

**A Report on the  
Integration of Water Quality and Water Quantity Measures  
State Advisory Committee  
March 26, 2007  
Submitted by the Fanning Institute  
University of Georgia**

The State Advisory Committee was convened for the seventh time for the purpose of reviewing the integrated water quality and water quantity measures and to begin the discussion of sub-state planning. EPD sought input on how the plan itself was shaping up, looking at the big picture and the component parts as well as thoughts and reactions to the idea of sub-state planning.

Initial feedback on where SAC members were with the acceptability of the plan as a whole was deferred, as the group wanted to vet the materials they had received as the basis for discussion before responding. Therefore, the “Gradients of Agreement” exercise will instead be included in an electronic survey that will provide for input on the additional policies and guidance materials.

**Integrated Water Management Policy**

EPD presented an overview of the Integrated Water Management Policy, including the following guiding policy statement:

*The State of Georgia manages its water resources to provide current and future opportunities for human use of water while protecting natural systems.*

*Georgia’s water resources have natural capacities that govern their use. These capacities can, under some circumstances, be supplemented in a sustainable manner. Exceeding these capacities, or supplementing them in ways that are unsound, is likely to have detrimental effects on current and/or future users and on the health and well-being of Georgians and/or natural systems.*

*Current and future opportunities for use of these resources can be accomplished through the identification and implementation of region- and resource-specific management practices. The array of potential management practices should include those that can supplement a resource’s natural capacities under a defined set of conditions, when it is possible to do so and still maintain opportunities for current and future users.*

*For water quantity, the State of Georgia manages the consumptive use of water from surface water and groundwater sources to ensure that sufficient amounts remain to allow all users and uses - present and future- the opportunity to benefit from the values that resource provides.*

*For water quality, the State of Georgia manages point and nonpoint source loading to Georgia’s waters on a watershed basis to ensure the physical, chemical, and biological integrity of those waters, now and in the future. This*

*requires protecting waters that currently attain water quality standards and restoring waters whose physical, chemical, or biological integrity are impaired.*

Before being divided into work groups, several questions and comments were posed by SAC members:

SAC: When you look at the far end of planning spectrum - when limits of the resource are approached - how will we look at planning what might be mutually exclusive uses? Will we have to choose the highest and best use?

EPD: It will be necessary to have a discussion of what the present and future uses are and how we arrange the practices to assure we live within the supply or ways to supplement the resources. A decision might be made to look at other sources, and that has to be left to sub-state planning

SAC: It struck me that the riparian doctrine would continue to be framework, but we need to acknowledge that what is considered “reasonable” changes over time.

EPD: Are you suggesting that somewhere in the definition of state policy that the riparian policy should be what continues to guide us, keeping in mind that what was reasonable 100 years ago is not reasonable now?

SAC: That may be jumping ahead, but it seems to me that one of the things that we all know is that a lot of work will need to be done to put skin on the bones. We haven’t looked for consensus, but I know that we will all agree that money needs to be put in. However, with things like the CUB, how much return from septic or LAS to surface water and/or groundwater will be included? I hope that there will be a recognition that we get what we thought we were getting in the plan.

EPD: That is the kind of discussion that comes under assessing status and conditions and that has to be done before things like capacity can be done.

### ***Integrated Policy Small Group Discussion***

The three working groups were asked to comment on what they liked about the integrated policy and what they did not like. The full array of comments is included in Appendix I. Following are highlights of the discussions and comments that were made in more than one group.

#### ***Water Conservation***

Water conservation as a key component of the plan is an important element. Ensuring that water conservation policies are implemented consistently across the state is paramount to the plan’s success. However, water conservation and supply augmentation should be a simultaneous discussion. If conservation measures are maximized and additional supplies are needed, how will those decisions be made and solutions be developed? Demonstration of need should not be an onerous process, and regions should not be at some critical state of need for additional supplies before a decision, presumably to made by the state, allows for alternate sources to implement supply.

### *Data and Information*

While a greater understanding has been built that this iteration of the Statewide Water Management Plan is more of a framework for future water resource planning, the need for additional data and information on myriad pieces of the water puzzle continues to be expressed. EPD has acknowledged the critical need for data and that funding is needed to do the work and build a sound database on the state's water resources. Questions such as: what do you measure and how often; how do you determine minimum flow requirements; and how do you change impairment status when historic sediments and background contaminants are the problem? These continue to be brought up as information/data that needs to be gathered to support the policies and practices in the plan. SAC members support full funding for data/information work.

### *Consumptive Use Budget*

Discussion around the CUB focused on the need to have other professional modelers, both within the state of Georgia and outside of the state, vigorously review how it is put together and tested to ensure that we as a state are essentially setting the bar where it needs to be set. Presenting the CUB model to decision-makers, and the general public, and how it will be explained, is another existing concern.

### *Land Use*

While not mentioned in multiple groups, it is worth reiterating comments that have been brought up in several SAC meetings regarding land use. The implications of land use on water quantity and water quality are important distinctions to make, i.e. the more impervious surface, the more likely for degradation from stormwater runoff, and in contrast, the more land cover, whether forested lands or open greenspace, the more "treated" stormwater will be prior to entering waterways. Detailing the connection between land use and water quality and quantity and the results of land use decisions on water resources should be noted.

### *Devil is in the Details*

The details of how the practices will be implemented; who will make decisions on supply augmentation; what will be required to demonstrate need; who will enforce the plan and how will that be done; clarification of terms (plan vs. practice); and concerns over funding continue to be issues raised by the SAC. By fleshing out some of these details, whether in the plan itself or in supplemental materials, the "who, what, where, when and how's" can be answered.

### *The Role of EPD*

One group brought up their discussion of the role of EPD in this framework and whether EPD keeps its statewide view or, when the state is divided up for sub-state planning, will EPD lose some of its authority? The discussion revealed that EPD needs to keep its overarching role statewide. Other SAC members felt this group jumped ahead in discussion and perhaps this was an item for sub-state planning conversations.

