Georgia Department of Natural Resources

Environmental Protection Division, Watershed Protection Branch
4220 International Parkway, Suite 101, Atlanta, Georgia 30354
Linda MacGregor, P. E., Branch Chief 404/675-6232
FAX: 404/675-6247

M E M O R A N D U M

TO: Regional Water Planning Council Members

FROM: Kevin Farrell
Assistant Branch Chief
Altamaha, Ocmulgee and Oconee River Basins

SUBJECT: Joint Water Planning Council Meeting
January 22, 2010
Macon, GA

DATE: February 11, 2010

On January 22, 2010, representatives of seven Water Planning Councils and the Metropolitan North Georgia Water Planning District met at the Amerson Water Treatment Plant in Macon Georgia to review draft groundwater and surface water resource assessments developed by the Environmental Protection Division (EPD). The following is a summary of the meeting:

1) Introduction

Kevin Farrell, Assistant Branch Chief for the Altamaha, Ocmulgee and Oconee River basins, welcomed the attendees and thanked the Macon Water Authority and their staff for their hospitality. Mr. Farrell provided Council members with an opportunity to add discussion items to the agenda. Mr. Farrell touched on some key issues for each region as well as where Councils share water resources and further coordination may be needed.

Mr. Farrell asked everyone to introduce themselves and invited the Council chairs or other designated Council representatives to say a few words about their Councils.

Richard Bentley, Oconee Council Chair - Mr. Bentley introduced the attendees from the Oconee Council. Mr. Bentley read the Oconee Council vision to the group. The goal of the Council is to responsibly manage water resources. The Oconee Council is looking forward to working with everyone.

Elmo Richardson, Middle Ocmulgee Council Chair – The Middle Ocmulgee Council members introduced themselves and their affiliation. Mr. Richardson introduced Mr. Copeland the Vice-Chair. The Middle Ocmulgee Council is looking forward to the work the Council will accomplish over the next few weeks. The Council is anxious to receive the population and employment forecasts that in addition with the resource assessments discussed today will provide the information they need to create a plan by the end of the year. Mr. Richardson stated that the Council appreciates other Councils contributing to the river, but hopes that they remain mindful of water quality. Mr. Richardson thanked Tony Rojas and Macon Water Authority for providing high quality water to much of the Middle Georgia area; Macon and several neighboring counties.

Brinson Lanier, Altamaha Council Chair – The Altamaha members introduced themselves and their affiliation. Mr. Lanier noted that Councils could read the Altamaha vision statement on the handout provided. The Altamaha Council has sixteen counties and a huge basin with several important rivers. Mr. Lanier thinks that the Altamaha Council is making progress and will make more based on the results provided today.

Dr. Ben Thompson, Coastal Georgia Chair – The Coastal Georgia Council members introduced themselves. Dr. Thompson said that the Coastal Georgia Council is downstream of the other councils. The Council is concerned about surface water quality and quantity. Dr. Thompson feels their vision statement is unique, as they are the only coastal environment in the state. Coastal Georgia region is the second fastest growing region in the state and the only region outside of metro Atlanta to have a regional planning process. The Coastal Georgia Council will work to integrate that planning process within their Regional Water Plan. Larry Stuber with the Council added that he hoped that successful Regional Water Plans will lead to a successful State Plan. Mr. Stuber also mentioned he was excited to see attendees from eight councils in attendance.

Dick Morrow, Upper Flint Council – Mr. Morrow spoke on behalf of the Council Chair, Donald Chase. Mr. Morrow explained that the Upper Flint Council is a very diverse region with different viewpoints. The communities in the region range from ex-urban communities in the north end of the region to the agricultural communities in the south end of the region. Mr. Morrow stated that the Upper Flint Council members respected their differences and were putting forth a sincere effort to work together. Consensus has been very important to the region. The Upper Flint Council vision statement highlights "cooperation among stakeholders" as an important goal for the Council. The Upper Flint Council is ready for data and discussions today.

