



B&V Project 164139
B&V File C-1.3
September 22, 2009

To: Upper Flint Water Planning Council

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

cc: Tim Cash, Assistant Branch Chief, GA EPD

Subject: Meeting Summary: Council Meeting 3 on September 18, 2009

The council meeting was held at Weyerhauser Plant in Oglethorpe, Georgia. 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 regional website (<http://www.upperflint.org/>).

Welcome and Introductions/Chairman's Discussion

Council member Randall Starling gave an invocation. Council Chair Donald Chase recognized the elected officials present which included:

- Gerald Beckum, Mayor, City of Oglethorpe
- Willie James Larry, Mayor, City of Montezuma
- Scott Dougherty, Macon County Commissioner
- Hays Arnold, Mayor, City of Thomaston

Randall Starling welcomed the Council members to the Weyerhauser Plant and introduced some of the Weyerhauser employees present in the room. A Weyerhauser staff person gave a short safety briefing. Donald Chase thanked Randall for providing the meeting location. Donald Chase stated that a quorum was present and the meeting should begin.

The council watched short video message from Governor Sonny Perdue about the recent court ruling in the tri-state ACF litigation and the importance of the Council's work. Donald Chase said that he and several other council members attended the Governor's briefing about the litigation, and he emphasized that the court ruling made the Council's work even more important than it was before.

Donald Chase emphasized that the meeting agenda is the Council's agenda and not EPD's agenda. He reviewed the objectives for the meetings. He next referred to the MOA and stressed the importance of the having consensus on the MOA. Next, he

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emphasized the importance of trust and civility in the council's work. He noted that the Council members come from different backgrounds and perspectives and that this makes the group stronger. Lastly, he suggested that Council members study the Metro North Georgia Water District plans to get a sense of what we are trying to do.

MOA Documents

Kristin reminded the council where it was in the MOA process. She said at the last meeting, the council had approved changes to the Operating Procedures and Rules for Meetings, but had deferred approval of the documents as a whole until this meeting. She noted that these documents were included in the pre-meeting packet.

Kristin noted the concern raised by Brant Keller at the last meeting that the MOA documents did not explicitly call for compliance with the Statewide Water Plan. The Chair and Vice Chair raised this issue in between council meetings and asked whether it could be addressed. A modification (underlined below) was proposed to be added under "General Powers" in Section IV (Council Leadership) of the Operating Procedures:

General Powers. The Upper Flint Water Planning Council Leadership shall function within existing State laws and regulations and shall follow guidance provided by EPD to ensure adherence to the Comprehensive State-wide Water Management Plan.

The Chair and Vice Chair found this modification acceptable to address the concern, and the Vice Chair discussed it with Brant Keller in advance of the meeting. There were no questions or comments on this recommended change.

Next, Council member Lamar Perlis raised a concern about how much local control the Council will retain. Mr. Perlis suggested that the Council consider amending the MOA documents to keep more local control in the permitting process. Kristin noted that the regional plan would operate primarily through existing EPD permitting processes. She noted that recommendations for changing state policy could be made in the plan. She also noted that the plan needs to be consistent with local comprehensive plans and that DCA would assist in this. Tim Cash said the plan would be used by EPD to understand the region's needs and to guide the permitting process.

Randall Starling asked how the final plan would be interpreted. Tim said that with respect to interpretation, specificity would be very important. Tim said that specificity would help in providing clear guidance to EPD. He noted that with the Metro North Georgia Water District plan, specific parts of the plans were easy for EPD to interpret, but more ambiguous parts created difficulty in interpretation. Kristin asked whether EPD would provide input as to whether the regional plan had enough specificity, and Tim said yes.

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Dick Morrow acknowledged Mr. Perlis' point, and he said he thought that made it all the more important that the Council "get it right" in their plan. Mr. Perlis said that his concern about local control remained, and he would like to note it for the record. Council Chair Donald Chair asked the Planning Contractor to make a note of Mr. Perlis' concern. The Chair also noted that the documents could be amended at a later time, if need be.

Dick Morrow made a motion to approve the MOA documents, as modified. Mike Donnelly seconded this motion. Raines Jordan asked to clarify that this motion would indicate adoption of the MOA and related documents, and the Chairman confirmed that this was the case. Donald Chase said that the Council needed to try to see if there was consensus. He said that if there were no objections to the motion, the Council would record that the MOA documents were adopted by consensus. ***There were no objections, and the MOA and related documents were adopted by consensus.***

Next, Kristin reminded the Chair that the council still needed to adopt the meeting summary for the last council meeting. Dick Morrow made a motion to approve the previous meeting summary. Randall Starling seconded it. ***The Council Meeting 2 meeting summary was approved by consensus.***

Population and Employment Forecasts

Kristin reported that the revised population and employment projections were not ready to present at this meeting. Since the last meeting, comments on the projections were considered and addressed by the forecasters. The revised projections will include high, medium, and low growth scenarios.

The Office of Planning and Budget (OPB), which contracted the population and employment projections, is reviewing the revised projections and will select a preferred projection to recommend to each council. OPB is meeting with the Governor sometime in September to review the revised projections. The projections are expected to be available by the next Council meeting.

Kristin said that the Council would be able to select which projections it would like to include in the water planning process. Kristin noted that the projections are important for the water planning process, but for many other state functions as well.

Council member Tommy Brunson asked if these projections will be able to be updated when new census data becomes available. Kristin said that they would be, but it would most likely affect a later version of the plan, given the expected completion date of this plan. Dick Morrow said that he has heard lots of comments from all over the state indicating a high level of concern about the projections.

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Kristin said that she will send the council members copies of the comments received in this region on the population and employment projections.