### **Assess Status and Condition of Resource**

EPD presented information on the "Status and Condition" section of the plan which focuses on three primary areas: Data and Information; Water Availability (Consumptive Use Budgeting); and Water Quality and Assimilative Capacity. SAC members again discussed this information in

small groups. Following is a summary of the major comments with the full extent of comments included in Appendix II.

### *Data and Information*

Data and building a statewide database of information is the foundation of the whole process. Several items were identified as critical needs: information about land uses within watersheds and impacts of those uses on water quality and quantity; identifying nonpoint vs. point sources of pollution; volume of water that will be required to protect instream species; returns from septic systems and land application systems; and safe yields of aquifers. SAC members expressed that data should be comprehensive in scope to see the real value of the entire watershed which will enhance the overall plan. Members were also glad to see that there is a plan to get more data, increase monitoring and standardize data collection methods, however, they expressed the need for more emphasis on funding for data and information collection. EPD should be clear about what is at stake if funding needs are not met.

### *Water Availability - Consumptive Use Budget*

The concept of the CUB remains a difficult one for some. It was expressed that the CUB concept presumes that the entire water balance is known, and it is not. We do not know how the CUB concept will play out, and the need to have some system set up to arbitrate internal “water wars” based on the CUBs might be necessary. Where and how the CUB boundaries are drawn will be an important piece of the water planning puzzle. As well, the economics of moving water from one place to another must be considered.

### *Water Quality Standards and Assimilative Capacity*

SAC members expressed the need to understand the economic relationship between conserving natural systems (protecting assimilative capacity) and replacing/restoring natural systems with higher treatment standards and costs. It is much less expensive to protect water resources on the front end than to restore them. The example of New York City’s purchase of land around their source water to maintain the water quality at the source instead of cleaning it through expensive infrastructure was mentioned. The potential for policies that drive land use decisions in the state to protect water quality need to be considered, but must be sensitive to private property rights. Policies might be needed to maintain certain land uses to protect water quality.

Following the small group discussions, SAC members engaged EPD in a brief conversation:

SAC: I think that there were several comments related to needing to understand the economics of certain choices that we will make - Wastewater Treatment Plants vs. Septic Systems or Natural vs. Hard Infrastructure. We need to think about costs to local governments.

SAC: The general notion that the way CUBs are presented, what they mean, and the information we need for instream and use flows appear to be separate mechanisms. They need to proceed in a parallel fashion instead, and the water for offstream uses can’t be a remainder term. We need all the information for planning.

EPD: One of the real examples, although it wasn’t developed as such, that gets at the heart of this was done on the coast. We have a resource that has been used for myriad things. We did lots of

study on its uses and future potential uses and those impacts on other uses and had to establish an upper limit on what can come from that source. We are in the process of making regulatory decisions on what that means. That is a budget. While it is cheaper to use the aquifer instead of looking to other sources, the EPD Director has produced a plan that states what the sustainable capacity of the aquifer is and the demand can go up but some other management practice might have to be used in order to maintain the same supply level. So consider the Floridan aquifer the original CUB.

SAC: We need to consider augmentation and conservation as two sides of same coin, and we need to use both.

SAC: Is EPD going to be a facilitator/problem solver or serve as regulator?

EPD: We need to be very involved in the conversations to develop the plan, and we have a role and responsibility to bring folks to the table outside of a sub-state planning process; but some entity has to ensure that plans are implemented otherwise we're right back in the same place.

SAC: What if, for example, a decision is made that more storage needs to be built on the Chattahoochee. Whose decision is that?

EPD: That hasn't been decided yet. There might be occasions where the state is making decisions and other cases where that will be done on the local level.

### **Water Conservation Implementation Plan**

Alice Miller Keyes briefed SAC members on the Water Conservation Implementation Plan (Appendix III). The goal is to reach this level of detail on all the practices that are included in the water plan. EPD has set a goal of fully developing the water conservation implementation plan by November of this year, and Alice asked that anyone interested in engaging in that process, please contact her directly. The water conservation piece of the plan is a critical element, and SAC members commented that it is great that EPD is setting benchmarks to see where we are and what we can do.

### **A Conversation with Dr. Carol Couch**

Dr. Couch then spent some time addressing questions/concerns from SAC members.

SAC: What role will EPD play in implementing framework/policies?

Dr. Couch: The state statute says that all water withdrawal permits will have to be in compliance with the plan (EPD function). If a jurisdiction is seeking state grants and loans (GEFA), they have to demonstrate consistency with the plan. One way to think about this is that this framework (policy) will have an effect on decisions made on permits. We will likely be advising applicants on what they need to do to be in compliance with the plan, and we will still be working to incorporate framework. The legislation does not require/prescribe sub-state planning.

SAC: Once the state is divided into sub-basins, the concern is that those areas will be pitted against each other. Will EPD keep some umbrella for management?

Dr. Couch: It would seem to me that counties and cities would want to work together on future water needs. Every area of the state has to be looking at implementing some process for evaluating long term water needs; and you might look at the MNGWPD and its long term projections, the suite of projects consistent with the plan, etc. Their permitting is and must be aligned with their plan. The state plan statute does not make the same relationship between how EPD and the district function, so your thoughts on how to get to the next generation of thinking would be helpful. If we do planning the same way in every area of the state, we need to lay out the discussion for a potential future state statute. The more and more we can do at the state level that is tied in consensus with local jurisdictions is what we need; we need to do it in some manner that isn't ad hoc.

SAC: Do you see a role for EPD as a provider for solutions to that problem?