Rusty McCall, Suwanee-Satilla Council Chair – The Council includes Valdosta-Lowndes County, close to the Florida at the southern end of the state. The shared border with Florida is a concern. Mr. McCall stated that the short-term problems may become even shorter term as some of the long-term problems receive focus. The Suwanee-Satilla Council is looking forward to working with everyone on a long-term state-wide plan. Mr. McCall recommends that the Councils follow the Governors lead and stay flexible.

Ron Cross, Savannah-Upper Ogeechee Chair – Mr. Cross stated that the Savannah-Upper

Ogeechee Region is the only Council that has a state line running the full length of the basin with South Carolina. The Council has started meeting with representatives from South Carolina and hope to work jointly with them. The Coastal Council shares water with many of the Councils in attendance, as they are downstream. South Carolina does not have discharge and withdrawal information available and hope that they follow the Georgia permitting lead. The Council is very interested in hearing the facts at the meeting and thanked the state for their efforts.

Mike Thomas, representing the Metro Water District – The Metro Water District is upstream of most of the Councils in attendance. The Metro Water District cares a lot about the quality and quantity of water that is sent downstream. Mr. Thomas, with Clayton County Water Authority, has been associated with regional water planning since the first Metro Water District Plans in 2003. The Metro Water District just finished our second round of regional planning. Speaking as a utility director, the Metro Water District has a very aggressive program. Mr. Thomas provided an overview of some of the water conservation measures and other aggressive programs that the Metro Water District is implementing.

Mr. Farrell introduced Mrs. MacGregor and some of the functions of the Watershed Protection Branch. Mr. Farrell stated that Mrs. MacGregor is very involved and immersed in the State Water Planning process.

Mrs. MacGregor provided a welcome. Mrs. MacGregor expressed her impressions listening to the introductions from each Council and hearing their vision and goals. The Councils have accomplished a great deal in terms of understanding their Council and knowing each other. The State's leaders identified 300 people across the state to create Regional Water Plans that will determine how water is used. Getting started on such an important endeavor is no small task. The resource assessments presented today are an integral piece of the work the Councils will accomplish in 2010.

Mrs. MacGregor read from the State Water Plan, "effective management requires a sound scientific foundation" best conducted at a regional level but this can be conducted statewide. The resource assessments are statewide and not subdivided by Council boundaries. The resource assessments are an evaluation of the water resources. The Council chairs asked to hear the resource assessments all together; which is why we are here together today.

The best experts in the state have been working hard to produce the baseline resource assessments. These resource assessments will be the building block for the work of the Councils in 2010. Mrs. MacGregor explained that the resource assessments will be improved over time based on diverse input and future data collection efforts. While the resource assessments are very technical, the resource managers will try to speak in plain English. The presentations include some modeling language, so the Council members were urged to ask for clarifications as needed. Mrs. MacGregor hopes the meeting today facilitates conversations between Councils, at the beginning of the water resources planning process.

The resource assessments are on a regional scale. Some council members have more detailed studies; such as property well studies or local water/wastewater master plans. One of the

recommendations in the Regional Water Plans could be more detailed studies in certain areas.

The resource assessment results will likely demonstrate what Council members already know because the models are calibrated to real conditions. There is groundwater available, there are groundwater/surface water interactions, and both point and nonpoint sources impact water quality. The assessments will, however, quantify what we know. These numbers may be refined or tweaked in the future. The resource assessments are discussions of the areas of concern.

Mrs. MacGregor reminded the Council members that the results are being presented at a joint meeting to encourage Councils to work together. While there are similarities between the Councils, there are also differences. Linda explained that while one of the roles of the watershed protection branch is permitting, there is a difference between permitting and these resource assessments. The resource assessments are inputs to the planning effort. There is no direct connection between the resource assessments and permitting activities; however, there is a direct connection between your plan and permitting activities.

Mrs. MacGregor asked if there were questions from the audience. There were no questions. Mrs. MacGregor thanked the Council members for their leadership and for the important work that the Councils will accomplish in 2010.