Visioning

Kristin provided a review of the purpose of the vision statement and how it is being developed by the Council. She said that the regional planning guidance document says that the vision should describe the economic, population, environmental and water use conditions desired for the future. The vision statement will be used to develop action-oriented goals and to guide the selection of management practices. The vision statement can be revisited and revised as needed to be consistent with other parts of the regional plan as it is developed. Kristin noted that the vision statement can be revised at a later time.

Kristin said that the following was the vision statement that was used during the development of the Statewide Water Plan:

Georgia manages water resources in a sustainable manner to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens.

The regional vision will tailor this vision statement to this region.

Next, Kristin reminded the Council of its discussion of the trends, forces, and factors affecting water resources in the region at Council Meeting 1. She reviewed a summary of that discussion:

- Conservation: Needed, Increasing, but Uncertain
- Uncertainty about future water demand
- Agriculture: More efficient irrigation but uncertainty about future water demand for agriculture
- Forest land use changing
- Water utilities: Regionalizing?
- Interbasin Transfers May Increase
- Near-term Climate Uncertainty
- Increasing use of land application and on-site treatment/concern about wastewater returns
- Political/Litigation Constraints
- Concern about the Future
- Budget Uncertain

Kristin emphasized that uncertainty was a leading theme in the discussion.

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Next, Kristin referred the Council to the visioning assignment, which asked the following:

1. What do you want your rivers, lakes and groundwater to do for you and the citizens in your planning region? Consider the following:
 - Supporting the region's and state's economy
 - Protecting public health and natural systems
 - Enhancing the quality of life for all citizens
2. What do you want to protect?
3. What do you want to achieve with your water resources

Next, Kristin said that the Chair and Vice Chair had asked her to prepare a draft or "strawman" vision statement for the Council to start with and respond to. She offered the following "strawman":

In the Upper Flint Water Planning Region, water resources will be managed to provide the quality and quantity of water needed to sustain a diverse economic base, preserve quality of life, protect natural systems, support vibrant and fiscally sound communities, and provide for the needs of future generations.

Then, she asked the Council members to consider the "strawman" and to help prepare a list of responses to the above questions, based on their individual responses to the questions in the visioning assignment. The Council members offered the following responses:

- Consider all users and all needs, not just economic needs.
- Do not just sustain water resources, but enhance them.
- Ensure water supply security (against terrorism).
- Maintain water for human health.
- Protect water supplies against terrorism threats.
- Provide for safe and adequate drinking water for citizens.
- Provide for protection of natural habitats (recreation/tourism).
- Provide for agriculture.
- Provide for healthy municipal, industrial, and commercial growth.
- Provide adequate access to water supply without unduly harming current users.
- Except where those users abuse their rights.
- Metro plan requirements are not affordable to small communities – need economic balance.
- Provide for flexibility in the plan so we can address and adapt to uncertainty.
- Consider costs and benefits.
- Temper "dream" with fiscal responsibility.

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- We can mandate things that we cannot afford.
- Do not want water resources diverted to another region.
- Priority use should be for in basin before other needs (external to basin).
- Protect water in our area so that we have enough to sustain economy and uses and preserve the quality of life.
- Use the word “stewardship” instead of “protect”, which might lead to unwanted interpretations.
- Protect the water in our area and be able to grow.

The discussion emphasized concern regarding possible future interbasin transfers of water to Metro Atlanta. Some members noted that uncertainty made it difficult to say what the vision should be. Cliff Arnett said that the Corps of Engineers controls water management in this basin and that leaves little control to the Council. Brant Keller said that until we have the resource assessments, we do not know where our demands are relative to our supplies.

Kristin noted the need to address uncertainty by having a vision that can be used to lead in times of uncertainty. She also noted that the vision can be modified later by the Council. Chairman Chase said that this is a council of “doers” for whom writing a vision statement can be an uncomfortable exercise, but noted the importance of having a vision.

Kristin noted that the Lower Flint Ochlockonee Council had created a subcommittee to draft a vision statement, based on the Council’s discussion, for the next Council meeting. Given the time, she suggested that this Council could consider that approach. Chairman Chase asked for volunteers and appointed the subcommittee as follows:

- Cliff Arnett (Chair)
- Frank Keller
- Jim Reid
- Randall Starling
- Brant Keller
- Buddy Leger

This subcommittee will work with Kristin to bring a suggested vision statement to the next Council meeting.