Dr. Couch: Yes, EPD is the regulator but that doesn't solve the problem. What we did in the coastal permitting strategy was to work personally with those who had a vested interest to understand the science, understanding of the aquifer, and even with the financial investment, there are still a lot of questions unanswered. We did not answer the question as to what is the sustainable yield, only determined that it was not being used in a sustainable manner. EPD has to have some involvement in making the choices to meet needs. That has to be part of the EPD role. We can't just execute permits with out the other information. So we do have a facilitation role, and the role is broad. We have to partner with groups like the Metro District; Flint River Advisory; Coastal committee; and other convening partners. We need to be working at that level towards solutions.

SAC: I think that the concern that some have about a comprehensive water plan is based on the restraints of the metro district. By statute, district entities can't look for water outside its boundaries, and it isn't compelled to look upstream as to what the needs, desires are there. There is an effort to make plans as best as we could based on legislative restraints. My fear in this process is that if we divide into sub-state groups, they won't feel that they have to be cognizant of their neighbors. But we need those conversations occurring across boundaries so that we are looking at the broader context of what is happening beyond that watershed and its potential implications.

Dr. Couch: There is a strong interest in having local districts so that each is responsible for permitting within its district. I still think that one of the strongest relationships that we can create is to provide that arbiter to those regions and have them communicate across basins. But, if we hand water quality responsibilities down to local level, we would lose our federal authorities designated to us by EPA.

SAC: If the state makes the wrong choices, there has to be an administrative and legal recourse.

Dr. Couch: From my perspective, certain things have to be at the state level. For example, the state told the district how much water was available. Other things have to be done at the local

level where the city might have some self determination, and still others have to be done at the county level. This plan does not change any EPD authorities, but there has been some discussion that their might be things that do need to be changed.

With no other questions, SAC members moved to the discussion of water quality and quantity management practices.

### **Management Practices for Water Quantity and Water Quality**

EPD provided an overview of the Water Quantity and Water Quality management practices, including these general overarching policy statements. For water quantity, the plan seeks to manage consumptive use of water from surface and groundwater sources while ensuring that sufficient amount remain to allow all users and uses - present and future - the opportunity to benefit from each resource. This policy shall be implemented through consumptive use budgeting (CUBs). For water quality, the policy seeks to manage point and nonpoint source loading to Georgia's waters on a watershed basis; ensure the physical, chemical and biological integrity of those waters, now and in the future; and to protect waters that currently meet water quality standards and restore waters that are impaired. Steps to implement both policies have been defined. SAC members posed several questions.

SAC: On the flow chart, who will do CUB?

EPD: One approach is to do what we did for the district, another approach is to charge an entity that is somehow designated within the district to come up with the science and results but the final review is left to the state.

SAC: At what point in the process will those sorts of determinations be made?

EPD: I imagine that there will be some description of how that will go as we develop the sub-state planning in the document that will go to the legislature.

SAC: Has EPD ever considered putting demand management above supply?

EPD: Why?

SAC: To identify uses.

EPD: I think that the way it looks, each bucket is treated equally, and EPD isn't thinking that way. It depends on what the status and conditions of the resource are as to what management practices would be utilized.

SAC: I think that what you just described is going to be problematic as time goes on unless we can come up with some foundational level of action that we can do statewide, where everybody is doing some base level of all those kinds of things.

EPD: I guess there is a discussion to be had about level of implementation around the state, and that isn't to say that there might not be some kind of recommendation for implementation of some minimal level of practices. This is intended to be a tool box to determine what the status and conditions are in your area and what practices you need to and chose to implement.

SAC: Seems to me that we have argued against having one size fits all but that when it comes to conservation, some level needs to be in place all the time. We need to be teaching conservation, and it won't hurt anybody if that is the baseline of the plan.

EPD: That is exactly the kind of input that Alice is seeking. And it needs to be reflected in the water conservation plan. While it isn't one size fits all, there should be some common ethics that are implemented.

SAC: Looking at this management scheme, where are the water supply need projections, water supply shortfall projections and the augmentation plans? How do you get to those in the middle if you don't have a plan that projects need, shortfall and augmentation? Doesn't that need to be represented in this picture?

EPD: The plan has to facilitate moving water where and when it is needed. Put your real attention on the areas where there is a real shortfall and step in and determine how that shortfall will be met.

SAC: When EPD came to the district and said here is what you can expect in terms of quantity, the district had to forecast for their needs. Is that a charge that will be identified in guidance for sub-state planning here?

EPD: I don't think we know yet. With assessing status and conditions, the needs are going to be determined as a part of the planning region, here is what we need. In the assessment, look at projection of resource and then in the sub-state planning, look at demand to inform what the region needs to do.

SAC: Using district, they can only look within their set boundaries, and my fear is that we divide into sub-state regions and we can't look outside our boundaries.

EPD: The district and that statute did not have the benefit of going through this process. That is hindsight, and we don't propose a limitation to supplement just to that basin. We want to establish plans/foundation where discussions for transfers will take place; fundamental to that discussion will be an understanding of the capacity of those resources and what that transfer does to the CUB of the donor basin. So how does that conversation start? We are not there yet.

Following the conversation, SAC members were charged with looking at all the management practices and denoting which they felt could move forward immediately, which they would like more information on, and which they felt were not good practices to use. Green, yellow and red dots, respectively, were used to indicate their selections. The following summarizes discussion held after the exercise, with the full results included in Appendix IV. All comments come from SAC members.

#### *Red Dots*

- I put a red dot on ASR. I would say that with each of the three red dots I used, each case is because the science isn't there to go down that road. I also have concerns about legal issues surrounding ownership: who owns that water that gets injected and will that lead

us down the road to it permit trading? There are also funding issues: do we have the kind of funding we need to monitor water quality in the case of practices such as ASR?

- I put a red dot on assimilative capacity. I'm not sure what it is, but I think that it is what refers to the nutrient trading program. There are large uncertainties surrounding that such as would it work and still protect watersheds.
- I placed a red dot on desalinization. To me, it discourages conservation, and it doesn't take into consideration energy consumption, cost, and other factors. Because I see a lot of cons, it really is not an option to me.