2) Groundwater Resource Assessment

Mr. Farrell introduced Dr. Jim Kennedy, the State Geologist, who works for EPD and reports to the Director. Dr. Kennedy is overseeing CDM (resource contractor) and other EPD staff working on the groundwater resource assessment.

Dr. Kennedy provided an overview of the groundwater resources for the region. The Eastern Coastal Plain, Cretaceous, and Piedmont Aquifers.

Q: The 40% of baseflow; that is related to surface water, correct? (Middle Ocmulgee)
A: Yes

Q: Did you run a model taking into account the permitted level of wells. The difference between permitted and actual usage is significant.
A: The resource assessments looked at actual withdrawals, either reported or estimated. The model results were compared to the actual measured groundwater levels in wells also known as calibration, and the models could not have been calibrated if permitted withdrawals were used in the models instead of reported or estimated withdrawals. EPD, however, is pulling together permit information to provide to Councils.

Q: Can't model against permitted value, but the Councils can make comparisons.
A: Yes. EPD is pulling this information together.

Q: In coastal areas, aren't there places where drawdown exceeds 30 ft? How did you handle?
A: These areas are being studied by the Coastal Sound Science Initiative, so EPD did not model

such coastal areas as part of the water plan process of determining sustainable yields.

Q: When looking at hypothetical new wells in the model, how did EPD define the parameters.
A: EPD assigned existing wells to nodes in the centers of model grid blocks. If there were large areas of the aquifer with no existing wells, EPD assigned hypothetical wells to those nodes. This does not mean that a well can actually be installed at that node. EPD added hypothetical wells to nodes to simulate the effects of increased withdrawals in areas where there were few existing wells.

Q: What is the starting year for the groundwater levels? 1970? 1960?
A: 1990

Q: Some areas have already experienced aquifer dewatering; therefore some areas have already declined. Did EPD superimpose new pumpage on top of the declined aquifers?
A: The models simulated drawdowns from current baseline conditions. These are regional models and drawdowns were simulated at the centers of model grid blocks. With the grid spacing used in the models the level of detail needed to simulate drawdowns at specific existing wells within a grid block was not available in the models.

Q: Did this exceed the model calibration?
A: The statistics such as standard deviation for the model residuals (measured minus simulated water levels) were very good.

Q: The model limits the amount of surface water flow reduction resulting from aquifer recharge; but in some areas the aquifer augments surface flows.
A: Groundwater discharging from the aquifer augments streamflow. The constraint on recharge from streams was applied only at areas where groundwater contributions to stream flow could instead recharge the aquifer; otherwise the aquifer flowing into the stream was not a constraining factor.

Q: How sensitive are the results if there are changes to the metrics? Such as a change in the 30-feet metric?
A: EPD has not tested sensitivity. EPD can evaluate this if Council members request a change in a specific metric.

Q: What about permitted withdrawals and sustainable yield?
A: EPD is compiling permitted withdrawal information.

Q: How long did it take to build the models?
A: EPD started prioritizing aquifers to model in January 2009, the modeling began in March, and calibration was completed in July. EPD modeled simulations of sustainable yield until the end of November.

Q: The data input into the model was from 1990's to present, correct?
A: Yes. The groundwater usage data is for that period, however data from the Coastal Sound

Science Initiative, the regional USGS model developed by Bob Fey, and withdrawal data from EPD and other states covers a longer period.

Q: Use depends on the category of user, correct?
A: Mr. Farrell stated that previous comparisons of actual versus permitted usage for all municipal and industrial permits show that usage is about 55% of the total permitted withdrawal. The percentage varies based on water user, and EPD is currently looking at the comparison by category.

Q: Does it take longer for the water to recharge the Piedmont Aquifer because of the clay soils?
A: Yes, it takes longer than for the Cretaceous Aquifer. However, the models didn't look at the time of travel to recharge the aquifer, but rather assumed the recharge had been ongoing and therefore didn't consider the rate of recharge. In order for the models to assess time for recharge, the models would have had to analyze data at very small time steps. This modeling effort was regional and therefore used larger time steps.

