



B&V Project 164139
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December 3, 2010

To: Upper Flint Water Planning Council

From: Kristin Rowles, GWPPC and Robert Osborne, Black & Veatch

cc: Tim Cash, Assistant Branch Chief, GA EPD

Subject: Meeting Summary: Council Meeting 8 on November 30, 2010

The council meeting was held on November 30, 2010 at Barnstormer's in the Peachstate Aerodrome in Williamson. The list of attendees is attached. In addition to these minutes, all the presentations (slides) discussed in this meeting will be posted on the Upper Flint web portal (<http://www.upperflint.org/>).

Welcome, Introductions and Chairman's discussion

Chairman Chase started the meeting with an invocation. Next, Bill Sawyer, Pike County Manager and Upper Flint Council member, and Doug Mangham, Chairman of the Pike County Commission, welcomed the Council to Peachstate Aerodrome and Pike County. Next, Chairman Chase asked the Council to approve the meeting minutes. Dick Morrow made a motion to approve the minutes, and they were approved by consensus. Next, Chairman Chase asked for consideration of the agenda. There were no changes made to the meeting agenda.

Chairman Chase referred to a [memo](#) from Allen Barnes, Director of GAEPD. The memo extends the original regional water planning schedule by three months. For example, Councils were supposed to submit the initial recommended water plan to GAEPD on January 31, 2010. This date is now extended to May 2, 2010. Kristin reviewed the following revised milestone schedule and asked for comments from the Council:

Completion Date

November 30, 2010

November, 2010

December, 2010

January, 2011

Milestone

Council Meeting 8

UF Receives Water Quality Modeling Results

Plan Review Committee Meeting

Council Meeting 9

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March, 2011	Plan Review Committee Meeting
March, 2011	Council Meeting 10
May 2, 2011	Recommended Plan to GAEPD
May-July, 2011	Public Notice of Draft Plan
August, 2011	Final Production of Adopted WDCP
September 30, 2011	GAEPD Approves UF Regional WDCP

Chairman Chase asked the Council if they were satisfied with these milestones. There were no objections from the Council.

Next, Chairman Chase reported on the October 6th Joint Council meeting in Macon. Cliff Arnett thought it was an excellent meeting with all the areas of the state represented. He said he was surprised at how cohesive the entire group was. He said the feeling statewide was that the regional water plans are an important mission, and everyone was working hard to be on the same page. Council member Brant Keller said that there many good points brought up during the joint meeting.

Several council members expressed concern with the EPD comments on the draft WDCP that was submitted in October.

Chairman Chase asked Clifford Arnett to comment on the joint Water Quantity Committees meeting that was held with the Lower Flint-Ochlockonee Council on October 26th in Albany. Arnett said it was a very constructive meeting in which the committees discussed how to address each others' concerns. He said that the Council would take up some of what was discussed at the meeting later in the day. He said he felt like the two Councils could work together. Chairman Chase commented that there might be a need to hold a similar meeting with the Middle Chattahoochee Council. While there are some concerns with what the MCH has drafted, there are also some ideas worth considering, such as local water management districts.

Next, Chairman Chase directed the Council to the last page of the pre-meeting packet to view a comment letter to the Council from the Georgia Forestry Association. He asked the Council to consider the comments and to review the Council's vision and goals to be sure they felt it addressed the comments. Kristin put the Council's vision and goals up on the screen. Council member Randall Starling suggested using the forestry goal in the comment letter as a new goal for the Council. Beth English suggested modifying the Council's existing goal, number 6, to address the suggestions from the letter. Beth noted that existing goal 6 could also be more positively stated. The Council discussed its goals with a focus on goals #4, 5, and 6:

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4. *Manage water resources sustainably through the three “C’s” – conserving, capturing and controlling water – in order to provide for the needs of all water users in the region (agriculture, utilities, residential, industry, and recreation).*
5. *Sustain the region’s aquifers and surface waters in a way that will continue to support the economic activities of the Upper Flint Region and the economy of the State of Georgia.*
6. *Ensure that actions taken by this Council do not impede the agriculture and forestry based economy of this region.*

Council member Raines Jordan said he remember when they developed the goals they wanted to be careful not to show favoritism to a particular industry. Randall Starling said he thought Goal 6 was strong enough as it is. Beth English said goal six does not infer support, but just that we will not cause harm to those industries.

After further discussion, Chairman Chase said there appeared to be consensus not to modify Goals 5 and 6. Clifford Arnett commented that forestry and agriculture are a big part of this region. There was then a discussion about adding forestry to the list of industries in goal 4. There was consensus among the Council to make this change.

Forestry will be added to the list of industries in goal 4.

