvement, Mr. Cross noted that because the transportation sector is still suffering budget shortages due to the poor economy, there may be little government funding available for water issues. The best thing to do at the present time may be nothing and to rely on the law prohibiting interbasin transfers into the Metro North Georgia Water Planning District.

Chairman Cross commented that the next council meeting may need to be on a schedule shorter than 3 months. A goal over the next 45 days is to take the forecasts presented today to technical and local experts each council member must speak with and return with comments. The next time the council convenes those figures will be considered final and a vote may be considered to adopt the revised forecasts so the Council can move forward.

1. Council noted that it was heard that forecasts would not be complete by this council meeting. (*The demand forecast is not necessarily complete because input is needed. Council members must consult with their experts or constituents to reach a conclusion on the acceptability of the forecasts. OPB has published the official population forecasts through 2030. They have also provided EPD population forecasts through 2050 for the purposes of this study. The planning contractor provided handouts of population forecasts through 2050 to the council.)*

2. Council member asked whether the council would reach a recommendation at this meeting. He noted that whatever threats exist for the water of the Savannah-Upper Ogeechee Region are going to be economically driven. *(A dual recommendation will likely be needed. Bill Martello noted that different water availability scenarios would be reviewed later on in the day. The Corps must operate reservoirs to meet multiple authorized purposes. Chairman Cross noted that the Savannah-Upper Ogeechee Region is the only planning region that showed no negative gap on its reservoirs. Even though the positive situation is not satisfactory as far as lake level, the Savannah-Upper Ogeechee Region is still in a better position than the other regions.)*

(3) Municipal and Industrial Water and Wastewater Forecasts

Bill Martello announced that later on, Matt Harper from the Metro North Georgia Water Planning District would be presenting on water planning issues and lessons learned. Bill stated that there are 9 months left to get a draft water development and conservation plan to EPD. The schedule is very aggressive, and finalizing the water and wastewater forecasts is critical to plan development.

Draft Municipal and Industrial Forecasts

Population and preliminary water and wastewater forecasts were provided in the pre-meeting packet. Bill Martello presented an overview of population forecast for the Region. The Region currently has a population of 600,000 people, which is projected to grow to 1 million by 2050, approximately a 1.5% per year growth rate over the next 40 years. The average growth rate for Georgia is projected to be 1.8% per year. The bulk of the growth in the Region will be in Columbia and Richmond Counties. Bill Martello stated that comments on population projections should be directed towards OPB.

1. Council member noted that Oglethorpe County is going to triple in population while other counties were losing population. He asked whether or not the assumptions or data were available on how those projections were reached. (*OPB has revised the population based on comments received since its initial release of draft population forecasts in June 2009. Any information request and comments should be directed toward OPB. Chairman Cross urged that concerns about the population projections should be addressed expediently.)*

2. Would the projections be updated using the 2010 Census Data? *(Population projections are tentatively scheduled to be updated on a 2-year cycle. The 2010 Census is likely to be available for the next cycle of population updates.)*

3. Council remarked that smaller counties may be hurt by this methodology because population drops indicate less water use while agricultural demands in the county will remain the same or increase. *(Agricultural water uses are being forecasted separately, as are industrial and energy water use projections. Municipal water uses trend with the general population, but industrial uses do not. Agricultural uses (irrigation uses for major crops) have been projected by UGA and are available online. Energy water use forecast is being developed by EPD in a joint effort with power companies in the State.)*

4. Council asked what the break-point should be on considering an industry to be "light industry" and be lumped with municipal demands or heavy and projected separately as an industrial demand. *(EPD has identified 13 North American Industry Classification System code industries that are being handled separately. These industries use more water for their processes and therefore are considered major water using industries.)*

5. Planning Contractor commented that these water use forecasts are for planning purposes, not for permitting.

Municipal Water Demand Forecasts

Planning Contractor gave an overview on forecast methodology and presented the initial and revised per capita water use rates for the Savannah-Upper Ogeechee counties. She emphasized that municipal demand here includes residential, commercial and light industrial water demand. She encouraged input from council members if anyone should have additional feedback. An outreach effort was made from October to December of 2009, 57 utilities (or municipalities) in the Region were contacted via e-mails and phone calls; questionnaires were sent regarding water use and wastewater assumptions. Eighteen utilities responded, resulted in revision of per capita water use rates in half of the Savannah-Upper Ogeechee counties. It was learned through that effort that there is not a high awareness of the regional water planning effort that is taking place, especially among the smaller utilities. Help from council members is needed to fill the gaps in the per capita water use calculation and other assumptions for the forecasts.