Q: Did I understand you to say that we had 60% more water available for use?
A: Throughout the entire aquifer, that is the additional groundwater available; however, that does not necessarily mean that increased withdrawals would be acceptable for all locations within the aquifer.

Q: We are looking at water footprint and not specific, local numbers? Where is the process headed for EPD?
A: EPD is open to requests for adjustments from the Councils to gain greater sensitivity. EPD looked first at regional results, but can "zoom in" to a more detailed level in areas if the Councils need that level of detail.

Q: In simulating additional withdrawals, EPD simulated a well in the unoccupied grids. What was the grid?
A: The grids for the regional Coastal Plain model were one mile by one mile and grids for the models of prioritized aquifers were 2,000 feet by 2,000 feet. Data for a grid block were assigned to the center of the grid block, because that is mathematically how the model is run in the computer program.

Q: EPD presented the yield for entire aquifer, is there a plan to develop yields for individual sub-regions?
A: EPD does not believe sub-basin modeling is being considered at this time. Sub-basin modeling is really well field design, which is beyond the scope of this planning process. Councils may consider this within the confines of schedule and budget. This model could be used as part of a well field study.

Q: The presentation states that 600-700 MGD of is water available today. If Councils ask EPD to raise the drawdown from 30 feet to 50 feet between wells, will the sustainable yield increase?
A: Probably.

Q: What is the process for Councils to provide input to request a change to the model?
A: The Councils should make requests through their Assistant Branch Chief (ABC).

Q: If all 8 Councils in attendance request changes, how will EPD handle this workload?
A: EPD has an internal process to handle the requests.
A: The process for requesting adjustments to the model starts right now and through the breakout sessions, council meeting #5 and technical meetings. EPD will be listening to the comments expressed today, recognizing that input from one Council member may not reflect the opinion of the entire Council.

Q: The information presented today leads into the selection of management practices and how the Council will manage the resources in the future.
A: Yes. The Councils will identify ideas for managing the resources. These management practices will be input into the models as part of the future assessments.

Q: I believe the difference between static and pumping levels is less than 55 feet. If the model proposes a 30-foot drawdown, some of the wells will need to be extended which will cost money. Some of the municipalities may want a different drawdown.
A: Yes. The extent of drawdown is the type of input that Councils may provide to EPD.

Q: Did EPD consider the future increases in withdrawals from neighboring states?
A: No, the withdrawals from other states were held static. EPD did include current withdrawals in the portions of Alabama, Florida, and South Carolina within the boundary of the regional Coastal Plain model but did not simulate increased withdrawals in these states. If EPD receives information on future withdrawals from other states, it could be considered.

Q: Where drawdown exceeds 30-feet within the square mile grid; does the model account for more than one well included in the grid?
A: The models represented withdrawals at individual wells within a grid block as a single withdrawal at the center of grid block (because that is mathematically how the model is run in the computer program). The models were scaled for regional planning and not for site-specific detailed studies of individual wells.

Q: When determining sustainable yield, how did EPD define the undesirable results?
A: EPD identified undesirable results and selected metrics of undesirable results, as shown in the presentation. These undesirable results included drawdown that exceeds 30-feet in the aquifer between pumping wells, areas where stream baseflow is reduced by more than 40%, and others related to changes in aquifer storage and recovery of water levels between periods of dry-weather withdrawals. EPD could not compare the metrics selected to other similar studies, because no comparable studies exist at the scale undertaken for the water plan. EPD did look at the undesirable results in great detail, and discussed sustainable yield metrics with the Scientific and Engineering Advisory Panel (SEAP). EPD may make changes to these undesirable results based on Council input.

Q: What about the water situation in Atlanta? Does EPD have any comments or opinions on

what Atlanta will do?
A: Mrs. MacGregor provided a summary of the Governor's four prong strategy to address the Judge Magnusson ruling. Currently, there is a heavy focus on negotiations. Contingency plans are also being discussed. The hope is that the ruling does not come to fruition as it would be an enormous impact.