Next, Donald Chase commented on the surface water availability assessment with respect to the model assumptions regarding withdrawals to fill reservoirs in the Upper Flint. He noted his concern that these assumptions do not reflect actual withdrawals and created a shortfall estimate that could not be closed even with complete cessation of water use. He said he was concerned that the Council is making decisions based on the model, but some of the assumptions are not real. He wants to make sure this is explained reflected in the plan. Cliff Arnett said this issue related to his concern that future modeling should be based more on actual conditions and use. Kristin suggested the following

For this plan, the Council accepted the modeling assumptions regarding withdrawals to fill upstream reservoirs, but the Council does not believe that these assumptions reflect actual conditions accurately. Moreover, the Council believes the current assumptions may overestimate flow shortfalls in the Flint Basin. The Council recommends that future modeling to assess surface water flows in the Flint be preceded by an evaluation of withdrawals to fill reservoirs in the Upper Flint in order to support the development of improved assumptions about such withdrawals and more accurate modeling of surface water flows.

Clifford Arnett said that this language was not strong enough. He said that the Council needs to emphasize the importance of more accurate modeling based on actual use.

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Dick Morrow said that the Middle Chattahoochee plan would lead one to believe that the Chattahoochee is making up for Flint shortfalls at the state line, but if the model is not based on real use levels, then the shortfall is not accurate either. Kristin suggested that the Water Quantity Committee should review this issue and develop alternative language to address the Council's concerns. The Council members agreed.

Next, Chairman Chase said there is an In-stream Flow Ad-Hoc Meeting on December 7, 2010 in Macon. He explained this meeting would be a work session on instream flows and aquatic resources to develop language for recommendations regarding the next round of planning that Councils can consider for inclusion in their draft plans. Chairman Chase asked if any members would volunteer to attend. Council member Clifford Arnett stated he plans to attend. Council members Brant Keller, Randall Starling, and Frank Keller also volunteered to attend.

Chairman Chase said that on December 8th there will be a meeting of the joint legislative committee created by Senate Bill 370 to consider water supply issues. The regional water councils have been invited to send a representative, but they will not be provided with time to speak on the agenda. Donald Chase said that he would represent the Council at this meeting.

Overview of October 15th Draft Water Development and Conservation Plan (WDCP)

Kristin Rowles said EPD had provided positive feedback on the Upper Flint Council's October draft plan. She said that several Council members have expressed concern about EPD's comment memo and the ability of the council to address the comments.

Council member Dick Morrow said he thought it was hypocritical of EPD to request more detail in many places in the comments when they have also asked the Council to keep the document to less than 40 pages. Kristin said this was a good point. Council member Clifford Arnett said that the plan is a master plan, not an implementation plan, and EPD's comments are asking for the details of an implementation plan.

Kristin said that in her meetings with EPD on the October draft, EPD was generally positive. She said that she thinks most of the comments can be addressed – either directly or by indicating where additional information was needed. She said that generally EPD thought the Upper Flint plan was very good. She asked Tim Cash to comment, and he agreed. He said that the review team within EPD is rather large, and so the comments reflect input from many sources, but overall the plan is very good.

Kristin noted that she has several other councils' October 15th draft plans. These draft plans are good sources of ideas. Kristin can send these to Council members upon request.

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Council member Brant Keller said that he had recently reviewed the Metropolitan North Georgia Water Planning District's plans, which have many quantifiable goals. He said that the Council cannot get to that level of detail. Clifford Arnett commented that the Council's plan is a moving target without more information on nutrient standards, water quality conditions, tri-state water litigation, and other unresolved issues. He said it is a waste of time to add specifics. Kristin said the Council should note in the plan where more information is needed and where improvements in the plan can be made in the future. She noted that uncertainty has been a major theme for the Council since its first meeting. She said that it was still important for the Council to proceed and lead with a plan based on the best available information.

Kristin began reviewing slides that summarized EPD's comments (available on Council website). She said that EPD was focused in its comments on adoptability and implementation. She said that as we move through today's discussion that she would note unresolved items that need further attention in the coming months, and it was acceptable not to completely resolve all issues today. At the end of the meeting, she will review outstanding issues with the Council.

EPD comments also ask that the councils define benchmarks for implementation that will measure effectiveness and progress in addressing gaps. Later, they ask for quantification of how management practices will address gaps. These comments have created some concern for council members. Dick Morrow said that the Council has been talking about gaps defined by the resource assessments, but that the Middle Chattahoochee Council has enlarged its definition of gaps. Dick Morrow and Cliff Arnett asked if the Upper Flint Council is supposed to address the gap that occurs in the Lower Flint-Ochlockonee region. Dick Morrow asked how the Upper Flint plan compares to other plans. Tim Cash said the Upper Flint Council is on the right track. He thinks more detail about management practices would give more support to what the council is recommending.

Brant Keller asked when there would next be Board of Natural Resources rule-making as it was likely to affect the planning process. Tim Cash said he was not sure on the timing, but rules were in the works on inter-basin transfers and water quality. He will find out more for the Council.

Kristin resumed reviewing the comments from EPD. EPD would like for additional coordination with existing plans to be noted, including local and regional comprehensive plans, the State energy strategy, and watershed management plans. EPD also asked that management practices be described as clearly and specifically as possible. More explanation of why a practice was selected, how it relates to the gap, and how it will be implemented is desired, where possible.