1. Council observed that the table in the slide does not match the table in the pre-meeting agenda packet. *(Only the revised per capita rate is in the pre-meeting packet. The presentation shows both the initial and revised per capita water use rates.)*

2. Council asked whether or not the water use rates include industrial data. (*It depends on the classification and size of the industries. The per capita rate can include usage from many small industries. However, if an industry obtains water from a municipal water provider and belongs to one of the 13 categories, it should be separated. It is important that these numbers be finalized in the next month with help from council members.)*

3. Planning Contractor noted that the per capita water use rates may decrease in the future due to water conservation measures enacted by the recent Task Force bill. It was noted that a time-dependent adjustment to the per capita rate was developed to take into account the natural water savings resulted from new construction that will only have low-flow fixtures and replacement of older toilets with low-flow toilets in older homes throughout the planning period. The Planning Contractor can provide this data if the council is interested.

4. Council member asked if an industrial user does not have a permit but uses large quantities of water (>80,000 gpd), should it be left as municipal or reported as industrial. *(If the information on the industry is available, or if it is one of the designated North American Industry Classification System industries, it should be provided to the Planning Contractor. It would be included in the industrial water demand forecast.)*

Planning Contractor stated that 75 gpcd is used as the self-supplied water use rate for people on individual wells. Other numbers may be used for the different counties if requested. The majority of water served in the Savannah-Upper Ogeechee Region is from public water suppliers and from surface water sources. Projections of future water use are based on current practice as a baseline assumption. In other words, the current ratio of surface water to groundwater use is held constant in the future in the baseline forecasts. Council members may request changes to this assumption through feedback if they know of development of new water supply sources that may change the ratio.

1. Council member asked if Chatham County will be added to the water use projection models. *(Yes. The resource assessment models are based on basins and aquifers, not on regional boundaries.)*

2. Is it possible to project changes in the self-supplied to publicly-supplied ratio due to the creation of new public water suppliers. *(Yes, please inform the Planning Contractor of plans or changes to new public water supplies so we can incorporate them into the forecasts.)*

Municipal Wastewater Forecasts

Municipal wastewater projections are based on indoor water use. Estimates of inflow/infiltration are added to the indoor water uses to produce projections for municipal wastewater quantities. This does not include industrial wastewater.

The average indoor water use estimates are based on an EPD report (Georgia Water Use and Conservation Profiles, 2008) that includes a water use profile for eight communities in Georgia. The eight communities had good billing data and accounting systems that facilitated the analysis of use by category. The communities in the Savannah-Upper Ogeechee Region were compared to the eight communities in this report to find a "similar" water use pattern. The comparison looked at population, age of housing, and land use.

The indoor water use percentage ranged from 77% to 88% for counties in the Savannah-Upper Ogeechee Region. The baseline assumption is that for future wastewater projections, the indoor use ratios will be held constant for each county. If the indoor use ratios are expected to change due to changes in density, land use or other reasons, then the assumption that the indoor usage fractions are to be held constant through the planning window should be adjusted. Council members need to let the Planning Contractor know if they expect the indoor use ratios to change in the future.

Additionally, the percentage of people using septic systems is held constant from 2010-2050 as a baseline assumption. The base year (2005) septic system percentage was estimated based on the number of septic systems reported in 1990 census data and the number of new septic installations between 2000 and 2007. In 2000, the census stopped collecting data on the number of septic systems. EPD collected information on the number of septic systems installed between 2000 and 2007 by county for use in forecasts. Therefore, the percent of

septic systems in 2005 (base year) is an interpretation of these two sets of data. Council members are urged to provide better local data, as available. Many local health departments track numbers of septic systems, but not all. The percentage of the population on centralized wastewater treatment system for each county was presented.