#### *Yellow Dots*

- I put almost all yellow dots because I feel like we need more facts, data, meat, teeth on almost everything.
- I placed a yellow dot on quantity. Particularly with LAS and onsite management, there isn't enough information to consider this return management. They should fit as a subset under something else. It is a quantity issue that we are losing water and that is a red herring.
- I put one on manage land use. That gets into property rights, and as always, the devil is in the details.

#### *Green Dots*

- I think that IBT is a viable solution to making sure that water is allocated where it is needed.
- I put green dots on water conservation and reuse because they are upfront options where you can find "new" water.
- I put a green dot on reuse, but with it being under demand management. When it is used for irrigation, it slides over to return management and becomes a negative there. So it conflicts with the return side of things.
- I put green dots on conservation, reuse, IBT, and reservoirs. It will take all of them to accommodate long term growth in the state and particularly Atlanta region.

#### **Additional State Policies or Guidance for Specific Management Practices**

For feedback on the materials concerning additional state policies and guidance for specific management practices, EPD is developing an electronic survey that will provide SAC members with the opportunity to comment on as many of the additional policies as they chose. The Fanning Institute will provide a link to the survey to SAC members and compile the input received. Upon completion of that, the survey information will be included as Appendix V of this report.

SAC: Is there a way to differentiate between the management tools and whether there needs to be an additional policy?

EPD: We will have the survey differentiate those so that a response can be made to both the oval and the diamond, as represented in the chart on page 6 of the SAC Packet.

With no other questions concerning this agenda item, the meeting shifted to the next topic for discussion: sub-state planning.

### **Sub-state Planning**

EPD presented the language in the legislation that sets forth the requirements of the comprehensive water plan, including the section that addresses sub-state planning. Section 12-5-522 reads:

(c) ...shall set forth state-wide water policies not inconsistent with this chapter which shall guide river basin and aquifer management plans, regional water planning efforts, and local water plans.

(d)...may include a process for creating draft river basin management plans and draft ground-water management plans and how such plans are finalized and revised, including how the public may participate in the creation and revision of such plans.

There is an important distinction in sections c and d. The state *shall set forth* water policies in section c, but section d indicates that the plan *may include a process* for sub-state planning. With that information before the group, the following questions were posed by EPD:

- What features or characteristics are needed for sub-state planning to be effective?
- What role should the state play?
- What are the top three concerns about sub-state planning? What would constitute fatal flaws?

SAC members spent several minutes responding individually to each question and submitted them in writing. SAC members shared their thoughts with the group and the complete list of comments is included in Appendix VI.

For the sub-state planning to be effective, funding for those efforts and fulfilling the data needs (projected demands, projected uses, projected supply, etc) around the state were mentioned myriad times. Some system to facilitate communication within and between basins is also a desired feature. Consideration of economic issues, education of local officials and involvement of major regional stakeholders are all part of a successful plan.

The role of the state is viewed as coordinator and facilitator within and between regions. The state should have final authority over local and regional planning; provide at least partial financing for local planning; be the gatherer and keeper of data and information; and set conservation and reuse standards, among other things.

What most concerns SAC members is the potential lack of funding for plan implementation; legal challenges to the plan; lack of communication between basins; not enough data; negative economic impacts; and lack of “teeth” to enforce compliance with the plan.

EPD posed this question to SAC members: What would you do if the Legislature says there will be no sub-state planning?

SAC: If you don’t want it to be done on the local level, then it has to be done on the state level. There has to be planning, and this has to be done, and you have to take into account what basin you are dealing with.

SAC: It is my understanding that this will be voted on up or down (the plan), but there will be a plan. They can vote on this one, they can write their own, but the last one on the table becomes the plan.

SAC: In preparation (of what will be submitted to the legislature), there ought to be a strong statement that reflects the superiority of sub-state planning so that it makes it a difficult argument to not do sub-state planning.

SAC: Is there any communication between EPD, the Water Council and legislative leadership keeping them informed along the way or will this all just hit them all in the face?

EPD: There are four legislators who are members of Water Council, and they have been working to keep their colleagues informed. Dr. Couch has also started a process of meeting with all members of the General Assembly, and there has been a briefing of natural resources committee and will likely be more.

SAC: When will they first see the plan?

EPD: It will likely be shared with the full legislature when the Water Council receives it, but that won’t necessarily be the plan submitted to them in January.

SAC: What is in your head when you say the state needs to facilitate the sub-state planning process? Is that to get people off the ground and started? Folks would be at a loss without any initial steps around which to make decisions.

SAC: We have to consider priorities. We don’t need planning everywhere on the highest order. Set priorities. We don’t need an all or nothing buy in. If an area is currently projected to be approaching a shortage then they need planning (perhaps some kind of planning pilot program), and then some minimal level of planning for areas where it isn’t critical.

SAC: In the long run, as the state has an economic development department, it needs a water planning department. This is major, particularly in the northern part of the state. This seems to be short term issues and we aren’t looking far enough down the road. Look down the road!

SAC: We immediately need to start building an information base, but who will do it, where are the information sources; what are the logical groupings for sub-state planning, are they the

existing groups; and what are the implications on other basins? We can't run without information.

SAC: The state should facilitate communication among districts.

SAC: In thinking about geographic structure of sub-state planning, we also have to consider "governing" structure, the make up of these groups. It would likely be very different around the different basins, such as farmers in the southwestern part of the state, industry representatives in coastal counties and the like, but there is also a need to include local governments, economic interests, and big users. If you don't have those folks represented then you won't have buy in.

SAC: Major stakeholders in the region should be included. An entity might have different representation across the state but all need to have the same authority.

SAC: You could have a board in the areas, but it is the authority that the districts are given, like Florida districts can tax, and Georgia is not ready for that.

SAC: You have to be careful giving authority where there is no funding.