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Section 6 Comments

Kristin reviewed the following major comments for this section:

- Quantify how management practices will address gaps (where possible)
- Address information gaps with recommendations for data collection and analysis to improve specificity of management practices and to support future planning
- Prioritize management practices for implementation

Kristin noted there were estimates in the strawman water quantity management practices document about water savings from various practices. These would be incorporated into the plan through an appendix. She noted that for some practices, good estimates might not be possible, especially given the lack of information on baseline levels of implementation.

Dick Morrow asked, given the size of the gap at Bainbridge, perhaps the Council should just propose a reservoir and remove all of the rest of the management practices, since we know that a reservoir is the only management practice that can completely close the gap. This comment led to extensive discussion. Several members noted the need for a reservoir, but Morrow noted, the plan does not emphasize this practice enough. Kristin said that one of EPD's comments is that management practices should be prioritized, and this emphasis could be noted in the prioritization. Donald Chase agreed, but said that priority must also consider costs. Dick Morrow noted that management practices could be organized based on quantity of water saved, long-term vs. short-term, or cost per gallon, similar to Water Contingency Task Force report.

Lamar Perlis said that most of us believe we need a reservoir. Hays Arnold said that if we had built the reservoirs that were proposed in the 1960's and 1970's, we would probably not have a gap today, and furthermore, we would have the benefits of hydropower and flood control. Raines Jordan said that the Council's region is geographically well suited to storing water. He said the Council has always been concerned that others will want our water, and we need to plan for our future or else someone else will. Randy Starling said that while a reservoir may be needed, management of the reservoir would be critical. Harold Fallin said that we need to be able to manage reservoirs to regulate flow. He said that farm ponds in the region provide a lot of storage. Brant Keller noted that we cannot control the management of federal and private reservoirs. Cliff Arnett said that use definitions and lake authorization is critical in determining how a federal reservoir will be managed. Dick Morrow said that a multi-purpose reservoir might not meet our needs for flow management in the Flint if too many purposes are competing.

Generally, the group agreed that it supports a reservoir conceptually and would like to see this management practice emphasized more in the plan.

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Clifford Arnett reminded the Council that it needs to make sure that the Lower Flint-Ochlockonee Council is in agreement. Kristin said that the Lower Flint-Ochlockonee Council has a similar reservoir recommendation.

Kristin noted she would like to work with the Council to improve specificity of management practices and to indicate prioritization of management practices in the plan.

Section 7 comments

Kristin reviewed the following major comments for this section:

- Be more specific about entities responsible for implementing management practices
- Clarify priorities of management practices
 - Detail Council's consideration of feasibility (technical, political, affordability) and effectiveness
 - Reflect Council's consideration of financial and environmental costs of management practices.
- For actions identified for state entities, state what Council objective(s) that the action will support (per Section 14(7)(c)(xiii) of State Water Plan).
- Strongly consider adding eligible water quality projects as management practices to receive CWA Section 319 funds made available by GAEPD.

Section 8 comments

Kristin explained the following major comments for this section:

- Include benchmarks that can be used to assess progress and effectiveness
 - Select qualitative and quantitative benchmarks that can help to assess whether management practices are closing gaps and supporting attainment of Council vision and goals over time.
- Include benchmarks that measure progress relative to water use and environmental outcomes (i.e., not just implementation actions).
- Group benchmarks by categories where possible (e.g., implementing party, types of management practice, geographic area).

Kristin reviewed other GAEPD Suggestions including:

- Borrow from other councils' plans
- Discuss lack of baseline information on implementation of conservation practices and how it affects the ability to evaluate extent (and cost) of future implementation needed
- Explain the portfolio of MPs: how it fits together to address gaps
- Specify geographic coverage of management practices, where applicable
- GAEPD will provide guidance on how to address future actions by Councils consistently
- Discuss more thoroughly how to evaluate the adverse impacts of identified gaps

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- Add conclusion to Section 8 that ties plan together (linking goals, vision, management practices, expected outcomes)

Council member responses and reactions to the EPD comments included:

- Dick Morrow said that there is a lack of understanding of the groundwater use and recharge in the region. This is an information need. Groundwater recharge areas need to be protected from development.
- Donald Chase noted that another major information need is a better understanding of surface water availability considering the full water cycle. It has been shown in dry climates that irrigation raises humidity and rainfall.
- Dick Morrow said that we need to keep the water councils going on a permanent basis. Kristin said that EPD would be offering guidance on how to address the future of the councils in the plan soon.
- Cliff Arnett noted the need to better understand the effect of evaporation from reservoirs and farm ponds.
- Council members discussed adding language on the impacts of not meeting the instream flow metric as currently defined; are there adverse impacts on farmers, fish and wildlife, recreation, etc.?
- Michael Beres said that farm ponds might not offer substantial benefits to address flow needs. Dick Morrow said that farm ponds do offer water quality benefits and might be considered as a water quality management practice. Donald Chase said that perhaps farm ponds could be the focus of a 319 water quality grant proposal. Donald Chase said that the Council might specify that farm ponds are a practice with more benefits in the area above the fall line.
- Donald Chase emphasized that it is the council's job to protect water users as well as the natural system.