1. Council member observed that table shown in the presentation does not match what is in the handout. *(It is possibly a mistake. The data in the handout is correct.)* **[**Note from Planning Contractor: The data shown in the presentation was **the percentage of people who have public water supply but uses septic system to dispose of the wastewater**. The handout showed the **percentage of total WW that is treated in septic system**.]

2. Council member expressed concern about the assumption that the baseline septic use ratios are being held constant for the planning period. *(If there are plans to expand existing wastewater collection and treatment systems in the future, Planning Contractor would like to work with each County to refine this percentage so the forecast can be adjusted. If better data on septic systems is available from local health department, council members should send it to Planning Contractor.)*

3. Council member asked if Madison County is shown to have 100% septic usage, then the wastewater projections assume that there is never going to be a centralized wastewater system. *(Correct. Planning Contractor knows this assumption may not be right, but need to work with the Council to define the "future" percentage that will be served on centralized wastewater systems. Planning Contractor asked the Council and local utilities to provide information on new or planned systems so we can factor this in future projections.)*

Industrial Water

EPD's permit database was the starting point for industrial demand projections. There are 13 categories of major water-using industries included. Projections of employment growth from OPB are used to project future demands for each industry. If specific input was received from industries, that additional information was incorporated.

1. Council questioned that if a major textile mill is closed down, that demand is kept in the database because someone else may use it? *(Yes, it was agreed early on in the forecasting process by all councils that even if an industry is showing declining employment, the water use for the particular industry will be held constant through the planning period.)*

2. Council asked at what point in time were the industry water use rates fixed. *(The base year is 2005 and data from EPD was used to gather industrial water use. Certain industries may decline by 2050, but their demand is projected to remain and be filled by other industries.)*

3. Council commented that this methodology seems to be flawed. In addition to textiles, the paper industry is also going to decrease, and a great deal of water is likely to become available. *(This is a way to reserve available water for future growth. It may help to look at the industrial water uses for the Region as a whole instead of by industry.)*

4. Planning Contractor stated that industrial uses are significant. The Council can ultimately decide how to handle available capacity for declining industries.

Industrial Wastewater

Industrial wastewater quantities were estimated based on usage, using data from the EPD withdrawal permit database. Wastewater permits were also used to determine where the treated effluent goes (stream discharge or land-application). EPD provided a ratio of estimated wastewater return by industry for use in wastewater forecasting. This return ratio was based on researched industry average return rates.

1. Council noted that inactive permits are being used as an asset by communities to try to recruit industries to move in. It would be beneficial to include this as a consideration.

2. Council asked when the baseline would be updated. *(Immediately. Planning Contractor will continue revising the forecasts based on feedback and hopes to be done with this in the near future.)*

(4) <u>Guest Presentation from the Metro North Georgia Water Planning District</u>

Matt Harper gave a brief overview of the nature of his presentation, which is designed to share the Metro North Georgia Water Planning District's issues and lessons learned with the Savannah Upper Ogeechee Water Planning Council. He covered the creation and structure of the District, which consists of 16 counties and is governed by 26 board members (16 elected officials, 10 citizens). The timeline set in 2001 at its creation was rather aggressive. District plans were adopted in 2003 and updated in 2009.

EPD provides planning guidance but does not necessarily agree with everything in the District's plans. EPD certifies the plans so long as they follow the guidance EPD sets forth for the District.

The metro North GA area has crystalline rock aquifers which produce little groundwater, so reliance for water supply is primarily on surface water streams. Reservoirs are difficult to build in the District's region. Water transfers into the District from outside are prohibited, but transfers within the District are necessary because many of the cities are built on ridges. Water conservation is essential to meeting future needs. With water conservation, the current supply of water may be extended out further before alternate measures are needed to meet demand. With conservation, the District is not projected to have a water shortage by 2035.

