

**OVERSIGHT OF THE ARMY CORPS OF ENGINEERS'  
MANAGEMENT OF THE ACT AND ACF RIVER  
BASINS**

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**FIELD HEARING**  
BEFORE THE  
**COMMITTEE ON**  
**ENVIRONMENT AND PUBLIC WORKS**  
**UNITED STATES SENATE**  
**ONE HUNDRED NINTH CONGRESS**

SECOND SESSION

ON

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AUGUST 8, 2006—GAINESVILLE, GA  
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ONE HUNDRED NINTH CONGRESS  
SECOND SESSION

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**OVERSIGHT OF THE ARMY CORPS OF ENGINEERS' MANAGEMENT OF THE ACT AND ACF RIVER BASINS**

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**TUESDAY, AUGUST 8, 2006**

U.S. SENATE,  
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,  
*Gainesville, GA.*

The committee met, pursuant to notice, at 10 a.m., Riverside Military Academy, 2001 Riverside Drive, Gainesville, GA, Hon. Johnny Isakson presiding.

Present: Senators Isakson and Chambliss.  
Also present: Representative Deal.

**OPENING STATEMENT OF HON. JOHNNY ISAKSON, U.S.  
SENATOR FROM THE STATE OF GEORGIA**

Senator ISAKSON. We will call this hearing to order. A couple of members of the media are in the audience.

MEMBER OF THE MEDIA. I have a photographer, or I have one coming, and wanted to know if they could have access to the stage for the purpose of photographing the testimony.

Senator ISAKSON. That is all right if they come up from these steps and veer right and there is a side thing here where they can slip back where they won't block anybody and they can take all the pictures that they want to.

Second, for the benefit of the Governor and colleagues, Senator Chambliss, Congressman Deal, microphones are not self-actuated. So you turn them on and off when you want to speak. That way, we won't pick up or interfere with each other.

I want to particularly thank Colonel Guy Gardener, Riverside Academy, he is standing right over here. You all give him a big round of applause. This is a magnificent facility. We appreciate the opportunity to have this here.

There is an old adage, behind every good man is a good woman, and I also want to thank Kate Maine.

For the purposes of the audience, this is a hearing of the Senate Environment and Public Works Committee.

I will make an opening statement of about 5 minutes followed by Senator Chambliss, who is next, and Congressman Deal. We'll go straight from there to the testimony of the government.

We have three distinguished panels this morning. We look forward to your participation and thank the panelists in advance for coming.

I welcome the U.S. Army Corps of Engineers management of the ACT and ACF River Basins, as well as the actions, their actions, as I said to you earlier.

We have a very distinguished group of witnesses to discuss the topic at greater length, Forsyth, Dawson, Gwinnett, and, really all of the counties in Georgia, certainly, in the ACF Basin.

Today we are conducting a congressional oversight of the corps, following their announcement in June of this year that the lake at the Buford Dam, the place in December 2005, was not properly calibrated, bringing it nearly 2 feet or over a half a meter higher than the actual level.

Because of this, billions of gallons of water were released unnecessarily. I have heard from many of my constituents, and I should say our constituents from this area, of the numerous calls they had made to the board, trying to alert them to what was obviously the declining water level.

I am looking forward to getting answers from General Walsh as to why this happened and what steps they are taking toward preventing it from happening again. I am also looking forward to hearing the answers on the related ACT/ACF River Basin issues.

I stand by my belief that if the corps would go forward with the updated water control management of the two river basin systems, an update that is long overdue, many of these problems will be solved.

In fact, currently the interoperational plan that was placed because the environmental species complaint, which was, in part, acting as an interim operational plan, but interim water control plan, it has been decades since the water control plan has been redone. It is—time is of the essence and I will see to it that it gets done.

It is the fundamental foundation and an ultimate tristate water compact and an insurance for the people of our State and the States of Alabama and Florida as to the way in which the river will be managed.

I want to particularly welcome Governor Sonny Perdue to the committee today. Governor Perdue has been a leader in our State on water issues and offers a unique perspective as the chief executive of Georgia.

His testimony, which I have already read, will provide you a unique insight into how long and how hard the State, in concert with Congressman Deal, Senator Chambliss and myself and the other members have been working to bring about a resolution to this problem.

I want to personally acknowledge and thank the Governor for his diligent, diligent effort on behalf of all those in the State of Georgia with access to their water.

With that said, I'm going to cut the rest of my statement short, because hearing from those who are here to give testimony today are the ones we really want to hear from, but I have a few procedural motions that I need to make.

First, given Governor Perdue's unique perspective and the fact that he has taken his time from a busy schedule to be here, I'm going to give him 15 minutes for his testimony, and all the rest of us will have 5 minutes.

Second, I want the record to reflect that I'm bringing Senator Chambliss and Congressman Deal to serve as panelists on the Senate Committee on Environment and Public Works field hearing today.

We look forward to the questions from all the members, we look forward to the answers we will receive from the corps, and we look forward to the participation of local residents here.

It's now my pleasure to turn the microphone over to Senator Chambliss.

**OPENING STATEMENT OF HON. SAXBY CHAMBLISS, U.S.  
SENATOR FROM THE STATE OF GEORGIA**

Senator CHAMBLISS. Well, thank you very much, Senator, and I appreciate very much the opportunity to be here today with so many folks who have come out to talk about an issue that is very emotional and very sensitive and, needless to say, extremely important to all of us for any number of reasons.

First of all, I want to extend, again, our thanks to the Army Corps for hosting this outstanding facility here. I almost feel like I am in the military here when I walked out. What a great facility you have here.

Again, I want to thank all of you for coming out today to discuss this extremely important issue of Georgia's water resources.

There's not been an issue, and more now that I've been around Atlanta, as to the State's low levels of Georgia lakes.

The purpose of today's hearing is to let our constituents hear firsthand for those responsible for operating the Apalachicola-Chatahoochee-Flint River Basin, fine men and women of the U.S. Army Corps of Engineers as to why the lake levels are as low as they currently are and why they simply can't refill them as many of us would like.

The dog days of summer have traditionally been a time when our families try to beat the heat in any number of ways—swimming and boating, keeping hydrated, or staying inside with the air conditioner cranked up.

Although there are a variety of ways that you will keep cool throughout the summer's sweltering days, they are all connected by one common thing, and that is the necessity for water.

Georgia's water resources are a precious commodity for allowing municipal drinking supply, to give us electricity for commerce, for irrigating crops and to sustain what had been at that time, as well as for recreation.

So when folks notice a significant drop in the lake levels, that impedes their recreation plans or when they are informed that there are restrictions placed on their domestic use of water, like watering lawns or washing cars, and all to avoid drinking supply, they are likely concerned.

Benjamin Franklin once noted when the well is dry, we know the word for water. I think our recent experiences with Lake Lanier have proven to be true although we didn't have to watch Lake Lanier drain completely in order to learn the lesson.

The fact of the matter is that, the ACF River System is the life blood of the economy and the environment, and that's a major part of the Southeast; but right now, the system is out of balance.

It is important that the operation of this river system balance economic and environmental interest, balance water quality and supply and environmental needs, and balance the very needs among Georgia, Florida, and Alabama so that fair decisions can be made about competing to get that drinking water in the upper Basin, agriculture and economic development in the middle Basin and important species in the lower Basin.

I think this hearing today is very timely. We want to provide an opportunity, for those of you who rely on Lake Lanier for any number of reasons, to have the opportunity to hear directly from the Corps of Engineers about the management of Lake Lanier.

It also provides us the opportunity to hear from you, the State Board Members, as to the important interests at stake in the proper management of this vital resource.

I am eager to hear today from General Walsh with the Army Corps of Engineers, because the corps is responsible for operating a number of different reservoirs across the river systems.

Normally, they conduct their operations under a water control plan, a plan that identifies the objectives for managing the system such as navigation, water supply, and recreation.

The water control plan instructs the management of the flow of the river system for different identifying needs of that system.

For instance, an updated water control manual would advise the corps as to whether or not Lake Lanier can store a greater amount of water supply for counties in the metro Atlanta area, or whether such higher storage in Lake Lanier is detrimental to the entire ACF system.

There's not been an updated water control plan in the ACF in more than 50 years. That is really hard to believe. I believe the lack of a master control plan of the ACF plan is the root of a number of problems we have experienced with the operation of this system.

I think it is the main reason there is so much imbalance with respect to the allocation of water during times of surplus and during times of drought.

I think what all the State oversees is fairness, consistency and transparency in the operation of this system.

What we don't want to see is one State using an individual law or regulation to gain an advantage over another State resulting in a temporary gain of that State.

Unfortunately, although the Corps of Engineers is mandated by statute and by regulation and maintaining of the water control manuals due to the ongoing litigation between Georgia, Florida and Alabama over water resources, they have not done so.

In January 2006, as a result of the corps approving, the legal impediments to control the legal control manuals for the ACT and the ACF Basins were eliminated with the settlement of that court case.

After months passed and the process of updating manuals had not started, Senator Isakson and I sat down with the Secretary of the Army, Francis Harvey, and he informed us that the Corps of Engineers will start the process of updating the control manuals no later than January 2, 2007.

I applaud his leadership in setting a firm date in moving forward with this process, because I do believe it's the right thing to do and

the responsible thing to do. We need to assess all the right needs for the ACF system and then we can figure out an appropriate level of water needed to meet all of those needs.

The main question I hope that will be answered today is, we see Lake Lanier is lower than it should be. Why can't we simply refill the lake?

I think it would be helpful for General Walsh to put into context the recent operations of Lake Lanier. For instance, I know the corps is currently under a court order to release certain level amounts of water.

However, I also note that the corps accidentally released an extra 22 billion gallons of water.

It is not only important for all the folks here to get an estimation from the record from the corps as to how that extra 22 billion gallons of water was released, but to also come away with an understanding of why they were releasing water in the first place.

Where restrictions lie in the corps from doing things is important to smart management of the ACF river system, like updating the water control plan or simply raising our lake levels.

I have here today a letter dated August 7, from the Hon. Shirley Franklin, the Mayor of Atlanta which, Mr. Chairman, I would like to insert into the record.

[The referenced document follows on page 286.]

Senator ISAKSON. Without objection.

Senator CHAMBLISS. What this letter says is, it reinforces that government officials and community leaders over a wide geographic area are indeed with this issue and are actively seeking solutions, and we truly are.

She makes an excellent point that the interim operations plan is not a sustainable solution, and that we must move forward and find a long-term solution for operating the river system.

Last, I just want to say to our first witness today, Governor Perdue, were it not for you and your persistence in trying to call your colleagues from Alabama and Florida together, we simply wouldn't be at the point where we even are today.

These folks are not satisfied and we are not satisfied with where we are. But I want you all to understand that were it not for Governor Perdue for being as insistent as he has been, with not only the Corps of Engineers, but with the two Governors, which is where this issue ultimately has got to be resolved, that we simply wouldn't be where we are.

The other two Governors, frankly, relied on filing lawsuits as opposed to sitting down at the table and trying to resolve this.

Thank goodness we have prevailed in these lawsuits, but the leadership of Governor Perdue is critically important.

Mr. Chairman, thank you, and I look forward to the testimony, and I look forward to hearing from our constituents on this matter today.

Senator ISAKSON. Congressman Deal.

**OPENING STATEMENT OF HON. NATHAN DEAL, U.S.  
REPRESENTATIVE FROM THE STATE OF GEORGIA**

Mr. DEAL. Thank you.

It's an honor to be here. Thank you for holding this hearing here in Gainesville in my congressional district and thank you also to Senator Chambliss also for being here on this panel today and thank you for inviting me to stay as well.

I also would commend Colonel Gardner and the staff here at Riverside Military Academy for their hospitality and for allowing us to be the hosts of this meeting at this very gorgeous facility, something that I think our community is tremendously proud of. I know that you are as well, Colonel Gardner.

I too would like to thank Governor Perdue for being here today.

I do believe that it is his leadership and persistence on this issue, that it will become more clear as we hear his testimony, that it has been a real stabilizing force and an incentive for us to remove some of the impediments that have been there in the past, and hopefully reach a conclusion.

Needless to say, Lake Lanier is important to this part of Georgia. It is estimated that it has about a \$5 billion economic impact on our community and our State as a whole.

High water levels for Lake Lanier, in our opinion, are not inconsistent with adequate water usage downstream. In fact, we think it may, in fact, compliment that as well.

So this is a comprehensive hearing. It is nice to have the opportunity and public forum to hear from the Corps of Engineers as to the issues that they are confronted with.

Hopefully, if there are legislative issues that need to be addressed, at this time I will be advised of those in the process of this hearing today.

Needless to say, this is the time of year when, as Senator Chambliss pointed out, the lake is a vital recreational resource for many people in our State. With water levels as they are now, it is certainly a problem, to say the least.

I want to thank all of those who have come to participate in this hearing and to listen to the testimony. I think it is important that everyone involved in the process know the magnitude of the interest of the people as a whole in this issue.

Thank you again for allowing me to be a part of this panel and welcome to Gainesville and to Hall County.

Senator ISAKSON. Thank you very much.

It is now time for me to introduce our first panel. Governor Sonny Perdue, the Governor of the State of Georgia.

Governor, you have been given the exception of having 15 minutes.

#### **STATEMENT OF HON. SONNY PERDUE, GOVERNOR, STATE OF GEORGIA**

Mr. Perdue. Good morning.

I would like to begin by thanking the Senate Committee on Environment and Public Works today chaired by Senator Johnny Isakson.

I would also like to thank Senator Saxby Chambliss and Congressman Nathan Deal for their presence, their interest and their leadership on this issue in the first of hearings in Washington for pursuing the solutions to this dilemma.

The issue of the U.S. Army Corps of Engineers management of the ACT and ACF river basins is both timely and significant. The rivers that make up these Basins are among the State of Georgia's most precious natural resources.

Waters rising and flowing in Georgia are waters of the State of Georgia and the Federal reservoirs constructed on them should be operated by the corps to meet the vital needs of Georgia citizens, including water supply, waste assimilation, recreation and navigation, and support a wide variety of needs of the biological needs of a wide variety of species.

In March of this year, the corps announced a new reservoir management plan for the ACF Basin including Lake Lanier, reservoir, called the Interim Operations Plan (IOP).

The IOP was intended to support the needs of the endangered Gulf sturgeon during its spring spawn and the needs of two species of protected mussels in the summer.

While the intention of the IOP may be good, the State of Georgia is concerned that it mandates the release far more water than is necessary for the protection of these species and depletes the water storage upon which people and wildlife, including the protected species at issue, depend. Unfortunately, the corps has largely dismissed Georgia's concerns.

I'd like to give you a time now. On May 5, 2006, Dr. Carol Couch, director of Georgia's Environmental Protection Division, wrote a letter for the corps enclosing hydrologic data showing the corps' continued operations could draw down the Federal reservoirs in the ACF Basin in their lowest level in 50 years that could effectively empty them.

On June 1, 2006, Dr. Couch sent a letter to the corps and the U.S. Fish and Wildlife Service (FWS) requesting specific changes to the IOP.

On June 2, 2006, I wrote to the Secretary of the Army, Frances Harvey, sharing Georgia's concern that, "unless the corps changes its operating protocols, the reservoirs and lakes in the system will be drawn down to their lowest level in recorded history."

Also on June 2, 2006, Dr. Couch sent a letter to Colonel Peter Taylor and to the Fish and Wildlife Service with an attached memorandum providing additional results of the simulation of the IOP using data and information received from the corps.

On June 6, 2006, I personally met in my office with General Michael Walsh and Colonel Taylor to face-to-face express the concerns that we have expressed in writing.

By June 9, 2006, the State received no material responses from the corps in response to its communication. Thus, on June 9, 2006, Dr. Couch wrote the corps another letter demanding specific revisions to the IOP.

On June 12, 2006, the corps responded by letter to Dr. Couch's June 1 and June 2 letters. The corps challenged what it believed to be certain of the assumptions underlying Georgia's simulations of the IOP, but did not provide data to allow Georgia to assess the validity of the corps' assertion or to fully evaluate the discrepancies between the corps' and Georgia's models.

The corps repeatedly put off responding to our June 9, 2006 letter that demanded changes to the IOP. After several requests for

more time, the corps finally stated that it would not respond to the June 9, 2006 letter because of unidentified “concerns raised by the other parties to the litigation.”

In fact, the corps did not respond to Dr. Couch’s June 9 letter until June 21, 2006.

In the midst of all this, the corps admitted to releasing more than 22 billion gallons of water from Lake Lanier by mistake, at a time when the region was approaching what is traditionally known as the driest time of the year. By this mistake, they essentially created the effects of a “manmade” drought on top of a natural drought.

The 22.5 billion gallons of water that the corps mistakenly released corresponds to 6.3 percent of Lake Lanier’s conservation capacity, 22.5 percent at West Point’s conservation capacity and 28.2 percent of Walter F. George’s (Lake Eufaula) storage conservation.

This year, 2006 is 1 of only 2 years in Lake Lanier’s history when the lake levels fell, the period of January through May, which is normally the time of refill, even in drought years. The other year when this occurred was in 1986.

Submitted with my testimony, there is a chart that shows the drop in Lake Lanier levels compared to lake levels experienced in the drought of 1999 to 2001.

As you will see, this chart shows that Lake Lanier was able to rise in elevation for the same period, January 1 to June 1, even during the 1991 to 2001 drought, the most severe drought in the history for the ACF Basin.

I think that should be 1999 to 2001. For example, Lake Lanier began in 2006 more than 5 feet higher than it had begun in 1999. But the lake levels now are more than 2½ feet lower than it was on August 3, 1999.

For example, on January 1, 2006, Lanier elevation was 13 feet higher than the January 1, 2001 level, yet last night’s elevation was less than 1½ feet higher than at the same time in 2001.

This unprecedented loss of storage with the perspective of what happened in the past droughts, is clearly the result of an Interim Operations Plan (which was not part of past reservoir operations), in particular the magnitude of flow it calls for during the spawning season, March through May.

The unfortunate actions by the corps’ repeated lack of response to our concerns left Georgia with no alternative but to take legal action to protect our water resources.

As you are aware, the State of Georgia filed complaint in the Northern District of Georgia to stop the corps’ continued operating, according to the Interim Operations Plan. This case is pending.

Litigation is never how I choose to deal with issues. As I explained earlier, we tried repeatedly to impress our concerns upon the corps. The corps, we determined was fairly, largely nonresponsive. The threat of the State of Georgia is urgent and the situation demands immediate action.

We have challenged the IOP because the corps must allow the lakes to refill and recover the lost stored water.

Common sense tells us that you cannot manage a system of reservoirs if you never store any water. The corps’ Interim Operations Plan was adopted without any prior notice, without any public par-

ticipation, without analysis of impact on authorized purpose for which the Federal reservoirs were constructed, without consideration of its impact on the water supply, security for the millions of people who rely on the Chattahoochee reservoir system for water supply, without consideration of its long-term sustainability or its long-term impact on federally protected species, and without consideration of alternatives.

The result is an unbalanced plan that imposes a severe risk of substantial harm to the State of Georgia and its residents.

In fact, the Interim Operations Plan is essentially a water control plan. A water control plan that was adopted by and taken only one factor in consideration, endangered species.

Georgia has long advocated that the corps should update its master control plan for both the ACF and ACT Basins, which have been noted, have not been done in over 50 years.

As a result, the corps is operating its complex systems without reliable or predictable operating rules tailored and current demands and conditions within the Basins.

Indeed, the corps' own regulations provide that water control plans should be updated periodically in light of changing demands and other conditions.

I don't think there is any question of over the last 50 years, the ACF and ACT Basins in Georgia have changed dramatically.

The Federal Government itself recognized the need for current plans. The Federal Emergency Management Agency (FEMA) is investing millions of dollars in updating the floodplain maps. This is in response to growth in Georgia and Alabama that has altered the flood characteristics of watersheds.

The corps needs to incorporate these altered flood characteristics into updated operation manuals to ensure protection of life and property in both States.

Further, inefficient, inaccurate, or unpredictable operation of the ACF and ACT systems results in growing uncertainty about the supply of water for more than half of Georgia's citizens and for facilities such as the Farley Nuclear Plant and other powerplants.

The water control plans also should be updated as part of implementing the 2003 settlement reached by the corps, Georgia, and other parties that will help ensure that metropolitan North Georgia's water needs for the next decade will be met.

The failure of the corps to update the water control plan is also affecting a stated purpose of lakes in the Basin, recreation. West Point officials have asked the corps to raise the level of the lake by 2 feet in the winter when water is plentiful to accommodate recreational needs that have a significant impact on the region's economy. But the corps officials have said that they have to adhere to elevation levels in the IOP.

What does all this mean? The corps is providing flows for endangered sturgeon and mussels under an IOP that was developed without studying its full effects and without properly updating the corps' grossly outdated water control plans.

The corps' performance under the IOP this year demonstrates that it is not a sustainable plan. With a continuation of this dry year, Lake Lanier, Lake Eufaula, West Point and Seminole will all drop to levels that will put at risk water supply, water quality, en-

dangered species and other wildlife, and will be devastating to recreational boating and fishing that support the local economies.

In closing, I would like to say that I cannot believe that Congress passed the Endangered Species Act with the intention of providing substantially more protection for the species than for human beings.

The corps can provide both the needs for the endangered species and the needs of humans upstream if it operates wisely and is guided by sound science and good planning.

For example, I do not believe that Congress intended that the corps provide the species with more water than even the natural environment would support, particularly when it comes at such a great cost upstream.

Even at a flow of 5,000 cubic feet per second, which the corps IOP calls for, and under which we operate today, mussels are getting more water now than they would if no dam is built and no reservoirs created.

It is a time, gentlemen, for common sense to prevail on this issue. That is what we are asking for from the corps when they update the 50-year-old water control plans. That is what we seek through our request to stop the release of water greater than nature would provide.

That is the approach that I want to take when I sit down with my colleagues and neighbors to the west, Governor Riley on August 14.

Once again, I want to thank you all for the opportunity to provide this information and this testimony and thank you very much for your time today.

Senator ISAKSON. Obviously, Governor, you did well. I want to thank you for the detailed presentation and all the letters from you and Mr. Couch to the corps as well as all the letters from the corps to you as well as the charts that is testimony to and will be made a part of this permanent record.

On behalf of Senator Chambliss and Congressman Deal and myself, thank you for your valuable time. I appreciate it.

Mr. PERDUE. Thank you all.

Senator ISAKSON. Now it is my pleasure to ask Brigadier General Michael J. Walsh, the Commander of the South Atlantic Division of the U.S. Army Corps of Engineers, to come forward for your testimony.

General, we want to welcome you to this hearing today and thank you for your participation; and we look forward to your testimony of about 5 minutes and we will do questions and answers after, with your permission.

**STATEMENT OF BRIGADIER GENERAL MICHAEL J. WALSH,  
COMMANDER, SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS  
OF ENGINEERS**

Mr. WALSH. Thank you. I would like to thank you for my invitation to attend.

Members of Congress and distinguished guests, I am Brigadier General Michael J. Walsh, Division Commander, South Atlantic Division, U.S. Army Corps of Engineers.

Thank you for the opportunity to provide this statement before you today concerning the corps' operations and management of the Alabama-Coosa Tallapoosa River Basin encompassing parts of Georgia, and Alabama and the Apalachicola-Chattahoochee-Flint River Basins encompassing parts of Alabama, Florida and Georgia. The U.S. Army Corps of Engineers practices the principle of openness.

We strive to maintain transparency in all of our operations, providing all of our publics with as much data as possible via our Internet, sharing of information with State and Federal agencies, and through the media concerning our operations and management of this system.

I would like to divide my statement into three parts. Normal management, support for the Endangered Species Act and the gauge calibration error at Lake Lanier.

Normal management for the Alabama-Coosa-Tallapoosa River projects is multipurpose providing for flood control, hydropower navigation, water quality, recreation and fish and wildlife conservation.

The system has five corps projects and 10 Alabama Power Company dams. The corps projects consist of two major storage projects, Allatoona and Carters in Georgia at the upper end of the Basin and three run-of-the-river projects at the lower end of the Basin in Alabama.

The Alabama Power projects are located on the Coosa and Tallapoosa Rivers and are operated in conjunction with the corps' projects and provide a minimum 7-day average flow in the system. The corps has flood control oversight of the Alabama Power projects.

The ACT Basin has experienced the same drought conditions as have other places in the Southeast. The two upper most projects, Allatoona and Carters are experiencing inflows averaging 30 percent of normal. Allatoona is currently 6.5 feet below normal summer pool and Carters is 10 feet below normal.

Releases from Allatoona are being kept to a minimum with only 2 hours of hydropower generation a day, plus a continuous 240 cubic feet per second release for water quality purposes.

Carters, which is a pump back hydropower generating system—is operating in the pump back mode only.

At the lower end of the system, the Alabama River, depths are at 6 feet below project depth in support of navigation.

The only releases occurring at the corps projects are minimum flows coming from the upstream Alabama Power projects and the Alabama River situation, due to the drought, has caused one major industry to modify its water intakes to remain operational. Now the Apalachicola-Chattahoochee-Flint Rivers project (ACF) is also a multipurpose project providing flood control, hydropower, navigation, water supply, water quality, recreation, fish and wildlife conservation.

The Federal projects on the Basin system begin with Lake Sidney Lanier at the headwaters—West Point Lake, Lake Walter F. George, George W. Andrews, and Lake Seminole at the lower end of the Basin.

There are several lakes with hydropower facilities operated by private and public utilities along the system as well.

Under normal circumstances, the corps operates and manages these reservoirs to meet all project purposes in accordance with the draft water management plans developed in the 1980s.

These plans established zones of water levels that trigger actions when these levels are reached.

This management has proven to be successful in meeting all those project's purposes.

It is primarily when drought hits the system that issues begin to arise. The corps continues to operate and manage the system based on the above-mentioned plan.

This calls for balancing the various reservoirs with available water to keep them in the same action zones. These zones have been developed to meet as many project purposes as possible with dwindling water availability during a drought.

As conditions worsen during times of drought, some project purposes become a higher priority. These priorities include water supply, water quality, hydropower and fish and wildlife conservation.

Fortunately, we are often able to simultaneously meet several of these needs with one action. For example, water released for water quality can also be run through a generator to produce hydropower.

Like many of these systems operated and managed in the Southeast, along with most in the Nation, this river basin system is in a drought.

The National Weather Service Drought Monitor shows North Georgia is in a moderate drought, and as you move southward, it is characterized as a severe drought.

We operate and manage this Basin as a system; when the lower Basin receives less inflow, we must augment flows from stored water to maintain balance.

The next part is the Endangered Species Act. The corps and the U.S. Fish and Wildlife Service have been in consultation since 2000, the year 2000, concerning various mussel species, and more recently, the Gulf Sturgeon, which all fall under the protection of the Endangered Species Act.