The Council had a discussion of water management districts. Dick Morrow noted that the Middle Chattahoochee draft plan recommends a water management district as an institution for water resource management and funding (See page 7-15 of the Middle Chattahoochee plan.) Several council members supported adding a similar recommendation to the Upper Flint plan. Randy Starling asked if the recommendation would create unnecessary bureaucracy. He said he would like to see the recommendation in writing before supporting it. Brant Keller said that while recommending a district seemed at odds with his libertarian leanings, he believed we need this for the future. Dick Morrow and Cliff Arnett both expressed support for the Middle Chattahoochee's recommendation and asked that the Council consider a similarly worded recommendation at the next council meeting.

The Council discussed whether this type of recommendation would mean that a new regional body would assume permitting authority in the region. Brant Keller thought it would serve more as an extension of EPD. Dick Morrow felt the role of the new body would be more advisory and management. Lamar Perlis said that a regional board would

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be good because it would be closer to the issues. Joel Wood said that the watershed approach is here to stay, and therefore, some kind of regional body makes sense.

Kristin will draft a recommendation for consideration at the next council meeting. The Plan Review Committee will review the recommendation in advance of the next council meeting.

Tim Cash said EPD is drawing up plans and recommendations for the future of the Councils and hopes there will be some answers prior to the end of the planning period.

Dick Morrow suggested adding additional people to the council's subcommittees.

Lunch

The group broke for lunch. At lunch, Ron Alexander of the Peachstate Aerodrome told the Council about the history of Candler Field and the mission of his organization to preserve that history.

Review of October 15th Draft Plan and EPD Comments (continued)

After lunch, Kristin reviewed some of EPD specific comments from Sections 6, 7, and 8. A summary follows of the EPD comments and Council discussion follows:

- Section 6.1: Identifying Water Management Practices: This section needs to be simplified. Also in this section, EPD asked that we include several additional plans in the list of plans considered, including the State Energy Strategy and the Statewide Water Plan.
- List of uncertainties: Section 6-1, page 6-2: Note how these uncertainties are being addressed and where additional information can be found.
- Page 6-3: The term “adaptive management” implies a process that is probably not intended here.
- Table 6-1: Move to appendix.
- Table 6-2: Management Practices
 - Number the management practices for easier reference.
 - Page 6-4: Implement Tier 3 and 4 non-farm water conservation practices with the support of incentive programs. EPD asked which incentive programs are referred to here. Kristin noted that there really are not any. ***The Council recommends removing the word “existing” from the description section.***
 - Page 6-4: EPD recommends as a management practice the creation of a recognition program for agricultural water conservation.
 - Page 6-5: EPD has asked that the practice regarding the use of the Flint River Drought Protection Act be modified to reflect the need for better predictive tools, which are currently in development by EPD, to predict drought earlier than March 1. Tim Cash noted that as written, EPD will fail to implement the practice because it cannot provide earlier notification of drought than March 1

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if it lacks better predictive tools. The Council members emphasized their strong interest in earlier notification than March 1. The Council recommends that a sentence be added to the description section that says that the council supports EPD efforts to develop better predictive tools to use in determining the need for a drought declaration. The Council's management practice recommends notification in January instead of by March 1. The Council discussed changing January to February, but did not decide to make this change.

- Page 6-5: Restrict new agricultural water withdrawal permits in the region. Changes to this management practice will be discussed in the Water Quantity Committee report later today.
- Page 6-6: Kristin noted that there was some text related to the inter-basin transfer management practice that was mistakenly listed in the ASR description section. This will be fixed.
- Page 6-6: Inter-basin transfers: EPD recommends that the Council move this to the Recommendations to the State section.
- Page 6-6 Farm ponds: EPD would like for the Council to specify that withdrawals to fill farms ponds should be subject to requirements for low flow protection.
- Page 6-7: Randy Starling asked for clarification of the recommendation regarding a conservation land program in the "Improve implementation of nonpoint source controls" management practice. The Council discussed the wording, which is confusing regarding whether the intent is to increase the requirement for stream buffers. The intent of the recommendation is to increase the amount of stream buffer area that is protected voluntarily. ***The recommendation will be reworded as follows: Create a conservation land program that targets voluntary acquisition of stream buffers for water quality protection.***
- Page 6-7: EPD suggested adding a water quality management practice that would implement a BMP tracking and complaint response program for agriculture like that implemented by the GA Forestry Commission for forestry.
- Page 6-8: Improve water quality monitoring: EPD asked for more specificity on what additional monitoring is needed and recommended.
- Page 6-8: EPD asked that the estimate of storage needed to offset the gap be explained more fully and that the plan describe how and why the estimate was made.
- Page 6-9: EPD asked that the Council provide examples of what kinds of impacts for downstream user and in-stream needs would be of concern to the Council. EPD also asked that the Council explain how closing the gap fully would violate the Council's vision and goals. The Council discussed these comments. The Council's goals emphasize water use and the economy as well as the natural system, and this paragraph will be revised to explain how, based on the resource assessment model, closing the gap fully would require complete cessation of use in dry periods without the construction of a reservoir.