Planning Guidance

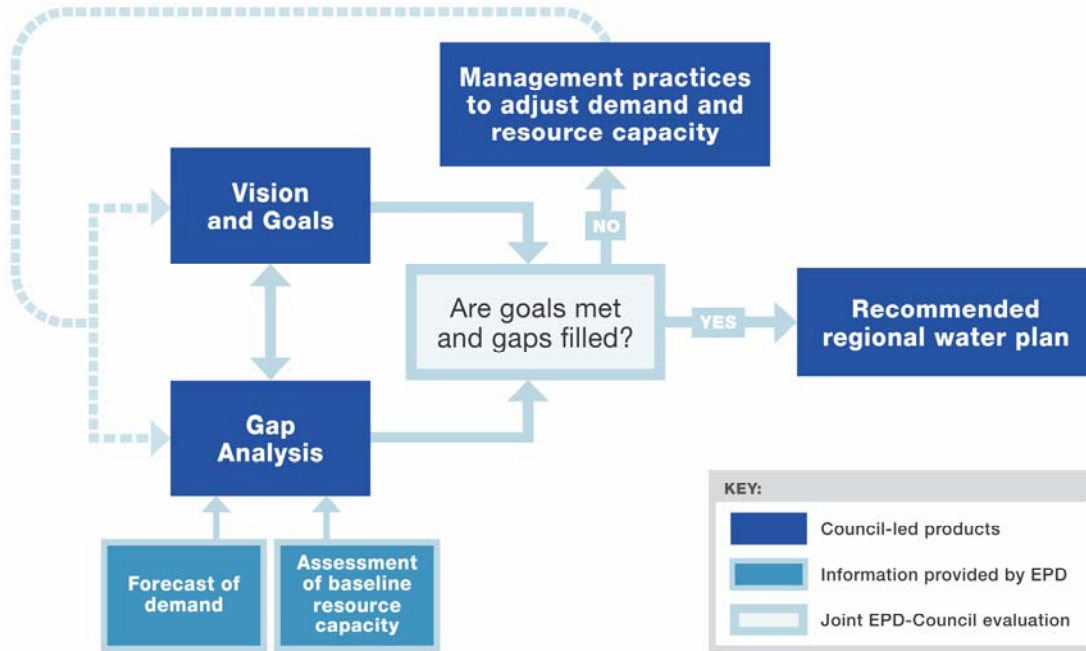
Kristin explained that EPD has published a regional planning guidance for the Council. The guidance is available through the Council’s web portal. The guidance will be an aid in preparing the various parts of the regional water plan, and it will also be used by EPD to evaluate the plan when considering final adoption. Kristin referred the members to the

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executive summary of the guidance as a good overview of the planning process and what will be expected of the Council and EPD.

Kristin presented the following graphic from the planning guidance as an over-arching illustration that describes the regional water planning process:



Kristin presented the following from the planning guidance as a schedule for the pieces of the planning process described in the graphic above:

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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 (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

Next, Kristin reviewed the responsibilities of the Council:

- Develop a recommended plan
- Submit to EPD by January 31, 2011
- Make revisions based on EPD and public comment and finalize recommended plan by June 30, 2011

The following are EPD responsibilities:

- Provide guidance and template to ensure completeness and consistency
- Provide public notice and 45-day comment period
- Review recommended plan for consistency with State Water Plan, rules, and guidance
- Adopt recommended plan if consistent with State Water Plan, rules, and guidance
- Use final adopted plan to guide agency decision making

Kristin encouraged the Council to review the planning guidance and to use it as a reference. Kristin also noted that there has been improvement to the council's website, and material from this meeting will be posted there (<http://www.upperflint.org/>).

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Public Involvement Plan

Kristin referred the Council members to the draft Public Involvement Plan, which is included in the regional planning guidance and which was also included in the pre-meeting packet. She reviewed each section of the public involvement plan to see if Council members had any suggestions for modifications to the document, which will be adopted at a future meeting. The Council members made the following comments and requests:

- Formally record responses to public input, as appropriate.
- Include water and sewer authorities in the list of stakeholders.
- Inform the Council regarding comments received by the planning contractor and EPD.
- Add press releases as another meeting announcement avenue.
- Include water and sewer authorities and private service providers when contacting local government officials for comments on various aspects of the plan.

Kristin will modify the plan as requested for consideration at the next council meeting.

Planning for Joint Meetings

Next, Kristin talked about coordination with other water planning councils and upcoming joint council meetings in January 2010. The councils have a strong interest in coordination among councils, as noted by the Chairs and Vice Chairs at a July leadership meeting with Dr. Couch. Furthermore, Kristin noted that the Statewide Water Plan calls for council coordination.

Kristin said that for January 2010, a series of six joint council meetings are being planned. These meetings will be “resource-based” in that councils that share water resources will meet together. At the joint meetings in January meetings, the results of the resource assessments will be presented. Another round of joint council meetings will be held in April 2010. These will also be focused on the resource assessments.

Kristin distributed two maps – one for surface watersheds and one for aquifers – which illustrates how council boundaries cross resource boundaries and which councils share which water resources. Then, she showed a draft set of groupings for the January joint council meetings. The Upper Flint will be a part of the following groupings (list included in pre-meeting packet):

- Chattahoochee River Basin/Piedmont Aquifer
- Altamaha, Ocmulgee & Oconee River Basins/Eastern Coastal Plain Cretaceous, Piedmont Aquifers
- Flint & Ochlockonee River Basins/Dougherty Plain, Claiborne Aquifers

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- Satilla, Suwanee & St. Mary's River Basins/Tift County Upper Floridan Aquifer

Kristin said that at its next meeting, the Council might wish to discuss further who will attend which meetings on behalf of the Council. She noted that the meetings will be open. Chairman Chase said that the Chair and Vice Chair would like to ask for members in counties bordering other councils to attend those shared resource groupings. ***Kristin will identify which council members this would include for the next meeting.***

In response to a question, Steve Simpson clarified that the joint meetings were informational, and no business would be conducted at these meetings.

Dick Morrow asked about the productivity of the aquifers and whether the aquifers in the northern part of the region could support agriculture. Kristin said that the groundwater assessment expert from EPD had some good information on the productivity of the state's aquifers, and a future presentation could address this and other groundwater topics. She referred the question to Nils Thompson, the groundwater expert from Leggette, Brashears, and Graham on the planning contractor team. Mr. Thompson said that most agriculture is below the fall line. The crystalline rock aquifers do not yield enough to support irrigation.

Kristin does not yet have information on specific dates for the joint council meetings. Council members expressed concern about scheduling, and ***Kristin said that she would pass on the schedule information as soon as it becomes available.***

Resource Assessments

Next, Kristin said the Council would hear about the on-going resource assessments. Three EPD experts are leading three teams that are completing the resource assessments, which will be available in time for the January 2010 joint council meetings. Dr. Jim Kennedy, state geologist, is leading the groundwater availability assessment, Dr. Liz Booth is leading the surface water quality assessment, and Dr. Wei Zeng is leading the surface water availability assessment. At this meeting, Dr. Zeng was present to address the approach to the surface water availability assessment. If the Council would like to hear from either of the other EPD experts, it can be arranged for the next meeting.