Together, we have developed an interim operations plan to provide adequate water from the system to protect and enhance the habitat of these species. During normal conditions, these needs have been met through routine operations and maintenance.

As we have encountered—as we have entered the drought period, management for those species has become more difficult.

From March through late June, our water flow regimes have been in accordance with our Interim Operations Plan (IOP), that is subject to the Formal Section 7 Consultation with the U.S. Fish and Wildlife Service.

As part of the litigation actions, the Court ordered specific flows in the late June and early July time period.

The States and other parties to the litigation actions, the Court ordered specific flows again in late June and early July.

The States and other parties to the litigation then agreed to a flow regime that took us through late July.

Today, we are once again operating in accordance with our Interim Operations Plan, the IOP. The formal consultation with U.S.

Fish and Wildlife Service on the IOP is ongoing. The biological opinion from the U.S. Fish and Wildlife Service, as a result of the formal consultation process, is due to me on September 5, 2006.

Last, on the gauge calibration error, on the June 16 of this year, we discovered that we had a gauge calibration error at Lake Lanier. The error led us to release additional water that would not normally have been released during that time frame.

In December 2005, during a routine maintenance of that gauge, it was discovered that certain components had been worn.

New parts were ordered and installed, to include a device called a selsyn. A selsyn device is an encoder that reads the mechanical data provided by the float via the pulley. It converts the mechanical data to electronic data which is then sent to the powerhouse that is indicating the lake levels.

As part of the installation, a scaling factor had to be programmed into the selsyn, and as we put that factor in, we called the manufacturer who recommended the scaling factor.

Unfortunately, we were not clear in our communications with the manufacturer in that we did not replace the pulley that is attached to the selsyn. The manufacturer had assumed that we replaced both the selsyn and the pulleys and provided a scaling factor for both systems.

The result was that we inputted a scaling factor that was not appropriate for the existing pulley with the new selsyn.

Between the time of installation and mid-April of this year, levels at Lake Lanier remained relatively stable and no error was detected during those time periods. Beginning in mid-April, we started to make water releases for downstream needs in accordance with the IOP.

The calibration error led us to believe we had a higher pool level than actually existed, indicating a greater inflow into the lake than was actually occurring. We were operating under the IOP, which required us to essentially release 100 percent of Basin inflows to mimic a run of the river flow for the entire Basin.

As the gauge data was incorrect, we were releasing more water than was actually entering the lake by approximately half an inch per day. Consistent with our policy of openness about our operations, we informed congressional interests, stakeholders and the general public as soon as we learned of this problem.

We have corrected the gauge error and have confirmed the accuracy of all of our gauges, not only on this system, but on all the systems in the Southeast that are under my jurisdiction.

In addition, we have installed redundant systems, redundant gauges on all the projects, again, in my area of responsibility and have updated procedures to verify their accuracy.

In summary, I'd like to thank you for the opportunity to update you on the management of the ACF River project and I want to assure you the corps is committed to working with all stakeholders in the Basin to provide the best management and operations for the lake.

I am hopeful the current mediation process that is taking place among the three States and the Army will produce a framework to bring mutual protection and balance to this precious resource.

Senator ISAKSON. General Walsh, thank you very much for your testimony and your service to our country.

I will start the questioning and then go to Senator Chambliss, then return to Congressman Deal and then we will spend 5 minutes on questions. Whoever wants to talk, be sure and do it as well.

I want to thank Nathan Deal for the outstanding job that he did on the 49 States in the House, about 6 weeks ago when he stopped and attempted to amend the budget and undo the water control plan.

I want to thank Senator Chambliss for his honorable intention to do the same thing on the actions that we have on the Senate floor.

I mentioned that so General Walsh knows that I know he has been somewhat of a proverbial ping-pong ball.

However, I think we are in a climate where we are willing to do what we can for reaching some realistic agreements.

To that end, Senator Chambliss and I have talked to Secretary Harvey in my office, and I am interested in knowing about the water control plan. Secretary Harvey informed Senator Chambliss and myself that we have a January 2 target date to begin the water control plan, and I want to know if that is still on target and still on date.

General WALSH. Yes, sir, we are still on target with the plan to start January 2.

Senator ISAKSON. Do you think that the statement that Governor Perdue made that the Interim Operations would be accurate for a water control plan, would that be an accurate statement?

General WALSH. No, sir.

Senator ISAKSON. Then would you tell us why you don't think that would be an accurate statement.

General WALSH. The water control plan that we put together at the IOP is down at Walter F. George, which is at one particular project. It does affect the entire drainage system, but it is one particular project.

The water control manual that Secretary Harvey is talking about is something that will control the whole basin.

Senator ISAKSON. But it would be true that if you had a plan for that particular lake downstream that maintain levels that it would affect the upstream levels of the river, would it not?

General WALSH. That's correct, it would.

Senator ISAKSON. The reason is, I just want to make the point for the audiences' benefit, and I think we have a very knowledgeable audience here—but in the absence of updating the water control plan, we're going to continue to have our hands tied and not have the best data that we need to make the right decisions; would that be correct?

General WALSH. That's correct. We do need to update the water control manuals.

Senator ISAKSON. In your statement, you said you divide your speech into three parts, and the first was normal management. You described your job as managing multipurposes for the waters in the lake.

In abnormal times, and I think we are in a moderate drought now and in a severe drought for testimony, are those multiple purposes prioritized in terms.

General WALSH. They are prioritized, as I mentioned in my presentation to the water supply and the water quality, and different species, Fish and Wildlife Conservation.

Senator ISAKSON. Water supply and water quality is as tremendously important to the human nature and human beings and, of course, the environmental species as referred in the Act of Congress passed for the protection of the environment of the species; is that correct?

General WALSH. That's correct, sir.

Senator ISAKSON. I believe there are currently four pending permit applications for this area. Is that correct?

General WALSH. I believe so. That's correct.

Senator ISAKSON. Would you give me a statement as to the status of those.

General WALSH. Well, there are four requests, one is from Forsyth County requesting a pipe line easement to withdraw water out of Lake Lanier. We have transmitted that request to the mediation crew, to the people from the three States, and the Army to review that particular request.

Right now, Forsyth County does not have a water withdrawal permit for Lake Lanier. The city of Cumming also has an easement to take additional water out of Lake Lanier, and we passed that also to the mediation team to see how we can work from that perspective.

Gwinnett County does have a waste water treatment outfall and diffuser at Lake Lanier. Again, that one is being—I believe that one, they are continuing to see if they can get a Georgia permit.

At the conclusion of that, if they do get the permit, they will be looking at going through the regulatory requirements of 404 and section 10.

The last item was the city of Gainesville is looking to replace and upgrade the waste water treatment pipeline and the outfall diffuser again at Lake Lanier, and that is going through a document review as well.

Senator ISAKSON. Thank you very much. My time is up, and I want to end it by letting the audience know that the General is going to Iraq, I believe, next month, is that correct?

General WALSH. Yes, sir.

Senator ISAKSON. We wish you the best and we thank you for your time. We hope you will inform your successor of the importance of the Lake Lanier and Chattahoochee Water Basin in regards to water control.

Senator Chambliss.

Senator CHAMBLISS. I just got back from Iraq, as a matter of fact, last week or so and you can go over there.

Senator ISAKSON. Yes, sir.

Senator CHAMBLISS. That reminds me of the fact that the Army Corps of Engineers is just as much a part of winning the war on water control as what we have for Fort Stewart.

You have given us that reminder here today, but let me just say that this statement made in the speech and the fact that 22 billion

gallons of water were released, if that kind of mistake had been made on the battlefield, it would cost American lives.

That is how serious, I think in terms of this issue, it is. There was simply no excuse for that and I hope appropriate actions have been taken as if it were a battlefield situation—any comments you want to make?

General WALSH. Yes, sir. As soon as we noted the error, as I mentioned in my statement, we contacted all the public interests, the Governor's office, certainly the Senators and Congressmen in the area of the corps.

From there, I was concerned that we did not have redundant systems on Lake Lanier water levels, and I was quite concerned with why we didn't have redundant systems on such a precious resource.

I found out all my facilities in the Southeast, we didn't have redundant systems. So I ordered redundant systems on each one of our lakes.

Senator CHAMBLISS. So going forward, what can we anticipate if something like this ever happened again? What will happen to the system?

General WALSH. Well, I think at Lake Lanier, we now have three systems in place, one the selsyn system that has now been recalibrated, we have the requirement for the "lowboard" to do a hand check to drop the float line down the pipe, that is twice a week.

They have also put a scaling device, a measuring device outside Buford Dam so that the public, as they drive by, can look at it themselves.

Senator CHAMBLISS. Now everybody who is in the audience today and all of us here have seen what has happened to the level of Lake Lanier over the last several months.

We also know that there has been at times some rainfall that has occurred, but the level of the lake continues to go down. I hope there are reasons that cause that.

But why can't we just stop the flow out of Lake Lanier today, because of this mistake that has been made, until it builds back up at 2 feet, that was inadvertently let out of the lake by mistake.

What's the key thing to do?

General WALSH. So the other requirements that are needed at Lake Lanier and downstream, we need to meet those requirements for water quality as well as for species.

Senator CHAMBLISS. Well, you had said that the issue is not as commonplace or not as serious as Lake George, Lake Lanier and Lake Sidney. Why can't you make up for that mistake in some manner in Lake Lanier?

General WALSH. I would like to say I'd be able to do that, but at this point, the way we are right now in the drought, we need to look at the system as a management system and make sure we are putting all the lakes in the same zones.

As I mentioned in my comments, we do manage the lakes in zones and we try to keep all three lakes in Zone 3 right now.

Senator CHAMBLISS. As I understand it, and the way it was explained to us is that, we have a need for process, which is the first stage of moving to update the manual; that is underway; is that correct?

General WALSH. No, sir. We will start the process for updating the water control manuals on January 2.

Senator CHAMBLISS. But it was my understanding that a month ago when you started the initial steps underneath the process, that is separate from updating the water control manual.

General WALSH. We have started a process in accordance with the court order for us to move forward with the settlement agreement.

Senator CHAMBLISS. Now, the water control manuals will give us the timeline; when that will be completed?

General WALSH. It will take 2 years for us to finish, December 2008.

Senator CHAMBLISS. Are there any impediments that might stand in the way of the Army Corps of Engineers of completing this process during that period of time?

General WALSH. At this point, it is just assurance that we have appropriated funds to move forward.

Senator CHAMBLISS. So there are no other legal impediments that might—

General WALSH. At this point, we have completed all the legal actions, but I was informed yesterday that Florida has started another legal action yesterday on the Interim Operating Plan.

So as of right now, there is nothing that will prevent us from moving forward on January 2.

Senator CHAMBLISS. Thank you, Mr. Chairman.

Senator ISAKSON. Congressman Deal.

Mr. DEAL. Gentlemen, I do want to thank you for your service from the past, present and future. I say that because some of my questions may not seem like I appreciate you, but I do.

First of all, what is the calibration error of 22 billion gallons translating to in terms of the lake level in Lake Lanier?

General WALSH. It is 1.950.

Mr. DEAL. I heard you give the lake levels for Carters Lake and Lake Allatoona, which are part of the ACT Basin. I did not hear you give the remaining lake levels in Alabama. Can you tell us how far below normal pool they are?

Rather than having you look for it, if you can't find it, would you supply that to us? In general, do you know whether the lake levels are appropriately below the lake levels like we have here?

General WALSH. Yes, sir. I will present that for the record, but yes.

Mr. DEAL. All right. Let's talk about the lake levels then within the ACF. Lanier is what is now below level?

General WALSH. It is about 7 feet.

Mr. DEAL. Seven feet. What about West Point?

General WALSH. I don't have that with me.

Mr. DEAL. What about Seminole?

General WALSH. I don't believe I have that.

Mr. DEAL. What about Lake Seminole?

General WALSH. Let me just say that all of these are on our Web site, I looked at them yesterday. It does tell you exactly what they are.

Mr. DEAL. Again in your testimony, you started out by saying, and you used the words transparency and openness in your process.

Yet as I understand it, the Interim Operating Plan was adopted without any external input in the process; am I correct?

General WALSH. We had been working in our operating plan since 2000 and have been gathering data on the endangered species in Florida and sharing that with the U.S. Fish and Wildlife Service and others.

So the Interim Operating Plan was an upgraded plan and it had been upgraded since then.

Mr. DEAL. So we consulted the endangered species folks, but we didn't consult the people, such as the Governor of Georgia. Is that what you are saying?

General WALSH. The Interim Operating Plan is the way we had been operating since year 2000, so I'm not sure where you're going.

Mr. DEAL. Did the IOP take into consideration the possibility of drought?

General WALSH. Yes.

Mr. DEAL. To what extent, what did you anticipate the IOP would be, the drought situation would be here in Georgia for this time of year?

General WALSH. When the water flow—when the inflows get into our lake into a certain level in that it doesn't bring enough water in, we reduce the amount of flows that leave the Walter F. George based on inflows.

Whatever comes into the Basin gets released from the Basin until we get to the area of 5,000 cubic feet per second, and that's where we stay for the endangered species.

So we do take into account the drought including up to the 5,000 cubic feet.

Mr. DEAL. But 5,000 cubic feet per minute is more than mother nature would provide right now including endangered species, is it not?

General WALSH. That's correct, there is less water coming into the Basin now than the 5,000 cubic feet per second. The additional water is coming from that water that is stored in the Basin.

Mr. DEAL. That is Lake Lanier.

General WALSH. Lake Lanier, West Point and Walter F. George.

Mr. DEAL. The court order levels you mentioned, are they Court ordered levels above 5,000 or below that and how do they reconcile with that figure?

General WALSH. The court originally ordered us to release more than 5,000 cubic feet per second and about 6,000 cubic feet per second.

When we went back to see the judge after that time period had expired, they couldn't agree what a new release would be and the judge fell back on our original operating plan of 5,000 cubic feet per second.

Mr. DEAL. Thank you, Mr. Chairman.

Senator ISAKSON. In light of the fact that I will give Congressman Deal an extra 2 minutes, this is his district and his lake.

Mr. DEAL. Thank you. You know, just common sense, as the Governor said in his opening statement, has to play a part in all of this.

The levels that we are now experiencing, based on the Governor's testimony, using the correlation of the drought from 1999 to 2000, where we were in the true drought period for a sustained period during that time.

General WALSH. There have been five droughts as of this date, five droughts that Lake Lanier has been at its level.

Mr. DEAL. But we had a more severe drought situation, as the Governor pointed out during that 1999 to 2001 time frame, and yet, we did not experience the same drops in lake level. I don't think the calibration error accounts for all of that difference.

What is the other difference if we had gotten more water during this current period of time than we did in the drought period of time, 1999 to 2001, what accounts for the difference?

General WALSH. I don't know the answer to that, but it is about 2 feet due to the error, probably another 2 feet for conservation of endangered species. The additional 3 feet, I'm not sure I know the answer to that.

Mr. DEAL. Well, the presume necessity for endangered species, and I say presumed because your IOP is a presumed level of 5,000 cubic feet, was that, based just on an assumption that that is what they had to have.

You know, not to be totally facetious, but we have a grand aquarium here in Atlanta, GA, and if those 12 sturgeon need some water, we can find a place to put them there.

The 5,000 cubic was based on a scientific analysis of what the mussels and the sturgeon need; is that where it came from?

General WALSH. We were using the best scientific data that was available.

Mr. DEAL. Thank you, Mr. Chairman. Let's continue.

Senator ISAKSON. Let's just follow up.

Senator CHAMBLISS. Talking about these mussels, you said something when I went on the lake. I walked out of my backyard yesterday and there were a bunch of mussels laying around.

Now, the point I wanted to make is, there are folks in this part of the Basin or this part of the region that have concerns about species also that may be endangered.

At one point in time, we were down to a 113-day supply of water. Thank goodness the Lord came in and gave us a little bit of wine and some cheese with it.

Is there any plan to look for species problems in other parts of the Basin or if somebody finds the sturgeons laying out there and it creates a problem during the middle of this, it is kind of interesting, but we happen to be in a lawsuit and we have to refill Lake Lanier and all of a sudden Florida has found these sturgeons down there, is there a plan that looks for species—

General WALSH. The U.S. Fish and Wildlife Service keeps an eye on endangered species to work with and in support of those.

Senator CHAMBLISS. Last, I want to go back to this, but I want these folks to understand exactly this process that we are going through.

There are actually two different processes, as I understand it. One of the main processes has to do with the settlement of the lawsuit of the State of Georgia. That is the process that is underway right now; is that correct?

General WALSH. That's correct.

Senator CHAMBLISS. Now, that process is separate from the unique process that will be done and part of the updated water bans; is that right?

General WALSH. That's right.

Senator CHAMBLISS. These two, you said it would take an approximate 2-year period of time. Is there any way, in the appropriation of funding, that we can speed up that process as far as a 2-year plan to—

General WALSH. I think the 2-year plan is an aggressive plan with whatever funding that we have lined up before.

As you may recall, we have been working this process for the past 15 years through the contacts and other processes, so I think 2 years is a fairly aggressive approach.

Senator CHAMBLISS. During that period of time, the potential to have Lake Lanier back to a level that is a reasonable level for recreation, as well as for other purposes. This is done through one of two ways, if the Lord sends us enough water, but also, if the States of Alabama, Georgia and Florida come to an agreement on all of the issues relative to the drawn out water from the ACT ACL, that agreement could also provide the method by which Lake Lanier will rise up to a more reasonable level; is that correct?

General WALSH. Yes, sir. If the three Governors agree on water allocations—

Senator CHAMBLISS. You are here representing the corps and you are a brave man to be here. You may have a need for it here. We appreciate the work that you do.

We don't always agree with you and that is what makes us a great country that we are. This is and you know it is a very sensitive and very emotional issue, like Senator Isakson said, and I know that you will impress on your successor—not just the folks here today, but to all the folks in Florida, in Georgia and Alabama—it is important that we get it right. Thank you very much.

Senator ISAKSON. General, I have one last question here.

The question I asked you regarding the four permits, for Dawson, Forsyth, city of Gainesville and Gwinnett, did I understand you to say that the corps had signed off on them and submitted them to mediators for their sign-off, or shall we submit them to the mediators and then you deal with them?

General WALSH. We have not signed off, we just submitted it to the mediators for litigation.

Senator ISAKSON. Is there a timeline or a deadline for them to respond to you?

General WALSH. No, sir. It is a mediation process, the judge will determine how much time that is.

Senator ISAKSON. We sure appreciate you being here, and best of luck to you and God bless.

General WALSH. Thank you.

Senator ISAKSON. Let me now call our next group of people—Jack Conway, Kit Dunlap and Jackie Joseph.

The lights you see in these little boxes, the green light means that you have 5 minutes; the yellow light means you have 1 minute left; and the red light means you are supposed to stop, because it has already timed out.

With that said, Mr. Conway.

**STATEMENT OF JACK CONWAY, CHAIRMAN, FORSYTH COUNTY BOARD OF COMMISSIONERS, FORSYTH COUNTY, GA**

Mr. CONWAY. Mr. Chairman, thank you for the opportunity to be here, Senator Chambliss, Representative Deal.

On behalf of Forsyth County, the Forsyth County Board of Commissioners, and all Forsyth County citizens, I want to thank this honorable committee for providing me this opportunity to testify regarding Forsyth County's experience and interaction with the U.S. Army Corps of Engineers and its management of the ACT and ACF River Basins, specifically, Lake Lanier.

At the outset, I must respectfully advise that Forsyth County's experience with the corps and its management and stewardship over Lake Lanier has been at best frustrating and at worst exasperating.

Forsyth County has been, and remains, discouraged and disappointed by the endless layers of bureaucracy, politics, and all the red tape that seem to control the corps, and that makes it almost impossible to receive a straight or even consistent answer to even the most mundane of questions.

Throughout my tenure as chairman, one of my chief goals has been to ensure that Forsyth County has sufficient water availability to satisfy both the present and long-term demands of its citizens.

That effort has necessarily generated multiple discussions, meetings, correspondence and telephone calls with corps personnel.

The only consistency theme that has permeated these repeated encounters with corps' personnel is that the county's overtures and initiatives are systematically rebuffed.

Although the county's request to the corps for its own water intake began in the mid-1970s and was renewed in earnest in the mid-1990s, due to time constraints, I will relate only my personal experiences beginning in 2003 to demonstrate the county's inability to obtain cooperation with the corps.

While the county was and remains mindful that the so-called "water wars" had been ongoing and that this litigation has impacted the corps' discretion in issuing water withdrawals, the corps' interpretation of the 1992 Memorandum of Agreement between Georgia, Florida and Alabama, has been a moving target.

On November 23, 2003, I wrote Colonel Robert Keyser at the corps requesting permission to begin construction of a second order intake into Lake Lanier. I emphasized that the county was not seeking any additional water allocation, but simply requested an approval to construct the vitally needed water intake structure.

On May 10, 2004, Colonel Keyser rejected my request, stating that Forsyth County did not have a "holdover water supply contract."

Colonel Keyser also noted that an injunction entered into by the District Court in Alabama further bound its hands.

On March 25, 2005, the corps tendered a "Notice of Proposed Actions" to the Alabama Federal District Court stating that Forsyth County's request for an easement into Lake Lanier cannot be considered because approval would require a new withdrawal contract and is therefore enjoined.

On April 11, 2005, I attended a meeting with Congressman Nathan Deal and corps officials.

At that meeting, I requested that the Corp consider granting an intake easement to the city of Cumming, with Forsyth County possibly funding the construction costs.

Approximately 6 weeks later, in a telephone conversation with Colonel Taylor, I was advised that all "holdover" contracts had expired, and an intake easement into the city of Cumming was not possible.

On September 19, 2005, the injunction that served as the latest basis by the corps for not cooperating with Forsyth County was lifted.

On September 23, 2005, I again wrote the corps requesting simply an easement across corps property for purposes of commencing construction of a water intake into Lake Lanier.

On October 13, 2005, Georgia's Senatorial delegation delivered correspondence to Deputy Assistant Secretary of the Army, John Woodley, clarifying their understanding that the corps would get to work on the various requests for Gwinnett, Cherokee, and Forsyth counties.

Secretary Woodley responded to you on January 30 that he did intend to begin taking all necessary Federal action.

On February 1, 2006, I again delivered correspondence to the corps requesting that the corps immediately "make good" on its commitment to begin taking action on Forsyth County's easement request.

In a telephone conversation following that letter, corps officials declared that in spite of the assurances provided to our Senatorial delegation, the corps refused to grant Forsyth County an easement because the county did not have a "holdover" water storage contract.

In the spring 2006, the corps advised that the city of Cumming should make a request for an intake and that the city and county could then enter into an intergovernmental agreement regarding intake operation.

When asked whether the corps would place its proposal in writing, the corps advised it would not.

The latest word from the corps on why Forsyth County's vital water interests could not be addressed is because the comprehensive study of the ACT/ACF is ongoing.

Ironically, it was some 10 years ago when this comprehensive study was used by the corps as the basis for denying the county's request at that time. Here we have come full circle again.

I believe that commitments made to our Senatorial delegation have not been honored, and that the corps has placed the water needs of Florida and Alabama over the needs of the Georgia citizens. Thank you.

Senator ISAKSON. Thank you, Mr. Conway.  
Mr. CONWAY. Thank you.

Senator ISAKSON. Ms. Dunlap.

**STATEMENT OF KIT DUNLAP, PRESIDENT/CEO, GREATER  
HALL CHAMBER OF COMMERCE**

Ms. DUNLAP. Senator Isakson, Senator Chambliss, Congressman Deal, thank you for giving me the opportunity to discuss some water issues that are facing North Georgia and our entire State.

I am here wearing two hats. I currently serve as president and CEO of the Greater Hall Chamber of Commerce here in the State of Georgia and have a strong interest in the economic issues associated with Lake Lanier and the entire ACF Basin.

I am also here as chairman of the Metropolitan North Georgia Water Planning District, which is a 16-county metro Atlanta planning agency that was created by the General Assembly 5 years ago to develop regional water plans.

How appropriate we are here today to talk about water or lack of water. We are currently in a drought, have extremely high temperatures affecting our water and Lake Lanier. We are also dealing with the tristate water wars, our critters downstream, and a costly water gauge error by the Corps of Engineers.

Lake Lanier is 7 feet below full pool. Today we are at 1063.9. Full pool is 1071. Traditionally, our driest month is October.

My comments today will focus on three areas, the economic impact of Lake Lanier, as already stated is over \$5 billion annually.

This was in a 2001 study done by the Marine Trade Association of Metro Atlanta.

It is 5 years old, and it was done at the end of a 4-year drought season. Today those values would be much, much higher, and I pledge to you I think I can get my study done in about 6 months and give you a new one.

Recreation is the dominant part of that figure. Lake Lanier is the most visited Corps of Engineers lake in the Southeastern United States with a variety of tourism and recreation activities.

The portion of the ACF Basin within the Metropolitan Atlanta area accounts for over two-thirds of the basin population, and nearly half of the population of the State of Georgia.

It generates a significant majority of the total personal income in the ACF Basin and roughly one-half of the personal income in the State of Georgia.

The role of regional water planning—with a finite water supply and a population of over 4 million and growing, the need to carefully and cooperatively manage and protect Metropolitan Atlanta rivers and streams is a top priority.

In September 2003, the Water District adopted three long-term water management plans, of which you have a copy of our annual report which is submitted for the record.

[The referenced document follows on page 115.]

Of these, the water supply and water conservation management plan calls for a future of intensive water demand management and an aggressive water conservation program.

When I was asked to serve as chair of the Water District, many of my colleagues in Hall County questioned my decision to go down to Atlanta to talk about water, talk about our water.

Yet it was important for all of the players, every county, every basin, to be at the table. There were certainly differences of opinion during this planning process.

But the plans were created in all 16 counties and 95 cities in the district of moving to put together the plans for water conservation.

We are in a sense “regulating ourselves” and working together. We learned a lot through the first planning process but yet had a long way to go. We applaud Georgia EPD’s efforts on the new State Water Plan and the district is involved in that.

We certainly realize that other parts of the State have different water needs and different interests. We want to continue our work with our upstream and downstream neighbors and further our out-reach programs.

The district is presently involved in lots of conservation efforts, conservation pricing, water system, leak and reduction, the district use of a household assessment, which you have a copy of, and was submitted to the record.

[The referenced document follows on page 147.]

We have a strong education program through the media and through our schools.

Aggressive water conservation is critical to the region’s future.

We are developing new programs such as retrofit programs for old, inefficient fixtures and pre-rinse spray valves.

The third part, the impact of water supply on the Apalachicola River—the total net diversion from the ACF Basin for water supply for the Atlanta metropolitan area ranges between 250 and 300 cubic feet per second.