Q: The groundwater models for south Georgia do not take into account the withdrawals from Florida. The upper Floridan aquifer continues south and the model should consider the usage in Florida.
A: EPD did include current withdrawals in the portion of Florida within the boundary of the regional Coastal Plain model but did not simulate increased withdrawals in Florida. EPD's focus was on simulating increased withdrawals from prioritized aquifers within Georgia. The regional model did extend into a portion of Florida so if data were available the model could simulate increased withdrawals for the portion of Florida within the model boundary.

3) Surface Water Availability Assessment

Mr. Farrell introduced Dr. Zeng to discuss the surface water availability results. Dr. Zeng was supported by ARCADIS (Resource Assessment contractor) on this project. Dr. Zeng is also busy supporting some of the state's assessments related to the tri-state lawsuit.

Q: Do the results consider the power generation operations and their consumption for cooling water?
A: Yes. This need is included in the model at the present level. The model looks at the maximum monthly usage.

Q: How much "surplus" surface water is available for future withdrawals?
A: The surface water resource assessments do not determine the water available for future withdrawals. The model evaluates the impacts under current withdrawal conditions. The future assessments will include the forecasted withdrawal information that is currently being completed. In instances where there is a gap between available water and demands, additional management practices will need to be considered. When the demand forecasts are completed, there will be a better sense of the volume of water available for future use.

Q: Early in the planning process, sustainable use budgets were discussed in terms of identifying the available yield. It sounds like EPD now expects this to be an iterative process.
A: The sustainable use is a groundwater terminology and not really the approach for surface water availability assessment.

Q: Is there a plan for a more dynamic model than static model? Our community pays for 7 gage stations. As we model water availability through 2050, the state will need more data and more stations. Is EPD collaborating with USGS and communities to get more stations?
A: Yes. EPD has contracted with USGS for 30+ additional stations. USGS is currently installing these stations, which will be helpful in the future. It is important to remember that this

is the starting point and these resource assessments will be re-evaluated every 5 years.

Q: There is a big gap between the Lake Jackson to Lumber City nodes. There is a gage station in Macon and Hawkinsville. Why is there such a big difference between these stations?
A: When establishing the nodes, EPD did not want to separate a community's withdrawal and discharge with a node for any of the major users because it would skew data. EPD located nodes as close to Council boundaries as possible.

Q: The basin runs from Newton County above Lake Jackson to Pulaski County. There are two additional gage stations that could serve as nodes.
A: Macon is a Basic Node where hydrological and demand data have been compiled. EPD is soliciting comments from the Council. If the Council requests better spatial resolution, EPD can convert the Macon "basic node" in to a "planning node". The model includes data from more gage stations than the 76 that serve as planning nodes. EPD only developed unimpaired flows at the 76 planning nodes because sufficient data was not available at all of the basic nodes where there are gage stations.

Q: Do the models use real time data?
A: The models use historic data to develop unimpaired flow.

Q: Can EPD read the current results from the model in real time?
A: Real time data is different than historical data; there may be stations that provide real data but not historic data.

Q: Will EPD be able to track data during critical times such as drought?
A: The new gage stations will provide real-time (15-minute intervals) and historic data (daily).

Q: The capacity of dams and reservoirs appear very important to this analysis because they store water for time of need and augment natural flows. Correct?
A: The State Water Plan calls for instream flow protection. The state's instream flow protection policy only applies to unregulated portions of the river. The policy does not provide guidance for instream flows from regulated portions of the river. The model assesses flows needed to meet immediate demand and outside flow requirements. For example, the Chattahoochee system has a 500 cfs continuous flow requirement out of Buford dam and 675 cfs out of West Point Dam. There is a flow requirement. The Chattahoochee basin is controlled by the Corps Water Control Plan. For OOA basin, the FERC license requires Lake Jackson and Lake Sinclair to meet certain flow standards at the dam, but does not set instream standards downstream of the dam. The resource assessments cannot include an arbitrary standard for instream flow. The Councils can provide input, if they believe that locations in basin should have additional instream flow protection or a different desired flow regime (for unregulated streams).
A: Tonya Bullock with Georgia Power stated that their FERC license includes water quality releases to comply with the state's minimum instream flow requirements that addresses flows needed for aquatic species. The FERC licenses comply with the state requirements.

