

To: Lower Flint Water Planning Council

From: Kristin Rowles, Black & Veatch and Steve Simpson, Black & Veatch

cc: Tim Cash, Assistant Branch Chief, GA EPD

Subject: Meeting Summary: Council Meeting 5 on March 22, 2010

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The council meeting was held on March 22, 2010, in the Kirbo Regional Center at Bainbridge Technical College. The list of attendees is attached. In addition to these minutes, all the presentations (slides) discussed in this meeting will be posted on the Lower Flint web portal (<http://www.flintochlockonee.org/>). The public sign-in sheet is included as an attachment.

### **Welcome, Introductions, and Chairman's Discussion**

Council Vice-Chair Hal Haddock welcomed attendees and thanked everyone for attending. Chairman Richard Royal could not attend this meeting and sends his regrets. Council member John Bridges provided the invocation.

Hal asked for Kristin Rowles to review the meeting minutes from council meeting #4 (November 17, 2009) and to review the agenda for today's meeting. Kristin reviewed these items and asked the council to consider approval of the minutes from council meeting #4. Howard Small made a motion to approve seconded by John Bridges. *The minutes were approved by unanimous consensus of 17 council members.*

Hal Haddock noted that progress had been made in the discussion of the meter data. Some council members expressed continued interest in this matter. They were happy to hear that the meter data had been more thoroughly considered and asked if meter data from later years could be evaluated as well (2008, 2009).

Hal Haddock also advised that he and others had attended the joint meeting in Columbus to hear the baseline resource assessments and that council members had also attended other joint meetings.

Hal Haddock said that alternate council member Huddy Hudgens had sent a letter regarding the assumption in the planning process that agricultural water use is 100% consumptive. Huddy made copies of his letter available to the council. He said that he

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did not believe it was accurate to assume that agricultural water use is 100% consumptive. Huddy had just received a response from GA EPD and asked that copies of the response be distributed to the council (which was done at lunchtime). The response indicated that GA EPD assumed 100% consumptive use because a defensible alternative had not been identified. Rick Moss noted that septic system returns to groundwater were considered. Steve Singletary said that Marshall Lamb at the USDA Peanut Lab was planning a research study that would address consumptive use by agriculture in this region. *Hal thanked Huddy for the letter and said that he would discuss with Chairman Royal creating a committee to look into this issue further.*

### **Chair/Vice Chair Elections**

Kristin told the council that it was time to hold the council's annual Chair and Vice Chair elections. Jimmy Webb made a motion to keep Richard Royal as Chair and Hal Haddock as Vice-Chair. The motion was seconded by several individuals. *The council approved the motion unanimously by a 20-0 vote.*

### **Agricultural Water Use Forecasts: Committee Report**

Jerry Lee, Chair of the Committee, was not able to attend the council meeting, and so Kristin said that she would give an update and committee member John Heath would make comments as well.

Kristin reminded the council that the committee was created last fall when the council first reviewed the agricultural water use forecasts from Dr. Jim Hook. The purpose of the committee was to address areas where the council was concerned about agricultural water uses that were not included in the forecasts.

Other councils had similar concerns and created similar committees. Kristin said that to maintain consistency across regions, a statewide effort was initiated to address data gaps for animal operations. She noted that Jeffrey Harvey from the Farm Bureau led this effort and was assisted by Mark Masters (Georgia Water Planning and Policy Center), Mark Risse (UGA), and representatives of various agricultural commodity groups. This group focused on the development of estimates of water use by various types of animal operations across the state. Most animal operations do not use more than 100,000 gallons a day (the threshold for a withdrawal permit). The estimates for animal production were developed by determining per animal water use numbers and then multiplying by the population of these types of animals in each county in the state. Kristin referred to the agricultural water forecasts web page for a report including the actual estimates for animal operations. She also referred to a brief paper included in the pre-meeting packet that described the methods used in this effort. She distributed an updated version of the hand-out that included the methods used for nursery operations as well as animal operations. She referred to the agricultural water forecasts web page

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(<http://www.nespal.org/sirp/waterinfo/State/awd/agwaterdemand.htm>) for a report including the actual estimates for animal operations.

Next, Kristin described the efforts to develop estimates of water use by nursery operations. A similar approach was used to that for animal operations, including academic advisors and commodity organizations. Kristin noted that a similar approach was taken to address water use by golf courses that have agricultural withdrawal permits.

Kristin noted that how the data from these efforts would be incorporated into the planning process was another area of discussion for the committee and the ad hoc groups that worked on the additional estimates. She explained the estimates broke out into several categories:

1. Dr. Hook's estimates: These estimates address water use by the major agricultural water uses in the state, primarily crop agriculture. These estimates are forecasted through 2050 and divided regionally in a manner that supports their use in the resource assessment models, and these estimates will be included in the resource assessment models.
2. Animal operations water use estimates: These estimates are a "snapshot" of current use by these types of operations. They are divided by county. They do not include forecasts, and they are not dividable along the geographic regions used in the resource assessment models. Therefore, these estimates are not to be used in the resource assessment models, but provided instead to support the council's understanding of water use by these types of operations in the region.
3. Nursery water use estimates: These estimates will be forecasted through 2050, but they are not geographically dividable along the geographic regions used in the resource assessment models. However, industry representatives noted that only a handful of nursery operations (about 20% of them) account for about 80% of the water use by this sector in the state. Therefore, it was decided that the estimates for the individual permitted operations (which can be geographically assigned as needed for the resource assessment model) will be included in the resource assessment models.
4. Golf courses with agricultural permits: These will be handled like the estimates for animal operations.