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- Randy Starling noted that throughout the plan the need for additional water storage is discussed, but the purpose of this storage should be expressed more directly. For example, instead of just referring to additional storage as “storage”, it could be referred to as “supply augmentation storage”.
- In Section 7, Kristin said that the Recommendations to the State section would be expanded. In particular, it will include several recommendations to address information needs, many of which were discussed today. Kristin urged the council to consider what other plans have in their recommendations to the state and noted that the Middle Chattahoochee plan had a lengthy list of such recommendations that could be considered. The Council discussed some information needs, with an emphasis on modeling based on better estimates of actual use and conditions. They also noted their interest in having more nodes in the model so that the information on the region can be modeled in more detail. Only the Montezuma node is located in the Upper Flint region. The Council discussed how much of the Upper Flint region contributes to the Bainbridge node. While some members thought the region’s impact was minimal, it was noted with the region map that a significant portion of the Upper Flint region is between the Montezuma and Bainbridge node and about half of the surface water use by agricultural that is observed at the Bainbridge node is located in the Upper Flint region.
- Table 7-1: Kristin noted that the dates in the agricultural conservation benchmarks on pages 7-3 and 7-4 need editing.
- Page 7-4: EPD suggested listing the General Assembly as a responsible party under the irrigation suspension auction recommendation if new funding is needed for implementation.
- Page 7-5: EPD suggested that identification of funding sources for aquifer pumping to augment flows should be listed as an implementation action if this practice is determined to be feasible.
- Page 7-6: EPD suggested that identification of funding sources should be an initial action under the “Evaluate storage options” management practice.
- Table 7-2: Kristin said that the cost table was still in development, and that all of the planning contractors had recently discussed how to simplify and populate this table. She noted that for some practices, cost estimates could be difficult to develop.
- Section 8: EPD suggested a conclusion section for the plan that ties together the vision and goals with the resource assessments, selected management practices, and expected outcomes.

Water Quantity Committee Report

Committee chairman Cliff Arnett made the Water Quantity Committee’s report. The Committee met with the Lower Flint-Ochlockonee Water Quantity Committee on October 26. A meeting summary is included as pages 21-25 of the pre-meeting packet. The committee then met by conference call on November 16th. A meeting summary for the conference call is included as pages 26-28 of the pre-meeting packet. At its meetings,

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the committee discussed management practices (agricultural permits, inter-basin transfers, storage) and information needs. It also discussed the Middle Chattahoochee Council's draft plan. The committee developed some recommendations for today's Council meeting.

The committee recommends modifying the following Management Practice on Page 6-5:

Current language:

Restrict new agricultural water withdrawal permits in the region

- No new Capacity Use Area withdrawal permits in the Flint River Basin
- Make all new permits interruptible (surface and groundwater)
- New permits should have to demonstrate that they have no impact on minimum in-stream flows
- New permits should cause no net increase in consumptive use in the watershed during periods of low flow.

Replacement language:

Manage new agricultural water withdrawal permits in the region according to the 2006 Flint River Basin Water Development and Conservation Plan:

- The 2006 Flint Plan limits new agricultural withdrawal permits based on expected impact on nearby wells and streams (summarized by map of Capacity Use, Restricted Use, and Conservation Use areas included in the 2006 plan).
- New permits require mandatory conservation measures, such as end-gun shut off switches and leak prevention and repair, as a condition of the permit.
- New surface water permits in Ichawaynochaway and Spring Creek sub-basins must suspend use when streamflow drops below 25% Average Annual Discharge instead of 7Q10.
- New permits in the Flint River Basin have a \$250 application fee.

Randall Starling asked that the replacement language be modified to make it clear that the mandatory conservation measures referred to in the 2nd bullet point are those already required by the Flint Plan of 2006. ***The Council approved the replacement language with this modification.***

The committee made the following additional recommendations to the Council:

- Add to Section 7.4 (Recommendations to the State) a strong recommendation for gathering better information on water use to be used in future modeling efforts by state.
- Do not adopt a recommendation regarding quantification of permits (as LFO has)
- Move Inter-basin Transfer recommendation from Management Practices (Section 6.2) to Recommendations to the State (Section 7.4)
- Share these decisions with the LFO Water Quantity Committee

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These recommendations were discussed briefly and accepted by the Council.

Water Quality Committee Report

Committee chairman Raines Jordan gave the Water Quality Committee report. He noted that the committee had not met since the last Council meeting, but would meet soon to consider new information, including the recently released Florida nutrient standards and the water quality modeling results, which are expected this week.

The Council discussed the Florida nutrient standards. Kristin noted that the phosphorus standard for the Western Panhandle was quite strict. She said it was not yet clear how the new standards would translate into permit limits in GA, but they are expected to have a significant effect. The states and local governments have 15-18 months to come up with a compliance plan. Brant Keller noted that the treatment upgrades would be costly to meet the new standards.

Energy Sector Water Use Forecasts

Steve Simpson presented the energy sector water demand forecast results. The Executive Summary of this forecast is included as pages 29-43 of the pre-meeting packet. Steve explained that he would discuss the forecast methodology, forecast results, and guidance to Councils.