This is an average daily net diversion from the ACF Basin from all 16 counties within the metropolitan water district. Most of this water is taken from Lake Lanier, a small amount comes from the Flint River.

To put this figure in comparison, agricultural withdrawals in South Georgia, Senator Chambliss, have a much larger impact on the surface water resources in the Flint River Basin.

According to recent testimony by the corps, this impact is estimated to be between 600 and 700 cubic feet per second during the summer months.

Because there is no large reservoir in the Flint River, withdrawals from this part of the Basin have a “real time” impact on stream flow.

Agricultural demands are highest during the summer when stream flows are the lowest. Therefore, such demands have a disproportionate impact on stream flow.

Evaporation also has a significant impact as we know today.

In conclusion, we all need to be prepared to come to the table and actively seek solutions to water supply limitations. All of our varied interests do not need to be fighting each other.

We need to be working together—Metro Atlanta, Lake Lanier Association, other advocacy groups, Corps of Engineers, U.S. Fish and Wildlife Service and average citizens to clean up and conserve our water.

There is plenty of water if it is managed correctly. Thank you.  
Senator ISAKSON. Ms. Joseph.

**STATEMENT OF JACKIE JOSPEH, PRESIDENT, THE LAKE  
LANIER ASSOCIATION, INC.**

Ms. JOSEPH. Thank you, Senator Isakson, Senator Chambliss and Representative Deal, we appreciate the opportunity.

Senator Chambliss called me in late June and asked me about the possibility of a meeting to take place today. So, I thought of that effort because I knew our membership would be extremely interested in this type of opportunity which you were offering to us.

The mention of the Lake Lanier Association is dedicated to a cleaner Lake Lanier to enhance the economic development for the entire State of Georgia.

Established in 1966 with 4,000 members, 1,700 memberships, which include recreational use, businesses, water usage, and dock owners and residents who just enjoy the peace and tranquility of this wonderful lake water.

We do have many solid programs. We have shore sweep, which is a lake clean up. The community has 1,200 people participate in that which, of course, is inclusive of scout troops. That is one of our big activities where we take 20,000 tons of garbage to be picked up and we hope to—we don't like to have to pick up the trash but we do.

We have the Adopt-A-Lake program, which is very active. We go out and we monitor certain areas of the lake. We participate in this and we are collecting the data to determine baseline, so we know exactly what is happening in this sphere, which is basically an advocacy group for Lake Lanier.

We feel that it is the finest Natural Resource in the State of Georgia, created, of course, by legislation and Senate and Congress back in the late 1940s. Property was bought, 640 miles of shoreline, 8,500 private docks, 10,000 boats, 10 marinas and 8 million visitors annually.

We are the drinking water source for 4-plus-million Georgians, with the—billion dollar economy. Sixty-six percent of the AFC stored water storage in Lake Lanier and 5 to 7 percent of the AFC watershed.

Of course, we have a lot of issues. The issues are the municipalities are calling for sewage discharge into Lake Lanier and calls for for up to 200 million gallons by the year 2025, as Ms. Dunlap alluded to, that the Metropolitan Georgia's Planning Commission District came up with.

The support of the Lake Lanier Association denied sewage discharge permits as it relates particularly to the quality standards of Lake Lanier from the standpoint of Gwinnett County. The sewage discharges are necessary for sustained Georgia growth.

However, we do feel and we are very adamant in this particular subject, that sewer discharge must be as clean as possible through the treatment processes that are used by the counties and/or municipalities that are asking for those particular discharges.

Gwinnett County has agreed with the Lake Lanier Association to make the discharge very clean indeed. Georgia EPD has not issued a program, it was applied in the summer 2005, which we negotiated with Gwinnett County satisfactorily.

The EPD should issue Gwinnett sewage discharge permits. The EPD should direct that all future Lake Lanier sewage discharges

must be at least as clean and deep as the Gwinnett permit requests.

Georgia should ensure that the water management plans specifically addresses cleanliness and sewage discharges, and reuse strategies which have not been discussed in the Basin Advisory Committee meetings, which I attended three or four, and we have yet to address this issue and we feel that is, in fact, a serious issue that needs to be brought to the corps' attention.

The AFC must be managed as a system in a prudent manner. Low lake levels are very dangerous to boaters, swimmers and the economy. Reservoirs are significant investments, and should be managed accordingly.

A balance between endangered species and human requirements must be effective.

First of all, if we are talking about humans versus species, and I think you have addressed that accurately and we all feel the same way, and I think our membership would certainly agree with that.

The water flows at the Florida line for mussels and sturgeons should not be artificially inflated to a level greater than the natural water flows without reservoirs unless excess water flow capabilities exist.

Economic value of water must be evaluated before release decisions are implemented. As an example, Lake Lanier is in contribution to Georgia versus a very small oyster industry in Florida.

Establish a fair level of support for the endangered species, but not to the detriment of drinking water and safety. Mussels should not trump people.

Implement solid reinforced management of the AFC System, rather than overreacting to specific requests. Prevalidate all water release decisions with onsite visual inspections.

Set a lower limit for Lake Lanier (example 1060) and do not go below that limit. Consider raising full pool at Lake Lanier to 1,073 feet. This would be like adding 25 billion gallons to the reservoir to the system.

Consider closer management of the Flint River, particularly the withdrawal and permitting processes. Lake Lanier is the most valuable national resource in Georgia, certainly the most.

Lake Lanier must be kept clean and full for the economic vitality and growth of Georgia and prudent management of the system is essential for Georgia's objectives.

We appreciate your opportunity and thank you for allowing us to speak to you today.

Senator ISAKSON. Thank you, Ms. Joseph.

We will take 5 minutes each on questions. Mr. Chairman and Mr. Conway, I want to thank you. You mentioned the permit that Forsyth County has had for the corps, for roughly, I think 10 years; is that correct?

Mr. CONWAY. Actually, it goes back about 25 years, Senator.

Senator ISAKSON. The reason that I asked General Walsh the question about the four outstanding permits is one is in your—

Mr. CONWAY. That's correct.

Senator ISAKSON. In defense of Mr. Walsh, this communication you referred to was the communication between Secretary Woodley,

Senator Chambliss and myself, which we have a copy which we will submit and make a part of the record.

But in that, I just want the record to reflect that in that letter, responding to Senator Chambliss and myself, Secretary Woodley didn't just implement it. He flat out stated it's for the procedure process.

He is the superior to General Walsh, so I don't recall, General Walsh, what his answer was, but I knew on when I asked that question, on many occasions, you and I have had, as well as others, we have had outstanding permits for a long, long period of time.

Do you have an additional comment on that process?

Mr. CONWAY. No, I just—I think it is unusual that the corps can release billions of gallons of water in a matter of days or even hours, yet when the 11th Circuit Court of Appeals directed to the corps to vacate the order of the Alabama judge, that even after all of our correspondence, that the corps took the position that there may be an appeal so nothing could be done. It is incredible.

The perception seems to be that for the last 25 years, whatever Forsyth County has asked, the answer is always no. It's just a matter of what question you put before them and what region—

Senator ISAKSON. What is a "holdover water storage contract"?

Mr. CONWAY. The water storage contracts are what the withdrawer pays for the amount of water they take out. When we went and asked for a water withdrawal permit, I think it was back in the 1970s that the water contract first came up because they said we didn't have a water contract.

Then I think in the 1900s, it was denied that there was—well, what happened, when it got to be 2000, and I think it was around 2001 or 2002, that the compacts—these are called "the compacts," the water compacts, they were running out. What the corps did, they didn't renew any of those contracts.

So what they did was, when we asked for a permit for the water withdrawal, they said you don't have a holdover water contract, so that was created as a reason for saying we couldn't have it because we didn't have a storage contract.

So they said that they were holdover contracts and then they said again, just recently it came up that the water contracts were all let go so that nobody had a water contract. Yet when the judge's order was vacated and Woodley got involved in it, it came up again that said, you don't have a holdover water contract again.

So it came full circle to where you had it, it was the reason that the city only had a holdover water contract and we didn't, and then they said they had all expired.

Then the next time they came back, they said, well, there is hold-over water contracts again. So it is a moving target.

Senator ISAKSON. Ms. Joseph?

Ms. JOSEPH. Yes, sir.

Senator ISAKSON. During the period of time of the unfortunate 1.9 additional feet of 22 billion gallons of water was being released, our office received a number of phone calls from people concerned about the lake levels. I assume the Corps of Engineers received a lot of phone calls, too.

From your standpoint, how is the communication between the citizens, and in particular the citizens and the Corps of Engineers?

Ms. JOSEPH. We did have a number of responses of people who called and we referred them to the corps office, because we really did not have an answer at that particular point in time, except to tell them to call the corps.

Senator ISAKSON. Has that access been pretty easy in your case—

Ms. JOSEPH. Yes, I would say the corps was responsive in at least answering the questions.

I don't think at that particular point in time that people were saying they had observed by the dock, by whatever markers they may have at that particular location saying that they were well aware that there was a significant difference.

First of all, I would like to say that we did call, and I did speak to this lovely lady and I spoke to other folks and I spoke briefly with Jonathan Nathus, who is the resource manager, and they said it is obvious that the water is going down and I don't know at that point if they had an answer or they certainly would have told us.

Senator ISAKSON. Thank you very much.

Ms. Dunlap, I will talk to you in your hat as chamber—you cited in your testimony, and so did Ms. Joseph, the tremendous economic value of Lake Lanier's resources and what it does for the economy.

Do you know of any examples where businesses or companies considering coming into this area didn't because of the water problems?

Ms. DUNLAP. No, sir, at this time, I do not.

Senator ISAKSON. Has that question come up?

Ms. DUNLAP. Obviously, it would come up. I think it came up during the 4-year period of 1999 through 2001. You know, as we continued the dry period, we worked on that residential housing, and it has to do with companies and the wonderful resource of 38,000 acres and seeing a lot of red mud with the water of Lake Lanier so very low.

Senator ISAKSON. I want to commend all three of you and your testimony in particular. I am sorry the slide show didn't work as well as it was intended, because the handouts are beautiful, and I appreciate the comprehensive nature of Association Corps.

Without objection, this will become part of the permanent record.

Ms. DUNLAP. Thank you, Senator.

Senator ISAKSON. Senator Chambliss.

Senator CHAMBLISS. Do you have the potential for severe water crisis in your county and what can cure that crisis if that is the case.

Mr. CONWAY. We did have a water crisis that we had to do a reverse 911. Several weeks ago, our water levels got dangerously low to the point where we were concerned about health issues. We've had a firefighting issue with it, and our tanks got that low.

We have a usage problem in our county that we have gotten under control now, but the supply that we need and why we need the second intake is that the present intake we have is in a fairly shallow area.

At times in a drought like now, the water quality is not very good and it takes quite a bit of effort to treat it. We cannot physically pull out of that intake our present allocation for withdrawal

from the lake. It is for both the city and the county because we both draw out of the same lakes.

Senator CHAMBLISS. Ms. Joseph, you talked about your relationship with the corps.

Do you primarily speak with one voice for your membership or has everybody on their own contacted the corps? I want to know if everyone is getting the same answer.

Ms. JOSEPH. Senator, typically what we will do is, we have an executive director and she is in the office and takes care of all the issues and the calls and works out other numbers too. But typically she would, I don't think experience is the word for it, but accept the calls coming in.

In some instances, there are issues with the corps, not just water issues that our organization would be able to answer, but if we don't, we refer it to the corps.

Issues that are fairly common, we can usually handle that, and we act as a screening situation for them.

When it comes to little issues like, why can't I have a dock here and things like that, normal issues that new residents particularly have. We do refer to the corps on a regular basis.

I spoke with Mr. Davis yesterday regarding this meeting and other issues, so we do communicate frequently. Of course, I really don't know about the water issue, how many calls he's received. I don't know. I have no idea. I know we've had a number of calls.

Senator CHAMBLISS. Ms. Dunlap, what about your relationship with the corps, have you found the same that they have been receptive to the water issues?

Ms. DUNLAP. Senator Chambliss, I have lived on this lake—well, I won't say how many years, but I came to live in Hall County in the 1960s and have been here ever since.

I have a very good relationship with the Corps of Engineers and the local management. Irwin Topper, who was here for many years and then his successor have been open and receptive to the public and the Chamber of Commerce.

Jonathan Davis being very new on the job, his first day on the job was a meeting with some of you all, and I certainly get questions answered when I call him. I speak for the Chamber of Commerce, as well as the Water District.

In fact, Colonel Pete Taylor made a report to the Water District last year. But I will say sometimes when you get out of our area on some other areas as permitting reservoirs and other issues, it is kind of hard to tell where it goes. Whether it is Mobile, whether it is Savannah, and it is hard to get a straight answer.

Senator CHAMBLISS. I think it would be a good idea if we can get a copy of that 2001 Trade Association Study and attach it to the record.

Ms. DUNLAP. We have. I believe 25 copies were sent to Senator Isakson's office on Friday.

Senator CHAMBLISS. Very good.

Ms. Joseph, for the record, let's talk about some effects of the lower water levels this summer on the lake; and in particular, recreation is a critical part of the decisionmaking process, but also from the safety standpoint.

Can you tell us what issues we are facing right now at the lake?

Ms. JOSEPH. I would suggest, Senator, that significantly people who are not as familiar with the lake as some of the people who may live on the lake who know what some of the hazards would be involved, a separate issue would be brought there. I would think that some have been. There are, but then I don't know how widespread it is.

For example, if you had a marker indicating that there is a lower area, it may be a sand bar, or it could be a rock, a facility there, it can be located there, and it can spread out over a period—I mean, over a distance, but I'm not familiar with the process.

I would think that many people that navigate the lake who are residents who do it frequently are very much attuned to where these danger spots would be. But I would think that maybe additional markers because we don't know because when it goes low.

I didn't really know that that particular—I thought it was just the bar itself. It may run 50 or 60 feet out, it may be before an inch of rock. Some of those are exposed now that we hadn't seen recently. There are disadvantages to that, yes.

Senator CHAMBLISS. Thank you.

Senator ISAKSON. Congressman Deal.

Mr. DEAL. Let me, first of all, thank all the panel members. You all represent points of view that need to be heard, and I appreciate the corps being here for the purpose of hearing that.

Mr. Conway, I want to personally and publicly thank you for being an aggressive leader on this issue. You have represented your constituents well.

You have been an outstanding spokesman on the problems that exist. Perhaps some of the problems that should have been avoided and can be avoided. I would just like to amplify on the illustration that you gave earlier.

In your answer, you are not really for that you would like to have a larger withdrawal or a permit altogether on behalf of the county, but the current withdrawal apparatus with the piping in such shallow water, it is impossible to currently withdraw the level that you are already, that you and the city of Cumming are already authorized to withdraw; do I understand that correctly?

Mr. CONWAY. That's correct.

Mr. DEAL. That is the reason for your request for the secondary easement for purposes of additional water outtake pipe. Not for new water, but just to be able to take advantage of the authorized permit level that has previously been granted. Is that correct?

Mr. CONWAY. That's correct, Congressman.

Mr. DEAL. I have said this to the corps, and I'll say it again, it seems that once these legal impediments have been removed, and I think that most of them have now maybe been removed, that seems like a reasonable request.

I would hope you would give priority to that consideration because this is not the withdrawal amount, it is just taking what has been already been authorized by the corps.

Two, just to re-emphasize the point, tell us where you are in terms of population of growth in Forsyth County.

Mr. CONWAY. Congressman, first of all, thank you for the kind words. I appreciate that. Not too many people know how much I have done on water over the last few years, but I think that you

guys have seen me a number of times and you know that I have a passion for this and it is something that is very important to our county.

Our county has topped the 140,000 citizen mark. This past year, we have grown by about 8,500 residents. It looks like we will continue to grow at that pace for at least the next several years because there is that much growth.

Mr. DEAL. You have consistently within the decade been either the fastest growing within the top 10 fastest growing counties in the United States. Is that not right?

Mr. CONWAY. Yes, sir, Congressman. However, this past year, we're dropped down to 14.

Mr. DEAL. Oh, not enough water.

Mr. Conway, I want to thank you too because we've all had a close working relationship with your Association and appreciate the efficacy that that Association puts forward.

I would like to touch upon the one, the point in your presentation about the possibility of raising the pool level of Lake Lanier by an additional 2 feet, which I think the calculation is that would be an additional 25 billion gallons of storage.

You hear all sorts of arguments about the effects of raising or even lowering, in some cases, pool elevation level.

One of the concerns I have had, and it becomes very obvious in some of these periods when the level drops precipitously, is that this constant ebb and flow has a huge erosion factor associated with that, does it not?

Ms. JOSEPH. Yes, it does have an erosion factor. But in our opinion, in talking also I might insert this, that I have spoken with several people. I have spoken also with residents, individuals—and the feeling is it would not be, other than the erosion issue, it would not be an impact on anyone's—either dock or anyone's residence, that they wouldn't feel that there was any problem with that.

They would like to see that versus actually having the water where it is today. In other words, another important factor, but I don't think it would—is what I would ascertain from discussions with people.

Mr. DEAL. My recollection is that several years ago when we got very close to thinking we had the greatest amount of three States, that the raising of Lake Lanier's pool level by 2 additional feet was a part of that.

It was almost to the point of being finalized at one point, but the signatures weren't forthcoming. But I didn't think it is a significant part of hopefully, any new proposed water plant for the lake.

Could I ask one very quick question, if I may, I know my time is up.

Senator ISAKSON. Sure.

Mr. DEAL. Ms. Dunlap, thank you for what you do. I know your group has been very active in trying to promote conservation alluded to in the handouts that are here.

Could you, rather quickly, tell us what you have done, because I don't know if people who are not from this area just think we are trying to get greedy with the water. I think they need to know that we are doing this and continuing to promote conservation practices. Would you refer to some of them?

Ms. DUNLAP. Thank you, Congressman Deal. Our plans were adopted in 2003, which is a very short time ago. But since then, we have put in place policies for 16 counties to regulate water supply, storm water, waste water management.

We are dealing with, like I say, almost a hundred municipalities that in some way adopted these measurements. Certainly water conservation is a part of it. Our education process, educating the public, elected officials the need for water conservation—

We have put in place—of course, the basic premise of our whole water district plan is to return water to its source and construct new reservoirs.

So I would say the adoption of our three plans by these municipal governments have greatly affected water conservation positively. We have a long way to go, but I think we have come a long way in conservation.

But we need to all be working together. I would say this, that unless we have a strong management plan or our greatest resource, then it is hard for us to work our plan.

Mr. DEAL. Thank you.

Senator ISAKSON. I want to thank our panelists. Let's give them a round of applause.

Senator CHAMBLISS. Let me just make a quick comment.

We do have an ongoing dialogue, obviously, Nathan lives here. All three of these folks have been terrific in staying in touch with our office even on the smallest of issues.

We can't tell you how much we appreciate that because, if we don't know what is going on, it's difficult for us to react.

So they represent you folks well. So all three of you, thank you for what you do for us.

Senator ISAKSON. It is about 10 minutes to noon, so we all get out a little bit early—let's see if anybody has any questions for the three of us.

If anybody has one, raise your hand; if you don't, we will adjourn the hearing.

Yes, sir. State your name and where you reside and speak loudly.

Mr. SLOAN. My name is Michael Sloan, and I live in Forsyth County.

Congressman Deal, several months ago, I believe you wrote a letter to Colonel Taylor in reference to the issue at Bethel Park and why that park had not been offered to Forsyth County in accordance with Federal regulations.

As far as the residents of the county know, at this time, there has been no response from the corps to your request.

Additionally, the county sought a freedom of information request from the corps for them to present their documentation that they hadn't got offered that park formally to Forsyth County.

Do you have any information on that?

Senator ISAKSON. Before you answer—in keeping with the rules of the Senate, I will officially adjourn this meeting to questions and answers which may be about other issues so it doesn't become a part of the permanent record. So for technical purposes, we stand adjourned.

[Whereupon, at 11:53 a.m., the committee was adjourned.]

[Additional statements submitted for the record follow:]

## STATEMENT OF SONNY PERDUE, GOVERNOR, STATE OF GEORGIA

I would like to thank the Senate Environment and Public Works Committee for conducting this field hearing today on this very important issue. I would also like to thank Senator Saxby Chambliss, Senator Johnny Isakson and Congressman Nathan Deal for their leadership on this issue.

The issue of the United States Army Corps of Engineers' (Corps) management of the ACT and ACF river Basins is both timely and significant. The rivers that make up these basins are among the State of Georgia's most precious natural resources. Waters arising and flowing in Georgia are waters of the State of Georgia, and the federal reservoirs constructed on them should be operated by the Corps to meet vital needs of Georgia's citizens, including water supply, waste assimilation, recreation and navigation, and support of the biological needs of a wide variety of species.

In March of this year, the Corps announced a new reservoir management plan for the ACF Basin reservoirs called the Interim Operations Plan (the IOP). The IOP was intended to support the needs of the endangered Gulf sturgeon during its spring spawn and the needs of two species of protected mussels in the summer. While the intention of the IOP may be good, the State of Georgia is concerned that it mandates the release of far more water than is necessary for the protection of these species and depletes the water storage upon which people and wildlife—including the protected species at issue—depend. Unfortunately, the Corps has largely dismissed Georgia's concerns.

- On May 5, 2006, Dr. Carol Couch, Director of Georgia's Environmental Protection Division, wrote a letter to the Corps enclosing hydrologic data showing that the Corps' continued operations could draw down the federal reservoirs in the ACF Basin to their lowest level in 50 years and could effectively empty them.

- On June 1, 2006, Dr. Couch sent a letter to the Corps and the U.S. Fish and Wildlife Service (FWS) requesting specific changes to the IOP.

- On June 2, 2006, I wrote Secretary of the Army Frances Harvey sharing Georgia's concern that "unless the Corps changes its operating protocols, the reservoirs and lakes in the system will be drawn down to their lowest level in recorded history."

- Also on June 2, 2006, Dr. Couch sent a letter to Colonel Peter Taylor and FWS with an attached memorandum providing additional results of the simulation of the IOP using data and information received from the Corps.

- On June 6, 2006, I personally met with General Michael Walsh and Colonel Taylor again expressing these concerns.

- By June 9, 2006, the State had received no material responses from the Corps in response to its letters. Thus, on June 9, 2006, Dr. Couch wrote the Corps another letter demanding specific revisions to the IOP.

- On June 12, 2006, the Corps responded by letter to Dr. Couch's June 1 and June 2 letters. The Corps challenged what it believed to be certain of the assumptions underlying Georgia's simulations of the IOP, but did not provide data to allow Georgia to assess the validity of the Corps' assertions or to fully evaluate the discrepancies between the Corps' and Georgia's models.

- The Corps repeatedly put off responding to our June 9, 2006 letter that demanded changes to the IOP. After several requests for more time, the Corps finally stated that it would not respond to the June 9, 2006 letter because of unidentified "concerns raised by the other parties to the litigation." In fact, the Corps did not respond to Dr. Couch's June 9 letter until June 21, 2006.

In the midst of all of this, the Corps admitted to releasing more than 22 billion gallons of water from Lake Lanier by mistake—at a time when the region was approaching what is traditionally the driest time of the year. By this mistake, they essentially created a "man made" drought on top of a natural drought.

The 22.5 billion gallons of water that the Corps mistakenly released corresponds to 6.3 percent of Lake Lanier's conservation, 22.5 percent of West Point's, and 28.2 percent of Walter F. George's (Lake Eufaula) storage conservation.

This year, 2006 is 1 of only 2 years in Lake Lanier's history when the lake fell during the period of January through May, which is normally a time of refill, even in drought years. The other year when this occurred was during the drought of 1986. Submitted with my testimony is a chart that shows the drop in Lake Lanier levels this year compared to lake levels experienced during the drought of 1999–2001. This chart shows:

- Lake Lanier was able to rise in elevation for the same period (January 1 to June 1) even during the 1991–2001 drought, the most severe drought in history for the ACF Basin.

- For example, Lanier began 2006 more than 5 feet higher than it began 1999, but the Lake is now more than two and a half feet lower than it was on August 3, 1999.

- For example, on January 1, 2006 Lanier elevation was 13 feet higher than the January 1, 2001 level, yet last night's elevation was less than one and a half feet higher than at the same time in 2001.

- This unprecedented loss of storage, with the perspective of what happened in the past droughts, is clearly the result of the IOP (which was not a part of the past reservoir operations), in particular the magnitude of flow it calls for during the spawning season (March through May).

The unfortunate actions by the Corps and the Corps' repeated lack of response to our concerns left Georgia with no alternative but to take legal action to protect our water resources. As you are aware, the State of Georgia filed a complaint in the Northern District of Georgia to stop the Corps' continued operation according to the Interim Operations Plan. This case is pending.

Litigation is never how I choose to deal with issues. As I explained earlier, we have tried to impress our concerns upon the Corps. The Corps has been largely non-responsive. The threat to the State of Georgia is urgent and the situation demands immediate action.

We have challenged the IOP because the Corps must allow the lakes to refill and recover the lost stored water. Common sense tells us that you cannot manage a system of reservoirs if you never store any water. The Corps' Interim Operations Plan was adopted without any prior notice, without any public participation, without analysis of its impact on authorized purposes for which the federal reservoirs were constructed, without consideration of its impact on the water supply security for the millions of people who rely on the Chattahoochee reservoir system for water supply, without consideration of its long-term sustainability or its long-term impact on federally protected species, and without consideration of alternatives. The result is an unbalanced plan that poses a severe risk of substantial harm to the State of Georgia.

In fact, the Interim Operations Plan is essentially a water control plan. A water control plan that was adopted without any public comment or notice and taking only one factor into consideration—endangered species. Georgia has long advocated that the Corps should update its master control plan for both the ACF and ACT basins—which it has not done in over 50 years. As a result, the Corps is operating these complex systems without reliable and predictable operating rules tailored to current demands and conditions within the Basins. Indeed, the Corps' own regulations provide that water control plans should be updated periodically in light of changing demands and other conditions. And there is no question that over the last 50 years the ACF and ACT Basins in Georgia have changed dramatically.

The Federal Government itself recognized the need for current plans. The Federal Emergency Management Agency (FEMA) is investing millions of dollars in updating floodplain maps. This is a response to growth in Georgia and Alabama that has altered the flood characteristics of watersheds. The Corps needs to incorporate these altered flood characteristics into updated operation manuals to ensure protection of life and property in both states.

Further, inefficient, inaccurate, or unpredictable operation of the ACF and ACT systems results in growing uncertainty about the supply of water for more than half of Georgia's citizens and for facilities such as the Farley Nuclear Plant and other powerplants. The water control plans also should be updated as part of implementing the 2003 settlement reached by the Corps, Georgia, and other parties that will help ensure that metropolitan north Georgia's water needs for the next decade will be met.