Next, committee member John Heath made the following motion:

The Agriculture Water Demand Committee would like to propose a motion that the Council acknowledge the water use data compiled and presented by Mark Masters of the Flint Water Policy Center titled, "Water for Georgia's Livestock & Nurseries" (hand-out revised version to Council). This data was reviewed, accepted, and/or submitted by the

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affected commodity groups. This data will be incorporated into the resource assessment modeling as practical (i.e., for large permitted nursery operations), and otherwise is available to the council as information that will inform the development of our regional water plan.

*Steve Singletary seconded this motion, which was subsequently approved unanimously by the Council (21-0).*

### **Agricultural Meter Data: Committee Report**

Committee chair Jimmy Webb reported that the committee had recently received an analysis based on data from the GA Soil and Water Conservation Commission that would aid in the committee's efforts to evaluate the comparison of the Hook agricultural water use forecasts with the meter data. Jimmy noted his concern over the delay in getting the analysis completed, and thanked Tim Cash of GA EPD for his assistance in facilitating the completion of the analysis.

Jimmy said that when the committee did get the final results to compare, they agreed that the Hook estimates were fairly closely validated by the meter data. He noted that in the future it would be helpful to tie meter readings with crop information.

Ben Mosely with Georgia Soil and Water Conservation Commission commented that the meter data is only available to the individual water users. Due to confidentiality concerns, meter readings cannot be distributed publicly. He said the agency does make an effort to compare crop residue noted by the meter readers with aerial photography performed by USGS.

Jimmy Webb said that the committee still has some reservations about the metering program, and they would meet after this meeting to continue their work to make recommendations for the metering program to be considered by the council for the regional plan. Steve Bailey thanked those involved for working to complete the analysis, to get the information needed, and that it would be helpful for meters to be read on a monthly basis in the future. Council Vice-Chair Hal Haddock said he appreciated the work the committee has done, and thinks that 2008/2009 data would be helpful in continuing to compare against estimated water use.

### **Resource Assessment Overview**

Kristin reviewed the overall planning process as the context for the discussion of the resource assessments, and she reviewed the calendar for the planning process. Kristin said that synopses for the draft resource assessments for current conditions were due to be released very soon. [*Post Meeting Note: They were released on March 23, 2010 and are available online at the state water planning website: <http://gawaterplanning.org>*]

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Kristin said once the synopses were available, a public comment period on the draft assessments would begin. She said that based on input from council members, comments received, and the scientific and technical advisory committee, EPD would refine the draft assessments as needed. She noted that the councils would be using the draft resource assessments to begin the initial selection of management practices.

Next, Kristin reviewed the approach for today's meeting:

- Review resource assessments
- Discuss results, gaps, information needs
- Prepare for future assessments
- Plan for committee work
- Discuss management practices
- Review forecasts

Then she presented what would happen in the coming months before the next council meeting:

- Follow-up on questions and comments on resource assessments
- Committee work:
  - Decide on future assessment inputs
  - Select management practices to evaluate
  - Review draft plan
- Next Council Meeting (June): Future assessments, management practice refinement

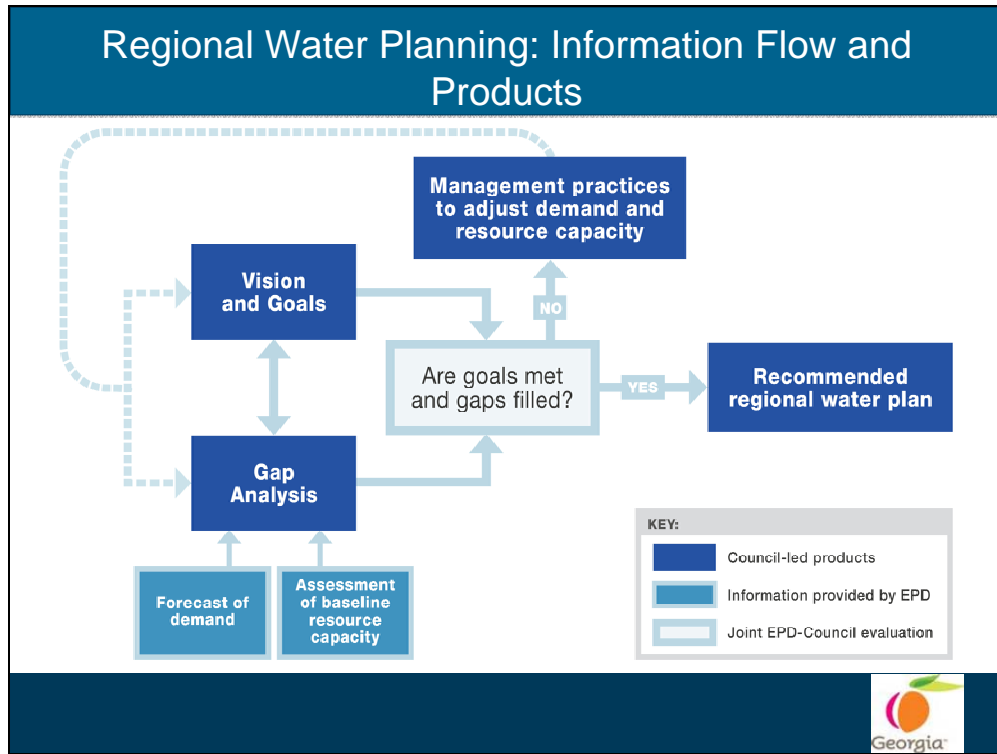
She asked that the council members consider the following as they listened to the draft resource assessment results today:

- What information do we need to complete our review and understanding of the current resource assessments?
- What do the results of the current resource assessments mean for our region?
- How will we organize our efforts to select inputs and management practices for the assessment of future conditions?

Jimmy Webb commented that he attended the joint meeting in Americus and advised that MCH council member attendees expressed concern that the Chattahoochee River is being used to make up for shortfalls on the Flint River. There is a minimal gap at Montezuma, but a more sizable gap at Bainbridge.

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| PRODUCTS                                                                    | REGIONAL WATER PLANNING COUNCIL ACTIVITIES SCHEDULED |
|-----------------------------------------------------------------------------|------------------------------------------------------|
| Regional vision and goals                                                   | April 2009 – September 2009                          |
| Assessment of baseline resource capacity                                    | November 2009 – March 2010                           |
| Forecasts of demand                                                         | February 2009 – March 2010                           |
| Gap analysis<br>(i.e. comparison of resources and demands to identify gaps) | January 2010 – October 2010                          |
| Water management practices to adjust demand and resource capacity           | January 2010 – January 2011                          |
| Recommended regional water plan                                             | January 2011 – June 2011                             |

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### **Groundwater Resource Assessment Presentation**

The groundwater resource assessment was conducted under the leadership of Dr. Jim Kennedy, state geologist. It was presented at this meeting by Nils Thompson, a hydrogeologist with Leggette, Brashears, & Graham, part of the Black and Veatch team for this project. Nils advised that this presentation was a shortened and more council specific version of what was recently presented by Dr. Kennedy during the joint meetings. He explained that he would provide an overview of groundwater sustainable yield modeling results, review the process for modeling sustainable yields, and present sustainable yield results for aquifers in the council area.

Nils reviewed the groundwater characteristics for the region. Next, he explained that sustainable yield was the amount of groundwater that could be withdrawn without causing unwanted results. He noted that sustainable yield metrics were different for different aquifers and that different sustainable yield metrics would result in different sustainable yields.

Nils said that north of the fall line, water budget calculations were completed for an example basin within the crystalline rock aquifer of the Piedmont, while south of the fall line EPD used various numerical groundwater flow models for some portions of the Coastal Plain aquifers.

Nils explained that the regional Coastal Plain model used MODFLOW and that the Claiborne & Upper Floridan aquifers were modeled by zooming into portions of the regional Coastal Plain model originally built by the USGS. Other assumptions included:

- Models were run to represent monthly average withdrawals during a dry year. Sustainable yield is for the entire extent of the modeled aquifer.
- The baselines for sustainable yield modeling were estimated or are actual current withdrawals (not permitted capacities). Municipal & industrial withdrawals were obtained from data reported to EPD by permittees.
- Un-permitted domestic & commercial withdrawals (estimated by USGS to have been about 12% of total state-wide groundwater use during 2005) were taken from USGS data.
- Agricultural withdrawals were estimated using a combination of USGS & EPD data, and the 2004 Agricultural Water Pumping Study.
- The model runs increased withdrawals from existing wells & hypothetical new wells in individual prioritized aquifers (one at a time).

EPD established the following metrics for model simulations used to determine sustainable yields:

1. Drawdowns of groundwater levels in the pumped aquifer do not exceed 30 ft. between pumping wells.

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2. Recharge from surface water sources constrained to 40% of baseflow to maintain opportunities for surface water use.
3. Reduction in aquifer storage does not go beyond a new base level.
4. Groundwater levels are not lowered below the top of a confined aquifer.
5. The ability of the aquifer to recover to baseline groundwater levels between periods of higher pumping during droughts is not exceeded.

Nils showed maps of the simulated drawdown in different aquifers due to increased withdrawals.

Nils explained that sustainable yields in portions of the Coastal Plain are plentiful, but not necessarily where current withdrawals are located. For projected areas that may need to rely on sustainable groundwater yields, a detailed well-field analysis is required.

A council member asked who had conducted the 2004 agricultural water pumping study, and the response was that it was completed by Dr. Jim Hook at UGA. Another council member said that 30 feet of drawdown would be unusual in the Floridan, even in a drought. Nils explained that this is just one of the metrics used in the groundwater model, and it is possible that another metric was limiting in the assessment model run. Another council member noted that in the 1954 drought, streams ceased to flow and there was no ground water pumping for irrigation at that time. Nils said that the models used the best information we have.