He said the energy sector ad hoc group was comprised of representatives of the power industry (Georgia Power, MEAG Power, and Oglethorpe Power Corporation) and GEFA. The initial stages of the ad hoc group also included Dalton Utilities. The ad hoc group assisted with data collection, interpretation and technical review.

Steve explained the forecast methodology. He said the base year water withdrawals and consumption were for 2005 and the power generation needs forecast was developed using statistical analysis based on the historical rates of energy use. He noted that data was collected for all NAICS 22 facilities in Georgia as well as planned facilities that have applied for an EPD air quality permit.

Steve said water consumption refers to water that is consumed during the power production process and not returned to the stream. Consumptive use occurs mostly as a result of evaporation during the cooling process. Statewide, 93% of the water withdrawn for the production of thermoelectric power was returned to the source.

Steve said a regression analysis of statewide power generation and population from 1990-2008 created the statewide power needs scenarios. Multiple scenarios were analyzed. The baseline power needs scenario uses the mean parameters from the regression

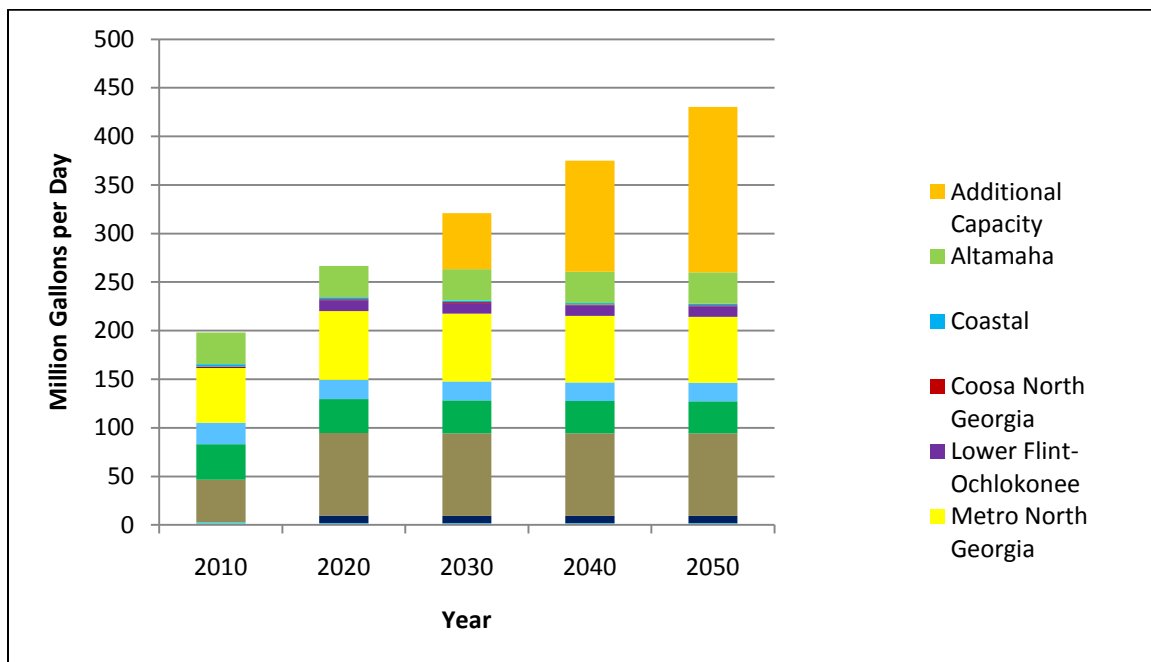
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analysis, while the alternative power needs scenario uses the upper limits of the parameters while still within the 95% confidence interval. This is a high scenario to be conservative in the water demand planning perspective.

The 2017 water demand scenario presents what would happen if we did not add any new facilities beyond what is existing, permitted or planned. Under the 2017 Capacity Scenario, existing and planned facilities produce 100% of statewide power needs until their capacity factors reach maximum sustainable levels.