1. Council asked if the projections assume the District will continue to get the same amount of water from Lake Lanier. *(Yes.)*

2. Council asked how much groundwater is used in the district. *(Very little. Most of the new permits are expected to be for surface water.)*

3. Council questioned where the potential new reservoir sites are. *(There are several sites, but not all are feasible. Such sites are hard to come by.)*

4. Council asked by whom the new reservoirs would be funded. *(Local governments and rate payers.)*

5. Council asked which base year data was used for projections for the recent plan updates. *(2006 data was used in the most recent plans, normalized for standard weather conditions by a national expert. The District feels these are good projections.)*

6. Council asked how the District considers economic growth into its future needs for water, considering a potentially worse future drought. *(There is long-term planning and there is drought planning, and the two are different in nature. Reservoirs must begin construction 5 years in advance in order to meet some projected demand. Drought was considered, but had the District assumed that a drought would happen every 5 years, it would underestimate realistic projected water usages.)*

7. Council asked what is the District's last alternative. *(Reallocate Lake Lanier.)*

Mr. Harper discussed the conservation measures put in place by the Metro North Georgia Water Planning District through its water plans. Ten conservation measures were adopted, including conservation pricing, replacement of old plumbing fixtures, pre-rinse spray valve education, rain sensor shut-off switches on new irrigation systems, sub-meters in new multi-family buildings, water system leak reduction and repair, residential water audits, low-flow residential retrofit kits, commercial water audits, and public awareness/education.

1. Council asked how the proper multi-tiered rate structure was determined. *(It's an art and must be considered separately for different regions and different utilities.)*

2. Council asked if tiered pricing is potentially a state-wide measure. *(Yes. It's in the new bill from the Governor's bill SB370).*

3. Council member asked what Atlanta is doing to fix water system leaks. *(There are legitimate water uses that aren't metered or billed, such as City Halls or fire hydrants, which can confuse estimates of water loss. The difficulty is in finding out which is which. The City is using special software to perform audits on water systems and to locate, prioritize and optimize water leak repairs.)*

4. Council member commented that not metering government buildings sounds like an excuse to not fix leaks. Usually, the only unaccounted-for water that is not a leak comes from fire hydrants. *(Loss of water is potentially due to long runs of pipe or very old systems. Atlanta has both. There are many leaks but they are being fixed. 9,000 repairs were made in 2009.)*

5. Council asked if there is a certain leaking percentage that the District is aiming for. *(The estimates of loss vary from place to place. City of Atlanta has leaks and is working to fix them. Planning Contractor noted that each utility with a withdrawal permit will soon be required to submit an annual water conservation progress report and non-revenue water or water loss will be tracked in this progress report.)*

6. Council member commented that McDuffie County caught 12% of its unaccounted-for water by replacing all the building meters. (*Meter replacement and calibration program is important in controlling water loss*.)

7. Council inquired about how local governments account for required retrofits with budget problems. *(It's going to hurt local budgets, but it is something that needs to be done. It is important to show that rate-payers and small governments are willing to enact conservation measures if larger governments are expected to do it too.)*

8. Council member commented that he has heard from time to time that as a nation, the United States is behind in water conservation. Other nations appear to be far more advanced. He asked if Atlanta has done any benchmarking with other countries to improve technology and alternatives. *(No. There is, however, nothing else like this plan in the Country. The leadership on the front end from the District says these measures are needed, but then the EPD has the ability to enforce.)*

Matt commented that the water demand from the 2008 plan was significantly lower than the demand from the 2003 plan, which is indicative of smarter water use and better planning.

New Water Facilities

Current plans in the District call for six new reservoirs, six new water treatment plants, and the expansion of 28 existing water treatment plants.

Local Planning

Matt spoke on the need to develop and update water master plans, local drought contingency water plans, and source water supply watershed protection plans.

1. Council member asked what is meant by "watershed protection". *(It means managing growth and development within a watershed to protect its water. For example, it isn't wise to put a new intake downstream of a railroad crossing or to allow a new dry cleaner to pollute the runoff. Watershed protection is essentially risk management.)*

2. Council then asked how the water in a watershed can be protected if the governing entity doesn't own or control the land. *(When reservoirs are identified as being for water supply, the same buffers still apply. Many governments can set aside funds to buy land around a reservoir to maintain the buffers, but they cannot buy a whole watershed, so they must educate the public. Cooperation is essential.)*

Public Education

Matt commented that the best way to affect people is face-to-face. There is a regional component on public education and local implementation of regional goals. Videos, brochures, press releases, and a website are used in the District's education efforts.

Toilet Rebate Program

A rebate program for new, efficient toilets was started in 2008 with 16 utilities participating. Under this effort, single-family residential homeowners may get rebates for new low-flow toilets. To date, about 36,000 toilets have been replaced.