### **Surface Water Availability Resource Assessment Presentation**

Kristin Rowles presented this resource assessment of work led by Dr. Wei Zeng of GA EPD. She explained that the state had divided the state into six study basins:

- ACF: Apalachicola-Chattahoochee Flint
- ACT: Alabama-Coosa-Tallapoosa
- OOA: Oconee-Ocmulgee-Altamaha
- OSSS: Ochlocknee-Suwannee-Satilla-St. Mary's
- SO: Savannah-Ogeechee
- TN: Tennessee

Kristin included in her presentation results from the Flint, Chattahoochee, and Ochlockonee Basins. She said that results from other basins would be available in the draft resource assessment synopses, which will soon be available on the state water planning website.

She said that the surface water availability assessments were done to figure how much water we have relative to how much water we need – for both off-stream (consumptive uses) and in-stream (flow regime) needs. She emphasized the models were for broad scale regional planning, not for individual permitting decisions.

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Kristin said that the models use available existing data and build upon existing studies. The models allow us to evaluate current and future conditions and scenarios. At this time, we are reviewing the assessment of current conditions, and we will begin looking at future scenarios later today. The inputs to the models include: unimpaired flow data representing conditions over 70 years; current water use data (withdrawals, discharges, consumptive use); and flow regime parameters based on:

- US Army Corps of Engineers Modified Interim Operation Plan (for Chattahoochee)
- State Interim In-stream Flow Protection Policy (protects monthly 7Q10 or natural inflow, whichever is lower)

Kristin said that the 7Q10 is the seven day low stream flow that statistically would be expected to occur once every ten years.

She then described how the desired flow regime was determined and gaps were assessed for non-regulated streams (i.e., no reservoirs):

- Step 1 – Determine monthly 7Q10 for each of the unregulated Planning Nodes
- Step 2 – Determine unimpaired or “natural” flow for a node by removing man-made effects on flow observed at that node for the 70 year period
- Step 3 – Develop Flow Regime by taking the less of the two
- Step 4 – Identify gaps between availability and demand by comparing the Flow Regime to modeled stream flow assuming all water demands are being met.

The results are expressed as a function of whether the desired flow regime is met when all off-stream water demands are being met. A summary of results at different nodes are shown below in a table.

For regulated systems like the Chattahoochee, the assessment models have some additional inputs, and the results are expressed a bit differently. These models consider:

- Are off-stream consumptive use demands met?
- Are at-site release requirements met?
- Are downstream federal flow targets met?
- When all the above are accomplished, is residual storage in conservation pool? (Results are expressed in terms of the residual storage in the conservation pool.)

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**Summary of Surface Water Availability Resource Assessment Results  
 (See PowerPoint presentation for the associated graphs)**

| <b>Unregulated River Systems</b>                    |                                         |                                                   |                                                  |                                      |
|-----------------------------------------------------|-----------------------------------------|---------------------------------------------------|--------------------------------------------------|--------------------------------------|
| Length of Shortfall (% of time)                     | Average Shortfall (cfs)                 | Long-term Average Flow (cfs)                      | Maximum Shortfall (cfs)                          | Corresponding Flow Regime (cfs)      |
| <b>Montezuma in the Flint Basin</b>                 |                                         |                                                   |                                                  |                                      |
| 2%                                                  | <1 (0.6 MGD)                            | 3,392 (2192 MGD)                                  | 1 (0.6 MGD)                                      | 593 (383 MGD)                        |
| <b>Bainbridge in the Flint Basin</b>                |                                         |                                                   |                                                  |                                      |
| 12%                                                 | 314 (203 MGD)                           | 7,920 (5120 MGD)                                  | 1202 (777 MGD)                                   | 2506 (1620 MGD)                      |
| <b>Quincy in Little River</b>                       |                                         |                                                   |                                                  |                                      |
| 5%                                                  | 5 (3 MGD)                               | 264 (171 MGD)                                     | 28 (18 MGD)                                      | 72 (47 MGD)                          |
| <b>Concord in Ochlockonee River</b>                 |                                         |                                                   |                                                  |                                      |
| 9%                                                  | 15 (10 MGD)                             | 1,108 (716 MGD)                                   | 113 (73 MGD)                                     | 206 (133 MGD)                        |
| <b>Regulated River Systems</b>                      |                                         |                                                   |                                                  |                                      |
| Demand Shortage (cfs)                               | At-site Flow Requirement Shortage (cfs) | Minimum Reservoir Storage (acre-feet)             | Minimum Percentage Reservoir Storage             | Basin-wide Flow Requirement Shortage |
| <b>Whitesburg in the Chattahoochee Basin</b>        |                                         |                                                   |                                                  |                                      |
| 0                                                   | 0                                       | 539,600 at Lanier                                 | 48% at Lanier                                    | None                                 |
| <b>Columbus in the Chattahoochee Basin</b>          |                                         |                                                   |                                                  |                                      |
| 0                                                   | 0                                       | 14,226 at West Point                              | 5% at West Point                                 | None                                 |
| <b>Columbia in the Chattahoochee Basin</b>          |                                         |                                                   |                                                  |                                      |
| 0                                                   | 0                                       | 11,872 at W.F. George                             | 5% at W.F. George                                | None                                 |
| <b>Chattahoochee Gage in the Apalachicola Basin</b> |                                         |                                                   |                                                  |                                      |
| 0                                                   | 0                                       | 565,698<br>At Lanier, West Point<br>& W.F. George | 34%<br>At Lanier, West<br>Point & W.F.<br>George | None                                 |

Kristin summarized the results by saying that there are no apparent gaps in the Chattahoochee, which can be operated through the release of storage water to achieve

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flow targets. In the Flint, there are gaps at both Montezuma and Bainbridge, with the shortfall at Bainbridge being much larger. In the Ochlockonee, there is a shortfall relative to current demand at Quincy and Concord.