Dr. Zeng distributed several hand-outs, including maps and an outline of his presentation. These hand-outs are available through the Council's web portal. The outline describes the modeling approach being used in the assessment. In summary, the assessment is considering: How much water we are using? How much water Mother Nature has given us? How much water can we reliably use without compromising the needs of downstream users and in-stream flow needs? Next, Dr. Zeng reviewed a chart indicating the various elements of the modeling process.

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Next, Owen McKeon with Arcadis, a firm that is assisting in this assessment, addressed the council. He explained the development of estimates for “unimpaired flows”. An “unimpaired flow” is what you would have with no human activity in a river system. To estimate unimpaired flows, the team is looking at withdrawals, discharges, and reservoir operations and removing these effects from the USGS data on flows from 1939 to 2007. He said that for water use, good data only goes back to the 1990s, and so estimates had to be made for historical use back to 1939. He said that reservoir operation data dating back to 1939 is available.

Wei Zeng discussed the maps that were distributed. These maps show the planning nodes in the model and the users and discharges of water in each segment. ***More legible copies of the maps will be made available on the website.*** Some Council members asked for the GIS shape files for the maps. Wei Zeng said that the GIS files could be shared, with the exception of those for the water withdrawals, for security reasons. ***Kristin will follow-up on distributing the GIS data.***

The Council members had several questions and comments for Dr. Zeng and Mr. McKeon:

Question: Do you put weights on various water uses (e.g., recreation, in-stream, agriculture)?

Response: It is up to the council’s to determine the importance of various uses. For the assessment, we are just considering flow and depletion data.

Question: Will this process re-evaluate 7Q10 flow standards? Some 7Q10’s are fairly old.

Response: There is some subjectivity in which 7Q10 flows to use in the model. There will be input from EPD’s scientific advisory panel.

Question: Is there any differentiation between regulated and unregulated streams?

Response: Yes, there will necessarily be some difference.

Comment: I have concerns that the severe drought of the early 2000’s will bias the results. Our use dropped dramatically in 2002, and that will impact the numbers. It is not good to use base flow data collected during the drought. Withdrawals, discharges, and consumptive use in the drought were low and affected by watering restrictions. And the interim years (2005-2006) were unusually high rainfall years in between unusually low rainfall years.

Response: We do not have the data or the budget to include years after 2007 to incorporate the emergence from the drought. We have used data back to the 1930’s to incorporate highs and lows.

Question: Does the unimpaired flow model help to address drought year bias?

Response: Yes.

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Comment/Question: Land use changes have modified both amount and timing of flows. Specific examples are agricultural and change in forested land. How are you taking land use into account?

Response: These changes are captured by the USGS stream gage data.

Question: Is this a standard approach for estimating unimpaired flows?

Response: Yes.

Question: What about the interface between surface water and groundwater?

Response: The historic interface is captured by the USGS stream gage data.

Question: In what format are the data (with respect to time)?

Response: Flows data are daily; usage data is monthly.

Comment: Data will get better as councils modify plans in the coming years.

Response: Yes, it will be a dynamic, living model.

Dr. Zeng asked that the council members review the withdrawals and impacts on the resource assessment map.

Weyerhaeuser Presentation

Over lunch, the Council received a very informative presentation about the Weyerhaeuser Flint River plan from Neil Moore, a Weyerhaeuser engineer.

Forecasting Agricultural Water Demand

Dr. Jim Hook presented the agricultural water demand forecasts to the Council. Dr. Hook is recently retired from the UGA National Environmentally Sound Production Agriculture Laboratory (NESPAL), and he is working under contract to GA EPD to prepare the agricultural water demand forecasts for the water planning process. The forecasts are available on the following website:

<http://www.nespal.org/sirp/waterinfo/State/awd/agwaterdemand.htm> (There is also a link to this website from the Council's web portal: www.upperflint.org)

The agricultural water demand forecasting team included Dr. James E. Hook, Crop and Soil Sciences and NESPAL; Dr. Gerrit Hoogenboom and Dr. Joel Paz, Department of Biological and Agricultural Engineering; Dr. Jeffrey Mullen and Dr. John Bergstrom, Agricultural and Applied Economics; and Dr. Mark Risse, Biological and Agricultural Engineering.

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The purpose of the agricultural water demand forecasting project was to prepare projections of irrigation water demand that will meet the needs of the agricultural sector for the Georgia economy during the first half of this century. The projections include the row and orchard crops, as well as most vegetable and specialty crops, that cover more than 95% of Georgia's irrigated land.

Dr. Hook said that the projections assume that there would be no changes in regulation and that resource and land availability would not be limiting. He noted that the approach to forecasting agricultural water demand, like all forecasting, looks to trends from the past and considers foreseeable changes. He also noted the benefits and problems in using computer models for forecasting.

The steps in forecasting agricultural water demand included the following:

1. Determine "baseline" irrigated acreage.
2. Identify withdrawal sources (groundwater, surface water, ponds).
3. Project major crop acres through 2050.
4. Calculate crop water needs for wet, normal, and dry years.
5. Project agricultural water withdrawals 2011-2050.