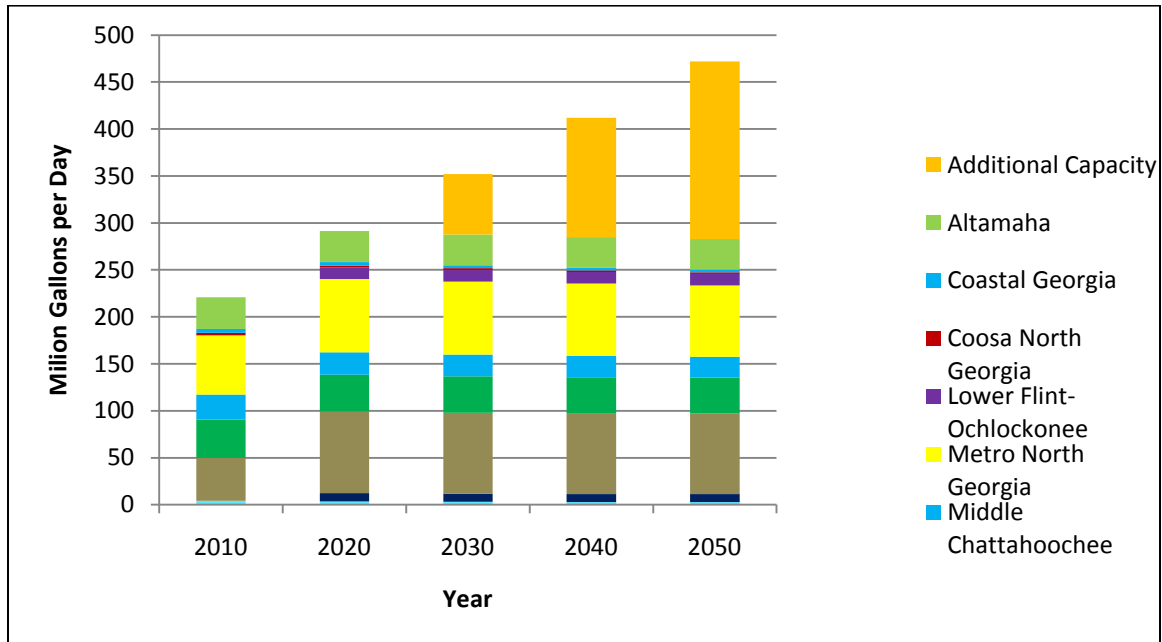
Baseline scenario:



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Alternative scenario:



As the charts demonstrate, currently the Upper Flint region does not currently have energy producing capacity with consumptive water use. The future location of additional needed capacity is not known at this time.

Steve presented the following conclusions:

- Statewide energy sector withdrawals are forecasted to increase at about 0.20 – 0.25% annually from 2010 to 2050.
- Statewide energy sector consumption is forecasted to increase at about 1.80 – 1.85% annually from 2010 to 2050.
- Trends indicate more capacity development for water consumption intensive power generation (those with cooling towers)
- Little to no capacity development for water withdrawal intensive power generation processes (those with once-through cooling).
- Power generation from renewable energy, primarily biomass, will increase over the planning horizon.
- The additional capacity scenario presents the forecast most useful to Councils in making regional water resources planning decisions.

Steve presented the following as guidance to the Councils:

- Location of any assumed additional capacity beyond 2017 is unknown.

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- Councils can incorporate forecasted withdrawals and consumption directly attributable to existing and planned facilities into their regional plans.
- For demands associated with assumed additional capacity beyond 2017, Councils may wish to address the issue more qualitatively by trying to understand the water resources implications should some percentage of future additional power generating capacity locate within their regions.

Steve then asked the Council if they had any questions.

Q. A Council member asked if the energy results looked at power plant conversions.

A. Steve said yes, if they are planned prior 2020.

Q. Council member Brant Keller asked if the two new nuclear power reactors at Plant Vogtle in the Savannah basin were included.

A. Steve said yes.

Q. Council member Dick Morrow asked why future energy production after 2020 was not disaggregated by region.

A. Steve said the location of any assumed additional capacity beyond 2017 was unknown and therefore not assigned to a particular region.

Q. A council member asked why newer coal powered plants use more water?

A. Steve said newer plants with cooling towers withdraw less water; however, the evaporation from the cooling towers consumes more water than once through cooling. Steve noted two reasons that newer plants use cooling towers: (1) cooling towers reduce the heat load discharged to rivers with once through cooling, which is considered a pollutant and (2) cooling towers reduce the water quantity that needs to be available for power production.

Dick Morrow commented that a proposed project to build a dam that can create power and storage could be desirable. However, he said there needed to be a better way to model water than we are using in this planning process.

After some more discussion, Chairman Chase tabled the discussion and asked the Water Quantity committee to incorporate energy consideration into the plan. Chairman Chase commented that no one wants to make the hard decision on where to locate a power plant, but energy is likely to be the critical in the future.

Middle Chattahoochee Draft Plan Review

Next, Kristin presented an overview of the Middle Chattahoochee Council's October 15th draft plan. Slides are available on the Council website.

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A major theme of the Middle Chattahoochee plan is the assertion that the U.S. Army Corps of Engineers' current Water Control Manual for the ACF is inadequate and that it contradicts and compromises authorized purposes, specifically, recreational use at West Point Lake. The Water Control Manual is currently under revision; completion is due in 2012.

The Middle Chattahoochee plan recommends that the Water Control Manual should be modified as follows:

- Reduce operational flood storage and improve lake levels for recreation in West Point Lake
- Establish and maintain in-stream flow targets below Columbus and Columbia planning nodes to ensure adequate protection of water quality for downstream users
- Allow for operational flexibility to enable storage reservoirs to recover faster after severe droughts and reduce risk of follow-up droughts
- Ensure protection of critical habitat for listed species, based on thorough science

The Middle Chattahoochee plan also endorses the modeling work of Georgakakos of modifications to the Water Control Manual.

Dick Morrow asked whether the Council needs to endorse the modeling work of Dr. Georgakakos. Kristin said that the Council could consider this or providing a more general statement about what it supports in terms of modifications to the Water Control Manual.