Wastewater Treatment Issues

Wastewater treatment systems in the District must be improved and expanded. The growth of the population served by septic systems is an important factor in future wastewater generation. Septic currently accounts for 10% of all wastewater in the District and 20% of residential wastewater. Matt noted that Walton County opted out of the District in 2008 to join the Upper Oconee Water Planning Council.

Septage forecasts are included in the plan update. Wastewater septage loads on treatment plants are expected to decrease because the percentages of homes on septic tanks in the District are expected to decrease.

Intensive management of sewers and septic systems is important. In particular, an ordinance for private wastewater systems may be enforced by EPD, so adopting one may be helpful for planning entities. They may prohibit private systems altogether or require that they be installed according to certain specifications.

Greater emphasis is being placed on local wastewater master plans. Local wastewater system providers are responsible for certain things concerning their centralized systems, but local governments are responsible for local septic systems.

Watershed Management

Paved areas impact streams, generating water quality problems in the District. Land cover has changed dramatically in recent years and this must be acknowledged and accounted for in watershed management. Important tools for watershed management are comprehensive land use planning, floodplain delineation and maintenance, sanitary sewer inspection and management, ordinances on construction impacts, asset management, pollution prevention including detection of illicit discharges into storm sewers, water quality monitoring, local education, and resource-specific measures such as TMDLs or endangered species protection.

State Water Plan

The State Water Plan cannot change state law, which is why the District's boundaries were fixed when it was included as a regional council.

Lessons Learned

Local participation and financial support are keys to a successful water planning program. Partnership between local and state governments is important.

Don't re-invent the wheel – the District relies heavily on knowledge and existing efforts and plans.

1. Planning Contractor asked for advice for this group for future water planning challenges. *(Know about legal challenges and droughts in advance.)*

2. Council inquired if the District expects the United States Congress to reallocate Lake Lanier. *(Reallocation is the only option that can be prepared by 2012. Everything else will take more time. It must be remembered that there will be other hurdles, as the Magnuson ruling was just the first phase of the problem. Endangered species is another consideration which hasn't yet been answered, and it may overrule a successful negotiation between GA, AL and FL.)*

3. Concerning the Water Wars, Council asked what it is that Atlanta has to give up in terms of growth potential to meet the needs of the other states enough to reach a consensus. Essentially, how far off are the states from agreement? *(Georgia is willing to give up quite a bit and would feel it. There is hope with the Alabama negotiations. Unfortunately, no one is truly privy to what those negotiations are.)*

4. Council questioned if Southern Company has a power plant taking a great deal of water. *(Total power generation within the District was considered and it added up to 18 MGD. Somewhere around 90% of that is returned.)*

(5) Agricultural and Energy Forecast Update

Bill gave a brief update on projections for agricultural and energy water uses. About 47.5 MGD is used in crop irrigation for the Region, with 9.2 MGD for livestock and 10.2 MGD for horticulture. The 2050 forecasted irrigation needs for major crops have been completed. Based on comments from multiple councils, EPD is working with the livestock and green industries to complete their water demands. Cumulatively, these industries use significant water, but the individual users are not large enough to require individual permits. UGA and EPD are working with representatives of these industries to develop a snapshot of current water use.

The demands for livestock water use are a snapshot of the 2005 usage. Future livestock water use will not be available for this round of planning. EPD hopes to collect better information by the next round of planning for livestock water use. A snapshot of the 2005 usage has also been estimated for the nursery and horticulture industries. The green industry is working on forecasts through 2050 and they are not available yet.

The energy demand forecasts are still being worked on by EPD with inputs from Georgia's power companies. The hang-up is the question of what the future fuel sources will be. The forecasts are projected to be done in the summer of 2010.

(6) Next Steps

It is critical for the Planning Contractor to receive and incorporate any additional feedback on municipal and industrial water and wastewater forecasts. The agricultural demand forecasts should also be finalized soon.

(7) Joint Meeting Update/Overview of Resource Assessments

EPD held joint meetings in January and February of 2010 to present initial results of resource assessments for Georgia's six major basins. The resource assessments were performed for surface water availability, groundwater availability and surface water quality under current use conditions.