The effort started with baseline data on irrigated crops. Hook noted that the projections are based on existing, mapped irrigation locations because they expect that: (1) farmers will continue to use their investments in existing hardware; (2) farmers will expand irrigation near existing irrigated fields; (3) existing irrigation areas have proven water supplies, suitable soils, and established farm support; and (4) all GA counties have room for irrigation growth. For water sources, the projections assume that 2008 sources will continue to be used in the same proportions (70% groundwater, 30% surface water).

The forecasters used projections from the USDA, from a Southeast Regional model, and from a Georgia model to determine which crops would be planted on the projected acres. In making the projections, the forecasters assumed economic conditions will reflect near-term effects of the current economic crisis followed by a transition back to steady economic gains. They relied on the Southeast regional and Georgia models to reflect Georgia farmers' preferences among crop choices. To combine the outputs of the models for crop acreages (USDA, SE, GA), the forecasters assumed that the projected acreage would best be projected as the average of the National, Southeast and Georgia models.

Next, the forecasters determined the water needs of the projected crop acreages. The water needs of crops grown in GA are known and can be modeled. The projections do not include any climate change scenarios. To project irrigation water needs, the forecasters assumed that irrigation replaces rainfall deficit in a given year, and they made projections for wet, average, and dry years based on weather patterns of the past 60 years.

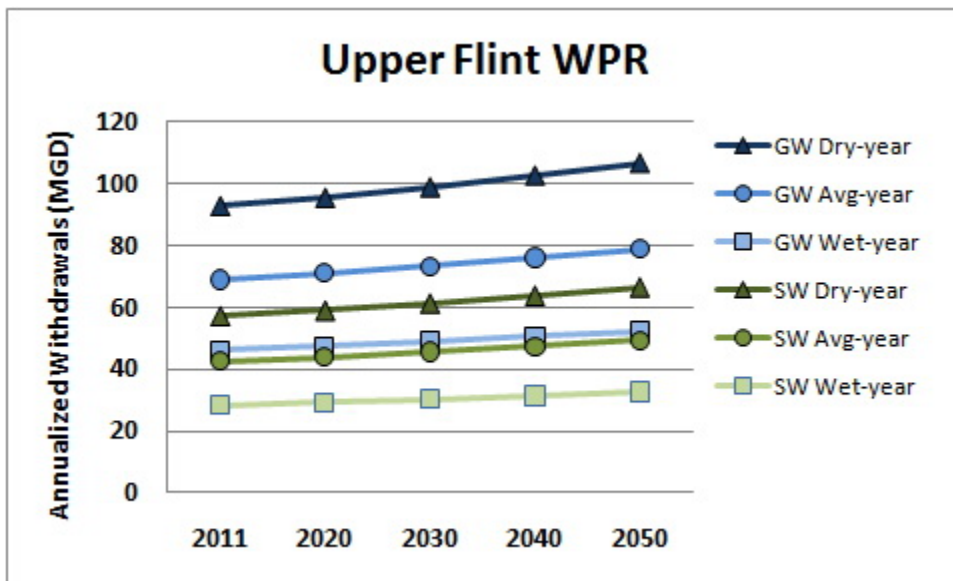
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To pull the pieces together, the forecasters then made the following calculation: Projected irrigated area of each crop (acres) multiplied by predicted monthly irrigation depth for the crop (inch) multiplied by fraction of water from the water source. The results were then converted from acre-inches to million gallons per day (MGD).

Overall, the results show that there will be slight increases in Georgia's agricultural irrigation water use over the next 40 years. There is a wide range in the demand projections between wet and dry years. Across the state, irrigated crop acreage is expected to increase slowly at an average of about 0.5% per year.

The chart below shows the projects in the agricultural water demand for the Upper Flint region. Overall, the Upper Flint region accounts for 13% of the state's irrigation water use (surface and groundwater). In the meeting, Dr. Hook reviewed some of the county and region level data from the UF region. While the overall projections are annualized, the website includes seasonal projections for water use. The chart below shows projected water use in the UF region for 2011.



Dr. Hook noted that in the UF region, most agricultural irrigation is in the southern part of the region. He referred to the county-by-county details on the website. He said that most surface water withdrawals were from ponds or tributaries and not from the mainstem of the river.

The following are not included in the agricultural water demand forecasts:

1. Commercial & industrial landscape irrigation
2. Home lawn & landscape irrigation

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3. Golf courses and athletic fields (sod farms producing turf for retail sale are included)
4. Retail nurseries and greenhouses (large production nurseries and greenhouses are included)
5. Non-irrigation water use on farms including livestock water, processing of farm products and aquaculture

Following Dr. Hook's presentation, the Council members had several questions and comments:

Question: Do you foresee a cap being imposed on agricultural water use in the future?

Response: No. Maybe localized restrictions, but not a widespread cap. The moratorium that ended in 2006 was imposed because of a lack of data, not because of the impact. Cannot imagine EPD getting into individual farm management.

Question: The projections do not include dairy and poultry production and nurseries. Do we have a handle on these?

Response: We will rely on the individual industries to get us additional data if they wish. Poultry processing should get included through the industrial forecasts. Overall, for animal production, these uses are not as significant as the others in the forecasts, but for some counties, these uses are very important. For nurseries, the larger ones should be in the data, but for smaller ones, there is no data. We were asked to only look at agricultural irrigation, and so, animal operations were not included. We added specialty crops to the forecasts after we started.

Question: Is anyone looking at these other agricultural water uses?

Response: The council should encourage EPD to make sure these uses do not get overlooked.

Question: Are dairies a significant water use?

Response: Statewide, dairy use really is not that substantial, especially compared to center pivot irrigation.

Question: Are there other sources of data that have not been considered?

Response: One council member offered information on data on dairies in the UF region. He said that dairy cows use about 75-100 gallons of water per day each.

Question: About 8,600 agricultural wells are not metered. How do we address those?