*Discussion:*

Q. Do we only have two nodes on the Flint River?

A. Yes.

Q. Would it be better if we had more?

A. It would provide more detailed information, but the analysis would yield the same answers and budget constraints limit the number of nodes.

Q. Could an alternative to 7Q10 be used as a metric in this assessment? Are there alternatives?

A. Additional information about different statistical measures could be provided. Tim Cash (GA EPD) commented that 7Q10 is an industry and scientific definition for low-flow conditions, and it is a benchmark that EPD uses to evaluate low flow for various purposes. An alternative could be considered, but it would be important to consider what the objective is. He noted that it would be unusual not to use the 7Q10 metric.

Jimmy Webb commented that the results show that the flow regime at Bainbridge is met 88% of the time.

*The council members would like for the Ad Hoc Technical Committee to consider precedence of appropriate alternatives to the 7Q10 metric for this region's assessment.*

### **Water Quality Resource Assessment Presentation**

Steve Simpson presented this assessment from the modeling work led by Dr. Liz Booth of GA EPD. Steve explained that surface water quality modeling is about determining the assimilative capacity of waterbodies modeled. Steve explained that water quality models were developed to show us the current status of the available assimilative capacity based on current discharges. Violations of the water quality standards indicate there are unacceptable impacts that need to be addressed.

Steve included in his presentation results from the following basins: Flint, Chattahoochee, Ochlockonee, and Suwannee.

Steve presented a map which shows the surface water quality models that are being developed to look at dissolved oxygen in the region's basins. These models were developed for those waterbodies that currently have wastewater treatment plant discharges on them. Determining assimilative capacity is dependent on different parameters and requires information on the streamflow, in-stream water quality,

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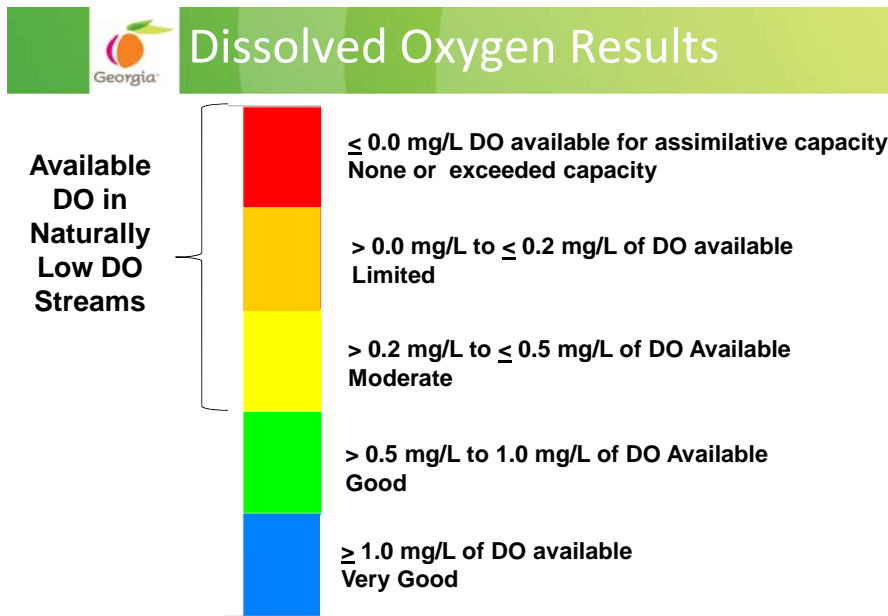
wastewater discharges, water withdrawals, existence of land application systems, weather information, land use, stream hydrology, topography, and the state's water quality standards.

Next, he explained some key aspects of the methodology used to develop the water quality models. These included:

- Two sets of models are planned. The first set evaluates dissolved oxygen due to discharges under critical conditions; this modeling is mostly completed. The second set evaluates the impacts of point and non point sources from nutrient loadings, primarily nitrogen and phosphorus.
- The dissolved oxygen models were run with existing discharges and critical, low flow, high temperature conditions.
- The watershed and lake models will account for nutrient sources from both wastewater discharges and nonpoint source stormwater runoff based on various land uses.
- Unacceptable impacts for the water quality assessment are identified if in-stream water quality does not meet state standards.
- The assimilative capacity assessment is not the same as the 303(d) list of impaired waters or total maximum daily loads because this assessment is only looking at dissolved oxygen and nutrients; the 303(d) list assesses other parameters such as solids, bacteria, metals, etc.

Steve noted that these models were checked to ensure that they represent real world conditions both through discussions with experts on the Scientific and Technical Advisory Panel and through model calibration with comparisons of model results to real world streamflow and in-stream dissolved oxygen levels.