Surface Water Availability

Current surface water availability for consumptive water use and for flow regime (in-stream use) was evaluated. The resource assessment models included 70 basic nodes and 40 planning nodes. River-Basin Planning Tools and Reservoir Operations Models were used. Bill noted that the models assume that the state will not force a utility to augment river flows to meet the 7Q10 if the river flow is below that amount. Bill gave an overview of the

assessment process and showed how the unimpaired flow and flow regime is defined step-by-step.

Five planning nodes (sub-basin planning units) were selected in the Savannah River basin. Bill first discussed the Hartwell Node as an example. The current resource assessment showed no water supply gap at Lake Hartwell based on drawdown to a minimum lake level of 37% conservation pool. There were no constraints in the model for how low the lake can be drawn down. Bill then reviewed the Lake Thurmond node results. There was no water supply gap found there, but it required drawing down to 13% of the conservation storage. The results were similar at the Augusta, Clyo and Savannah Nodes. In summary, the water demand and flow regime can be fully met by available water, and there is ample storage in the Corps reservoirs for a typical drought scenario. One of the tasks for EPD in the coming months will be to impose future demands on the model.

1. Chairman Cross commented that he disagrees with that method. In this scenario, water quality impacts downstream may affect the operation of upstream reservoirs.

2. Council member noted that the Council also doesn't know when South Carolina will put a pipe in the Savannah River and try to take the water.

3. Chairman Cross stated that so far, he had not heard anything from South Carolina that would indicate a major withdrawal impact.

4. Jeff Larson said that EPD is currently working with South Carolina to get to an agreement. EPD has been talking with South Carolina's Department of Health and Environmental Control (SCDHEC) and its Department of Natural Resources about using a similar process to project demands. The starting point of the agreement will be future demands.

5. Council asked if EPD is looking at scenarios with Lakes Keowee and Jocassee alleviating downstream water use. *(Jeff commented that they are considering such scenarios.)*

6. Council asked what criterion is used to set the 3,500 cfs minimum from the Thurmond Reservoir. *(Downstream flow needs and water quality.)*

Surface Water Quality Resource Assessment

Bill described the basic methodology of the water quality (or assimilative capacity) modeling. Input parameters include: stream flow, topography, rainfall, evaporation, and land use. The models are run at critical conditions with lake models (watershed models) looking at the impacts of nutrients. The models were calibrated to real-world data using stream flow records to produce dissolved oxygen levels at critical conditions. He also discussed existing water quality standards for dissolved oxygen.

The results of stream segment models were defined in 5 levels and the streams were mapped according to category. Waters near the coast are naturally low in dissolved oxygen. A new TMDL is being developed for the Savannah River and Harbor concerning dissolved oxygen.

An additional issue is how the TMDL load will be shared with South Carolina. Jeff Larson commented that the major dischargers are already discussing this and will hopefully produce a TMDL implementation plan.

Bill discussed sample results from the modeling effort for the Savannah River and for the Savannah Harbor. Nitrogen and phosphorus levels are both concerns for the Savannah-Upper Ogeechee Region.

1. Council asked why fecal coliform is not considered. *(Dissolved oxygen is the major concern, and fecal coliform is not a critical factor for determining dissolved oxygen. Additionally, fecal coliform is rather difficult to model. Planning Contractor noted that fecal coliform has been addressed by the 303(d) List of Waters and TMDL requirements. EPD has to prioritize the study parameters due to limited funding and time.)*

The draft synopses of the resource assessments have been posted to the State Water Plan website for council's review.

Groundwater Availability

From a groundwater perspective, Georgia is divided into two characteristic regions by a fault line. Sustainable yield is the amount that can be drawn from groundwater without causing undesirable results. In the crystalline-rock aquifer, sufficient cracks are not likely to be found to bring sustainable yield up to meet demand. In the Upper Floridian, Cretaceous, Claiborne, and Paleozoic-rock aquifers the sustainable yield is higher than current usage.