Response: Generally these are smaller withdrawals. Some are still getting permits. Do we need more data or is what we have enough? We will not get 100% of the wells. What is enough?

Comment: Often agricultural permit users do not use all that they are permitted for.

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Response: That is why irrigated acres, not permitted acres, were used for the forecasts.

Chairman Chase suggested a subcommittee to try to address additional agricultural water uses not in the forecasts (especially, dairies and nurseries) and bring the information back to the council. ***Council members Jim Reid, Tommy Burnsed and Terrell Hudson volunteered to serve on this subcommittee.***

Municipal and Industrial Water Demand Forecasting

Steve Simpson presented the methodology that is being used to forecast municipal and industrial water and wastewater demands for the planning process. Steve's slides will be available at the council web portal. Steve began by explaining each of the variables in the forecasting methodology:

Future Water Need:



Next, Steve explained how future self-supplied water demand was to be calculated. He explained each one of the variables in the following slide:

Future Self Supplied Water Demand:



Steve explained that plumbing code efficiency was incorporated into the methodology. This was a result of the 1992 National Energy Policy Act (NEPAct) mandated use of 1.6 gallon per flush toilets. The water savings from replacement of older toilets due to

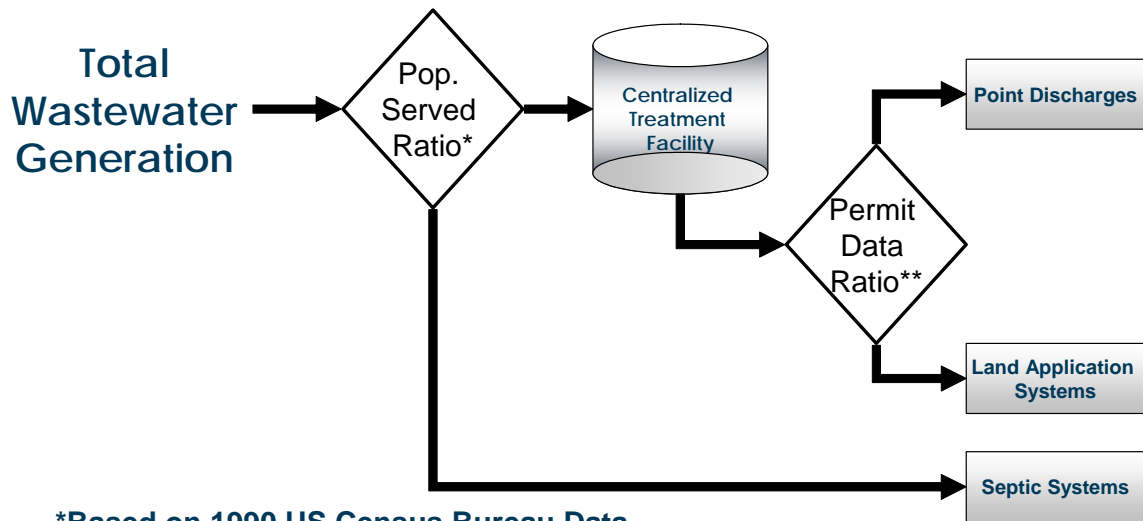
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plumbing code efficiencies will be specific to each county based on census age of housing data.

Steve then explained that both inflow, stormwater entering at points of direct connection, and infiltration, groundwater entering through cracks and/or leaks, were incorporated into the methodology. An average percentage will be estimated for each water planning region based on input from water users.

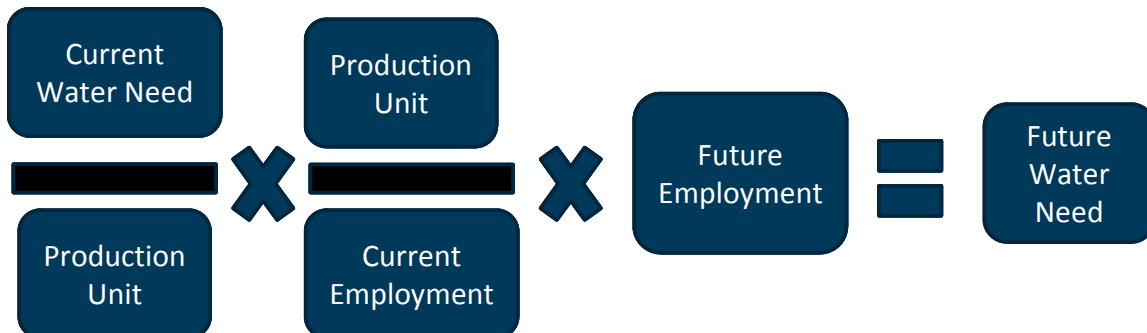
Steve then used the following PowerPoint slide to explain the total wastewater generation methodology.



*Based on 1990 US Census Bureau Data

**Based on Existing GA EPD Permit Data

Next, Steve explained the industrial demand methodology using the following PowerPoint slide. Steve noted Water is needed for industrial processes, sanitation, cooling and some domestic (employee) use and this need is linked to production, but production units are in multiple forms and often data are proprietary. Therefore, since employment is linked to production and employment data is available; this data will be used to determine future industrial water demand.



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The Council members had the following questions and comments:

Comment: One council member was concerned about poultry, livestock, and other agricultural uses not included in irrigation estimates.

Comment: One council member was concerned how this methodology was going to account for filling of new pools.

Response: Cliff Arnett said this was not a big number.

Comment: Another council member questioned how municipal unaccounted-for water was going to be considered.

Response: Steve said this was going to be considered in the Management Practices.

Comment: A council member did not think toilet fixture replacements would work in rural Georgia.