The failure of the Corps to update the water control plan is also affecting a stated purpose of lakes in the basin—recreation. West Point officials have asked the Corps to raise the level of the lake by two feet in the winter when water is plentiful to accommodate recreational needs that have a significant impact on the region's economy. But Corps officials have said that they have to adhere to the elevation levels in the IOP.

What does all of this mean? The Corps is providing flows for endangered sturgeon and mussels under an IOP that was developed without studying its full effects and without properly updating the Corps' grossly outdated water control plans. The Corps' performance under the IOP this year demonstrates that it is not a sustainable plan. With a continuation of this dry year, Lake Lanier, Lake Eufaula (Walter F. George), West Point and Seminole will all drop to levels that will put at risk water supply, water quality, endangered species and other wildlife, and will be devastating to recreational boating and fishing that support the local economies.

In closing I would like to say that I cannot believe Congress passed the Endangered Species Act with the intention of providing substantially more protection for the species than for human beings. The Corps can provide for both the needs of the endangered species and the needs of humans upstream if it operates wisely and is guided by sound science and good planning. For example, I do not believe that Congress intended that the Corps provide the species with more water than even the natural environment would support, particularly when it comes at such a great cost upstream. Even at a flow of 5000 cubic feet per second, which the Corps IOP calls for, and under which we operate today, mussels are getting more water now than they would if no dam had been built and no reservoirs created.

It is time for common sense to prevail on this issue. That is what we want from the Corps when asking that they update 50-year-old water control plans. That is what we seek through our request to stop the release of water greater than nature would provide. And that's the approach I will take when I sit down with Governor Riley on August 14th.

Thank you again for this opportunity.

**Georgia Department of Natural Resources**  
2 Martin Luther King Jr., Drive, Suite 1152 East Tower, Atlanta, Georgia 30334  
Noel Holcomb, Commissioner  
Carol A. Couch, Ph.D., Director  
Environmental Protection Division  
(404) 656-4713

May 5, 2006

Colonel Peter Taylor  
Commander and District Engineer  
Department of the Army  
Mobile District, Corps of Engineers  
190 Saint Joseph Street  
Mobile, Alabama 36602-3630

Re: Corps ACF Operations

Dear Colonel Taylor:

I am writing to alert you to what the State of Georgia fears could be devastating consequences of the Corps of Engineers' current ACF Basin reservoir operations. Our computer modeling shows that, if the Corps continues on its present course, before the end of this year, the Corps could draw down the federal reservoirs in the ACF Basin to their lowest levels in 50 years and, even worse, could effectively empty them. My staff has tried repeatedly to no avail to exchange information and discuss this with Corps personnel over the past couple of weeks. I request that you review this situation immediately and assure us that the Corps is taking appropriate action to protect the water stored in the ACF Basin reservoirs from significant and unnecessary depletion.

As you know, by letter dated March 7, 2006 to the U.S. Fish and Wildlife Service, the Corps requested initiation of formal consultation regarding the Corps' operations at Jim Woodruff Dam pursuant to Section 7 of the Endangered Species Act. In that letter, the Corps confirmed that, pending completion of the formal consultation, the Corps would operate in accordance with an Interim Operations protocol set forth in the letter and an attached table in an effort to minimize to the extent practicable and feasible adverse effects of the Corps' operation of Jim Woodruff Dam on the listed species within the Basin. That protocol specified the following operational rules:

During the months of March through May: (a) when Basin Inflows are greater than or equal to 37,400 cubic feet per second (cfs), the Corps would release no less than 37,400 cfs from Woodruff; (b) when Basin Inflows are between 20,400 cfs and 37,400 cfs, the Corps would release between 70% and 90% of Basin Inflows, but not less than 20,400 cfs; and (c) when Basin Inflows are less than 20,400 cfs, the Corps would release 100% of Basin inflows, but not less than 5,000 cfs.

From June through February: (a) when Basin Inflows are greater than or equal to 37,400 cfs, the Corps would release no less than 37,400 cfs from Woodruff; (b) when Basin Inflows are between 8,000 cfs and 37,400 cfs, the Corps would release between 70% and 90% of Basin Inflows, but not less than 8,000 cfs; and (c) when Basin Inflows are less than 8,000 cfs, the Corps would release 100% of Basin inflows, but not less than 5,000 cfs.

The protocol also set forth certain rules limiting the rates at which the Corps would ramp-down releases (between .25 and 1 foot per day, depending on the current release range) as Basin Inflows fall.

The State of Georgia has been monitoring Basin Inflows since the Corps announced the Interim Operations protocol. According to our data, Basin Inflows have dropped rapidly as the spring has progressed. Over the past several weeks, Basin Inflows have resembled, and in some instances have been lower than, inflows experienced during the severe drought of 2000. The attached memorandum by Dr. Wei Zeng of Georgia EPD, including particularly Figure 1 to the memorandum, compares Basin Inflows during the spring in 2006 and 2000. We are concerned that if climatic conditions do not change significantly, we could continue to see inflow rates through the rest of the year that resemble year 2000 conditions.

We also have been monitoring carefully the Corps' releases from Jim Woodruff Dam this spring and analyzing the potential effect on the federal reservoirs if the Corps continues to operate in its current manner. The Corps' recent operations have resulted in the release of significantly greater than 100% of Basin Inflows. We are unable to determine whether this is wholly the result of the limitations on ramp-down under the Interim Operations protocol or instead is due in part to operational imprecision or error. What we do know is that the over-release of Basin Inflows is significant. From March 15 to the end of April, the Corps released 68,999 cfs-days (136,618 acre-feet) more than Basin Inflows. This amount is equivalent to 56% of Walter F. George's conservation storage, 42% of West Point's, or 12% of Lanier's.

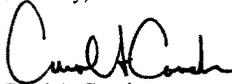
Dr. Zeng's memorandum discusses the potential consequences of the Corps' continued operation of the federal reservoirs under the Interim Operations protocol, assuming that Basin Inflows continue to resemble those of 2000. Dr. Zeng analyzes three scenarios, each of which produces the alarming results, as shown in figures 2 through 4 of the memorandum. Assuming that the Corps were to operate strictly in accordance with the Interim Operations protocol for the rest of the year and did not limit ramp down or otherwise over-release Basin Inflows, Lake Lanier would drop to a level of 1050 feet above mean sea level by the first of November 2006. Lake Lanier has not fallen to this low a level since its early years in the 1950's. Such draw down would place Georgia's water supply, and water quality and biological resources throughout the ACF Basin, in jeopardy, particularly if drought conditions were to continue beyond the end of this year. Over-releases and limitations on ramp-down would exacerbate the draw down, as would the imposition of a minimum flow requirement of greater than 5,000 cfs at the Chattahoochee Gage during the summer months. Any one or a combination of those factors could drain completely the conservation pools of Lake Lanier, West Point, and Walter F. George, the results of which would be nothing less than catastrophic.

I request that you review the situation immediately. Please confirm whether the Corps is releasing any water in excess of that mandated under the Interim Operations protocol.

Furthermore, I request that the Corps perform and share with the State of Georgia as soon as possible its own analysis of the effect of the Corps' continued adherence to the Interim Operations protocol in the event that the current drought conditions continue through this year and beyond. Finally, I request that the Corps proceed with extreme caution and, if necessary, consult with the Fish and Wildlife Service on modification of the Interim Operations protocol so as to avoid substantial depletion of ACF Basin storage.

A prompt response to these concerns would be appreciated by Wednesday, May 10. In follow up, please contact Jim Ussery, EPD Assistant Director, 404/656-4713.

Sincerely,



Carol A. Couch  
Director

CAC:ypf

ATTACHMENT

cc: Brigadier General Michael J. Walsh, South Atlantic Division  
U.S. Army Corps of Engineers  
Governor Sonny Perdue



DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, AL 36628-0001

**MAY 15 2006**

Inland Environment Team  
Planning and Environmental Division

Carol A. Couch, Ph.D, Director  
Environmental Protection Division  
Georgia Department of Natural Resources  
2 Martin Luther King, Jr. Drive  
Suite 1152 East Tower  
Atlanta, Georgia 30334

Dear Dr. Couch:

I received your letter dated March 24, 2006, addressed to Ms. Gail Carmody of the U.S. Fish and Wildlife Service (USFWS) and myself in which you offered assistance in providing technical input and support to assess the potential for impacts of the U.S. Army Corps of Engineers (Corps) water management operations at Jim Woodruff Dam to federally-protected species, and to ensure that the biological opinion prepared pursuant to consultation under Section 7 of the Endangered Species Act is based on the best scientific and commercial data available. I have also received your letter dated May 5, 2006, which provided the results of certain hydrological modeling conducted by the State of Georgia and expressed concern that the Corps may be releasing water in excess of that required by the Interim Operations Plan submitted in our request to initiate formal Section 7 consultation under the Endangered Species Act. Copies of your correspondence are enclosed for reference.

Your letter dated May 5, 2006, noted that the State of Georgia has been closely monitoring basin inflows in the Apalachicola, Chattahoochee, Flint (ACF) river basin and releases made from the Jim Woodruff Dam. You noted that the current conditions in the basin, specifically the declining basin inflows this spring that have dropped to levels approaching those during the drought year of 2000, and concern that the low flow conditions could potentially continue through the rest of the year. Concerns were also expressed that releases from Jim Woodruff were in excess of the 100 percent of basin inflows required under the Interim Operations Plan, and that the continued release of flows in excess of basin inflows could result in a dramatic drawdown of the federal reservoirs if dry conditions similar to the year 2000 continue.

We have also been closely monitoring basin inflows and adjusting our operations in accordance with the Interim Operations Plan. We agree that releases have at times exceeded 100 percent of basin inflow and this is primarily due to the ramp-down rates that are specified in the plan. Other factors include releases made that were in excess of the basin inflow when water was not being retained for storage in early March and our conscious efforts to minimize or avoid impacts to the Gulf sturgeon spawning activities below the Jim Woodruff Dam due to our continued consultation with the USFWS. We continue to refine our operations within the

constraints of the Interim Operations Plan to make every effort to match releases to the basin inflows as called for in the plan, with due caution in order to protect the federally-protected species, and with the awareness of other project purposes and demands on the ACF system. It is also significant to note that real world operations will not be as precise as conditions observed in a model simulation.

We have reviewed the modeling results by Dr. Zeng, which were enclosed in your May 5 letter. It appears that Dr. Zeng's analysis of the Interim Operations Plan as he carried it out through November 2006 assumed that the releases from Jim Woodruff Dam would not drop below a minimum flow of 8,000 cubic-feet per second (cfs). The Interim Operations Plan states that from June through February, when basin inflow is between 8,000 and 37,400 cfs, that the releases from Jim Woodruff Dam would be at least 70 percent of basin inflow, but not less than 8,000 cfs. Additionally, when basin inflow drops to below 8,000 cfs, the discharge from Jim Woodruff Dam will equal basin inflow until basin inflow is less than or equal to 5,000 cfs. At that point, the minimum flow will equal 5,000 cfs. Our analysis shows a much less severe impact to system lake levels than that presented by Dr. Zeng when using the specified 5,000 cfs minimum flow from Jim Woodruff versus the much higher 8,000 cfs assumed by Dr. Zeng.

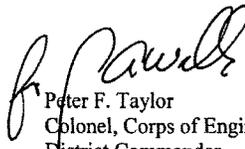
The Corps is continuing discussions with the USFWS concerning the formal Section 7 consultation process. As part of these discussions, we are addressing the impacts of the Interim Operations Plan, including the ramping rates, on upstream reservoir levels. In order to assess these impacts, we plan to conduct hydrological modeling of the Interim Operations Plan, which will also address potential adjustments to the plan if determined necessary. We have discussed with the USFWS your previous offer to assist in developing the best available scientific information which can contribute to the evaluations and findings in the Biological Opinion. Although it would not be appropriate to allow a third party to join the consultation process, both agencies want to assure we are using the most appropriate modeling tools and best scientific information available to assist in completing a biological opinion, and agree that it would be helpful to confer with others with technical modeling expertise. The Corps and USFWS have therefore scheduled a modeling workshop to be held on May 24-25, 2006, at the Lake Seminole Resource Management Office, near Chattahoochee, Florida. The purpose of the workshop will be to assure that there is a common understanding of the elements of the Interim Operations Plan, what it is intended to achieve, and what can be expected to be observed in real time operations when implementing the Interim Operations Plan. The technical group would then assure that the appropriate modeling assumptions, tools, and procedures are selected and implemented to portray the impacts of the Interim Operations Plan or any alternative operations procedures as accurately or closely as possible.

By this letter, we are extending an invitation to the State of Georgia to provide technical representation at the workshop scheduled for May 24-25. The workshop will be scheduled to begin at 10:00 a.m. central daylight time (11:00 a.m. eastern daylight time) on Wednesday,

May 24 and should conclude by noon on Thursday, May 25. We only request that attendance at the workshop be limited to technical representatives and that no attorneys be present.

Please notify Ms. Joanne Brandt, Corps Inland Environment Team, of your acceptance of this invitation and provide her with the names of the representatives who plan to attend so we will know who to expect at the workshop. She can be reached by telephone at (251) 690-3260 or by email at: [joanne.u.brandt@sam.usace.army.mil](mailto:joanne.u.brandt@sam.usace.army.mil).

Sincerely,

 LTC, EW  
Peter F. Taylor  
Colonel, Corps of Engineers  
District Commander

Enclosures

**Georgia Department of Natural Resources**  
2 Martin Luther King Jr., Drive, Suite 1152 East Tower, Atlanta, Georgia 30334  
Noel Holcomb, Commissioner  
Carol A. Couch, Ph.D., Director  
Environmental Protection Division  
(404) 656-4713

May 17, 2006

Colonel Peter Taylor  
Commander and District Engineer  
Department of the Army  
Mobile District, Corps of Engineers  
190 Saint Joseph Street  
Mobile, Alabama 36602-3630

Re: Corps ACF Operations

Dear Colonel Taylor:

I received your letter of May 15, 2006 in response to my letters of March 24, 2006 and May 5, 2006. I and members of my staff will attend the workshop that you have proposed for May 24-25 to discuss the Corps' Interim Operations and alternative operations procedures. As your letter notes, I have requested repeatedly that the Corps and the Fish and Wildlife Service allow Georgia the opportunity to provide input during the course of the current Endangered Species Act formal consultation. The necessity for us to do so has become more evident as we have observed the effects of the Corps' Interim Operations.

On that point, please allow me to clarify the computer modeling that I shared with my May 5, 2006 letter, as there appears to be a significant misunderstanding regarding assumptions that has caused the Corps to discount the validity of Georgia's concerns. In your letter, you state that Georgia's modeling runs "assumed that the releases from Jim Woodruff Dam would not drop below a minimum of 8,000 cubic-feet per second (cfs)." You point out that the Interim Operations protocol establishes a minimum flow of only 5,000 cfs and conclude that modeling the Interim Operations with a 5,000 cfs minimum flow produces much less severe results. In fact, however, of the six model runs that were summarized in the memorandum that accompanied my letter, only two (Runs F0503V3 and F0505V3) assumed a minimum flow of 8,000 cfs. The other four assumed that the minimum flow would be 5,000 cfs.<sup>1</sup>

While it is true that the results are less severe when one assumes a minimum flow of 5,000 cfs rather than 8,000 cfs, the results of all the runs are severe nevertheless. For example, as Runs F0503V2 and F0505V2 show, operating according to the Interim Operations under year 2000 conditions could draw down Lake Lanier to an elevation of 1050 feet, an elevation lower

<sup>1</sup> You will note that in the two charts in Dr. Zeng's memorandum that summarize the assumptions of the models, six of the eight runs have the word "none" in the column labeled "8,000-cfs non-spawning season minimum flow requirement." This was intended to indicate that the 8,000 cfs minimum was not assumed in those runs.

than any seen since the 1950's. Draining Lake Lanier to such a low level could cause serious harm throughout the ACF Basin in 2006 and for years to come. If the Corps continues to release in excess of 100% of Basin Inflows (as it is doing now), or must maintain a minimum flow of greater than 5,000 cfs, Lake Lanier and other the federal reservoirs will fall further and could reach the bottom of their conservation pools. For these reasons, Georgia remains extremely concerned about the Corps' Interim Operations and believes that the Corps and Fish and Wildlife Service should carefully evaluate whether they should be modified prior to the completion of the formal consultation.

I request that the Corps' technical staff once again review the modeling results that I have provided in light of the above clarification. We would be pleased to provide you with additional information to assist you in your analysis. In return, I request that the Corps share with Georgia's technical team the Corps' own computer modeling of the Interim Operations under the same assumptions and any other assumptions that the Corps has evaluated. If indeed the Corps does not share Georgia's fears about the potential effect of the Interim Operations, we would like to understand the basis for the Corps' conclusions.

Given the seriousness of Georgia's concerns, I request that you respond to the above requests as soon as possible. It would greatly aid our discussions in the workshop if the Corps would respond before May 24. Thank you again for your attention to this matter.

Sincerely,

Carol A. Couch  
Director

cc: Brigadier General Michael J. Walsh, South Atlantic Division, U.S. Army Corps of  
Engineers  
Governor Sonny Perdue  
Ms. Joanne Brandt, Corps of Engineers Inland Environmental Team



DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

May 19, 2006

REPLY TO  
ATTENTION OF

Plan Formulation Branch  
Planning and Environmental Division

Dr. Carol A. Couch, Ph.D, Director  
Environmental Protection Division  
Georgia Department of Natural Resources  
2 Martin Luther King, Jr. Drive  
Suite 1152 East Tower  
Atlanta, Georgia 30334

Dear Dr. Couch:

Thank you for your letter of May 17, 2006, which provided clarification of Dr. Zeng's modeling results previously furnished in your May 5, 2006 letter. You also expressed concerns regarding the impact of the Interim Operation Plan on the ACF system. Our review of Dr. Zeng's modeling is underway. At the workshop scheduled for May 24-25, 2006, we will be presenting our assumptions and model results and we will listen to any concerns that the states may have. I appreciate your desire to provide input regarding the Interim Operations Plan. Both the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service want to convey that we are using the most appropriate modeling tools and best scientific information available to assist in completing a biological opinion. This can best be accomplished by conferring with others, such as Dr. Zeng, who has technical modeling expertise.

Although we have not completed our review, we have identified several different model input assumptions that may be contributing to differences in our modeling results. One such area of difference may be the consumptive water use demands. We are using the actual 2000-2001 consumptive use demands in our calculations. If a different demand set were used, for example the projected 2030 demands, results could differ appreciably. Another area that could greatly influence model results would be the hydropower demands placed on each reservoir project. We have assumed that due to the current basin-wide low flow conditions, coupled with the flows required under the interim operations plan, that we would not place heavy firm energy requirements on Buford if drought conditions develop and persist in the basin. If high firm energy demands were placed in the model at Buford in addition to the demands of the Interim Operations Plan, lake levels could be expected to be lower later in the year. There are many other modeling assumptions that could influence estimated future pool levels; model time step, inflow data sets used, ramping rates below Jim Woodruff, and assumptions regarding the level of flow support from each system reservoir, to name a few, and we look forward to discussing next week.

We are open to sharing our modeling information and assumptions necessary for your modelers to capture the operations of the system and to incorporate the Interim Operations plan into the models. It is our hope that causes for differences in model results can be determined and clarified at the modeling workshop to be held on May 24-25, 2006. Our modelers and water managers will be in attendance and prepared to discuss modeling techniques, assumptions, and data to assist all parties reach a common understanding of the Interim Operations Plan and its effects on the entire ACF system.

We look forward to working with all the modelers at the workshop next week.

Sincerely,



Peter F. Taylor, Jr.  
Colonel, Corps of Engineers  
District Commander.

**Georgia Department of Natural Resources**

2 Martin Luther King Jr., Drive, Suite 1152 East Tower, Atlanta, Georgia 30334  
Noel Holcomb, Commissioner  
Carol A. Couch, Ph.D., Director  
Environmental Protection Division  
(404) 656-4713

June 1, 2006

Col. Peter Taylor  
Commander and District Engineer  
Department of the Army  
Mobile District, Corps of Engineers  
190 Saint Joseph Street  
Mobile, Alabama 36602-3630

Ms. Gail Carmody  
Ecological Services  
U.S. Fish and Wildlife Service  
1601 Balboa Avenue  
Panama City, Florida 32405-3721

Re: ESA Consultation on Corps of Engineers' Operation of Jim Woodruff Dam

Dear Col. Taylor and Ms. Carmody,

In follow up to my prior correspondence and the workshop that the Corps of Engineers and Fish and Wildlife Service hosted on May 24-25, 2006, I am writing to express the State of Georgia's continued concerns about the Corps' Interim Operations and the ongoing consultation pursuant to Section 7 of the Endangered Species Act, and to request an extension of the consultation. As discussed below, the State of Georgia requests (1) that the Corps thoroughly reconsider the Interim Operations in light of the State of Georgia's findings that the continued operation of the federal reservoirs in the ACF Basin thereunder is unsustainable and threatens not only the endangered species but other vital needs within the Basin; (2) that, during any delay in replacing the Interim Operations with an alternative management protocol, the Corps immediately undertake measures identified by the State of Georgia to mitigate the negative effects of the Interim Operations; and (3) that the Corps and the Fish and Wildlife Service extend the consultation so that the Corps and the Service have the opportunity to consider the best scientific and commercial data on the endangered and threatened species and the hydrologic data and analysis necessary to meet the needs of those species while meeting the other vital needs within the Basin.

*1. Reconsideration of the Interim Operations*

The State of Georgia has demonstrated that the Interim Operations have the potential to produce very harmful effects within Georgia and throughout the ACF Basin. As explained in my letter of May 5, 2006 and the memorandum by Dr. Wei Zeng attached to that letter, the Interim

Operations could draw Lake Lanier down to levels not seen since it first was constructed in the 1950's, or, even worse, could completely deplete the storage of all of the federal reservoirs in the ACF Basin. The possibility of this occurring is not remote; indeed, given the current extremely dry conditions, low reservoir and river levels are a very real danger. This, in turn, could produce lower flows in the Apalachicola River than any that have been seen in history. Even if the consequences this season are not this dire, our analysis indicates that the flows prescribed under the Interim Operations cannot be sustained in dry conditions such as this on a multi-year basis.

To date, we have received nothing from the Corps in written response or during the workshop that would indicate that our analysis is incorrect or our fears unfounded. Rather, the clear impression that we derive from the Corps' correspondence and remarks of Corps personnel at the workshop is that the Corps, prior to the request for consultation, had not undertaken a thorough and appropriate analysis of the Interim Operations, and is waiting until after the formal consultation is completed to consider making the necessary changes to reservoir operations to address the concerns that Georgia has raised. In our view, these issues are too important not to be considered and acted upon right away.

Of additional concern is that the proposed action (some manner of implementing the Interim Operations) is unclear and ill defined. In short, we are not certain of the proposed action being reviewed. In response to Georgia's concerns about over-releases of Basin Inflows (discussed further below), for example, the Corps in the workshop explained that the instructions regarding the release of certain percentages (including 100%) of Basin Inflows constituted a minimum and not an upper bound on releases from Jim Woodruff Dam. The Interim Operations table and narrative set forth in the formal consultation letter do not indicate that there is no upper bound on releases, and this was the first that Georgia had heard of this interpretation. This interpretation is alarming because without any upper bound on releases, the Corps and the States cannot evaluate fully the effects of the Interim Operations and ensure that they will not cause great damage to the Basin.

We acknowledge that in the formal consultation letter, the Corps expressly reserved the right to alter the flow numbers prescribed by the Interim Operations "based on better information that may be developed during the Section 7 consultation process." We request that the Corps undertake the appropriate analysis and reconsider the Interim Operations to ensure that the Corps conserves the water resources of the ACF Basin to meet vital needs throughout the ACF Basin, including but not limited to the needs of the protected species.

## *2. Mitigation of Adverse Impacts of Operating under the Interim Operations*

Even within the parameters of the Interim Operations, the Corps is not taking all of the actions that it could to conserve water and mitigate adverse consequences of the Interim Operations. For example, despite knowing that the Interim Operations prevent the Corps from ramping down releases as rapidly as Basin Inflows are dropping, the Corps has failed to limit its ramp-up of flows in response to rainfall so as to prevent a significant aggregate over-release of Basin Inflows. Rather than releasing the required percentage of Basin Inflows, the Corps has on repeated occasions released more than 100% of Basin Inflows. We also have asked that while the current dry conditions persist, the Corps commit to reducing or eliminating peaking power generation at Buford Dam to the extent that it would involve releases in excess of those needed for other purposes. While Corps personnel have said that the Corps would likely shift power demand from Lake Lanier to other projects under such conditions, we have no commitment from

the Corps that it actually will do so. In light of falling reservoir levels and our projections of reservoir levels that result this year, the Corps' failure to assure us that it is undertaking all actions permissible under the Interim Operations to conserve water is untenable.

Corps personnel did indicate at the workshop that the Corps would consider certain alterations of its management under the Interim Operations to conserve water. These include determining Basin Inflow to be released based upon a seven-day average rather than a three-day average, and determining compliance with the Interim Operations based upon a comparison of the flows at the Chattahoochee gage with Basin Inflows. Please confirm whether the Corps will indeed implement these modifications to its procedures and any other improvements that the Corps intends to implement.

The State of Georgia hereby requests that the Corps commit to take whatever actions is necessary, including those measures outlined above, to ensure that the flow requirements in the Interim Operations are not exceeded and that water is conserved in storage to the maximum extent possible, at least until the reservoirs can be restored to a safe level.

### *3. Extension of Formal Consultation*

Finally, while the Corps has determined that the flows prescribed under the Interim Operations are sufficient to meet the needs of the Gulf sturgeon and protected mussels, there exists a serious question as to whether those flows are necessary or sustainable. The Corps' formal consultation letter indicates that the flow numbers governing the Gulf sturgeon spawn were based on very limited data from four data points observed during the relatively wet conditions of 2005. As you are well aware, 2006 has been significantly drier than 2005, and the flows in the Apalachicola River have been lower this year than last. We are aware of no data indicating that the flows prescribed based upon 2005 conditions were necessary to allow a successful spawn during a drier conditions such as those that we are now experiencing. Furthermore, it has become increasingly apparent during the workshop that neither the Corps nor the Fish and Wildlife Service have adequate data or feel compelled to develop data from which to determine whether the flows observed in 2005 and prescribed under the Interim Operations are actually needed.

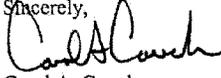
We understand that a study is underway and will be completed in the coming weeks regarding the 2006 Gulf sturgeon spawn in the Apalachicola River. No responsible determinations can be made until this data and other data is considered that bears on what flows are actually necessary and prudent to support the Gulf sturgeon spawn and the protected mussels. Completing the consultation without such information could allow over-releases of water that jeopardize the needs of the Gulf sturgeon and protected mussels in this or future years, not to mention jeopardizing Georgia's water supply and other needs.