SAC: The Metro district requires partial self-funding which is tied to permits, and that is a hammer for involvement.

SAC: There are fears about districts like the ones in Florida and the make up of the local authorities (the crazy political districts, etc.). When you divided into watersheds, you might have a county in many watersheds, which automatically puts them in cross districts and competing responsibility, coordination and communication. You have to consider the political vs. natural boundaries. Should both be balanced? You have to be careful and have to get practical.

SAC: These groups have to have boards that are populated differently. The board has to figure out how to raise the money and they should be given a choice: per capita assessment; water use assessment so that industries, etc. have a financial responsibility; planning needs to be tied back to permitting - the stick.

SAC: Will there be cost estimates that will go to the legislature?

EPD: There will be data and information collection cost, but to what extent we will provide for estimates of sub-state planning in two or three areas, we don't know.

SAC: We have talked a lot about what happens if the legislature doesn't fund this, then if all the folks in this room want sub-state planning, then we need to move it forward with our constituents and the organizations that we represent to make that happen.

With no other comments on sub-state planning, SAC members were asked if they had any other comments for the day.

SAC: In the last paragraph of the document, second from the last sentence, there will be a lot of disagreement in that there is no private ownership of water. We, the Farm Bureau, don't agree

with that. If you buy a piece of land, drill a well and pump that water, it is yours; property rights are the heart and soul of this whole thing, and we need a lengthy discussion of property rights.

SAC: My understanding from EPD's perspective is that the issue of water as private property is not on the table for discussion. Under Georgia law, water belongs to the state, and this state plan must be done under current statute and we can't change that so that discussion is futile.

With no other comments, the meeting was adjourned. The SAC will reconvene on April 30 for further discussion on sub-state planning.

# Appendix I

## Integrated Water Management Policy

- Acknowledge both sides of the equation - needs to use water and needs to use water in sustainable way
- Sounds good in theory but implementation/devil in details
- Quality and Quantity integration key element; details and funding = quality of plan
- Schematic is fine
- More robust vision statement: we will meet our future needs, don't hedge language, more direct; opportunity on pg. 3
- No cautionary management policy language (slide 6): Must meet future needs
- Language seems to indicate that it is debatable that we want to augment our supply
- State plan should facilitate what goes on and between regions
- Questions about having to demonstrate needs (IBTs, CUBs, Reservoirs)
- Don't make demonstration onerous - who decides, how do you decide
- How critical does a region have to be in its planning before the state permits alternative means
- Role of state- intervener
- Need for overarching entity to pull everything together (EPD)
- Reasonable use - who owns the resource
- Policies used consistently across state
- More on sustainable water use
- Like the framework
- More language on augmentation
- What works - idea of sub-state planning should be beneficial
- Mechanics of sub-state - how do we envision that being carried out
- Like planning for dry year conditions
- Like water conservation as a key component
- Overall process - how it is laid out - assessment to see what we have; starting with assessment of natural capacity makes sense
- Provisions to recognize potential need to supplement will be key
- All been approached with being wise with the resource
- Definition of impaired - how do you change impairment status when historic sediments and background contaminants are the problem
- How do you determine the baseline of impact
- What do you measure and how often (ex. 303(d) is every five years)
- Want a statement that talks about the vital relationship of forests and water quality and quantity - have to talk about watershed scale and a land use that covers 2/3 of the state - science of forests and water - both quality and quantity
- If one of the challenges we have is conversion of land uses from forested to other, how does that affect water and what are non-water related decisions/steps that might need to be addressed
- The CUB model needs to be vigorously reviewed both within and outside the state by other professional modelers - how is it put together and tested

- How do we present these issues (CUB) to decision makers
- Defining of hydrologic planning boundary - there are no economics to it - moving water is cheap - might be easier to pull from a different CUB - easy and cost effective and might also be environmentally smart
- Agree with sub-state but need equity and understanding, too complicated to bring to local level; don't see it as economically or environmentally beneficial - lots of technology available and we are developing policies that don't take advantage of that
- Costs associated - future and existing users - how do you define reasonable
- Risk of doing analysis on ultra-extreme events that get process off track - agree with dry year but if you couple that with other extremes it misses the mark
- State funding commitment - we won't be able to gather information we need (baseline data) without the money
- Decision-making - who will be making what decisions - need clarity on who does what - is there an example from another state
- If sub-state planning groups have no oversight authority it won't work; however, we don't want some local folks making all the decisions without some higher level of authority
- What kind of authority might sub-state groups have (like Florida)?
- Does the word "supplemented" always mean additional reservoirs?
- First line of policy statement - when you reach the point of total allocation for human use, where does the natural system protection go; who will lose that right
- Without natural systems, and protections for them, we're dead....
- Not sure we know what we don't know
- Weak - no data (#9) - admission of weak data
- Resources - funding is necessary
- Change occurs as need occurs
- Something is missing
- Process needs to be continuous
- More explanation on the CUB model
- Process should not reflect policy; it is just a tool
- Much less cloudy - quality vs. quantity side - ahead of what's acceptable; legal force and resolution missing; fuzzy, not clear; minimum flow missing; difficulty in how to determine that minimum flow - how is that determined what is needed to protect critters, we need the numbers
- The general assembly and the public are having difficulty understanding
- Very verbose and hard to get through; too general, needs to be more precise, not sure what I'm commenting on; document is hard to track; new things; new designations like urban rivers - where did that go?
- Lots more emphasis on enforcement
- EPD can't enforce current rulings
- How is this going to work
- How will it be funded
- Resources - pg. 10 - hallelujah! Stress with stronger terms with more power on the weakness of data; data critical; needs serious resources