Steve showed a color scale that was used to show dissolved oxygen that is available above the water quality standard in the streams that were modeled:



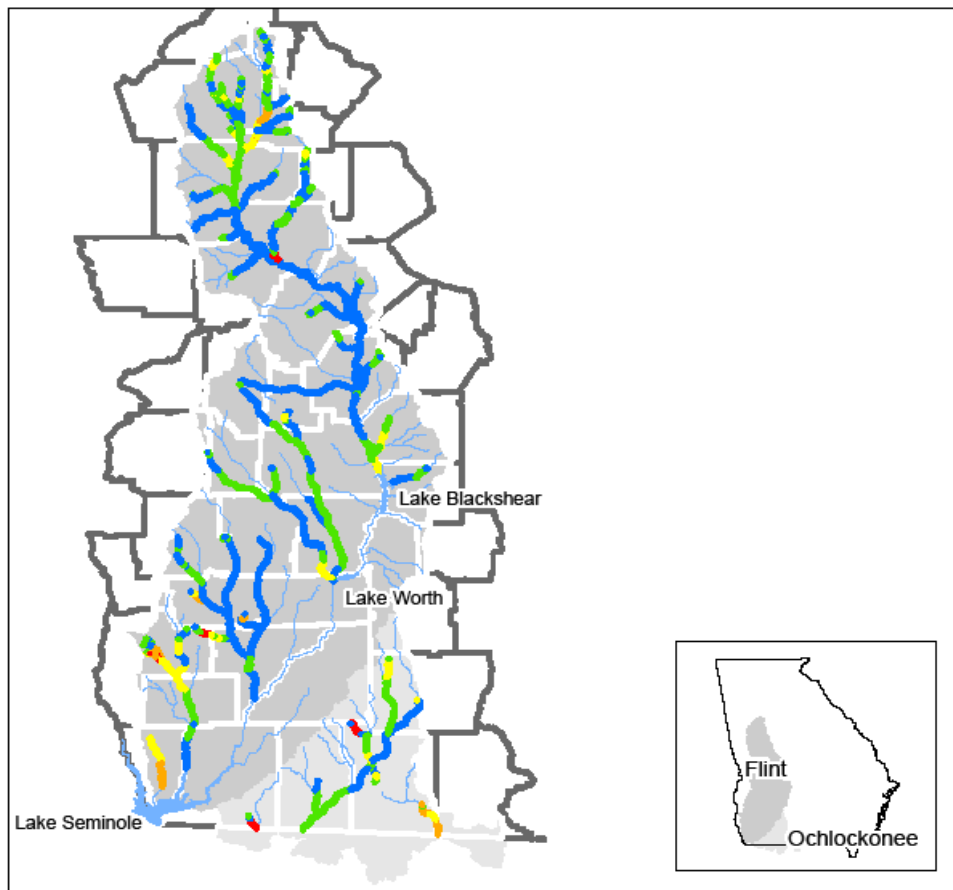
Stream segments that have no available assimilative capacity under critical low flow (7Q10), high temperature conditions are red. Those with DO levels in excess of state water quality standards are blue. Naturally low DO waters that have a natural DO below 5.0 mg/L in the summer time will typically be in the yellow to red range.

Steve then showed a series of images of the modeling results for the streams in the Upper Flint region for which results are currently available. The Flint Basin results are included below. Steve noted that as you move south toward Albany, the results show more in the moderate range than upstream. Steve noted that as you look at these maps, you can observe where there is greater potential to expand point sources discharges (i.e., in the blue and green areas).

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Steve said that in the Flint Basin, nutrient water quality modeling work remains to be done. Steve said that this is not the only council that is currently lacking some water quality assessment results.

Steve said that the Council will need to continue to watch the development of nutrient standard in Florida, by the US EPA, and that the outcome of this process could affect the Flint Basin. The US EPA is developing nutrient standards for free flowing streams and lakes in Florida as a result of a federal lawsuit under the Clean Water Act. If promulgated as proposed, these criteria will require increased control of nutrients in Georgia waters.

Steve noted that where water quality in the region is good, the Council has the option to protect waters as Significant Natural Resource Waters. This designation can be used to increase the level of protection for a waterbody.

*Questions:*

Q. Huddy Hudgens asked if mercury was included in this assessment?

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A. Steve said no; mercury is one of the parameters that may result in listing a stream reach as impaired. Huddy said he would like to see current mercury load and commented that if the fish are not edible, we can forget about anything else.

Q. Mike Newberry commented about Mill Creek and its impoundments and asked if this was the cause of limited available assimilative capacity.

A. Steve said he does not know the details of these lakes, but commented that in general shallow lakes may pose DO challenges.

Q. If an impoundment was proposed in the Ochlockonee, would it help the Flint River shortfall?

A. Since these watersheds are not connected, it would not help in the Flint.

Q. Howard Small asked if we going to look at heavy metals in these models?

A. No. A TMDL for that parameter would have to be in place for heavy metals contamination to show up in the assessment results.

Q. What is happening with the new Florida nutrient standards?

A. Steve said that the USEPA was sued under the Clean Water Act over water quality standards for nutrients in Florida. USEPA recently published draft standards, and they are currently available for public comment. Steve noted that USEPA will either publish the criteria, tweak the criteria, or Florida might publish their own standards.