The model increased withdrawals from existing wells up to the design metric to determine what would be an acceptable yield. Bill covered some sample results of groundwater modeling and described the layout of aquifers in Georgia. The resource assessment shows that there are relatively large quantities of groundwater available above existing withdrawals in all modeled aquifers in Georgia, except for the Paleozoic rock aquifer in northwestern Georgia. The draft synopses of the resource assessments have been posted to the State Water Plan website for councils' review at the location linked below. A summary of the predicted sustainable yield for each major aquifer is provided.

http://www.georgiawaterplanning.org/news/DraftWaterResourceAssessmentsforReviewandComment.php

1. Council asked if there is concern about saltwater intrusion. *(Yes, it is a major concern in the coastal area.)*

(8) Management Practices

Bill gave an overview on management practice selection and goals, as well as examples on water supply, return and quality management practices. Water supply management practice examples include water conservation, new reservoirs, and water return management. Return management includes reducing outdoor use, decreasing land application of wastewater, and reducing septic usage to increase the quantity of treated wastewater returning to the river.

Management Practice Selection Process and Example

Bill focused on the Hartwell node as an example. Most of the demand at that location is municipal. Basic practices such as water conservation measures, system management, and water loss reductions (no-regrets measures) can possibly results in a baseline reduction in total demand. The current demands today are approximately at 10 MGD, and approximately 21 MGD has been permitted. Future projections are below the 21 MGD of permitted withdrawals.

1. One Council member asked if the model uses data from South Carolina, and if not, shouldn't the Council be concerned with them in this comparison process? *(South Carolina will certainly need to be included in future assessments, but this analysis compares permitted capacity to actual usage and forecast in the Region.)*

2. Council asked if there were a time utilities were encouraged to use land application systems and whether that trend is changing. *(It was a preference from the past, which is changing.)*

Bill showed an example of water quality management practice selection from the Upper Oconee basin where the impacts of point and non-point sources can be evaluated separately. Water quality management practices may include reuse, land application, improving compliance, best management practices, and watershed-based permitting. Management practices should consider regional vision and goals (such as minimum lake levels for the Savannah-Upper Ogeechee Region). Screening criteria must be developed which will be used to score management practices. The process by which management practices are selected consists of voting and documentation of the basis of the decision. That process can quickly get complicated.

1. Council suggested that a smaller council may need to be maintained down the road to address changes to management practices recommended by the state and EPD. *(Jeff Larson responded that guidance on how to remain involved will be produced by EPD, and that the council process will continue in the long-term.)*

Bill asked if the council preferred to discuss management practices as a group or to create a subcommittee, or to request JJG recommendations.

1. Council member noted that the EPD results were for existing demands. He asked what consideration there will be of future demands. *(Chairman Cross responded that the current results should allow the council to make decisions on what lake level to request. The Clemson study will also be helpful. Bill noted that a draft plan needs to be completed by the Council by December 2010.)*

Chairman Cross commented on the importance of having a set of forecasts adopted so the Council can move forward in this planning process. He identified a Council member as a point contact for each county and asked the selected Council member to contact stakeholders and local utilities in that county to have them review the forecasts and either approve the forecasts or provide information for further revision. Chairman Cross suggested to set a timetable of 30 days for reviewing and revision and recommended meeting again between 30 and 45 days to adopt the revised forecasts. He asked for volunteer to host the interim meeting. Lee Webster offered to host the interim meeting in Burke County. The Planning Contractor urged the Council members to obtain data from all players in the entire county, otherwise it is difficult to decide the county-wide assumptions or forecasts. Planning Contractor suggested development of a summary sheet for each county. Chairman Cross encouraged the Planning Contractor to be proactive in calling to get feedback. The contacts for each county are listed below:

Banks – Jerry Boling
Burke – Lee Webster
Columbia – Ron Cross
Elbert – Eddie Madden
Franklin – Donald Dye
Glascock – Charlie Newton
Hart – Pat Goran
Jefferson – Thomas Jordan
Jenkins – Robert Jenkins
Lincoln – Patricia Goodwin
Madison – Bruce Azevedo
McDuffie – Charlie Newton
Oglethorpe – Bruce Azevedo
Rabun – Larry Walker
Richmond – Tom Wiedmeier
Screven – Stan Sheppard
Stephens – Donald Dye
Taliaferro – N/A
Warren – Chris McCorkle
Wilkes – Mike Eskew

Chairman Cross reiterated that lake level minimums to protect future growth are a key issue for the council to decide on. Bill Martello suggested that a statistical limit be considered (an example goal may be to maintain elevations above 320 ft MSL 90% of the time).