Q: Does your model account for groundwater-surface water interaction?

A: The most significant area for groundwater-surface water interactions is the Dougherty Plain. The model for the Dougherty Plain was developed by USGS. The interactions are not considered in this basin, because the interaction is very minor. EPD did a mass balance accounting and in the Piedmont, the permitted groundwater withdrawals (permitted are typically higher than actual use) were compared to all streams leaving the Piedmont area. The permitted withdrawal was less than 0.5% of the total flows and therefore was not considered.

Q: If there is a 60% reduction in baseflow for the crystalline rock aquifer, how does this impact the water available?
A: For the crystalline rock aquifer the estimated range of sustainable yield was based on a water budget. The upper end of the range is 40% of total flow and the lower end is 20% of the monthly low flow.

Q: If streamflows were reduced by 20%, what is the impact to monthly streamflows augmented by groundwater flows.
A: The groundwater assessment analyzed smaller streams. The surface water availability assessment analyzed larger streams. As stated earlier, the total amount of groundwater usage in the Piedmont area is trivial in comparison to the surface stream flow, and its impact is therefore ignored in this area.

Q: How did you use flows out of the reservoirs, such as Lake Jackson? The reservoir may actually release to maintain 320 cfs downstream, but the permit is for only 200cfs. Do you look at their minimum flow release requirements or the actual releases?
A: The model is based on minimum monthly release from these reservoirs to reflect the FERC license requirements.

Q: Is there a minimum flow established on the Ocmulgee River like there is on the Chattahoochee River that has led to the disagreements?
A: Outside of the requirements for releases by Georgia Power, there are no requirements.

Q: In terms of process; the Councils will calculate water supply needs for 2050 based on population forecasts, these water supply needs will be provided to EPD, and then EPD will tell Councils whether this use is acceptable. Instead, can the Councils have the maximum amount that could be withdrawn upstream of each node and still maintain stream flows? It would be helpful to know if there is excess available to share with adjacent Councils.
A: The Councils will have this information once the future assessments are done. As the forecasts of future needs are provided to EPD, the future resource assessments will combine the new demand information with the baseline resource assessments.

Q: It would be helpful for the Councils to know what is being withdrawn and what is available.
A: The demands will be split by surface and groundwater sources. There are some fundamental principles that make this request challenging. EPD will look into a methodology for providing this information for surface water availability. This request can be a topic of conversation at CM#5.

Q: The presentation uses the phrase "state interim instream flow protection policy". There are two concerns with this statement, #1 interim, #2 policy (which means it can be changed). Can EPD really change this policy? If, for example, the demands exceed the available surface water; can the Councils recommend a change to this policy? Or is this number fixed.
A: The interim policy set by the DNR board is followed, lacking any other guidance. The minimum instream flow policy allows for adjustment based on site specific studies. The Councils may recommend funding sources for this site specific work.

Q: If a Council recommends a change to 7Q10, can this serve as a baseline in the model? There is a lot of debate on monthly 7Q10.
A: There is and always will be room for a site specific study on 7Q10; but EPD doesn't foresee a change to a Council by Council standard.

4) Surface Water Quality Assessment
Mr. Farrell introduced Dr. Booth.

Q: This is very different than the results presented at the meeting in Americus. Is the difference due to the Lakes?
A: The watershed modeling for the Flint and Chattahoochee didn't begin until fall 2009 due to funding limitations and results will not be raedy until Nov 2010. EPD has watershed models for the lower Savannah and Coosa watershed and is looking for additional funding to develop watershed models for the upper Savannah as well.