The Corps and the Service must extend the consultation as necessary to fully consider the concerns that Georgia has revealed. The Endangered Species Act states "the policy of Congress that Federal agencies shall cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species." Endangered Species Act § 2(c)(2), 16 U.S.C. § 1531(c)(2). The Service's Consultation Handbook instructs the Service to "request an information update from State agencies prior to preparing the final biological opinion to ensure that the findings and recommendations are based on the best scientific and commercial data available." Consultation Handbook at p. 2-16. The Corps and the Service have the

authority to extend the consultation. 50 C.F.R. § 402.14 (e). When the Service determines that additional data would provide a better information base from which to formulate a biological opinion, it may request an extension of formal consultation and request that the Corps obtain additional data. 50 C.F.R. § 402.14 (f). In any event, the Service has the responsibility to review all relevant information provided by the Corps as well as all information that is otherwise available. 50 C.F.R. § 402.14 (g)(1). By not considering all necessary and appropriate information, the Corps and Fish and Wildlife Service are only creating for themselves the immediate obligation to undertake an addition consultation. See 50 C.F.R. § 402.16 (stating that action agency must reinitiate formal consultation if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered).

Please inform me promptly as to the actions that you propose to undertake in response to the above concerns. In the meantime, the State of Georgia's analyses of the Interim Operations and the consultation are ongoing. We will continue to provide you with input as we develop additional information.

Thank you for your cooperation and assistance.

Sincerely,  
  
Carol A. Couch  
Director

cc: Governor Sonny Perdue  
Brigadier General Michael J. Walsh, South Atlantic Division, U.S. Army Corps of  
Engineers  
Ms. Joanne Brandt, Corps of Engineers Inland Environmental Team



STATE OF GEORGIA  
OFFICE OF THE GOVERNOR  
ATLANTA 30334-0900

Sonny Perdue  
GOVERNOR

June 2, 2006

The Honorable Francis J. Harvey  
Secretary of the Army  
The Pentagon  
Washington, D.C. 20301

Dear Secretary Harvey:

The purpose of this letter is to alert you to the grave concerns of the State of Georgia relating to the U.S. Army Corps of Engineers' operations of the reservoirs in the Apalachicola Chattahoochee Flint (ACF) River Basin and to obtain your assistance in averting an imminent crisis.

Despite repeated warnings from State of Georgia officials, the Corps continues to operate the ACF Basin reservoirs in a manner that threatens the ability of the system to meet the most basic needs that this precious resource supports. If dry weather conditions persist, as is anticipated, unless the Corps changes its operating protocols, the reservoirs and lakes in the system will be drawn down to their lowest level in recorded history. I have enclosed correspondence to the Corps from Dr. Carol Couch, the State of Georgia's Director of Environmental Protection, explaining the factual basis of our concerns in greater detail.

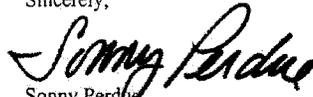
The cause of the current crises was the Corps' adoption in March 2006, in response to an Endangered Species Act claim filed by the State of Florida, of an "Interim Operations" protocol pursuant to which the Corps agreed to release significantly more water than it had been from the reservoirs in the spring, when those reservoirs typically are either refilling or kept full for the purpose of augmenting flows in the dry summer months. The stated purpose of the increased flows was to protect certain threatened and endangered species in the Apalachicola River in Florida. It has now become clear to officials in the State of Georgia, through communications with Corps leadership and rank and file, that the Corps did not undertake any kind of thorough analysis of the impact of adopting the Interim Operations, particularly in a dry year like this one. Moreover, there is no scientific evidence that the flows committed by the Corps are necessary to sustain the species. To make matters worse, the Corps, rather than cutting back releases in response to the dry weather conditions, has actually released substantially more water than even the Interim Operations require.

Secretary Harvey  
 June 2, 2006  
 Page 2 of 3

To be blunt, one of the reasons the Corps is having difficulty managing the reservoirs is that it has no current water control plan, and as a result, is forced to make critical decisions on the operations of this complex resource "by the seat of its pants." As you know, Corps regulations require the periodic updating of the water control plans – and everyone (all the States and the Corps) agree that the updating of the water control plan is *decades* overdue. That is one of the reasons why we welcomed Secretary Woodley's commitment, in his January 30, 2006 letter, to fulfill the Corps' obligation to "update the operating procedures and manuals" for the ACF River Basin. Indeed, the Corps in adopting the Interim Operations clearly anticipated that the more exhaustive and comprehensive water control plan would quickly overtake what clearly were ill-considered "Interim" Operations. It therefore came as a total surprise and deep disappointment to learn that Secretary Woodley's decision was reversed and a decision was made to postpone the revision to the water control plans, without even consulting with the State of Georgia – the state in which all of the Corps' ACF reservoirs are located.

With lake levels and river flows falling precipitously, the State of Georgia needs your support. We are calling upon the Corps to take decisive action now to stop releases of more water than the Interim Operations require, by taking certain additional steps to mitigate the negative effects of the Interim Operations, and to reassess from the ground up the hydrologic assumptions underlying the Interim Operations. In addition, as explained in greater detail in Dr. Couch's letter, we are also calling upon the Corps and the U.S. Fish and Wildlife Service to extend the time period for the consultation regarding the Corps operations under Section 7 of the Endangered Species Act. An extension of the consultation period will allow the Corps and FWS to consider the best scientific evidence available on how the Corps can best operate the reservoir system to provide the flow regime needed by the species and to meet the other vital needs of this precious resource.

Sincerely,

  
 Sonny Perdue  
 Governor

Enclosure

cc: Mr. H. Dale Hall, Director, U.S. Fish and Wildlife Service  
 Mr. Sam Hamilton, Region IV Director, U.S. Fish and Wildlife Service  
 Ms. Gail Carmody, Ecological Services, U.S. Fish and Wildlife Service  
 Brigadier General Michael J. Walsh, South Atlantic Division, U.S. Army Corps of Engineers  
 Col. Peter Taylor, Mobile District, U.S. Army Corps of Engineers  
 The Honorable Saxby Chambliss, United States Senate  
 The Honorable Johnny Isakson, United States Senate  
 The Honorable Jack Kingston, United States House of Representatives  
 The Honorable Sanford Bishop, United States House of Representatives

Secretary Harvey  
June 2, 2006  
Page 3 of 3

The Honorable Jim Marshall, United States House of Representatives  
The Honorable Cynthia McKinney, United States House of Representatives  
The Honorable John Lewis, United States House of Representatives  
The Honorable Tom Price, United States House of Representatives  
The Honorable John Linder, United States House of Representatives  
The Honorable Lynn Westmoreland, United States House of Representatives  
The Honorable Charlie Norwood, United States House of Representatives  
The Honorable Nathan Deal, United States House of Representatives  
The Honorable Phil Gingrey, United States House of Representatives  
The Honorable John Barrow, United States House of Representatives

**Georgia Department of Natural Resources**

2 Martin Luther King Jr. Dr., S.E., Suite 1152 East, Atlanta, Georgia 30334-9000  
Noel Holcomb, Commissioner  
Carol A. Couch, Ph. D., Director  
Environmental Protection Division  
404/656-4713

June 9, 2006

Colonel Peter Taylor  
Commander and District Engineer  
Department of the Army  
Mobile District, Corps of Engineers  
190 Saint Joseph Street  
Mobile, Alabama 36602-3630

Dear Col. Taylor:

The purpose of this letter is to obtain from the Corps a final decision as to whether it intends to make changes to its March 7, 2006 Interim Operations (the "IOP") to mitigate the devastating consequences of the Corps' current ACF Basin reservoir operations. This letter incorporates by references the letters and memorandums that the State of Georgia has submitted to the Corps in the past weeks on this topic, including but not limited to my May 5, 2006 letter, and attachments, and my June 1 and June 2, 2006 letters, and attachments.

Though the State of Georgia reserves the right to demand further changes to the Corps' operations, the Corps' commitment, by the close of business Monday, June 12, 2006, to make the following changes immediately will improve the situation substantially without having any measurable impact upon the threatened and endangered species in the Apalachicola River:

1. When basin inflows (BI) (as defined in the IOP) are greater than or equal to 8,000 cfs, the releases from Jim Woodruff Dam should be 8,000 cfs until all federal reservoirs on the Chattahoochee River are refilled to the top of conservation storage. In other words, the Corps should use the BI, if any, above 8,000 cfs to refill the reservoirs. As explained below, this change will have a positive impact on the mussels and their habitat.

2. When BI is less than 8,000 cfs, the Corps should release 5,000 cfs from Jim Woodruff Dam. Without this change, the Corps will be unable to sustain the 5,000 cfs floor on releases.

3. With each individual reservoir, releases should not exceed inflow for that reservoir, except when releases are necessary to augment flows to maintain 5,000 cfs.

As the State of Georgia has explained in previous communications, these changes will have a positive net impact upon the mussels and the system as a whole. Not releasing more than 8,000 cfs during this dry period will not have a negative impact upon the mussels since, as the Corps acknowledges, 8,000 cfs is the maximum known stage of the mussels on the river bed. Moreover, making these changes is the only way that the Corps will be able to meet the more critical elements of the IOP: as our modeling has demonstrated, unless the Corps increases the reservoir levels immediately by adopting these changes, there simply will not be enough water for the Corps to meet the 5,000 cfs "floor."

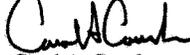
It is the State of Georgia's position that these changes to the IOP are mandatory in any event, but can also be accommodated within the formal consultation initiated with its March 7, 2006 letter to the U.S. Fish and Wildlife Service. As the Corps states in the IOP submitted with the March 7 letter:

These operations are considered sufficient to minimize adverse effects on the listed species to the maximum extent practicable or feasible based on equipment constraints and safety concerns. Consideration is also given to the need to balance releases to the river with the need to refill or conserve storage in upstream reservoirs in the interest of having adequate storage in later months when augmentation flows may be necessary to protect listed mussel species. *Any of the numbers in this table are subject to revision based on better information that may be developed during the Section 7 consultation process.*

In addition, in the Corps' April 26, 2006 Memorandum to the Record, the Corps stated: the "Mobile District will provide by official correspondence a description of the proposed adjustments to the operating plan to be considered during the formal Section 7 consultation process. We will then decide how to describe the operation and the appropriate assumptions to be incorporated into the modeling of the Interim Operations Plan."

In addition to the foregoing specific demands, the State of Georgia would further urge the Corps to extend the Section 7 consultation process with the FWS so that the hydrologic and biological issues could be addressed thoroughly with the benefit of the best scientific information available.

Sincerely,



Carol A. Couch  
Director

CAC:am

cc: Governor Sonny Perdue  
Brigadier General Michael J. Walsh, South Atlantic Division, U.S. Army Corps of  
Engineers  
Ms. Joanne Brandt, Corps of Engineers Inland Environmental Team  
Ms. Gail Carmody, U. S. Fish and Wildlife Service

55



DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

JUN 12 2006

REPLY TO  
ATTENTION OF

Executive Office

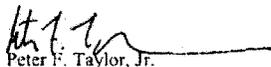
Dr. Carol Couch  
Director  
Georgia Department of Natural Resources  
2 Martin Luther King Jr. Drive  
Suite 1152 East Tower  
Atlanta, Georgia 30334

Dear Dr. Couch,

Thank you for your letter of June 9, 2006 regarding our Interim Operations Plan (IOP) at the Jim Woodruff Dam. My staff and I have been working diligently to review the points that were raised and to determine whether they can be incorporated into the IOP. Because this is related to the ongoing litigation, the response must be coordinated within the appropriate channels. I expect that to be completed soon and should be able to provide a response before the close of business on Wednesday, June 14th.

Thank your for your assistance.

Sincerely,

  
Peter F. Taylor, Jr.  
Colonel, Corps of Engineers  
District Commander



DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

June 21, 2006

REPLY TO  
ATTENTION OF:

Plan Formulation Team  
Planning and Environmental Division

Dr. Carol Couch  
Director  
Georgia Department of Natural Resources  
2 Martin Luther King Jr. Drive  
Suite 1152 East Tower  
Atlanta, Georgia 30334

Dear Dr. Couch

Thank you for your letter of June 9, 2006, regarding our Interim Operations Plan (IOP) at the Jim Woodruff Dam. As was discussed in the June 19, 2006 mediation session, like you, we want to ensure that this plan meets not only the needs of the threatened Gulf sturgeon, the endangered Fat threeridge mussel, and the threatened Purple bankclimber mussel, but also the multi-purpose water resource needs of the entire Apalachicola-Chattahoochee-Flint River basin.

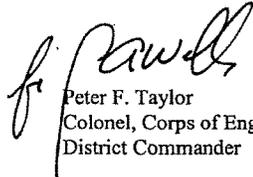
While operating under the IOP this spring we have identified several "lessons learned" and have asked the U.S. Fish and Wildlife Service (USFWS) to evaluate proposed adjustments to the IOP that could minimize unintended impacts on project operations and improve our ability to manage releases from Jim Woodruff Dam to meet the needs of the Federally listed species as well as our authorized purposes. These proposed adjustments include the method for computing basin inflows to manage releases under the IOP (using a seven-day average basin inflow rather than a three-day average); tying computations of basin inflows and releases to the Chattahoochee gage; clarifying threshold flows for ramping rates associated with flood control operations; clarifying how releases for gradual ramping rates are captured in the volumetric computation of releases to meet the volumetric computation of basin inflows; and a lowering of the upper flow threshold for the months of June through February which would allow for additional storage under certain conditions. In addition to inquiring about changes we have made to the IOP, you also suggested several specific changes be made to the IOP. Under separate cover, we have provided all three States the IOP, the Revised IOP, and all of the modeling data. We are scheduling another workshop to explain the IOP and how we modeled it. A notice will be coming to you in the near future with the time, date, and location. We will take your current comments and any future comments into consideration in deciding upon any other revisions.

Your letters also asked that we extend the Section 7 consultation period with the USFWS so that additional scientific information can be considered in the development of the Biological Opinion. On June 13, 2006, the USFWS requested a 45-day extension of the consultation period. We have reviewed their request and agree that it is appropriate to extend the consultation period for an additional 45 days. We will respond to the Service by letter and then inform the Court of this development.

We recognize that the amount of storage committed to hydropower generation is the variable that most affects projected reservoir levels. As my June 12, 2006 letter explained, we operate our projects using a zone concept. Under this concept, we reduce the amount of hydropower we require of each project as lake levels decline. This was the nature of project operations during the 1998-2002 drought. This does not mean that we do not generate hydropower at ACF projects as lake levels decline, but rather that hydropower is generated to the extent practicable to satisfy multiple project purposes (water quality, water supply, releases for fish and wildlife). If the resulting generation is insufficient to satisfy the demand for hydroelectric energy, the Southeastern Power Administration (SEPA) may purchase replacement energy to fulfill the remaining energy amounts that Corps projects in the region could not provide. Should the current drought-like conditions continue into the summer, we would envision operating under this same methodology for all our projects on the ACF. However, as always, we may need to make adjustments to respond to operational issues.

I appreciate your input as we refine the IOP, not only to meet the needs of the endangered species, but continuing to insure that we balance the competing water resource needs of the entire ACF basin.

Thank you for your assistance.

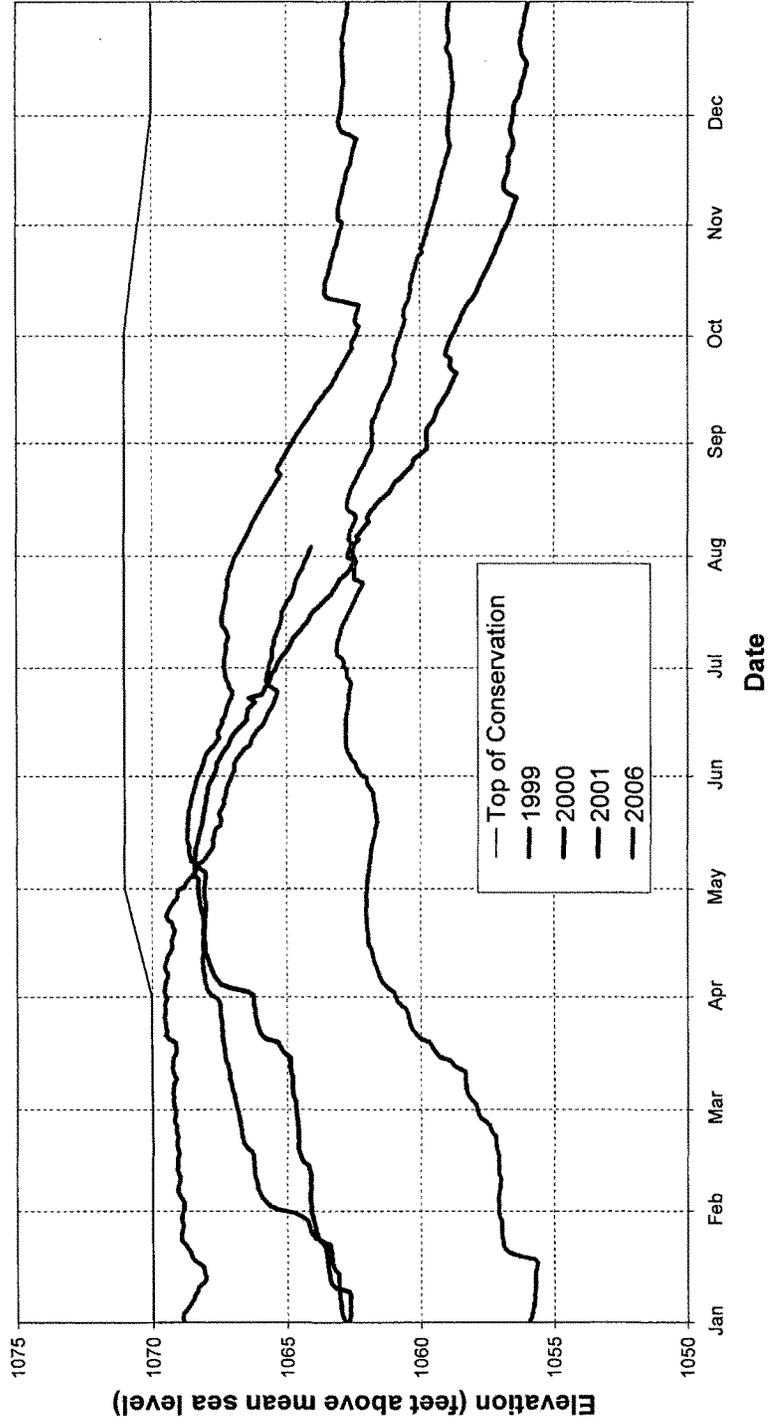
 LTC, EN  
Peter F. Taylor  
Colonel, Corps of Engineers  
District Commander

**Copies Furnished:**

**Mr. Trey Glenn  
Director, Alabama Department of  
Environmental Management  
Post Office Box 301463,  
Montgomery, AL 36130-1463**

**Ms. Colleen M. Castille  
Secretary, Florida Department of Environmental Protection.  
Majority Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399**

### Lanier Elevations in Past Drought Years and in 2006



Memorandum

To: Carol Couch

From: Wei Zeng

Date: May 5, 2006

Re: Projected ACF scenarios under the Corps' Interim Operation Table and Year 2000 – 2001 hydrologic conditions

The following analyses were based on combinations of the assumptions that (1) the Corps operates the ACF projects closely according to its Interim Operation Table, or with a 10% over-release, (2) the hydrologic conditions that we experienced in the period 2000 through 2001 are repeated from this point on, and (3) there is an 8,000-cfs minimum flow requirement imposed to protect endangered mussel species downstream of Jim Woodruff Dam. The assumptions of model simulations are shown in Table 1.

Table 1. Model Assumptions

Model Identifier	Corps compliance with its own Interim Operations	8,000-cfs non-spawning season minimum flow requirement
F0503V2	<ol style="list-style-type: none"> <li>1. Closely following the Interim Operations</li> <li>2. Releasing 90% of BI when BI is between 20,400-cfs and 37,400-cfs in spawning season, and</li> <li>3. Releasing 90% of BI when BI is between 8,000-cfs and 37,400-cfs in non-spawning season</li> </ol>	None.
F0503V3	Same as above	Imposed
F0503V4	Similar to F0503V2, but with 10% over-release at Jim Woodruff (close to what we've seen from Mar. 15 to Apr. 30, 2006)	None

All the other conditions remain the same as in our earlier models simulating the Florida ESA demands. These common conditions include year 2000 M&I demands, dry year agricultural irrigation, all federal projects in support of flow requirement downstream of Jim Woodruff, 750-cfs minimum flow requirement at Atlanta, 1,160-cfs minimum flow requirement at Columbus, and other conditions reflected in the ACF Existing Condition model.

Table 2. Assumptions of Additional Model Simulations

Model Identifier	Corps compliance with its own Interim Operations	8,000-cfs non-spawning season minimum flow requirement
F050506	4. Closely following the Interim Operations 5. Releasing 70% of BI when BI is between 20,400-cfs and 37,400-cfs in spawning season, and 6. Releasing 70% of BI when BI is between 8,000-cfs and 37,400-cfs in non-spawning season	None
F0505V2	Similar to F050506, except there is a 10% over-release at Jim Woodruff Dam.	None
F0505V3	Same as F050506	Imposed

If the 2000 – 2001 hydrologic conditions were to be repeated for the rest of this year and next year, under the most conservative approach prescribed by Corps' Interim Operation Table, The following things may happen.

- (1) Lanier elevation (Fig. 6) may approach the historic low of 1052 feet at the turn of the year, and set new record low the next year, though the elevations were slightly higher than shown in Fig. 2. West Point and Walter F. George elevations (Figs. 7 and 8) may be higher than shown in Figs. 3 and 4, where 90% of Basin Inflow is released to downstream of Jim Woodruff Dam.
- (2) A 10% over-release at Jim Woodruff Dam would set record low at Lanier in the fall this year, and again next year. It will also cause an additional drawdown of 2 to 4 feet at West Point and of 1 to 2 feet at Walter F. George.
- (3) An 8,000-cfs non-spawning season minimum flow requirement downstream of Jim Woodruff Dam is not sustainable. It will drain all the projects in the ACF system, and cause them to be empty for prolonged period.

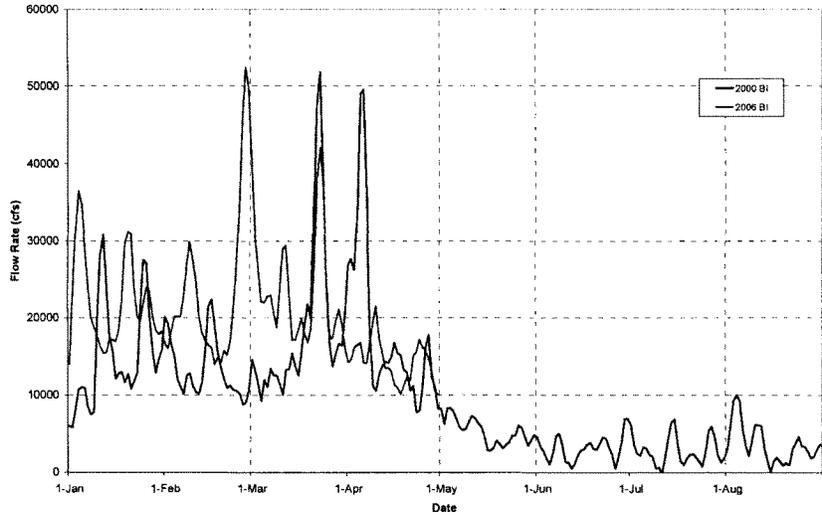


Fig. 1 Comparison of ACF Basin Inflows (down to Jim Woodruff) in 2006 and 2000

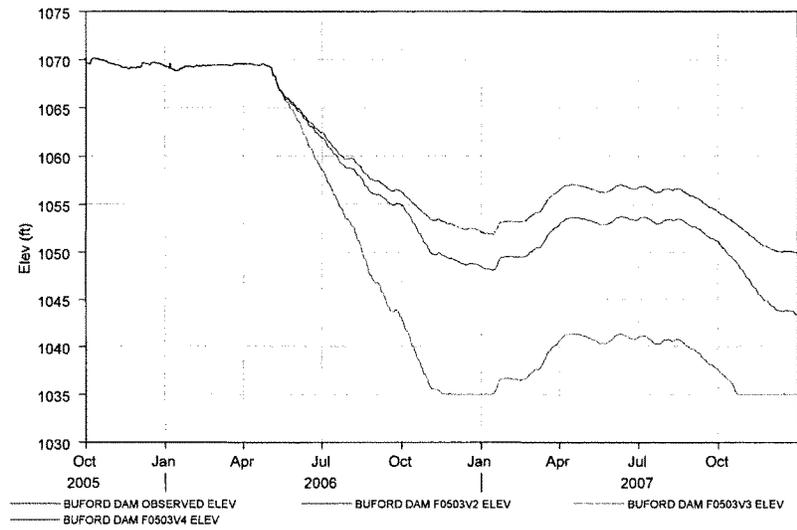


Fig. 2 Projected Lanier elevations under Corps Interim Operations and Year 2000 - 2001 hydrologic conditions (90% BI release)

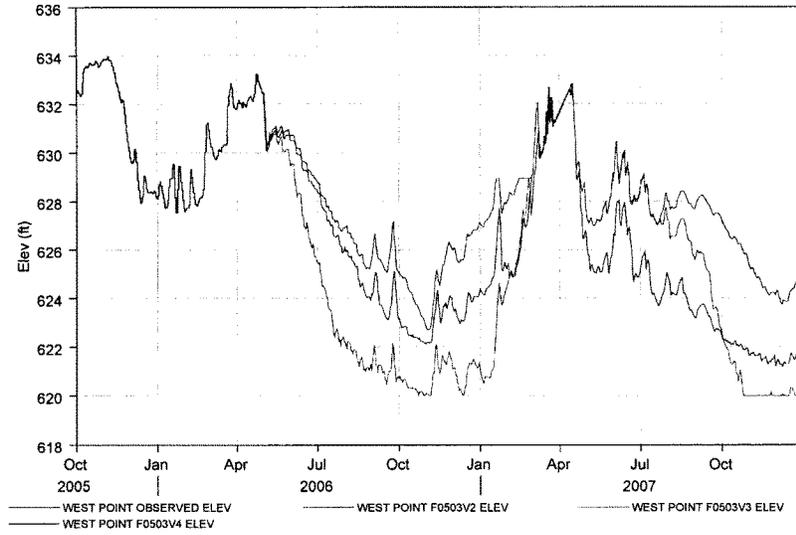


Fig. 3 Projected West Point elevations under Corps Interim Operations and Year 2000 - 2001 hydrologic conditions (90% BI release)

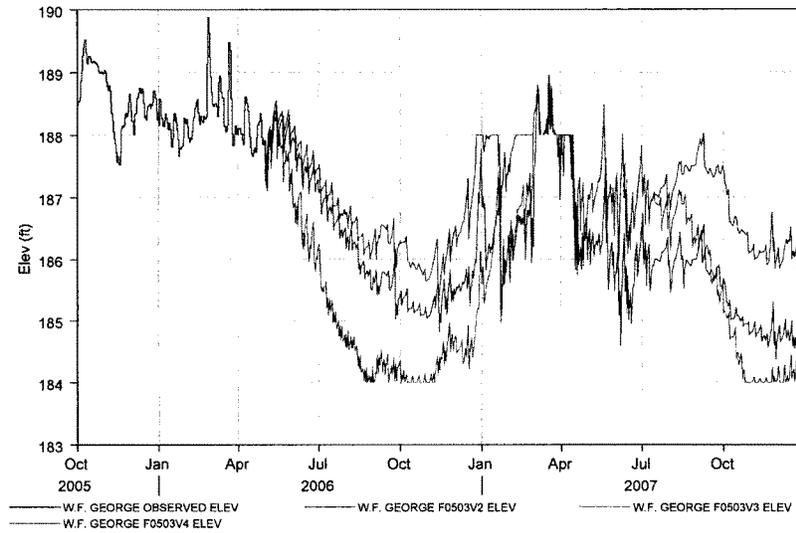


Fig. 4 Projected Walter F. George elevations under Corps Interim Operations and Year 2000 - 2001 hydrologic conditions (90% BI release)

STATEMENT OF BRIGADIER GENERAL MICHAEL J. WALSH, COMMANDER, SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS OF ENGINEERS, DEPARTMENT OF THE ARMY

INTRODUCTION

Members of Congress and distinguished guests, I am Brigadier General Michael J. Walsh, Division Commander, South Atlantic Division, U.S. Army Corps of Engineers. Thank you for the opportunity to provide this statement before you today concerning the Corps operations and management of the Alabama-Coosa-Tallapoosa River Basin encompassing parts of Georgia and Alabama and the Apalachicola-Chattahoochee-Flint River Basin encompassing parts of Alabama, Florida and Georgia. The U.S. Army Corps of Engineers practices the principle of openness. We strive to maintain transparency in our operations providing all our publics with as much data as possible via our Web site, sharing of information with state and Federal agencies, and through the media concerning our operations and management of this system.