Charlie Newton asked if the council can have an effect on the minimum flow downstream of the reservoirs through monitoring of the downstream water quality. *(Keith Crowe noted that while that is possible, monitoring can produce changes in the other direction as well if the water quality were poorer than expected.)*

Ron proposed to select 3 people from the council who will meet with the Savannah River Committee to produce more dialogue.

1. Brian Baker asked how the council will proceed with the draft of the report sections. *(Chairman Cross suggested emailing it out to council members who will have the opportunity to comment on it. Potentially a subcommittee could be formed to work in greater detail on the report later on in the process.)*

2. Brian Baker noted that in 30 days a check would be done on the forecasts and asked how the council will proceed. *(Chairman Cross suggested that the council vote on accepting the forecasts, then the rest of the interim meeting may be used to discuss the report sections or to take a tour of Plant Vogtle.)*

3. Planning Contractor noted that energy forecasts may not be ready for the meeting in 30 days. *(Tim McGill responded that the energy projections are being worked on diligently.)*

(9) Elected Official and Public Comments

Chairman Cross opened the floor to comments from the public.

A comment was received that the Savannah River was mentioned in a study as one of the nation's worst toxic release receptors in the country for combined air, land and water pollutants. That may have an impact on the planning process.

(10) Wrap-Up/ Council Meeting 5 Evaluation/ Next Meeting

Meeting was adjourned at 2:30 PM.

(11) Summary of Action Items

1. Planning contractor to collect information on the ongoing study by the Strom Thurmond Institute at Clemson University.

2. Planning contractor to send the appointed Council members a follow-up forecast summary sheet. Council will use the summary sheet to dialog with individual counties on future water use.

3. Planning contractor to set up an interim meeting in Burke County to summarize and finalize the municipal and industrial water and wastewater forecast numbers. Plant Vogtle tour will be scheduled.

4. Planning contractor to follow up with Arcadis team on "regulated stream" future condition and management practice model runs.

5. Planning contractor to perform research on interbasin transfer language and requirement in State Water Plan and send the information to council members.

6. Council will select 2-3 persons to represent Savannah-Upper Ogeechee Region to attend Savannah River Committee with South Carolina

Meeting Attendees

Council Members in Attendance

Ron Cross, Chair	Charlie Newton, Vice-Chair
Bruce Azevedo	Braye Boardman
Jerry Boling	Deke Copenhaver
Don Dye	Patricia Goodwin (alternate)
Larry Guest	Robert Jenkins
Thomas Jordan	Scott MacGregor
Eddie Madden	Chris McCorkle
Tim McGill	James Newsome
Larry Walker	R. Lee Webster

Council Members Not in Attendance

Charles Cawthon	Barry Cronic
Mike Eskew	Dan Fowler
Pat Goran	Toye Hill (alternate)
Lewis Sanders	Stan Sheppard
Tom Wiedmeier	Tenia Workman
Tom McCall (Ex-Officio)	Ralph Hudgens (Ex-Officio)

Staff in Attendance

Jeff Larson – EPD	Brian Baker – EPD

Bill Martello – JJG

Tai-Yi Su – JJG

Casey Porter – JJG

Partnering Agencies and General Public

George Bramlett – Corps of Engineers – Lake Hartwell

Scott Calloway – Georgia DNR, EPD in Athens

Dennis Black – Georgia Farm Bureau

Leanne Morrow – Georgia DNR, EPD in Athens

Vickie Yarbrough – Georgia DNR, EPD in Athens

Robert Amos – Georgia Soil & Water Commission

Keith Crowe – Corps of Engineers

Ed Bettross – Georgia DNR, Water Resources Division

Deatre Denion – Department of Community Affairs

John Colberg – Georgia Forestry Commission

Matt Harper – Metro North Georgia Water Planning District

Nancy Bobbitt – US Senator Isakson

Eston Melton – Member of the Public

Sam Booker – Georgia Soil & Water Commission

Frank Carl – Savannah River Keeper

Allen Saxon – August-Richmond County Utilities

Lindsay Averett – Member of the Public

Mark Gaffney – WSGC Radio, Elberton