- Stated more vigorously and briefly
- General assembly - flexibility to operator
- Balance - boundaries and not so general so it means nothing
- Detail
- Confusion on terms - plan vs. practices - are we trying to combine the two; if so, an explanation is needed - needs clarification
- Devil is in the details and that is what's missing
- Plan is the umbrella and practices are specific - expecting marching orders
- Implementation - too general
- Buy in will not come without more specific data and information
- Clarification needed for who will do what
- Plan avoids the real issue - we'll be short of water and how will we deal with it and who deals with allocation because someone will come up short in maybe 20 or 30 years
- If one comes up short, will they be compensated
- Term of plan - who will rewrite statutes to deal with plan
- Boundaries working together needs to be looked at - storage, transfer - interbasin, must talk to each other, must interact
- Surface storage - more emphasis and clarity
- Conservation, augmentation - must be in the same discussion
- Allocation - can't sidestep, must discuss and address issue
- Augmentation - conservation, reuse, efficiency - evaluate and utilize before seeking alternatives such as IBTs and reservoirs
- Quality of water you are putting back may have to be standardized

# Appendix II

## Assess Status and Condition of Resource

- Where lines drawn re: subbasins
- How CUB concept will play out - no pig in a poke
- CUB concept presumes you know entire water balance- we don't have a water balance - sets up waiting to the last - the remainder of an unknown quantity
- Need to figure out baseline needs for humans and critters
- CUB as currently presented relegate human use to remainder term
- Prioritize human needs
- When people in Atlanta need water, who gets shorted?
- Human needs flexible, environmental needs constant
- State needs to know how much water comes out of each stretch of stream
- Economic issue - move water; water quality
- Water czar + 2 to arbitrate water war from CUB
- Lots of conflict, lawsuits predicted
- Plain language from models
- Good there is a plan to get more data
- Needs to be more emphasis on funding for data; nothing that presents a sense of urgency on data needs
- EPD needs to be clear about what's at stake if funding needs aren't met
- Never enough data
- Critical needs are - information about land uses within watersheds and impacts of those uses on quantity and quality; might need policies to maintain certain land uses; instead of always restore - keep the resource in good condition; property rights of land owners vs. the right of the public for water quality (buffers); need to look at other policies that drive land use decisions in the state; identifying nonpoint vs. point sources of pollution and need the data to back that up; volume of water that will be required to protect critters and who makes that decision and what will be baseline of that decision also information on septic returns and LAS and agricultural returns
- Concerned with voluntary monitoring and quality of information - needs to be a standard methodology, etc.
- Data on how much water can be safely pulled out of aquifers
- Need input from TAC on some of the data questions, particularly aquifers
- Need to understand economics of wastewater treatment vs. septic tanks on a much broader scale (beyond direct construction costs); need good engineering work done as septic tanks are more expensive than we think when things like timing of returns are considered
- What kind of flow do we truly need to protect what is in the river and for human needs - must have the data; take out critter needs then humans get what's left, it will be different in each basin
- Need to understand the economic relationship between conserving natural systems and replacing natural systems (NYC example)
- Keep consideration of economics as part of the discussion
- Does "manage" nonpoint source pollution mean regulate?

- Not looking for a single snapshot but need pictures at regular intervals and need continuous process in place to accumulate data and that data needs to be reflected in decisions
- Defining threshold flow- needs to be a very principled discussion - what are we trying to protect instead of having criteria be “we don’t want Atlanta to suffer”
- EPD determining time lines - incremental: regular business; new business; statewide water plan; transmittal plan - regulating in absence of good data
- How will this be paid for
- Unfunded mandates
- Government mentality - how will epd integrate voluntary data into the process - recommend that voluntary data is implemented with standard data collection and analysis
- Standards - explanation - useful ways of using collected data - minimum standards - two tiers of data - screening and comprehensive
- Utilizing collected data is important
- Data should be comprehensive in scope to see the real value of the entire watershed to enhance the overall planning
- Foundation of the whole process - investment must be made

# Appendix III

# Statewide Water Conservation Implementation Plan

## Draft 03-06-07

Georgia is creating the state's first comprehensive statewide water management plan to meet the following vision:

*"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."* (O.C.G.A. 12-5-522(a), 2004)

Georgia is rich with many water bodies and plentiful rainfall. However, as our demand for water increases with growth and our infrastructure ages, some streams, lakes, and aquifers have become stressed, threatening the use of these supplies. Today, the need to use our water efficiently with minimal amount of waste is critical to the long-term health and viability of these important resources.

### **If Georgia is to achieve its long-range water management vision, we must implement water conservation.**

Water conservation is a cornerstone of the comprehensive statewide water management plan and a priority management practice for meeting all water needs. Over the next year, Georgia Environmental Protection Division (EPD) will develop a state water conservation implementation plan. This plan will provide detailed direction for realizing water conservation results necessary to achieve Georgia's vision of sustainable water management.

In general, the water conservation implementation plan will:

- ◆ Establish statewide goals for water conservation and water use efficiency;
- ◆ Provide guidance on water conservation practices (standard and advanced) for each water use sector;
- ◆ Overview funding opportunities available to help achieve conservation results;
- ◆ Outline state efforts to help achieve water conservation goals, including:
  - Educational and outreach opportunities and materials,
  - Incentives,
  - Enforcement mechanisms, and
- ◆ Propose a timeline for implementation and updating water conservation goals.

To ensure efficient implementation and that duplication does not exist, proposed and ongoing conservation efforts will be identified and linked through the conservation plan. The plan will educate and inform all Georgians about water use and waste, result in more reasonable water use, and help sustain water resources.

EPD staff will work with the Water Council, interested parties and citizens to draft the plan. As a starting point for plan development, EPD will use the report prepared by the University of Georgia and feedback received from technical, basin, and statewide advisory committee members regarding minimizing water withdrawals through water conservation and reuse. Drafting of the plan will begin in March and will be completed by November 2007.