I would like to divide my statement into three parts: normal management, support for the endangered species act, and the gauge calibration error at Lake Lanier.

NORMAL MANAGEMENT

The Alabama-Coosa-Tallapoosa Rivers project is a multipurpose project providing for flood control, hydropower, navigation, water supply, water quality, recreation and fish and wildlife conservation. The system has 5 Corps projects and 10 Alabama Power Company dams. The Corps projects consist of two major storage projects, Allatoona and Carters in Georgia at the upper end of the basin and three run-of-the-river projects at the lower end of the basin in Alabama. The Alabama Power Projects are located on the Coosa and Tallapoosa Rivers and are operated in conjunction with Corps projects to provide a minimum 7-day average flow in the system. The Corps has flood control oversight of the Alabama Power Projects.

The ACT basin is experiencing the same drought conditions as other river basins in the Southeast. The two upper most projects, Allatoona and Carters are experiencing inflows averaging 30 percent of normal. Allatoona is currently 6.5-feet below normal summer pool and Carters is 10 feet below normal. Releases from Allatoona are being kept to a minimum with only two hours of hydropower generation a day plus a continuous 240 cubic feet per second release for water quality purposes. Carters, which is a pump back hydropower generating system, is operating in the pump back mode only.

At the lower end of the system in the Alabama River, depths are 6-feet below project depth to support navigation. The only releases occurring at the projects are the minimum flows coming from the upstream Alabama Power Projects. The Alabama River situation, due to the drought, has caused one major industry to modify its water intake to remain operational.

The Apalachicola-Chattahoochee-Flint Rivers project is also a multipurpose project providing for flood control, hydropower, navigation, water supply, water quality, recreation and fish and wildlife conservation. The Federal projects on the basin system begin with Lake Sidney Lanier at the headwaters, West Point Lake, Lake Walter F. George, George W. Andrews, and Lake Seminole at the lower end of the basin. There are several lakes with hydropower facilities operated by private and public utilities along the system as well.

Under normal circumstances the Corps operates and manages these reservoirs to meet all project purposes in accordance with the draft water management plans developed in the late 1980s. These plans establish certain zones of water levels that trigger actions when these levels are reached. This management has proven to be successful in meeting project purposes.

It is primarily when drought hits the system that issues begin to arise. The Corps continues to operate and manage the system based on the above mentioned plan. This calls for balancing the various reservoirs with available water to keep them in the same action zones. These zones have been developed to meet as many project purposes as possible with dwindling water availability during a drought.

As conditions worsen during times of drought, some project purposes become a higher priority. These priorities include water supply, water quality, hydropower and fish and wildlife conservation. Fortunately, we are often able to simultaneously meet several of these needs with one action. For example, water released for water quality can also be run through a generator to produce hydropower.

Like many of the systems operated and managed in the Southeast, along with most of the Nation, this river basin system is in a drought. The National Weather Service Drought Monitor shows North Georgia is in a moderate drought and as you move southward it is characterized as a severe drought. We operate and manage

this basin as a system; when the lower basin receives less inflow, we must augment flows from stored water to maintain balance.

#### ENDANGERED SPECIES ACT

The Corps and the U.S. Fish and Wildlife Service have been in consultation since 2000 concerning various mussel species and, more recently, the Gulf Sturgeon, which all fall under the protection of the Endangered Species Act. Together we have developed an interim operations plan to provide adequate water from the system to protect and enhance the habitat of these species. During normal conditions, these needs have been met through routine operation and management.

As we entered the drought period, management for these species has become more difficult. From March through late June, our flow regimes have been in accordance with the Interim Operations Plan (IOP) that is the subject of Formal Section 7 Consultation with the U.S. Fish and Wildlife Service. As part of the litigation actions, the Court ordered specific flows in late June through early July. The States and other parties to the litigation actions, the Court ordered specific flows in late June through early July. The States and other parties to the litigation then agreed to a flow regime that took us through late July. Today we are once again operating in accordance with the IOP. The formal consultation with the U.S. Fish and Wildlife Service on the IOP is on-going. The Biological Opinion from the U.S. Fish and Wildlife Service as a result of the formal consultation process is due September 5, 2006.

#### GAUGE CALIBRATION ERROR

On June 16 of this year we discovered we had a gauge calibration error at Lake Sidney Lanier. This error led us to release additional water that would not normally have been released during that timeframe.

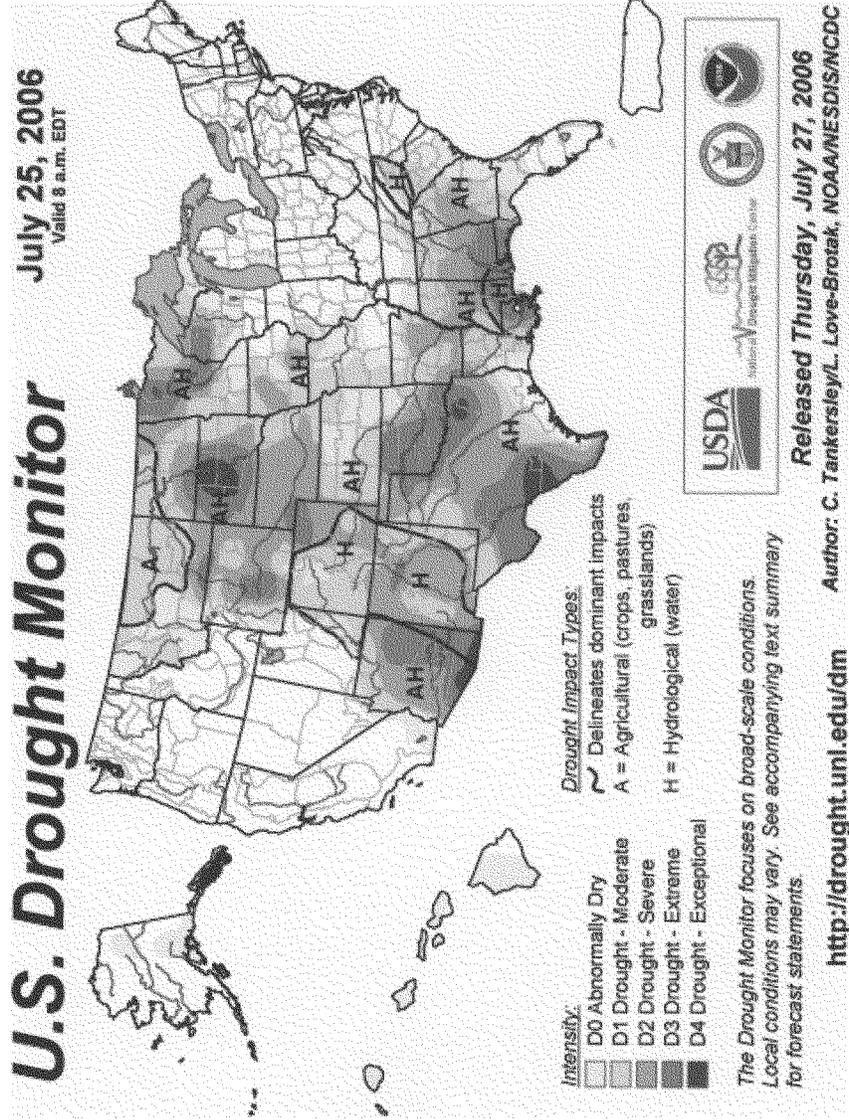
In December 2005 during routine maintenance of the gauge, it was discovered that certain components were worn. New parts were ordered and installed, to include a device called a selsyn. A selsyn is an encoder that reads the mechanical data provided by the float via the pulley. It converts the mechanical data to electronic data which is sent to the powerhouse indicating the lake level. As part of the installation, a scaling factor had to be programmed into the selsyn and we input the factor recommended by the manufacturer. Unfortunately we were not clear in our communications with the manufacturer in that we had not replaced the pulley attached to the selsyn. The manufacturer assumed both the selsyn and the pulley were new, and provided a scaling factor for a complete new system. The result was that we inputted a scaling factor that was not appropriate for the existing pulley attached to the new selsyn.

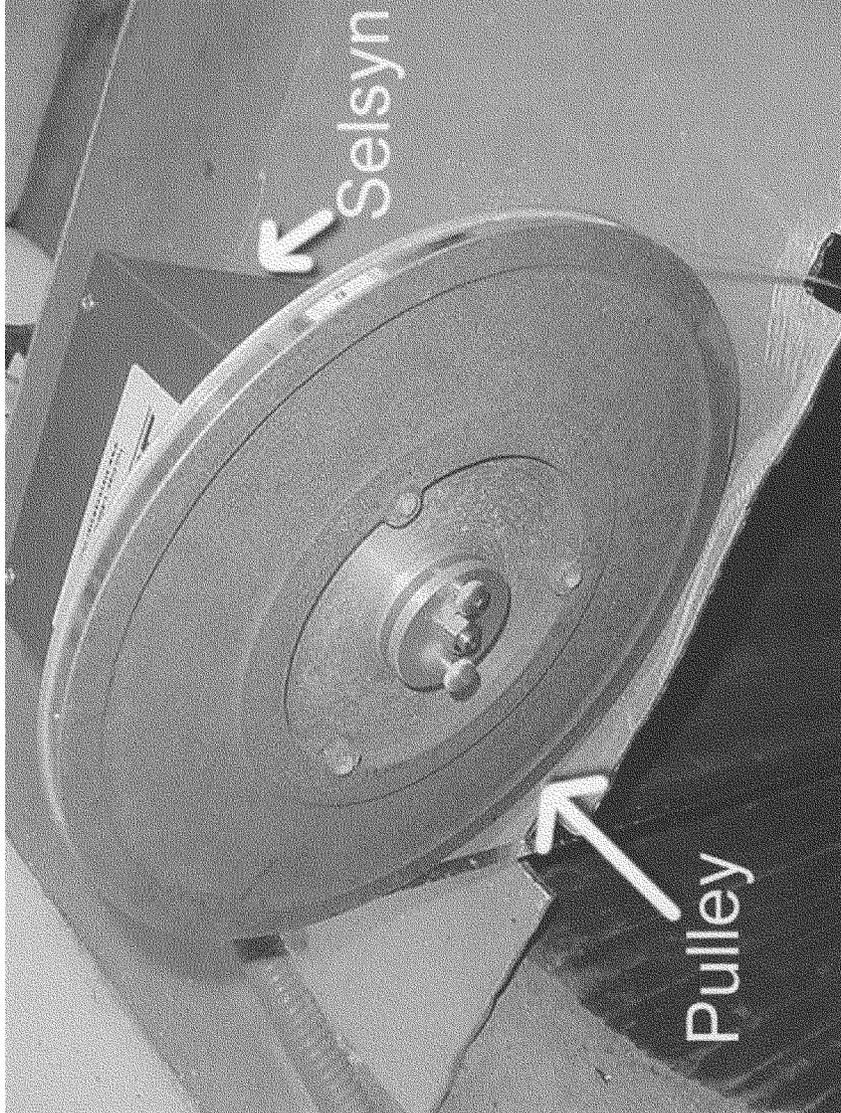
Between the time of installation and mid-April of this year, levels at Lake Lanier remained relatively stable and no error was detected. Beginning in mid-April we began making water releases for downstream needs in accordance with the IOP. The calibration error led us to believe we had a higher pool level than actually existed, indicating a greater inflow into the lake than was actually occurring. We were operating under the IOP, which required us to essentially release one hundred percent of basin inflows to mimic a run of the river flow for the entire basin. As the gauge data were not correct, we were releasing more water than was actually entering the lake by approximately one half inch per day. Consistent with our policy of openness about our operations, we informed congressional interests, stakeholders and the general public as soon as we learned of this problem.

We have corrected the gauge error and we have confirmed the accuracy of all our gauges on the system. In addition we have installed redundant gauges at all projects and updated procedures to verify their accuracy.

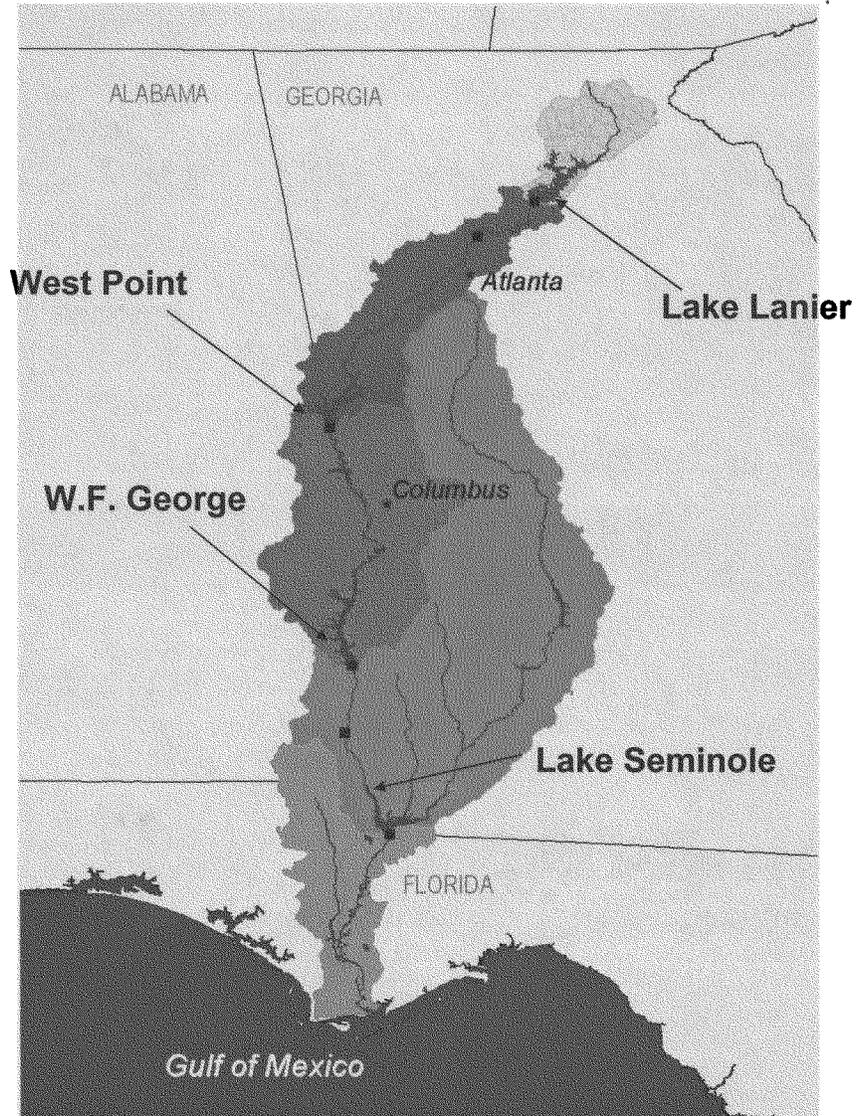
#### SUMMARY

Thank you for the opportunity to update you on the management of the Apalachicola-Chattahoochee-Flint Rivers project. I assure you the Corps is committed to working with all stakeholders in the basin to provide the best management and operation of our lakes. I am hopeful the current mediation process that is taking place among the three states and the Army will produce a framework to bring mutual protection and balance to this precious resource.

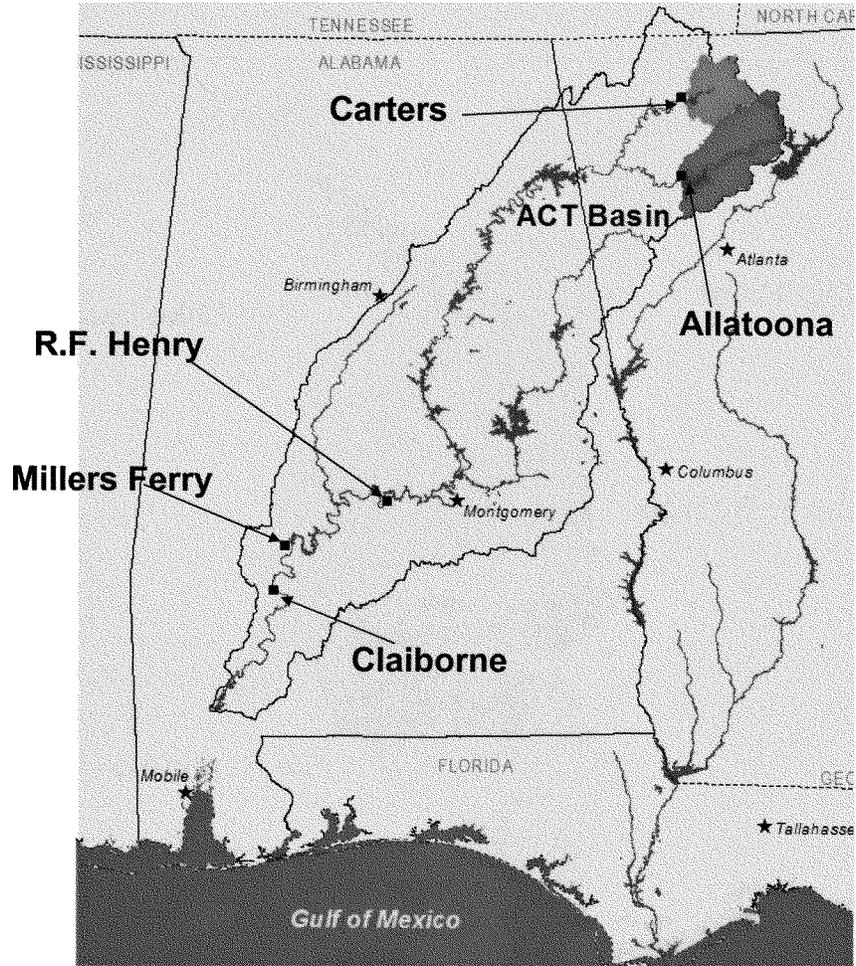




### ACF Projects and Drainage Basins



### ACT Projects and Drainage Basins



STATEMENT OF JACK CONWAY, CHAIRMAN, FORSYTH COUNTY BOARD OF  
COMMISSIONERS, FORSYTH COUNTY, GA

On behalf of Forsyth County, the Forsyth County Board of Commissioners, and all Forsyth County citizens, I want to thank this honorable committee for providing me this opportunity to testify regarding Forsyth County's experience and interaction with the U.S. Army Corps of Engineers and its management of the ACT and ACF River Basins, specifically Lake Lanier.

At the outset, I must respectfully advise that Forsyth County's experience with the Corps and its management and stewardship over Lake Lanier has been at best frustrating and at worst exasperating. Forsyth County has been, and remains, discouraged and disappointed by the endless layers of bureaucracy, politics, and red-tape that seem to control the Corps, and that make it almost impossible to receive a straight, or even consistent, answer to even the most mundane of questions.

To make matters worse, the Corps seems to go to great lengths to fashion new and innovative reasons for rejecting any and all proposals by Forsyth County on methods by which the County can initiate construction of vital, redundant infrastructure for water withdrawal from Lake Lanier. This, in spite of the fact that over 21 square miles of Lake Lanier sits within the jurisdictional boundaries of Forsyth County. There is more than a little irony in the fact that Forsyth County sits upon one of the largest fresh water bodies in the Southeast, yet is only one pump failure away from a health crisis due to lack of water availability.

Throughout my tenure as Chairman of the Forsyth County Board of Commissioners, one of my chief goals has been to ensure that Forsyth County has sufficient water available to satisfy both the present and long-term demands of its citizens. That effort has necessarily generated multiple discussions, meetings, correspondence and telephone calls with Corps' personnel. The only consistent theme that has permeated these repeated encounters with Corps' personnel is that the County's overtures and initiatives are systematically rebuffed. The reasons for the rejection appear to change on a daily basis and also vary depending upon which Corps' official responds.

Although the County's request to the Corps for its own water intake begin in the mid-1970s, I will begin my chronology in 1996 to demonstrate Forsyth County's inability to obtain any cooperation whatsoever by the Corps on the water issue. While the County was, and remains, mindful that the so called "water wars" have been ongoing, and that this litigation has impacted the Corps' discretion in issuing water withdrawals, the Corps' interpretation of the 1992 Memorandum of Agreement between Georgia, Florida and Alabama, has been a moving target.

- In 1996, in response to a request by Forsyth County for its own water withdrawal permit, the Corps said "no." The reason for this "no" was because the Corps was in the process of a "Comprehensive Study" that was set for completion in September 30, 1996. (Exhibit "A")

- On March 28, 1997, then Director of the Georgia Department of Natural Resources, Harold Reheis, wrote the Corps recommending that the County and City of Cumming each be deemed "current users" under the 1992 MOA. (Exhibit "B")

- On April 22, 1997, in conjunction with Mr. Reheis' request, Forsyth County again requested approval of an additional water supply withdrawal from Lake Lanier. (Exhibit "C") On May 12, 1997, Congressman Nathan Deal also made the same request on behalf of the County. The Corps' "no" came just a month later. (Exhibit "D") On May 28, 1997, the Corps responded that although Forsyth County may be an "existing user" as defined by the Memorandum of Agreement between Florida, Georgia and Alabama, the Corps still could not issue a withdrawal permit to Forsyth County because Forsyth County did not "withdraw directly" from Lake Lanier. (Exhibit "E")

- On December 23, 1999, the Georgia Department of Natural Resources issued separate water withdrawal permits to the City of Cumming and Forsyth County for water withdrawal from Lake Lanier. (Exhibit "F")

- On November 23, 2003, I wrote Colonel Robert Keyser at the Corps of Engineers requesting permission to begin construction of a second water intake into Lake Lanier to overcome the pressing issues of (1) Inadequate Withdrawal Capacity, (2) Improving Water Quality Withdrawn From the Lake, and (3) Safeguarding Water System Security. I emphasized in my letter that the County was not seeking an additional water allocation, but was simply requesting approval by the Corps to construct a vitally needed water intake structure. (Exhibit "G")

- On May 10, 2004, Colonel Keyser rejected my request stating that Forsyth County did not have a "holdover water supply contract" as anticipated by the 1992 MOA and therefore was not an "existing user" of Lake Lanier. (Exhibit "H") Interestingly, the phrase "hold over water supply contract" is found nowhere in the 1992

MOA, and the Corps' interpretation of the MOA is at odds with the MOA's expansive definition of those entities that are considered "existing users" of the lake.

- Colonel Keyser also noted that an injunction entered into by the district court in Alabama, further bound his hands in cooperating with Forsyth County.

- On March 25, 2005, the Corps tendered a "Notice of Proposed Actions" to the Alabama Federal District Court stating that Forsyth County's request for an easement into Lake Lanier could not be undertaken because "approval would require a new withdrawal contact and is therefore enjoined." (Exhibit "I") The Corps' position is, again, wholly unsupported by the 1992 MOA.

- On April 11, 2005, I attended a meeting with Congressman Nathan Deal and Corps' officials at the Congressman's request. At that meeting, I requested that the Corps consider granting an intake easement to the City of Cumming, with Forsyth County possibly funding the construction costs. Approximately 6 weeks later, in a telephone conversation with Colonel Taylor, I was advised that all "holdover" contracts had expired, including the contract between the Corps and the City of Cumming. Consequently, not even the City of Cumming could get a secondary intake easement.

- On September 19, 2005 the injunction that served as the latest basis by the Corps for not cooperating with Forsyth County, was lifted. On September 23, 2005, I again wrote the Corps requesting simply an easement across Corps property for purposes of commencing construction of a water intake into Lake Lanier. My correspondence emphasized that Forsyth County was not seeking any additional withdrawals, but merely needed to get started on this multi-year project to ensure the health and safety of Forsyth County citizens. (Exhibit "J")

- On October 13, 2005, Georgia's Senatorial delegation delivered correspondence to Deputy Assistant Secretary of the Army, John Woodley, clarifying their understanding that the Corps would get to work on the various requests of Gwinnett, Cherokee and Forsyth counties. (Exhibit "K") Secretary Woodley responded on January 30, 2006 that he did intend to begin taking all necessary federal action. (Exhibit "L")

- On February 1, 2006, I again delivered correspondence to the Corps requesting that the Corps immediately "make good" on its commitment to begin taking action on Forsyth County's request for an easement. (Exhibit "M")

- In telephone conversations following that letter, Corps officials declared that in spite of the assurances provided to our Senatorial delegation, the Corps refused to grant Forsyth County an easement because the County did not have a "hold over" storage contract.