Q: Will additional water quality standards be assigned to the point sources (WWTPs) to address problems? Agriculture is significant impact to nitrogen process. Will the Councils develop the management practices for their region?
A: Yes, Councils will develop the management practices for their region. One example management practice may be nutrient trading between point sources and the agriculture communities. If there appears to be a nitrogen problem, a point source discharger may pay for nutrient improvements on agricultural properties to allow for increased discharges. Councils can manage the sources according to the vision and goals for that Council.

Q: The presentation indicates that there aren't water quality problem in Lake Jackson yet. What is meant by "yet"?
A: There currently are not measured violations of the nitrogen standard in Lake Jackson, but the model indicates there may be violations of nitrogen standard in upper reaches of the embayment. Areas around Lake Jackson may need to implement best practices to mitigate future growth to make sure there is not a violation.

Q: Didn't nitrogen standards cause problems for dairy farmers in other states? There were strong concerns about these standards.
A: The standards have been a challenge to dairy farmers.

Q: The nutrient standards developed by EPA in Florida, please confirm these have not been

finalized yet? Every measurement has an associated percentage of error; what error analysis was performed on these models.
A: The proposed standards for Florida were issued January 14, 2010 and have been posted on the website. EPD recommends that the Councils upstream of Florida read these proposed standards. Sensitivity analysis will be included in the detailed modeling report.

Q: What is the status of the Ocmulgee model below Lake Jackson to the Oconee?
A: The dissolved oxygen model is currently in progress and will be ready by the end of the month. EPD does not have funding to create watershed models for the entire state.

Q: Is EPD going to make recommendations on how to address water quality problems? They need to be resolved in a way that addresses the problem but doesn't negatively impact employment.
A: These recommendations will come from the Councils and not from EPD.

Mr. Farrell summarized some of the big discussion points:

- There is available groundwater, the harder decision for Councils will be related to wastewater discharges.
- Nonpoint source pollution will increase in importance; therefore Councils will need to understand the linkage between land use decisions and nonpoint source pollution.
- Inexpensive secondary treatment will not be an option in the future for most parts of the state best available technology (BAT) will need to be used.
- The model tools will be refined based on input from the Councils.

Q: Water quality models don't look at subsurface water. Is the assumption that all sub-surface waters are acceptable quality? We have had problems in the Piedmont with septic systems and water quality.
A: That is beyond the scope of these baseline assessments.

Q: How will the Councils determine how the population forecasts and wasteloads will impact assimilative capacity? Will the Councils recommend secondary treatment of the wasteload and EPD will determine if assimilative capacity is available? Can EPD tell the Councils what the assimilative capacity would be based on a certain level of secondary treatment?
A: The Councils will know where assimilative capacity is available from the baseline resource assessments. There will be an iterative process of looking at the Council's plans and how the resources react. The Councils are not expected to determine the treatment level.

5) Resource Discussions

The Council members split into Groundwater, Surface Water Availability, and Surface Water Quality discussion groups with the resource managers.

6) CM#5

There was a presentation given by representatives of the Planning Contractor firms, Katherine Zitsch (CDM), David Ashley (JJ&G), and Doug Baughman (CH2MHill).

Q: What is the plan for joint meetings in the future to discuss the gaps among shared resources?
A: EPD has had preliminary discussions. Councils should discuss needs for additional meetings with their planning contractor and EPD staff.

Q: Most of our Council members will not have heard the resource managers speak. Are the Councils expected to share that information with all of the Council members? Will the resource managers give their presentation at the Council meeting?
A: EPD will provide a summary of the resource assessments, as there is a full agenda for CM#5. The planning contractors can provide support for technical discussions, but the Council members will be able to provide greater insights from discussions. Some Council's are forming sub-committees to discuss the issues in greater detail.

7) Public Comment

Mr. Farrell asked if there were any final remarks from the Council members. There were no comments.

No members of the public signed up for public comment or chose to speak.

The meeting was adjourned.