Q. Do USFWS critical habitat designations have a water quality standards?

A. We will have to investigate.

**Baseline and Future Resource Assessment Council Input**

Kristin presented this item. She said that the council will use preliminary baseline resource assessments to begin the initial selection of management practices. The input needs from the council for the future resource assessment model runs are outlined in the chart below. Kristin said that determining these inputs would be the work of committees, using the demand forecasts and a first cut selection of management practices. The first run of the future resource assessment models is to be discussed at the next council meeting.

| Resource | Scale of Assessments | Required inputs (active Council participation) |
|----------|----------------------|------------------------------------------------|
|----------|----------------------|------------------------------------------------|

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|                            |                      |                                                                                |
|----------------------------|----------------------|--------------------------------------------------------------------------------|
| Surface water availability | Local Drainage Area  | Withdrawals (mgd)<br>Storage (mg)<br>Returns (%)<br>Interbasin transfers (mgd) |
| Groundwater availability   | Aquifer unit         | Withdrawals (mgd)<br>Location                                                  |
| Assimilative capacity      | Stream reach or lake | Surface water availability assessment inputs<br>Discharge (mgd)<br>Location    |

Kristin walked through an example of how a committee could approach the development of the future resource assessment inputs for the Bainbridge node. She demonstrated the assessment of future demand and the adjustment of demand with management practices. She noted the need to consider the recent water conservation legislation as the council developed a portfolio of management practices to be assessed.

Next, Kristin talked about how the future assessments and management practice selection would be approached for water quality. She noted that the approach will be slightly different due to the scale of the assessment; it will focus on the level of sub-watersheds and stream reaches. At this level, the council will evaluate current and future concerns, assess the source of pollutants causing those concerns, and select management practices accordingly.

She reviewed some management practices that might be used to address point sources (e.g., advanced wastewater treatment, reuse, watershed based permitting, water quality credit trading, implementation of existing TMDL plans) and nonpoint sources (e.g., agricultural nutrient management plans, improved stormwater management, enforcement of sediment and erosion control laws, and implementation of existing TMDL plans).

Next, Kristin said that the management practice selection process would be iterative, with repeated rounds of refinement and re-assessment. The first model run with future conditions would be considered at the next council meeting, and before then, the council would need to complete the work of providing GA EPD with inputs for the model run (noted above).

### **Existing Gaps Discussion**

This discussion began before lunch and continued after lunch. A summary of the whole discussion is included here.

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First, Kristin reviewed some of the questions from the Council regarding the resource assessments:

- Is it possible to bridge the gaps identified in the surface water availability assessment?
- To what extent are flows targeted toward the needs of endangered species?
- Can we get data from the Wakulla Springs gage and should Georgia get credit for water that is flowing to Florida via groundwater?
- Is there an alternative to the 7Q10 metric used in the surface water availability resource assessment?
- For water quality, what portion of streams currently have available assimilative capacity?
- Where are the water quality monitoring locations used in the assessment?
- Do critical habitat designations for federally listed endangered and threatened species affect water quality regulation?
- How will the new Florida nutrient standards affect this region?
- When will the revised DO and fecal coliform standards be available for Georgia?
- How are Alabama and Florida uses (current and future) accounted for in the model? And how can they be addressed in the plan?

Council member Howard Small commented that agriculture is quite variable from year to year depending on factors such as crop prices and weather. He said he thought that this would affect the model results and forecasts significantly and made it especially difficult to consider 40 years in the future.

Some council members questioned whether the surface water availability shortfalls could be directly tied to agricultural water withdrawals. One member noted that in 1954, streams went dry despite the lack of agricultural pumping. Tim Cash noted that the surface water models for this region show that groundwater withdrawals can affect surface water flows by making streams go dry sooner and keeping them dry longer. Some council members expressed a lack of confidence in models relative to actual historic conditions. One council member commented that the importance of agriculture should not be ignored, and it seemed like soon, farmers would be considered an endangered species.

One council member commented that Florida is getting more water than it did before the Chattahoochee had reservoirs and that Georgia does not get credit for that.

Another council member said that in Florida, farmers that use groundwater have to monitor groundwater levels and report usage on a monthly basis.

With regard to management practices, several council members suggested considering augmentation of flows via groundwater, springs, and interbasin transfers.

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Several council members expressed concern about who we were trying to address the gap for – ourselves, the state of Georgia, or neighboring states. One council member asked whether we had to fill the gap for Florida. Another asked how water use from shared watersheds in our neighboring states would be addressed in the plan.

A council member asked about the interbasin transfer by the City of Griffin. Kristin explained that the city withdraws water from the Flint and discharges a portion of its treated wastewater in the Ocmulgee, due to the city's location between the basins. She said, however, that the impact of this transfer would be captured at the Montezuma node. A council member commented that stopping the transfer, however, would increase flows further downstream.

Next, Kristin asked the council about the shortfalls observed in the resource assessments. She asked how they thought the existing shortfalls should be addressed. She noted that this was a topic that was still open to discussion, and the Council and GAEPD would need to find agreement on what would be an acceptable level of "bridging" the gap.

Several council members expressed frustration at the lack of a management target. They asked what would be considered acceptable. Some council members commented that the existing shortfalls could be considered acceptable. Another asked if a shortfall 12% of the time would be considered appropriate. Another commented that others, particularly in the Tri-State water litigation, might not agree with the Council's assessment of what is appropriate.