- In spring 2006, the Corps advised Forsyth County that the City of Cumming should make a request for an intake easement, and that the City and County could then enter into an intergovernmental agreement for purposes of construction, operation, maintenance and distribution of water. When asked whether the Corps would place its proposal in "writing," the Corps advised that they would not.

- The latest word from the Corps on why Forsyth County's vital water interests cannot be addressed is because, once again, the Comprehensive Study of the ACT/ACF is ongoing.

- Exhibits "N" and "O" are copies of Forsyth County's formal requests to the Corps of Engineers for an independent water withdrawal.

Here we are, some 10 years after the Corps used the "Comprehensive Study" as a basis for denying Forsyth County relief, it is again serving as a basis for denial. The Corps' rationale for denying Forsyth County relief has come full circle.

The U.S. Army Corps of Engineers has seemingly gone out of its way to deny Forsyth County its own water allocation, an easement across Corps property for a redundant intake, and even refused to provide written confirmation that a request by the City of Cumming for an intake easement would be granted.

I believe that commitments made to our Senatorial delegation have not been honored, and that the Corps has placed the water needs of Florida and Alabama over the needs of Georgia citizens.

FORM 15, 1995 10-03841 FORSYTH COUNTY COMMISSIONERS



DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 2288  
MOBILE, ALABAMA 36628-0001

March 15, 1996.

COMMISSIONERS  
COMED

XC: TIM FERRINS  
TIM MAUGHON  
STEVE

A

REPLY TO  
ATTENTION OF:

Plan Formulation Branch  
Planning and Environmental Division

RECEIVED

MAR 14 1996

FORSYTH COUNTY  
BOARD OF COMMISSIONERS

Mr. Ron Seder  
Chairman  
Forsyth County Board of Commissioners  
Post Office Box 128  
Cumming, Georgia 30130

Dear Mr. Seder:

This is in response to your December 4, 1995, letter to Mr. Erwin Topper concerning your request for the Mobile District, U.S. Army Corps of Engineers to initiate approval actions for water withdrawals from Lake Lanier, Georgia. Mr. Tommie Pierce of our Real Estate Division responded to you by letter dated February 12, 1996, regarding the request to utilize property at Lake Lanier for withdrawal and treatment facilities.

We are not presently in a position to initiate action on your request for water withdrawal from Lake Lanier. As you know, the Mobile District and the States of Alabama, Florida and Georgia are currently performing a comprehensive study of the water resources of the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) River Basins. The ACT/ACF Comprehensive Study was originally scheduled for completion in September 1995. However, by collective agreement, the study partners modified the original January 3, 1992, Memorandum of Agreement and extended the completion of the study one year to September 30, 1996.

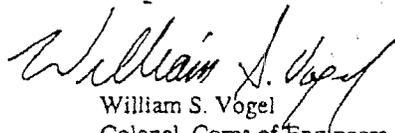
In order for the Mobile District to allocate storage in Lake Lanier to Forsyth County, Georgia for municipal and industrial use purposes, our current policy requires the execution of a storage space contract. The approval of a storage reallocation would be based on the findings of a reallocation study and accompanying environmental documentation. To adequately address the water needs and potential impacts associated with this proposed action, we would also have to address all other potential water resources actions likely to occur in the foreseeable future. That would bring into the analysis the anticipated water needs

of other entities in the basin. The Mobile District's commitment, as well as that of the states, is to work in full partnership through the Comprehensive Study process to develop mutually acceptable technical information to be used in making water resources decisions such as these. To date we have not completed this work.

Additionally, there is a question as to the requirement for cost sharing to perform a reallocation study and associated environmental evaluations. Historically, the Mobile District has funded reallocation studies at full Federal expense utilizing Operations and Maintenance (O&M) funds, but we do not believe this will necessarily be the case in the future. There has apparently been some inconsistency among U.S. Army Corps of Engineers districts nationwide concerning the funding of these studies. We are currently seeking policy guidance in this regard.

If you have any questions concerning this information, please call Mr. Keith Graham, ACT/ACF Comprehensive Study Project Manager, at (334) 694-3882.

Sincerely,



William S. Vogel  
Colonel, Corps of Engineers  
District Engineer

Copies Furnished:

Mr. Joe D. Tanner  
Executive Director  
Governors Commission on Privatization  
of Governmental Services

Mr. Harold Reheis  
Georgia Department of  
Natural Resources

## Georgia Department of Natural Resources

205 Butler St. S.E., East Floyd Tower, Atlanta, Georgia 30334  
 Lonnie C. Burt, Commissioner  
 Harold F. Recheis, Director  
 Environmental Protection Division  
 (404) 858-3

March 28, 1997

B

Colonel William Vogel  
 U.S. Army Corps of Engineers, Mobile District  
 Post Office Box 2288  
 Mobile, Alabama 36628-0001

RE: City of Cumming/Forsyth County Use of Lake Lanier for Water Supply

Dear Colonel Vogel:

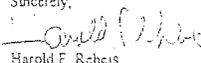
For a number of years the City of Cumming has had an agreement with the U.S. Army Corps of Engineers to withdraw water from Lake Sidney Lanier for municipal water supply purposes. Throughout the years of this agreement with the Corps, the city has also had an agreement with Forsyth County to supply county residents with water from this common source (i.e., Lake Lanier). Growth within the combined city/county area is quickly moving beyond the water treatment and conveyance capabilities of the city. This growth is expected to continue over the next 5-10 years, rather than level off or subside. The city and county have agreed to separately address these growing water needs. The city must expand its current treatment and conveyance capabilities to meet its service needs, while the county has the more complex and costly task of establishing water treatment works (rather than merely expanding) and conveyance systems from the ground up. The county will need its facilities on-line by the year 2000.

The city and county have historically had one source of water supply (i.e., Lake Lanier). Thus the Georgia Environmental Protection Division (EPD) considers the city and the county "persons" who are "...withdrawing, diverting, or consuming water resources within the ACT basin and ACF Basin..." as defined in the January 3, 1992 Memorandum of Agreement signed by Alabama, Florida, Georgia, and the Corps of Engineers. The growth that the area is experiencing, and the need for the county to proceed with separate development of a water intake, treatment works, and conveyance system does not alter the fact of the commonality of supply source. If the combined growth of the city and county were not beyond the future capabilities of the city's system, all raw water for the two entities would continue to be taken from the city's single intake in Lake Lanier. A separation of the withdrawal and treatment facilities of the two entities does not affect the link that the two political jurisdictions continue to have with their supply source, Lake Lanier.

The Georgia Environmental Protection Division has reviewed and approved withdrawal permit requests from both the City of Cumming and Forsyth County to increase their water withdrawals from Lake Lanier.

I respectfully request that you consider both Forsyth County and the City of Cumming as "current users" of Lake Lanier in any Corps of Engineers matters regarding near-term and longer-term use of the waters of Lake Lanier for water supply purposes.

Sincerely,

  
 Harold F. Recheis  
 Director

cc: Honorable Julian Bowen, Chairman, Forsyth County Commission  
 Honorable H. Ford Gravitt, Mayor, City of Cumming



**Forsyth County  
Board of Commissioners**

110 EAST MAIN STREET  
SUITE 210  
CUMMING, GEORGIA 30130  
(770) 781-2101  
FAX (770) 781-2199

April 22, 1997

Mr. Lex Lawrence  
Chief, Management Section  
U.S. Army Corps of Engineers, Mobile District  
Post Office Box 2288  
Mobile, Alabama 36628-0001

Dear Mr. Lawrence:

Subject: Forsyth County Withdrawal from Lake Lanier

You should have recently received a letter dated March 28, 1997 from Harold Reheis, Director of the Georgia Environmental Protection Division, regarding the above referenced topic. As described in the referenced letter, Forsyth County and the City of Cumming are current users of Lake Lanier for water supply, and are working cooperatively to meet their joint water supply needs. As the next phase of this long-standing relationship, Forsyth County is actively planning to establish a new treatment facility and the associated infrastructure necessary to meet the needs of our growing county. Based on conservative projections, it is critical that Forsyth County have its new treatment facility on-line in the year 2000.

C

The key element to moving forward with these plans is approval of the additional water supply withdrawal from Lake Lanier. In February, 1997 the Georgia EPD issued a withdrawal permit to Forsyth County for 14 million gallons per day (mgd) monthly average. Pursuant to the MOA, and subsequent amendments, the states of Alabama and Florida were also notified by the Georgia EPD of issuance of the permit. As a "current user" of Lake Lanier, we are formally requesting that the U.S. Army Corps of Engineers approve this withdrawal and associated allocation of storage.

Because of the extremely tight nature of our time schedule, we are requesting that this approval be provided as soon as possible. In accordance with the provisions of the MOA for current users, it is our understanding that the U.S. Army Corps of Engineers has the discretion to provide this approval, following notification of Alabama and Florida, prior to both the completion of the Comprehensive Study

JULIAN BOWEN  
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ASST. ADMINISTRATOR  
BETTY SHADBURN  
ACCOUNTING MANAGER



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Mr. Lex Lawrence  
Page 2  
April 22, 1997

late in 1997 and the subsequent development of water management plans and environmental assessments for the entire river basin which could extend through the year 2000.

We have been fortunate to work in the past with the local Project Manager, Mr. Erwin Topper, in evaluating potential locations for a water withdrawal on Lake Lanier. Given your approval to move forward with this withdrawal, we are certain that we can identify an option that is beneficial to both the U.S. Army Corps of Engineers and to the county.

Thank you for this assistance. Please do not hesitate to contact me in the interest of expediting this critical effort.

Sincerely,



Julian Bowen  
Chairman

JB/pja

cc: Mr. Harold Reheis, Director, Georgia Environmental Protection Division  
Mr. Erwin Topper, Project Manager, Lake Lanier, U.S. Army Corps of Engineers  
Honorable H. Ford Gravitt, Mayor, City of Cumming  
Mr. John Watson, Real Estate Specialist, Lake Lanier, U.S. Army Corps of Engineers  
Forsyth County Board of Commissioners  
Mr. Stevie Mills, County Administrator  
Mr. Donald Major, Assistant County Administrator  
Mr. Tim Perkins, Director of Water and Sewer Department

phone: (202) 225-5211  
 fax: (202) 225-8272

Committee On Commerce,  
 Telecommunications, Trade  
 and Consumer Protection,  
 and Hazardous Materials,  
 Health and Environment

Committee On Education and the Workforce,  
 Secondary Education, Training  
 and Life-long Learning



Nathan Deal  
 Congress of the United States  
 9th District of Georgia

May 12, 1997

Mailing address: P.O. Box 1015  
 Gainesville, Georgia 30603  
 phone: (770) 535-2592  
 fax: (770) 535-2765

Suite 108  
 415 E. Walnut Avenue  
 Dalton, Georgia 30721  
 phone: (706) 225-5320  
 fax: (706) 278-0840

Suite 102  
 104 W. Lafayette Square  
 LaFayette, Georgia 30728  
 phone: (706) 638-7042  
 fax: (706) 638-7049

Colonel William Vogel  
 U.S. Army Corps of Engineers, Mobile District  
 P. O. Box 2288  
 Mobile, Alabama 36628-001

Dear Colonel Vogel:

I am writing in reference to Forsyth County and the City of Cumming's recent request regarding the withdrawal of water from Lake Sidney Lanier.

As you know, Forsyth County and the City of Cumming have resolved their differences relative to providing water to their residents. The city agreed to support the county's efforts to obtain the necessary permits to construct a water treatment facility to be owned and operated by Forsyth County. As a result of the agreement between the city and the county, the Georgia Department of Natural resources issued Forsyth County a modified Water Withdrawal Permit. It is my understanding that this permit enables Forsyth County to be defined by the Corps as a "current user" and allows Forsyth County to formally request the Corps approval of their application for water withdrawal and associated allocation of storage. D

The city and county have historically had one source of water supply (i.e. Lake Sidney Lanier). Thus, the Georgia Environmental Protection Division considers the city and county "persons" who are "...withdrawing, diverting, or consuming water resources within the ACT basin and ACF basin..." As defined in the January 3, 1992 Memorandum of Agreement signed by Alabama, Florida, Georgia, and the Corps.

Thus, I respectfully request your consideration of Forsyth County and the City of Cumming as "current users" of Lake Sidney Lanier regarding the near-term and longer-term use of the waters of Lake Sidney Lanier for water supply purposes. I appreciate your consideration and look forward to your favorable response. If you should need additional information, please do not hesitate to contact me or Chris Riley of my staff.

Respectfully,

*Nathan Deal*  
 Nathan Deal



DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

May 28, 1997

REPLY TO  
ATTENTION OF:  
Plan Formulation Branch  
Planning and Environmental Division

Honorable Nathan Deal  
U.S. House of Representatives  
1406 Longworth House Office Building  
Washington, DC 20515-1009

Dear Mr. Deal:

This is in response to your letter dated May 12, 1997, regarding the use of Lake Lanier by the City of Cumming and Forsyth County for water supply. A copy of your letter is enclosed for your reference.

At the present time, the U.S. Army Corps of Engineers has a water supply contract with the City of Cumming, who in turn, provides water to Forsyth County. We do not have a water supply contract with Forsyth County. Accordingly, any interpretation of the January 3, 1992, Memorandum of Agreement (MOA) which may recognize Forsyth County as a current water user would not preclude the requirement for the Corps of Engineers to perform the following activities:

- a. Address the proposed construction by Forsyth County of a water intake structure under Section 404.b of the Clean Water Act and to issue the necessary Department of the Army permits.
- b. Execute a real estate lease to Forsyth County for the construction of a water intake structure on Federal lands.
- c. Perform a water supply reallocation study and associated environmental assessment, the cost of which would be shared equally between the Corps of Engineers and Forsyth County, to address Forsyth County's water needs, the use of reservoir storage in Lake Lanier to satisfy those needs, and the cost of the storage space.
- d. Execute a storage space contract between Forsyth County and the Department of the Army for the delivery of the needed water supply from Lake Lanier.

E

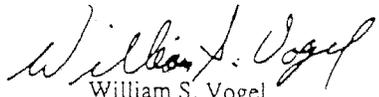
The terms of the MOA specify that no permanent reservoir storage allocation can be granted, as required by Army regulation, to any entity until the Comprehensive Study of the Alabama- Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) Basins is completed. The Comprehensive Study is currently scheduled for completion in December 1997. Article 2 of the MOA states, "*Each of the parties hereto has recognized that during the Comprehensive Study, it is premature for the Army to commit, grant or approve any reallocation, allocation or apportionment of water resources to service long-term future water supply or other water-related needs of any person from the water resources of the ACT Basin or the ACF Basin...*"

Further, Article 3 states, in part, "*The parties hereto agree that during the Comprehensive Study, any person...who is withdrawing, diverting or consuming water resources within the ACT Basin or ACF Basin may continue...in accordance with the laws of the state...and in accordance with applicable federal law and regulation...This agreement shall not be construed as granting any permanent, vested or perpetual rights to the amounts of water used during the Comprehensive Study nor shall it be construed as changing the status quo as to the Army's authorization of water withdrawals.*" As such, the Corps of Engineers cannot provide a permanent water supply storage allocation to Forsyth County at this time. Since Forsyth County does not currently withdraw directly from the lake, but purchases water from the City of Cumming, the Corps is required to perform the previously listed actions prior to permitting any direct withdrawal of water from Lake Lanier by Forsyth County.

The MOA, however, allows the withdrawal of an additional 10 million gallons per day (mgd) by existing water users on an interim basis. The City of Cumming, which has an existing intake structure in the lake and an existing water supply contract, could increase withdrawals from Lake Lanier by this amount to supply the existing needs of Forsyth County until such time that a permanent water supply storage reallocation can be evaluated.

If you have any questions or wish to discuss this further, please contact me.

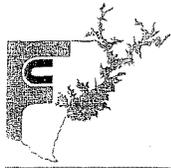
Sincerely,

  
William S. Vogel  
Colonel, Corps of Engineers  
District Engineer

Enclosure

Copy Furnished:

Congressman Nathan Deal  
Congress of the United States  
9th Congressional District  
Suite 108, The Hunt Tower  
200 Main Street  
Gainesville, Georgia 30503



Forsyth County Board of Commissioners

November 25, 2003

Colonel Robert Keyser  
US Army Corps of Engineers  
US Army Engineer District, Mobile  
P.O. Box 2288  
Mobile, AL 36628-0001

JACK CONWAY  
CHAIRMAN  
MARCIE KREAGER  
VICE CHAIRMAN  
CHARLES LAUGHINGHOUSE  
SECRETARY  
DAVID F. PRITCHETT  
MEMBER  
EDDIE TAYLOR  
MEMBER  
STEVIE P. MILLS  
ADMINISTRATOR  
DANE N. PERRY  
ASST. ADMINISTRATOR

Dear Colonel Keyser:

Subject: Forsyth County, Georgia Raw Water Intake on Lake Sydney Lanier

As Chairman of the Forsyth County Board of Commissioners, I have a strong responsibility and a mandate to ensure that the county's infrastructure systems are developed in such a way as to stay ahead of the needs of this county's citizens. In that respect I am writing this letter. Forsyth County is not requesting any additional water allocation but only the approval by the Corps to build a vitally needed water intake structure.

Forsyth County is an existing user of the waters of Lake Lanier and has been a user since 1987 when the County began building and operating its water distribution system. Raw water has been supplied from Lake Lanier through the City of Cumming's water intake. The 2000 Census population of Forsyth County was 98,407 and the City of Cumming's 2000 census population was 4,220. The County's water production and distribution system serves a population of 72,698 and the City's service area has a population of 26,728.

The Environmental Protection Division (EPD) of the Georgia Department of Natural Resources issued separate water withdrawal permits on December 23, 1999 to both the City of Cumming (for peak day withdrawal of 21 mgd and maximum monthly withdrawal of 18 mgd) and to Forsyth County (for peak day withdrawal of 16 mgd and maximum monthly withdrawal of 14 mgd). Water for these two permits comes through a single water intake structure in the Lake Lanier operated by the City of Cumming. Copies of these two permits are enclosed.

Forsyth County and the City of Cumming each operate their own water treatment plants, providing potable drinking water to the citizens in their respective service areas, in full compliance with state and federal safe drinking water rules. However, the mutual dependence of these two water systems on a single water intake sets up three problems that need to be solved

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in the very near future: (1) the problem of inadequate water withdrawal capacity to even use the state-permitted amounts of water out of Lake Lanier; (2) the problem of water quality; and (3) the problem of water system security and reliability.

- (1) Inadequate Withdrawal Capacity – The existing water intake and pumping station can physically move only 28.7 mgd of the needed 37 mgd peak day (32 mgd peak month) to Cumming and Forsyth County. The existing City of Cumming intakes are not very deep and when the lake level is low even less water can be delivered to the water treatment plants. At the current rates of growth in the two service areas, this 28.7 mgd physical limitation could be reached on a peak day as soon next summer depending on the weather and the maximum month demand is projected to exceed the 28.7 mgd limitation in the year 2010. As the fastest growing county in Georgia and one of the 10 fastest in America from 1990 through 2003, Forsyth County and the City of Cumming must be able to fully utilize the water allowed by EPD in the December 23, 1999 permits. Placing a larger pump in the existing water intake structure will only increase the physical capacity to a maximum of 35.0 mgd at the highest lake elevation, due to limits of pipeline capacity. A second water intake structure is clearly needed.
- (2) Water Quality – Generally the raw water quality of Lake Lanier is excellent, but the existing location of the City of Cumming intake is located in the near the end of a finger of the lake on Young Deer Creek and is susceptible to raw water quality fluctuations due to run off. The raw water quality is expected to improve and be less susceptible to water quality fluctuations with an intake location closer to the main channel flow through the lake.
- (3) Water System Security – The federal government is rightly placing great emphasis on Homeland Security, and those efforts include the security of the nation's public water systems. The single existing water intake structure serving the nearly 100,000 people currently living in Cumming and Forsyth County will not be sufficient to serve the people that will be living in these areas in the near future. Furthermore, if any Act of God or act of terrorism were to disable the existing water intake structure, safe drinking water would be unavailable for the people served by these water systems.

These three problems should be solved as soon as possible, and they can be solved readily by the construction of a second water intake. Forsyth County's consulting engineers have determined the ideal location, size and design of the needed facility. The Forsyth County Board of Commissioners stand ready to begin construction of this facility on Pilgrim Mill Road, upon the granting of an easement and approval of the construction by the US Army Corps of Engineers. A design development report describing the site selection options and process is available for your review.

We wish to emphasize that Forsyth County is not requesting any additional water allocation permit from Georgia EPD, nor is Forsyth County requesting any additional storage contract commitment by the Corps of Engineers. We are simply requesting approval by the Corps for

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November 25, 2003  
Page 3

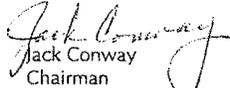
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Forsyth County to build this vitally needed water intake structure, so that our citizens can use the full amount of water allocated to the City of Cumming and Forsyth County, and can be assured of continuing safe quality and secure service delivery.

We stand ready to meet with you and your staff in Mobile to answer any questions you may have, and we will follow up shortly to schedule such a meeting.

We appreciate the continued cooperation of the US Army Corps of Engineers and look forward to your approval of this vital project.

Sincerely,

  
Jack Conway  
Chairman

cc: Erwin Topper, US COE Lanier Project Mgmt. Office  
Harold Reheis, Joe Tanner & Associates  
David Muckerman, CH2M Hill  
Peter Madsen, CH2M Hill

RECEIVED



MAY 14 2004 DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
WATER & SEWER P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

RECEIVED

MAY 13 2004

FORSYTH COUNTY  
BOARD OF COMMISSIONERS

10 MAY 2004

REPLY TO  
ATTENTION OF

Plan Formulation Branch  
Planning and Environmental Division

*IMPORTANT*

G

COMMISSIONERS

MAY 13 2004

COPIED

Xc: *Stevie*  
*Tim Perkins*

Honorable Jack Conway, Chairman  
Forsyth County Commission  
110 East Main Street  
Cumming, Georgia 30040

Dear Mr. Conway:

This is in response to your letter of November 25, 2003, which requested permission from the U.S. Army Corps of Engineers, Mobile District to construct a new raw water intake on Lake Sidney Lanier. I apologize for the time it has taken to respond to this request.

As you may recall, the State of Alabama sued the U.S. Army Corps of Engineers (Corps) in June 1990 regarding, among other things, the proposed reallocation of storage in Lake Lanier to satisfy water supply needs of counties and cities in and around Lake Lanier. During the next 18 months, the States of Alabama, Florida, and Georgia and the Corps entered into a dialog that resulted in a Memorandum of Agreement (MOA) signed in January 1992. This MOA provided for the conduct of the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint (ACT-ACF) River Basins Comprehensive Study and included the "live and let live" provision whereby existing Water Supply Providers (Gwinnett County, City of Cumming, City of Gainesville, City of Buford, and the Atlanta Regional Commission) could continue to withdraw water from Lake Lanier and reasonably increase the amounts withdrawn, even though contracts ("holdover water supply contracts") between the Corps and the Water Supply Providers had expired. The rates paid by Water Supply Providers remained the same as when the contracts expired in 1989 until March 2000 when these rates were updated. As noted in a June 16, 1997, letter from my predecessor, Colonel William S. Vogel to Mr. Stevie Mills, County Manager for Forsyth County, however, the County does not have a "holdover water supply contract" with the Corps and cannot be considered as an "existing user" of Lake Lanier. A copy of that letter is enclosed for your reference.

In December 2000, the Southeastern Federal Power Customers, Inc. (SeFPC), sued the Corps in Federal District Court in the District of Columbia regarding the adequacy of rates being paid by the Water Supply Providers to repay losses to hydropower generation. Court-sanctioned mediation between the Corps and SeFPC began in March 2001. Certain Water Supply Providers (Gwinnett County, City of Gainesville, and the Atlanta Regional Commission) and the State of Georgia were included in the mediation in July 2001. Following nearly two years of negotiations, in January 2003, the participants advised the Court that they had reached an agreement.

However, the States of Alabama and Florida challenged the Settlement in a Federal District Court in Alabama. On February 10, 2004, the District of Columbia Court ruled that the Settlement Agreement negotiated by the parties to SeFPC lawsuit was valid and approved, and may be executed and performed in accordance with its terms, provided that the preliminary injunction entered by Federal District Court in Alabama on October 15, 2003, is first dissolved.

At the present time the Federal District Court in Alabama has enjoined the Corps from entering into any new storage or withdrawal contracts in Lake Lanier. That injunction together with the fact that Forsyth County does not currently have a "holder water supply contract" with the Corps also prevents me from granting your request for an easement to construct a new intake structure. If you believe that a meeting with me to discuss these issues would be helpful, I am more than willing to meet.

I am forwarding a copy of this letter to Dr. Carol Couch of the Environmental Protection Division, Mr. Trey Glenn of the Alabama Office of Water Resources, Mr. Douglas E. Barr of the Northwest Florida Water Management District, and Ms. Colleen M. Castille and Ms. Teri Donaldson of the Florida Department of Environmental Protection.

I appreciate your patience as we work our way through the various legal challenges. As decisions are made that may give the Corps the latitude to implement the Settlement Agreement or to take other actions, we will keep you informed. If you should have any further questions, please call me at (251) 690-2511.

Sincerely,



Robert B. Keyser  
Colonel, Corps of Engineers  
District Engineer

Enclosure

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ALABAMA  
EASTERN DIVISION

STATE OF ALABAMA,	)	
	)	
Plaintiff,	)	
	)	
v.	)	No. CV-90-BE-01331-E
	)	
THE UNITED STATES ARMY CORPS OF	)	
ENGINEERS, <u>et al.</u> ,	)	
	)	
Defendants.	)	
_____	)	

H

**FEDERAL DEFENDANTS' NOTICE OF PROPOSED ACTIONS**

Federal Defendants hereby give notice to this Court of several proposed actions that the Corps intends to take consistent with its statutory and regulatory responsibilities. This notice is provided as a courtesy to the Court because these proposed activities relate to allegations made by the Plaintiffs in the proposed amended complaints. However, these proposed actions are consistent with and do not violate the preliminary injunction entered by this Court on October 15, 2003. That injunction prohibits the Defendants from filing, or implementing any part of, the settlement agreement in the case of *Southeastern Federal Power Customers, Inc. v. United States Army Corps of Engineers* (SeFPC Settlement Agreement), and from entering into any new storage or withdrawal contracts affecting the Apalachicola-Chattahoochee-Flint (ACF) river basin without approval of this Court.