Contact Alice Miller Keyes at EPD (404-656-4713 or [alice\\_keyes@dnr.state.ga.us](mailto:alice_keyes@dnr.state.ga.us)) if you have any questions or if you are interested in assisting with the development of the implementation plan. For information on water conservation principles, planning and practices, visit [www.ConserveWaterGeorgia.net](http://www.ConserveWaterGeorgia.net).

# **Appendix IV**

## Management Practices for Water Quantity and Water Quality

Concept	Green	Yellow	Red
<b>Water Quantity Management Practices</b>			<b>1</b>
<b>Demand Management</b>	<b>1</b>	<b>1</b>	
♦ Conservation (Y)	<b>12</b>	<b>4</b>	
♦ Reuse (N)	<b>12</b>	<b>2</b>	
<b>Supply Management</b>	<b>2</b>		
♦ Surface Storage (Y)	<b>12</b>	<b>6</b>	
♦ IBTs (Y)	<b>8</b>	<b>10</b>	
♦ ASR (Y)	<b>2</b>	<b>7</b>	<b>4</b>
♦ Desalination (N)	<b>4</b>	<b>6</b>	<b>4</b>
<b>Return Management</b>			
♦ Onsite Sewage Management Systems (Y)	<b>4</b>	<b>2</b>	
♦ Centralized Wastewater Treatment –LAS (N)	<b>1</b>	<b>4</b>	
♦ Centralized Wastewater Treatment –WCPC (N)	<b>4</b>	<b>1</b>	
<b>Water Quality Management Practices</b>			
<b>Manage Sources of Pollution</b>			
♦ Implement & Enforce Existing Laws (N)	<b>6</b>	<b>8</b>	
♦ Manage Land Use Impacts	<b>6</b>	<b>8</b>	<b>2</b>
♦ Enhance Nonpoint Source Management Tools (N)		<b>11</b>	
♦ Centralized Wastewater Treatment	<b>6</b>	<b>3</b>	
♦ Onsite Sewage Management Systems	<b>4</b>	<b>6</b>	<b>1</b>
<b>Manage Assimilative Capacity</b>			
♦ Water Quality Standards: Designated Uses and Criteria (N)	<b>3</b>	<b>5</b>	
♦ Watershed Based Wasteload Allocations	<b>2</b>	<b>6</b>	
♦ Cooperative Management of Assimilative Capacity	<b>1</b>	<b>5</b>	<b>3</b>

# Appendix V

RESULTS FROM SURVEY WILL BE INSERTED UPON ITS COMPLETION

# Appendix VI

## **Sub-state Planning**

### **What features or characteristics are needed for sub-state planning to be effective?**

- Funding and information
- Means of tying sub-state plan into an overall statewide plan
- Individual regions won't be "authority" in planning/expertise
- Consistency in principles used to develop each sub-state plan
- Understanding and details of expected needs, supply, growth potential of each region and biota needs
- Sub-state regions must have some authority under statute
- Comprehensive and specific direction regarding the quantity and quality of water which must be discharged from each sub-state planning unit
- There needs to be a uniform framework for the "outline" of the sub-state regions, possibly following the RDCs that are located in the basins.
- We need to see what has and has not worked for the Metro Planning District and build on that
- Once sub-state region boundaries are determined, then EPD, the RDCs, Soil and Water Conservation Districts and DHR need to address non-point water quality issues
- Supply need projections (where and when)
- Shortfall projections (where and when) compared to availability
- Planning time horizons and critical conditions (drought)
- What help to expect/not expect from the state
- Context of neighboring states plan areas  
Planning budget and funding sources
- Competent entity to do the planning
- Plan elements
- Cooperative
- Authority to regulate and must communicate across planning district boundaries and to EPD
- Be flexible
- Need funding/consistent flow of cash
- Must be given the right tools/resources to operate
- In selecting sub-state areas, select logical "commerce centers" or areas with common interests and not just arbitrary nodes on a chart
- State level resources available to guide/assist the sub-state regions with the process
- Needs to be done on a watershed basis
- Needs to be a mechanism for interaction and coordination with upstream and downstream users or other sub-state basins
- Needs to have a defined role and process established for working
- If regulatory authority is delegated to the sub-state entities need way to generate dollars for operation or funding given to the basins
- Must implement conservation practices/reuse practices as first step in water management

- Need to have “teeth” or the ability to get work completed
- State-level oversight of and approval authority for all regional and local plans
- Requirement for sound scientific data to guide local decisions
- Do all that can be done to remove politics
- Watershed based to the extent possible
- Don’t split political subdivisions (city/county)
- Strong leadership from key stakeholders
- Agreement on common vision for the region
- Local governments must have clear insight and appreciation for the goal(s) of the sub-state planning process
- Sub-state planning case studies must be established and promoted so that peer to peer interaction can be fostered
- An incentive based permitting and state financing process needs to be developed and implemented
- The way the state is subdivided needs to be on an ecological/natural basis (i.e. watersheds)
- Good data
- Strict standards for conservation and reuse before allowing new water supply projects (i.e. reservoirs, IBTs ASR or desal)
- Understanding natural carrying capacity, utilizing that knowledge when making decisions when allowing reservoirs, IBTs, ASR or desal
- Communication between the sub-basins
- Data and information on demands
- State authority to work or help with implementation of these plans
- Projected demand over length of plan
- Projected uses over length of plan
- Possible solutions to shortage in addition to conservation
- Need state water planning board to mediate and facilitate solutions to sub-state problems
- Educate local officials
- Economic means of returning water and allocating to areas of need from areas of supply
- Allow stakeholders plenty of opportunity to contribute
- Be sure “clear understanding” of planning
- Consistent guidelines and criteria for each region to follow in doing their planning
- Involvement of all major stakeholders in the region
- Should be done on a watershed basis
- Facilitation to help drive and smooth the discussions over difficult spots - to diffuse tension over competing uses - find a way around the roadblocks
- Need data specific to the sub-state region
- Need guidance or possible long term management options, e.g. is the region run like the Metro District or some other way?
- Local involvement in the process
- Considerations given to economic issues