Comment: We need to factor in that many counties are putting in water systems. There is a trend away from private wells.

Question: Cliff Arnett asked about how stormwater for combined sewer systems was going to be accounted for.

Response: Steve said they would need to think about this.

Question: Will this be reviewed by experts?

Response: Yes, an advisory committee will review. We plan to involve about five members of each council to review the methods and the initial estimates. (Steve/Tim)

Question: What about groundwater withdrawals that are returned by septic and land application systems?

Response: Steve said that septic and land application systems are assumed to be 100% consumptive for our purposes. Brant Keller noted that septic and land application can take a long time to get back into the system.

Question: Is the industrial methodology really going to work?

Response: Steve: There are industry norms, and we are using the best available information.

Question: What about communities that plan to grow faster than projected and to attract new industry?

Response: Dick Morrow noted that we will have a chance to review the numbers.

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Steve ended by noting that draft water demand and wastewater flow projections will be presented for review and comment at Council Meeting 4.

Metro District Presentation

Matt Harper from the Atlanta Regional Commission (ARC) addressed the Council about the plans of the Metropolitan North Georgia Water Planning District (Metro District). The ARC staffs the Metro District. Mr. Harper's slides will be available through the Council's web portal.

The Metro District was created in 2001. Its board has 16 elected officials and 10 citizen members. The District adopted its first set of water plans in 2003 (water supply, wastewater, and watershed protection). EPD conditions permits and GEFA conditions funding based on the guidance of the Metro District plans. Inclusion of a project in the plans does not guarantee permitting by EPD.

A permittee that is not in compliance with the plans might be able to receive a "good faith" letter to indicate that it has a timeline for compliance, but that it is not yet fully in compliance.

The Metro District is prohibited from transferring water into the district. It can transfer water within the Metro District.

The Metro District cannot meet future demands with aggressive conservation. The water supply plan includes 12 conservation measures.

In this update of the plan (adopted 2009), premium pricing for irrigation water, larger rebates for high-efficiency toilets, and minimum education requirements were added to existing conservation requirements. The newly updated plan will use less water than the 2003 plan. It aims for a 20% reduction in per capita use by 2035.

The Metro District is planning for six new reservoirs with water treatment plans in the district. None are in the Flint River Basin.

The Metro District operates a regional toilet rebate program, and some jurisdictions operate their own toilet rebate programs within the district. Since 2008, 26,000 toilets have been replaced through the rebate programs in the Metro District.

The Metro District plans consider septic tanks to be 100% consumptive. They use a standard of "measurable" return flow. If the return flow cannot be measured, it is assumed to be consumptive.

Walton County opted out of the Metro District, so the district now has 15 counties.

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80% of impaired streams in the Metro District are due to nonpoint sources.

The Council had several questions and comments for Mr. Harper:

Question: Are the six proposed reservoirs inside the District?

Response: Yes.

Question: How have the ratepayers accepted the requirements and pricing required by the plan?

Response: Kicking and screaming. Do not confuse water savings with cost savings. In the near future, you will probably see utilities get closer to charging the actual cost of providing water.

Question: Are people leaving the area?

Response: No.

Comment: We are worried Atlanta will come and steal our water.

Response: Another Council member pointed out that the Metro District cannot take water from outside the district.

Comment: There initially was one reservoir proposed in the Flint Basin.

Response: That was changed after the public comment period.

Comment: Toilet rebates will be a tough sell in this area.

Response: Another council member pointed out that their municipality (Griffin) had done it.

Comment: What if the sustainable yield number is really tough to get to? What will we try to do?

Response: Another council member said that the council should look at deficit irrigation studies done in Texas. ***Kristin will send this information to Council members.***

Comment: This morning, we talked about concern over local government control. What about local government control? It does not seem like there is much.

Response: Local governments developed the Metro District plans.

Comment: Once our plan is adopted, it is done. EPD will be using it. We better like what we have.

Response: We do have a process in the Metro District to modify the plans, as needed. For example, if a local government needs more water treatment capacity than called for in the plan, they can take that request to the Metro District Board.

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Question: Did EPD approve the Metro District plans?

Response: EPD provided planning guidance. We did the details of the plans. EPD certifies that the plan is consistent with the guidelines.

Management Practices

Kristin introduced the idea of management practices to the Council. A management practice is any program or activity that is undertaken to meet the forecasted regional water and wastewater needs without exceeding: water availability (surface and ground water) and assimilative (water quality) capacity. Kristin reviewed examples of management practices. She referred to the planning guidance to explain the role of management practices in the regional water plan. She explained that throughout 2010, the Council would be focused on selecting the management practices that would be a part of the regional water plan. She said that the plan was for the councils to use a decision matrix with weighted criteria to make management practice selections and that management practice selections would be refined based on evaluations using resource models.

Next, Kristin provided an overview of the Water Conservation Implementation Plan, which was called for in the Statewide Water Plan and adopted by the DNR Board earlier this year. She noted that the Statewide Water Plan emphasizes water conservation as a priority management practice. The Statewide Water Plan states that while water conservation alone cannot be expected to fully meet future water needs, water conservation is an effective and efficient management practice to meet some needs for all water users in the state. Further, it states that to support current and future use of water, and in accordance with DNR Rules 391-3-2-.04(11) and 391-3-6-.07(4)(b)(8)(ix), water conservation must be incorporated into long-term water demand and supply planning and measurable progress must be made toward water conservation goals and more efficient use of water. The Statewide Water Plan calls for rule-making regarding demonstration of progress by withdrawal permit holders (non-farm) toward water conservation goals/benchmarks identified in WCIP and refined in regional water plans.