Kristin said that the resource assessment results are new information, even to GA EPD, and so we are all trying to define the next steps and what our management targets will be. She said that she shares the council's concern about the lack of definition at this time, but she hopes that in the coming weeks, we will be able to further this discussion between council members and GA EPD.

Jim Quinn asked if a reservoir could be built to address the gap. Kristin said that it is one management practice, among many others, that could be considered. Management practices will need to be evaluated based on criteria selected by the council, including cost, technological, environmental, and social criteria. Other members suggested crop based permit flows and controlling and metering flows as other practices. One council member asked if wells in Florida impact Georgia.

Kristin asked the council to consider how it would structure its work on the future resource assessments. She noted that the Upper Flint had formed two committees: one for water quality and one for water quantity (surface and ground). The council members generally thought this to be a good approach. Kristin said that she had discussed the possibility of a Water Quantity Committee with Chairman Royal and member Jimmy

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Webb. They proposed using the existing Agricultural Meter Data Committee as the Water Quantity Committee, with the addition of more members as needed. *The following committees were appointed:*

**Water Quantity:** Jimmy Webb, Hal Haddock, Steve Bailey, Mike Newberry, John Bridges, T.E. Moye, Doyle Medders, Greg Murray, Chris Hobby, Jimmy Champion, Howard Small

**Water Quality:** Jerry Lee, Chuck Lingle, Steve Sykes, Jim Quinn, Dean Burke

Kristin said that there would be a need for a plan review committee after the next council meeting when parts of the regional plan will begin to be written.

Kristin will be in touch with the committees to get them started in a week or two. Additional appointments might be made from members not present at today's meeting.

### **Lunchtime Presentation by Georgia Soil and Water Conservation Commission**

While the council had lunch, Ben Mosely of the Georgia Soil and Water Conservation Commission gave an informative presentation about the Commission's activities.

### **Water Development and Conservation Plan Table of Contents**

Kristin reviewed the draft table of contents for the regional plan. A copy is included in the pre-meeting packet. She noted sections where the council can make recommendations for changes in state policy and for the improvement of the information base for future water planning.

### **Management Practices Survey and Decision Criteria**

Kristin reviewed the management practices survey results. There were fourteen respondents. She reviewed the results for each criterion. Overall, cost criteria were rated higher than the other criteria. Then she reviewed the result for the management practices. The category "Enhanced Pollution Management Practices" was rated highest by respondents. Kristin noted that the survey results could be used by the council as they developed weights for criteria to be used to evaluate portfolios of management practices.

*A council member asked to see the results of the survey from the Upper Flint and Middle Chattahoochee Councils, and Kristin said she would send links to these results.*

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### **Municipal and Industrial Water Use Forecast**

Robert Osborne reported that the GA Office of Planning and Budget (OPB) had recently released the revised statewide population projections. The Black and Veatch team has drafted forecasts of municipal water withdrawal need and water returns based on the population projections. Robert reviewed the county-by-county assumptions and forecasts for municipal and industrial water demand and wastewater generation. Robert reminded the Council that these forecasts were ongoing and that any new data could still be submitted. Energy water use was discussed as ongoing, and to date, for this sector, only existing and projected water use through 2017 has been compiled.

### **Local Elected Officials and Public Comments**

Oscar Jackson distributed a hand-out to the council. He commented that he is 83 years old and has worked on water issues in Georgia for many years. He said he does not think there is anything more important than this. He said he wants to ensure that Southwest Georgia gets its fair share of water. He has concerns about whether GA EPD's basin maps include two creeks in the right basin in Decatur County. He commented that there was inadequate hydrologic data and that there needs to be a water balance for Lake Seminole.

### **Wrap-Up and What to Expect Next Meeting**

Kristin told the council that the focus of the next meeting will be the future resource assessments and the selection of management practices. *The Council selected June 15 in Colquitt as the date and place for the next council meeting.* The meeting was adjourned.

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**Attachment 1:**  
**Middle Chattahoochee Water Planning Council**  
**Council Meeting Attendance – March 22, 2010**

**Council Members**

Hal Haddock  
Steve Bailey  
John Bridges  
Dean Burke  
Jimmy Champion  
Jerry Chapman  
Terry Clark  
John Heath  
Chris Hobby  
Huddy Hudgens  
Chuck Lingle

Rick Moss  
T.E. Moye  
Greg Murray  
Mike Newberry  
Jim Quinn  
Steve Singletary  
Howard Small  
Steve Sykes  
Jimmy Webb  
Bill Yearta

**Council Members Not In Attendance**

Richard Royal  
John Bulloch  
Bob Hanner  
Josh Herring  
Gary Leddon  
Jerry Lee

George McIntosh  
Doyle Medders  
Will Vereen

**Planning Consultants**

Robert Osborne, B&V  
Kristin Rowles, GWPPC

Steve Simpson, B&V  
Nils Thompson, LBG

**Georgia EPD**

Tim Cash, Assistant Branch Chief  
Bill Morris  
Cliff Lewis  
Tommy Rumph

**Georgia State Agencies**

Ben Mosely, Georgia Soil and Water  
Conservation Service

**Ad Hoc Technical Committee**

Doug Wilson  
Mark Masters  
Woody Hicks