- River basins or sub-basins as primary focus where ever possible
- Economic factors - Atlanta region, coastal region
- Representation of water providers, counties, business and environmental interests
- Approval by EPD to make sure all areas are covered and interests are represented
- Money provided by the legislature to do the planning through EPD to dole it out based on sound work
- Info base established and maintained by EPD

### **What role should the state play?**

- Facilitator/moderator
- Keep focus of plan
- Coordination and facilitation between regions
- Uniform setting of standards and enforcement
- Tie plans into state policy, oversight
- Other state agencies should continue to be involved (Ag., Econ. Dev., etc)
- Provide highly specific and rigidly enforced quantity and quality specifications for water to be discharged from each sub-state unit
- Prepare contingency plans for drought conditions and ensure that sub-state units are able to enact the contingency plans
- Funding
- Approval of the regional groupings
- Development and ongoing maintenance of the common information base
- Make sure no region is left out
- Approve the plan or require modification if in conflict with other regions
- The state EPD and DHR should work together on dealing with septic tanks regarding water quality and return
- The various state agencies dealing with agriculture need to have a role as well
- Should validate need projections on consistent basis
- Should provide “model” outline for sub-state plan
- Should provide hydrologic data/analysis --- the science
- Should declare instream flow criteria and availability
- Facilitate augmentation planning for shortfall areas
- Provide facilitator/mediator/arbitrator for sub-state interbasin disputes
- Should provide oversight
- Should develop budget while considering a holistic approach with input from districts
- Should have decision making powers
- Clear delegation of authority and/or scope of activities that are appropriate for each sub-state region
- Ensure consistency in process at the sub-state level
- Should be the ultimate authority to ensure water management plans and practices are being implemented
- Coordination/convener/overseer
- Money for implementation

- Should have final authority over local and regional planning
- Should have educational role with local water planning bodies
- Resolve disputes that arise locally and regionally
- Arbitrator
- Ultimate authority
- Stewardship role
- Facilitator
- Regulator
- Guide
- Partial financier
- Mentor - clear, concise, and direct
- Collect and analyze the data that will serve as the foundation of management decisions
- Make management decisions (water availability, CUB) based on meeting water quality regulations, meeting assimilate capacity, and protecting the natural functions of rivers and downstream users
- Set strict conservation and reuse standards that must be implemented before other water supply alternatives are allowed
- The state would, in a sense, monitor, help with implementing all the sub-state planning
- Help finalize overall planning from each sub-basin to the EPD
- Coordination
- Provide research and data
- Create division with board to assure water is available from some source for all areas of need
- Enforce rules and regulations
- Provide education for all to understand
- The state needs to do the kind of basin planning that only the state can do such as basin wide consumption limits; assimilative capacity limits; once these are determined sub-basin areas can find the measures that work for each of their areas within these constraints
- Make available the CUB for each basin
- Provide some assistance or incentives for stakeholders (i.e. \$ for building small reservoirs for irrigation; \$\$ for conservation tillage)
- Provide data
- Review progress and be present during discussions to hear concerns and ensure planning is consistent with the guidelines and not outside the bounds
- Be a legal and technical resource

**What are the top three concerns about sub-state planning? What would constitute fatal flaws?**

- State will not follow through on obligations and necessary implementation (i.e. state never wrote or adopted a state plan called for in the growth strategies planning process)
- Funding gap

- Lack of technical assistance, guidance and clarity of guidance given
- Allowing water to be moved between basins or stored without requiring strict adherence to conservation standards and reuse standards; strict standards for conservation and reuse must be established
- Allowing sub-state regions to be determined on criteria other than natural boundaries, i.e. watersheds
- Making decisions without data and ignoring a region's carrying capacity
- Amount and lack of information for each sub-division
- Lack of communication between neighboring basins
- Geographical breakdown / regions
- Regulation - where's the line
- Shortage of water in any area
- Failure for sub area to plan for water demand
- Legal challenges to use of water
- Sub-state planning areas must respect economic units, e.g. major metro areas, farm belt areas, coastal areas
- No one to police or see that water is being conserved
- Funding
- Narrow mindedness of individuals and constituencies in each region
- Unwillingness to compromise and look at larger region
- Not enough data to make it real and effective
- Territorial actions/not looking at the big picture
- There is no way to resolve a dispute between sub-state basins - there needs to be a logical process for resolution of issues
- The fact that these entities may have no authority for implementation therefore, nothing gets done
- Money
- Data
- Allowing the development of local, autonomous water fiefdoms
- Water should be protected from use as a "political tool"
- Basin delineation
- Territorial () need incentives for sub-regions to work together
- CUB - must protect all uses/demands
- Divorcing planning and implementation
- Undoing successful work already ongoing
- Expecting areas of basins 300 - 400 miles apart to work with each other on details of plans
- Erosion of private property rights
- Negative economic impacts
- Inadequate funding and information
- Plans in conflict with the overall state plan
- Plans in conflict with upstream and downstream plans
- Territorial/turf issues
- Inconsistencies in plans, not same level of expertise

- Politics will control
- Many sub-basins lack funding
- Lack of sufficient planning at the state level to address drought conditions restricting water availability
- Lack of “teeth” to force sub-state units to comply with restrictions in a timely manner when water use restrictions become necessary
- Lack of a “fall-back” plan if a drought continues long enough to become extremely severe
- Non-point pollution - how to deal with “voluntary” BMPs - will sub-regions have authority
- Lack of funding for analysis and planning at the sub-state level
- Creating sub-state water wars over shortfalls/surpluses
- Failing to meet future needs in time of drought
- Not funded properly
- The planning districts won’t have any “teeth” to get things accomplished
- The districts will not communicate with each other
- If not properly funded, it will never work
- Function between sub-state areas
- EPD will dictate which tools to use in addressing local issues