The Water Conservation Implementation Plan (WCIP) includes a series of goals and benchmarks for water efficiency for each of seven major water use sectors in the state (agriculture, electric generation, golf courses, industrial/commercial, landscape irrigation, domestic/non-industrial public use, state agencies). Kristin referred the council to the full WCIP document for more information. An Internet link to the document was included with the pre-meeting materials, and the document can be accessed from the Council's web portal.

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Elected Official and Public Comments

Next, the Council provided time for local elected officials and the general public to address the council. There were no elected officials who wished to speak.

The following public comments were made:

Shana Udvardy, Georgia Conservancy:

Ms. Udvardy asked that the Council consider making the Public Involvement Plan less passive and more active by:

- (1) Getting materials to the public at the same time they get to the Council.
- (2) Allowing for comments in an on-line forum, visible to everyone.
- (3) Developing an electronic guide with photos and biographical information on Council members.
- (4) Within the meetings, allowing for public comment prior to an action or vote.

Ms. Udvardy said that regarding the Metro District, her position is that there have been significant “rollbacks”. The Board can amend plans, and they do to adjust timelines and requirements when members are not able to comply. As long as there is a “plan to plan”, they can get permits.

Regarding the agricultural water demand forecasts, Ms. Udvardy said that the forecasts do not consider the efficiency that might be gained through conservation. She urged them to consider what they could do with more conservation.

Council member Jim Reid asked Ms. Udvardy why the Conservancy was opposed to dams and ponds. Ms. Udvardy responded that the Conservancy is not against them, but sees them as a last resort. She said that reservoirs are costly, and conservation is a less expensive way to get water. She said that the Metro District could do more conservation. She said that farm ponds lose water to evaporation and disrupt natural flows. Mr. Reid said that when a farm pond is full, the water goes over the dam and the flow is not disrupted. Ms. Udvardy responded that it changes the natural quality of the stream by making it warmer and holding more sediment. Mr. Reid responded that she might need to “sell that harder”.

Malcolm Hodges, The Nature Conservancy: Mr. Hodges said that he had no comments at this time.

Wrap-Up and What to Expect Next Meeting

The next Council meeting will be on November 20 in Americus at South Georgia Technical College. Kristin will send details about the meeting.

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Next, Kristin reviewed a list of follow-up items from this meeting (see below). Finally, she reviewed topics for the next council meeting:

- Municipal and industrial water and wastewater demand forecasts
- Revised population and employment projections
- Plans for joint council meetings
- Vision statement
- Management practice selection criteria
- Region specific information

Council Meeting 3 Evaluation

At the conclusion of the council meeting, the members completed evaluation forms on the meeting. Then, the meeting was adjourned. The members and other attendees were invited to a post-meeting farm tour at Chairman Donald Chase's farm, located next to the Weyerhaeuser facility.

Action List (Follow-Up)

- Send population and employment comments from region to Council members (Kristin)
- Identify members near neighboring councils for joint council meetings (Kristin)
- Modify the Public Involvement Plan as discussed in this meeting (Kristin)
- Provide Council with information on deficit irrigation studies (Kristin)
- Put Wei Zeng's maps on-line and provide GIS files to interested Council members (Kristin and PC team)
- Develop a draft vision statement for consideration at next council meeting (subcommittee)
- Address data needs for other nursery and dairy water uses (subcommittee)

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Attachment 1:
Upper Flint Water Planning Council
Council Meeting Attendance – September 18, 2009

Council Members

Clifford Arnette
Hays Arnold
Greg Barineau
Mike Beres
Michael Bowens
Gene Brunson
Tommy Burnsed
Donald Chase
Mike Donnelly
Beth English
Jack Holbrook
Terrell Hudson

D Raines Jordan
Frank Keller
Brant Keller
Buddy Leger
Dick Morrow
Lamar Perlis
Gary Powell
Jim Reid
Charles Rucks
Bill Sawyer
Randall Starling
Joel Wood

Council Members Not In Attendance

William Culpepper
Harold Fallin
Eddie Freeman
James Lynmore
Kip Purvis

Planning Consultants

Kristin Rowles, GWPPC
Steve Simpson, B&V
Nils Thompson, LGB
Mark Masters, GWPPC
Robert Osborne, B&V

Georgia EPD

Tim Cash, Assistant Branch Chief
Bill Morris

Georgia Soil and Water Conservation
Commission

Brent Dykes
Ben Mosely

Georgia Department of Community
Affairs

Corinne Thornton

Other Agencies

Ted Will, GA DNR Wildlife Resources
Division
Bert Earley, GA Forestry Commission



UPPER FLINT WATER COUNCIL

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Name	Organization
Steve Marko	Pike Cty Manager
Ben Mosely	GA SOL - WATER Commission
* Gerald Becker	City of Oglethorpe
Monte Simpson	Weyerhaeuser
Tim Cugh	GA EPD
Bill Morris	GA EPD
* Willie J. Larry	City of Montezuma
* Scott Darty	County Commissioner
Mark Markes	GA Water Policy Center
Kristin Rowles	GWPPC
Greg Bannan	Sully Co.
Jeffrey Harvey	Farm Bureau
Ted Will	GA DNR Wildlife Resources Division
Gerald Mixon	RIVER VALLEY PC
Colin Thornton	DCA
Ken Murphy	GA FARM BUREAU
Brett Dyer	GASWCC
Jim Pitt	Upper Flint Water Council
Bert Earley	GA Forestry Comm.
* Angus Arnold	CITY OF THOMASION - Mayor
Terrill Hudson	Dooly County
Kevin English	Dooly Co.
Matt Harper	Metro Water District
Shana O'vady	GA Conservancy