Cliff Arnett said that there are some major issues that need attention. For example, Columbus Water Works does not receive the minimum streamflow level that it needs for its operations. He also said that the new COE colonel has indicated that his main objective is to meet the 5000 cfs target at Woodruff Dam. Arnett said that the Middle Chattahoochee plan's recommendations should be evaluated for their impacts on smaller reservoirs below West Point (e.g., GA Power reservoirs including Goat Rock and Oliver). He believes these will be drawn down more quickly. Steve Simpson advised that the storage in the GA Power reservoirs are not included in the Georgakakos modeling. However, the draft Middle Chattahoochee plan does include consideration of this storage, which is currently under discussion within the council.

Kristin reviewed management practices in the Middle Chattahoochee plan that relate to ACF management and storage. She noted that the Middle Chattahoochee plan has a lengthy list of recommendations to the state which the Upper Flint should consider. She said that the Middle Chattahoochee plan also includes (a) an extension of process to consider Corps of Engineers modification of Water Control Manual, and (b) a process for plan amendment prior to the scheduled 5-year plan update. The recent extension provided by EPD does not accommodate the Middle Chattahoochee's request in (a).

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Kristin said that the Upper Flint's concerns regarding the Middle Chattahoochee plan would likely relate to the following issues:

- Competing uses in ACF (Middle Chattahoochee emphasis on recreation)
- Flint vs. Chattahoochee flow contributions
- Uncertainty surrounding Operations Plan revisions

Kristin said that the Upper Flint Council might want to look at "borrowing" certain parts of the Middle Chattahoochee plan. She said that the recommendations to the state on Woodruff dam target flows, water conservation program evaluation, and water planning districts might be desirable to the Upper Flint Council. Also, the Middle Chattahoochee plan's wording in its recommendation on Land Application Systems and additional storage might be worth considering. They seem to reflect the Upper Flint's interests and are well stated.

Dick Morrow said he was concerned about the Middle Chattahoochee recommendation that water system connectivity should be limited so as to limit inter-basin transfers. He thinks that this should apply only to transfers out of the ACF, and even then, the benefits of connectivity, which has been promoted by the state, might outweigh concerns caused by inter-basin transfers.

Donald Chase noted his overall concern about the strong emphasis on recreational use in the Middle Chattahoochee plan due to its potential impact on other uses.

The Council discussed how to approach addressing concerns with the Middle Chattahoochee plan. They decided to outline concerns in a letter (to be drafted by Kristin and shared with the Council) and let the Middle Chattahoochee Council know in the letter that the Upper Flint Council was open a joint meeting with representatives from each council (Upper Flint, Middle Chattahoochee) to discuss the concerns.

It was noted that the recent joint meeting with the Lower Flint-Ochlockonee Council's Water Quantity Committee was constructive. Committee members reminded Kristin to share the results of today's Council decisions with the Lower Flint-Ochlockonee Water Quantity Committee.

Identification of Outstanding Issues for WDCP

Based on today's discussions, Kristin reviewed issues that still need to be addressed in the WDCP:

- Modify the Council's goal #4 to add forestry
- Add further explanation of Council's position on assumptions regarding upstream withdrawals for reservoirs in the surface water availability model. The Water Quantity Committee will take up this issue.

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- Elevate storage management practice in emphasis.
- Prioritize management practices.
- Consider a recommendation for a water planning district. Kristin will draft for next Council meeting.
- Address new water quality information (nutrient standards, water quality model results). The Water Quality Committee will take this up.
- Review and add to the Recommendations to the State as needed. Kristin will draw together information needs to consider for this section at next council meeting. Council members should consider other possible recommendations, using other council's plans as a source of ideas.
- Send letter to Middle Chattahoochee Council outlining concerns.
- Notify Lower Flint-Ochlockonee Water Quantity Committee of today's decisions of the Council.

Local Elected Officials and Public Comments

Next, the Council provided time for local elected officials and the general public to address the council, but no one indicated that they would like to speak.

Wrap-Up /What to Expect Next Meeting/ Council Meeting Evaluation

The Council selected the first week of February for its next meeting. The location is to be determined. The members completed an evaluation form about the meeting, and the meeting was adjourned.

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Attachment 1:

**Upper Flint Water Planning Council
Council Meeting Attendance – November 30, 2010**

Council Members

Clifford Arnett
Hays Arnold
Mike Beres
Gene Brunson
Donald Chase
Mike Donnelly
Beth English
Harold Fallin
Eddie Freeman
Jack Holbrook

Raines Jordan
Frank Keller
Brant Keller
Buddy Leger
Dick Morrow
Lamar Perlis
Bill Sawyer
Randall Starling
Joel Wood

Council Members Not In Attendance

Greg Barineau
Michael Bowens
Tommy Burnsed
William Culpepper
George Hooks

Terrell Hudson
Lymore James
Gary Powell
Jim Reid
Charles Rucks

Planning Consultants

Steve Simpson, B&V
Robert Osborne, B&V

Mark Masters, GWPPC
Kristin Rowles, GWPPC
Bill Morris

Georgia EPD

Tim Cash, Assistant Branch Chief

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Upper Flint