The Corps intend to take the following proposed actions:

**1. Update of Existing Water Control Plans and Manuals for the Alabama-Coosa-Tallapoosa (ACT) and ACF River Basins.**

Project operations for each of the Corps' projects are described in water control plans. Water control manuals are developed for the larger, interrelated systems consisting of these projects. The basic purpose of water control plans and manuals is to assure that projects and interrelated systems are being operated in a manner consistent with project authorizations and applicable Federal law. The Corps' regulations require that these plans be revised as necessary. Engineering Regulation 1110-2-240.

In the late 1980's the Corps prepared a revised draft water control manual for the ACF Basin, as part of proposed post-authorization changes to Buford Dam/Lake Sidney Lanier. As a result of the litigation before this Court, the proposed revisions to the water control manual were deferred while the parties negotiated. Those negotiations resulted in the Comprehensive Study, the ACF and the ACT Compacts and the "live and let live" provisions. Therefore, the Corps took no further actions during this period to amend the water control plans and manuals.

The Compacts were allowed to expire in August 2003 for the ACF Basin and July 2004 for ACT Basin. Accordingly, the Corps now intends to proceed with the update of the water control plans and manuals. That process, subject to the availability of funds, is estimated to take approximately two years and will include analysis under the National Environmental Policy Act (NEPA), consultation under the Endangered Species Act and compliance with all other required environmental and cultural resource laws. The States of Alabama, Florida and Georgia have been asked to participate in the process. The process may also include other regional, local and tribal entities and will include public involvement.

The proposed updates of the water control plans and manuals are intended to reflect current operations as they have evolved due to changing conditions in the basins. A major

element of water control plans is data collection related to hydropower, flood control, navigation, recreation, and water quality. While such plans typically account for existing allocation of storage, consistent with this Court's preliminary injunction, the proposed updates will not include any effort to reallocate or implement any new storage or withdrawal contracts affecting the ACF basin, without the approval of this Court.

**2. Specific Updates for Alabama Power Company.**

Alabama Power Company (APC) is in the process of obtaining new operating licenses from the Federal Energy Regulatory Commission (FERC) for its projects within the ACT Basin with a deadline of July 31, 2005, for filing relicensing applications. As part of the FERC relicensing applications, APC is proposing changes to the operations of these projects that will impact flood control operations within the basin. Those changes to the flood control operations must be approved by the Corps District Engineer. Those changes will also need to be reflected in the Corps' water control plans and manuals. The Corps proposes to review the proposed changes to flood control operations and, if those changes are approved, amend the relevant water control plans and manuals.

**3. Gwinnett County Outfall Easement**

Gwinnett County has applied for an easement across the Corps' property and within Lake Lanier in the ACF basin for the construction and operation of a treated wastewater outfall structure. The Corps intends to process the request for the easement and likely a permit application under Section 404 of the Clean Water Act (CWA) for the outfall structure, which will require analysis under NEPA.

The easement and permitting action is consistent with the preliminary injunction entered by this Court. These Corps actions do not constitute and will not authorize any new storage or

withdrawal contract. In addition, they will not implement any provision of the SeFPC Settlement Agreement. The SeFPC Settlement Agreement provides for the crediting of return flows to Lake Lanier to Municipal and Industrial water supply. The Corps' actions to be taken here will not provide those credits at this time, but will simply authorize the outfall into Lake Lanier consistent with the preliminary injunction.

#### **4. City of Gainesville Easement**

The City of Gainesville has an existing easement for a pipeline and treated wastewater outflow structure at Lake Lanier in the ACF basin. Gainesville is upgrading its existing wastewater treatment facilities and requires a new easement to accommodate construction and operation of the new outfall/diffuser structure. The Corps intends to process the request for the easement which will include analysis under NEPA.

The processing of this easement request is consistent with the preliminary injunction entered by this Court because the easement is not a new storage or withdrawal contract. Also, the easement does not implement the SeFPC Settlement Agreement because Gainesville is specifically exempted from the provisions related to crediting of return flows.

#### **5. Line Creek Reservoir**

The Fayette County Board of Commissioners has applied for a CWA Section 404 permit authorizing the discharge of fill material into waters of the United States, including wetlands. The project purpose is the construction of a 650-acre water supply reservoir with a proposed yield of approximately 32 million gallons per day. The proposed water supply reservoir will be constructed on Line Creek, a tributary to the Flint River in the ACF basin. The Corps intends to process the application for the permit, which will include analysis under NEPA.

This action is consistent with the preliminary injunction entered by this Court because the

Corps' action would only represent approval of the placement of fill in waters of the United States, including wetlands, under Section 404 for construction of the dam structure. The State of Georgia is the entity authorized to allocate new water withdrawals from tributaries in Georgia. In accordance with Federal law, the Corps' permitting regulations expressly provide that "the authority of the states to allocate water quantities shall not be superceded, abrogated or otherwise impaired." 33 C.F.R. § 320.4(m).

Therefore, the Corps' issuance of a CWA Section 404 permit will not constitute a new storage or withdrawal contract.

**6. City of Cartersville Reallocation Storage Contract**

The Corps has completed a final draft reallocation report for Lake Allatoona in the ACT basin, which recommends reallocation of 1,436 acre-feet to the City of Cartersville, which would provide an estimated average withdrawal of 3.6 million gallons per day. A letter agreement was signed on November 20, 1996 among the States of Alabama and Georgia and the Corps agreeing that the Corps could begin processing and evaluating an amendment or modification to the water supply contract with the City. The Corps intends to finalize the reallocation report for approval and process the request for the water storage contract with the City of Cartersville, pursuant to the previous letter agreement.

In addition to the foregoing actions, the Corps has determined that two pending requests for official action are prohibited under the preliminary injunction and will not be processed by the Corps unless and until that injunction is dissolved. These requests are:

**1. City of Buford**

The City of Buford has requested additional storage reallocation for Lake Lanier.

Approval of this request would require a new storage contract from the Corps in the ACF

basin and is therefore enjoined.

**2. Forsyth County Intake**

Forsyth County has requested an easement to construct a new water intake at Lake Lanier.

Approval of this request would require a new withdrawal contract from the Corps in the ACF basin and is therefore enjoined.

The Corps will continue to review proposed actions to determine if they are consistent with the preliminary injunction. Proposed actions that are prohibited within the terms of this Court's injunction will not be processed without approval from this Court.

Dated March 25, 2005.

Respectfully submitted,

ALICE H. MARTIN  
United States Attorney  
Northern District of Alabama

SHARON D. SIMMONS  
Assistant United States Attorney  
200 Vance Building and Courthouse  
1801 4th Ave., North  
Birmingham, AL 35203  
(205) 244-2140

S/ Ruth Ann Storey  
RUTH ANN STOREY  
United States Department of Justice  
Environment and Natural Resources  
Division  
General Litigation Section  
P.O. Box 663  
Washington, D.C. 20044-0663  
(202) 305-0493

**CERTIFICATE OF SERVICE**

I hereby certify that I electronically filed the above Federal Defendants' Notice of Proposed Actions with the Clerk of the Court using the CM/ECF system which will send notification of that filing to the following:

John M. Johnson  
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W. Larkin Radney IV  
Lightfoot, Franklin & White, L.L.C.  
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Birmingham, Alabama 35203-2706

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William D. Little III  
Office of the Attorney General  
Civil Environmental Protection Division  
Room 303, 11 South Union Street  
Montgomery, Alabama 36130

Christopher M. Klise  
Solicitor General  
Office of the Attorney General  
P.L. - 01, The Capitol  
Tallahassee, FL 32399-1050

Greg Munson  
Office of the General Counsel  
Florida Department of Environmental Protection  
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Christopher R. Hood  
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Gregory W. Blount  
Charles A. Zdebski  
Troutman Sanders, LLP  
Bank of America Plaza  
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Atlanta, Georgia 30308-2216

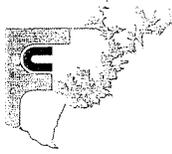
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Edward S. Allen  
C. Grady Moore, III  
Balch & Bingham L.L.P.  
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Birmingham, Al. 35201-0306

Paul E. Andrew  
Seven Lumkin Street  
Lawrenceville, GA 30045

Charlanna Spencer  
Chad E. Stewart  
Sasser Littleton & Stidham PC  
PO Drawer 4539  
Montgomery, AL 36103-4539

S/ Ruth Ann Storey



## Forsyth County Board of Commissioners

September 23, 2005

Colonel Peter F. Taylor, Jr.  
 Department of the Army  
 Mobile District, Corps of Engineers  
 Attention: CESAM-DE  
 Post Office Box 2288  
 Mobile, Alabama 36628-0001

JACK CONWAY  
 CHAIRMAN

BRIAN R. TAM  
 VICE CHAIRMAN

LINDA K. LEBBETTER  
 SECRETARY

CHARLES LAUGHINGHOUSE  
 MEMBER

DAVID W. RICHARD  
 MEMBER

JEFF QUESENBERRY  
 COUNTY MANAGER

Dear Colonel Taylor:

We hope this correspondence finds you well. We understand that you are in the wake of Hurricane Katrina and with Hurricane Rita looming, your office is likely overloaded with work and your time is stretched thin. Be that as it may, in light of the Eleventh Circuit's ruling on September 19, 2005 striking the Alabama District Court's October 15, 2003 and February 18, 2005 injunctions, it is absolutely essential that we renew our plea for the Corps of Engineers to authorize Forsyth County to begin construction of a redundant water intake in Lake Lanier and thereby regain control of the County's destiny in the realm of fresh water supply. In light of the small window that appears to have been opened by the Eleventh Circuit's ruling, we are sure you can appreciate the urgency of this petition.

It is not our intent, at this time, to ask for an additional capacity allocation from Lake Lanier. What Forsyth County needs, desperately, is permission from the Corps to begin construction of a redundant intake into Lake Lanier to safeguard the health, safety and welfare of the citizens of Forsyth County. There is more than a little irony in the fact that twenty-one square miles of Lake Lanier sits within the jurisdictional boundaries of Forsyth County and yet we are one pump outage away from a dire human health crisis due to lack of water availability. As you are keenly aware, in the post 9/11 era all branches of government should be vigilant to protect and provide redundant infrastructure where possible to minimize the consequences of deliberate sabotage. Moreover, the intake systems currently pulling water from Lake Lanier (and upon which, Forsyth County relies), are outdated and otherwise inadequate (i.e., due to the shallowness of the current intake it is physically incapable of withdrawing the current allocated capacity) to meeting the burgeoning Forsyth County population. Moreover, and critically, this infrastructure is not controlled by Forsyth County thereby placing the health and welfare of the County's citizens outside of County control. This is an untenable position for a County of this size to find itself.

As you are well aware, Forsyth County has made repeated overtures to the Corps for a redundant intake for years. And, as you also know, the injunction(s) issued by the Alabama District Court has been unflinchingly offered as the basis by which the Corps' hands were "tied" to issue



Friday, September 23, 2005  
Page 2

appropriate approvals for a redundant intake. We would direct your attention to a March 25, 2005 document titled Federal Defendants' Notice of Proposed Actions (attached hereto as Exhibit A), wherein the Corps endeavored to report and summarize to the Alabama judge the various water-related actions it was taking, and declining to take, in accord with the Court's injunctions. On the last page, you will note that Forsyth County's request for an intake was rather unceremoniously addressed with a single line: "Approval of this request would require a new withdrawal contract from the Corps in the ACF basin and is therefore enjoined." Based upon the Eleventh Circuit's ruling, the obstacle that the Corps has repeatedly advanced as the basis for its inability to take action is gone. The Corps is no longer "enjoined" from approving Forsyth County's request and we would therefore emphatically urge that the Corps' position on the County's intake authorization be reconsidered.

Please be aware that Forsyth County is not sitting on its hands. Forsyth County is pursuing other freshwater sources, including the creation of a freshwater reservoir, deep well technology, and potable water transfers from other jurisdictions. All of these measures should, in varying degrees, lessen our dependence on Lake Lanier as a freshwater source. However, every technical model that the County has reviewed mandates, indeed compels, that a sizeable part of the County's water supply must come from Lake Lanier. Forsyth County has yet to review one long-term water supply projection wherein Lake Lanier was not the primary source to service the County's needs.

Moreover, and to emphasize, all the County seeks at the present time is permission to construct the intake (including any necessary easements). As we are sure you can appreciate, construction of a deep-water intake is a time-intensive endeavor with a completion cycle of no less than three to five years. In other words, Forsyth County's request, and the Corps' corresponding authorization, simply guarantees that a critical infrastructure project gets off the ground in a timely fashion, as opposed to permission being delayed until crisis occurs. Far too often government is accused of inaction until it is in the midst of crisis. We hope the Corps will join Forsyth County in taking proactive steps to ensure crisis is averted as opposed to merely managed.

In summation, in light of the Eleventh Circuit's ruling striking the Alabama District Court's injunction(s), Forsyth County and its citizens do hereby respectfully and passionately renew our request for the following:

1. Immediate permission to construct a redundant intake into Lake Lanier;
2. All necessary easements to facilitate such construction; and
3. Consideration of a freshwater storage contract, if the Corps believes it has the authority to do so at this time; and
4. Corps recognition that Forsyth County is the owner of its portion (as permitted by the State of Georgia) of that capacity currently withdrawn from Lake Lanier.

Please be mindful that the above points are listed in order of priority, with points three and four being absolutely critical but not as time sensitive as are points one and two. For your consideration, we have attached to this correspondence historical data to demonstrate the County's prolonged and tortured efforts at securing a redundant intake for our citizens.

Your consideration of the contents of this letter is greatly appreciated.

Friday, September 23, 2005  
Page 2

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Best regards,

  
Jack Conway  
Chairman, Forsyth County Board  
of Commissioners

  
Jeff Quesenberry  
Forsyth County Manager

Enclosures

- cc: The Honorable Sonny Perdue, Governor of the State of Georgia  
The Honorable Johnny Isaakson, United States Senator  
The Honorable Saxby Chambliss, United States Senator  
The Honorable John Linder, United States Representative  
The Honorable Nathan Deal, United States Representative  
The Honorable Bill Stephens, Georgia State Senator  
The Honorable Chip Pearson, Georgia State Senator  
The Honorable Tom Knox, Georgia State Representative  
The Honorable Jack Murphy, Georgia State Representative  
The Honorable Amos Amerson, Georgia State Representative  
The Honorable Ford Gravit, Mayor, City of Cumming, Georgia  
Chick Krautler, Director, Atlanta Regional Commission  
Forsyth County Board of Commissioners

10/27/2005 13:35 FAX

SAXBY CHAMBLISS  
GEORGIA

**United States Senate**

WASHINGTON, DC 20510-1007

October 12, 2005

John Paul Woodley, Jr.  
Principal Deputy Assistant Secretary  
Civil Works  
Department of the Army  
108 Army Pentagon  
Washington, D.C. 20310-0108

Dear Assistant Secretary Woodley:

Thank you for taking the time to meet with us on October 6, 2005, to discuss the need to move forward in light of the recent decision of the 11<sup>th</sup> Circuit Court of Appeals regarding the "D.C. Settlement Agreement" and its effect on operations of the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) river basins.

We are very pleased that you intend to ensure that the Corps of Engineers will comply with the obligations of the D.C. Settlement Agreement and examine whether the contracts for water inputs and withdrawals are reasonable once they pass a NEPA review. We appreciate your willingness to ensure that action is taken on the pending applications for Gwinnett, Forsyth, and Cherokee counties in the near future.

As you stated in the meeting, we now have another opportunity to encourage the Governors of Georgia, Alabama, and Florida to come together to develop a framework for water allocations. We recognize that the Corps does not have the authority to apportion water between the states because that authority is vested in the Governors themselves in the form of an interstate compact. If no compact can be agreed upon, the least desirable solution is to have the United States Supreme Court or the United States Congress apportion water. Although the Corps should not directly or indirectly apportion water, it is obligated to follow the law and its own regulations that mandate the completion of an update of all relevant operating procedures and manuals.

We applaud your decision to resume the Corps' reevaluation and update of all relevant operating procedures and manuals with regards to the operation of the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) river basins. Not only is this decision consistent with the Corps' own regulations and with federal law - specifically, those laws that require the Corps to update its water control plans - it has also been requested by the State of Alabama as part of the ongoing litigation. (See page 64 of the State of Alabama's Third Amended Complaint, stating that the "Court enter an order compelling the Corps to develop and finalize Water Control Plans . . . in accordance with applicable law.")

418 RUSSELL SENATE OFFICE BUILDING WASHINGTON, DC 20510-1007 PHONE: (202) 224-3521	100 GALLERIA PARKWAY SUITE 1340 ATLANTA, GA 30339 PHONE: (770) 763-8030	6501 PEAKS ROAD BUILDING 350 MACON, GA 31210 PHONE: (478) 478-0788	P.O. Box 3217 MABLETONE, GA 31778 PHONE: (228) 866-2112	2 EAST BRYAN STREET SUITE 520 SAVANNAH, GA 31401 PHONE: (912) 232-3657	1058 CLAIBORN ROAD SUITE 105 AUGUSTA, GA 30907 PHONE: (706) 730-6302	TOLL FREE NUMBER 1 (800) 234-4208
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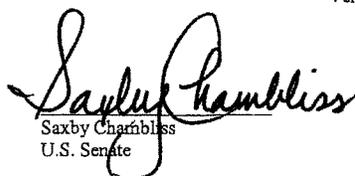
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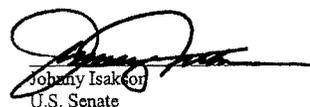
COMMITTEE:  
AGRICULTURE  
CHAIRMAN  
ARMED SERVICES  
INTELLIGENCE  
RULES

J

As long as you keep moving forward with implementing the D.C. Settlement Agreement and with good faith attempts to bring the Governors of the three states together to establish a framework for water allocations, you will have our full support. Thank you for your efforts on this issue that is so critical to our state. We ask that you continue to provide us with updates on this matter and let us know if we can be of assistance to you.

Very truly yours,

  
Saxby Chambliss  
U.S. Senate

  
Johnny Isakson  
U.S. Senate



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
CIVIL WORKS  
108 ARMY PENTAGON  
WASHINGTON DC 20310-0108

30 January 2006

Governor Sonny Perdue  
State Capitol  
Atlanta, Georgia 30334-0900

Dear Governor Perdue:

I am writing today as a follow up to my May 11, 2005 letter, and our meeting in Atlanta on June 17, 2005, regarding the allocation of water in the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) river basins.

On September 19, 2005, the Eleventh Circuit Court of Appeals issued an opinion in State of Alabama and State of Florida v. U.S. Army Corps of Engineers, No. 03-16424 & No. 05-11123, 424 F. 3d 1117 (11<sup>th</sup> Cir. 2005), vacating Judge Bowdler's October 15, 2003 and February 18, 2005 orders. En banc review was denied on December 6, 2005. No stay of the Eleventh Circuit's ruling was sought. The Eleventh Circuit issued its mandate on December 14, 2005. Consequently, the legal prohibition against the implementation of the settlement agreement in the Southeastern Federal Power Customers, Inc. v. U.S. Army Corps of Engineers, 00-CV-2975 (D.D.C.) [*SeFPC* lawsuit], no longer exists. Most recently, on January 20, 2006, Judge James Robertson, U.S. District Court for the District of Columbia, granted plaintiff's motion to stay the *SeFPC* case, as required by the settlement agreement, "for a sufficient amount of time to allow the [c]ompletion of the NEPA [p]rocess." As we discussed previously, I have been advised by counsel that the settlement agreement is a binding and enforceable legal instrument and the Army has no unilateral authority to modify it. As Judge Robertson noted in his January 20<sup>th</sup> Order, "no reason appears of record why the appropriate government authorities should not now be proceeding to perform their obligations under the settlement agreement." In granting *SeFPC*'s motion, Judge Robertson further ordered "this stay of the litigation will not release the Corps from its existing legal obligation to implement the settlement agreement as expeditiously as practicable." The Army is proceeding with the NEPA analysis associated with the interim storage agreements, and will comply with all other terms of the settlement agreement.

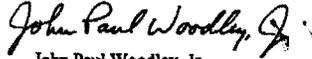
On April 26, 2005, I withdrew my intentions to re-evaluate and update the ACT and ACF operating procedures and manuals until the relevant litigation concluded, or the three States' Governors reach an agreement concerning water allocation. As mentioned above, no party moved the Eleventh Circuit to stay its order prior to issuance of the mandate. The relevant litigation, as contemplated in my April 26<sup>th</sup> correspondence, has concluded, as the Army presently is under no legal prohibition or injunctive order, and must therefore faithfully execute its federal responsibilities in compliance with law and regulation. As the Army proceeds with the NEPA analysis associated with the interim storage contracts, required by the *SeFPC* settlement agreement, the Corps will by necessity have to update the operating procedures and manuals for

the ACT and ACF basins. I will emphasize, however, that if the three States were to reach a final water allocation agreement in the foreseeable future (e.g., 6-9 months), I will request the Corps to immediately begin the legal process of adjusting its project operations to reflect such agreement. I also will inform the settling parties in the *SeFPC* lawsuit of the final water allocation agreement and explore with those parties the appropriateness of entering into a superseding settlement agreement. The Army therefore is proceeding with all federal actions in the ACT and ACF basins, including updating the operating procedures and manuals, as necessary and required to fully implement the *SeFPC* settlement agreement.

I remain hopeful that a final and comprehensive agreement equitably allocating water in these basins is still within reach of the three States. Litigation has proven to be disruptive, costly, and unpredictable. The most beneficial solution to the underlying water allocation issue is, from my perspective, a negotiated agreement among the States. I again offer to engage the Army's technical and legal representatives in an effort to assist you, Governor Purdue, and Governor Riley in arriving at a solution to this vexing issue, should such assistance be desired.

As Senator Isakson and Senator Chambliss have expressed interest in this matter, I am informing the Senators today, by similar letter, of my present intentions and path forward

Very truly yours,



John Paul Woodley, Jr.  
Assistant Secretary of the Army  
(Civil Works)



## Forsyth County Board of Commissioners

February 1, 2006

**VIA CERTIFIED MAIL # 7004 1160 0002 5870 1233**

Colonel Peter F. Taylor, Jr.  
 Department of the Army  
 Mobile District, Corps of Engineers  
 Attention: CESAM-DE  
 Post Office Box 2288  
 Mobile, Alabama 36628-0001

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 COUNTY MANAGER

Dear Colonel Taylor:

Forsyth County is in receipt of, and delighted by, Assistant Secretary Woodley's January 30, 2006 correspondence to Governor Sonny Perdue regarding the allocation of water in the ACT and ACF river basins. The County is genuinely pleased with the Assistant Secretary's correspondence as it manifests the clear intention of the Corps of Engineers ("Corps") to immediately consider and act upon Forsyth County's long-standing request for permission to construct a raw water intake into Lake Lanier. As you are aware, the County has been steadfastly pursuing such permission for years but has been repeatedly turned down by the Corps for an endless variety of reasons in spite of the fact that twenty-one square miles of Lake Lanier sits within the jurisdictional boundaries of Forsyth County. The Assistant Secretary's letter makes clear that all legal impediments to granting Forsyth County permission to build the redundant water intake have now been removed. A copy of the Assistant Secretary's letter is attached hereto for ease of reference. Indeed, based upon the Corps' previous representations to the Court, all remaining roadblocks to providing Forsyth County the requested relief have been lifted.

Specifically, on or about March 24, 2005, the Corps tendered a document to the United States District Court of Alabama, titled "Federal Defendants Notice of Proposed Actions" wherein the Corps outlined those pending requests for permits and permissions related to water withdrawal and use in the ACT and ACF basins. With respect to Forsyth County's request for an easement to construct a new water intake into Lake Lanier, the Corps advised the Court that "approval of this request would require a new withdrawal contract from the Corps in the ACF basin and is therefore enjoined." The "injunctions" referred to were contained in Judge Bowdre's October 15, 2003 and February 18, 2005 Orders. As noted in the Assistant Secretary's letter, those injunctions were vacated on September 19, 2005. Consequently, the asserted rationale for delaying Forsyth County's permission to construct the requested redundant water intake and indeed to award Forsyth County its own withdrawal permit or storage contract no longer exists. Please let me emphasize that Forsyth County already has an



independent water withdrawal permit from the Georgia Environmental Protection Division for 16 MGD. However, due to the Corps refusal to grant Forsyth County an access easement, the County has been unable to utilize this previously issued permit and has been forced to rely on another governmental entity for its water needs. As referenced in the County's September 23, 2005 correspondence, this is an untenable situation for a County of this size to find itself.

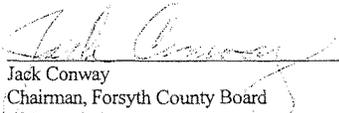
Immediately after the Eleventh Circuit vacated Judge Bowdre's injunctions, Forsyth County promptly renewed its plea for the Corps to approve the County's request to construct the redundant fresh water intake. Our request was presented both verbally and in writing (See, September 23, 2005 letter, attached). During a conversation with your office shortly after the injunctions were vacated, Forsyth County was advised that the necessary permissions could still not be granted as there existed a possibility of *en banc* review of the September 19, 2005 Order. However, the Assistant Secretary has correctly observed that *en banc* review "was denied on December 6, 2005" and that there is "presently.... no legal prohibition or injunctive order" and that the Corps must now "faithfully execute its federal responsibilities in compliance with law and regulation." The County heartily concurs with the Assistant Secretary's conclusion and would again request that the Corps immediately grant Forsyth County permission to commence construction of the redundant fresh water intake along with any necessary permit or withdrawal contract.

The County is aware of the Assistant Secretary's specific commitment that prompt action be taken with respect to Forsyth County's request for Lake Lanier access. Although we are mindful that the Assistant Secretary had previously committed to Senators Isakson and Chambliss that Forsyth County's request would be timely processed, this commitment by the Assistant Secretary has now been renewed and strengthened. The County appreciates that assurance. As noted in the Assistant Secretary's January 20, 2006 correspondence, the Corps "is [now] proceeding with all federal actions in the ACT and ACF basins..." Based upon our discussions with Mike Quiello of Senator Johnny Isakson's office yesterday afternoon, Forsyth County understands that the reference to "proceeding with all federal action" in the Assistant Secretary's letter represents a commitment that Forsyth County's request will be immediately taken up for consideration. We also understand that the Assistant Secretary will be issuing another letter to Senators Isakson and Chambliss on this same subject matter, wherein the Assistant Secretary will specifically confirm immediate action on the Forsyth County request.

In summation, Forsyth County genuinely appreciates the Assistant Secretary's stated intention of promptly moving forward on Forsyth County's request for a redundant water intake. The County is ready to immediately commence construction as soon as permission is granted. As mentioned in the County's September 23, 2005 letter, time is of the essence on this project as every moment of delay moves the County closer to a potential health crisis. Consequently, the County stands ready to offer the Corps any assistance it may need to promptly consider this matter and issue the requested permits and/or permissions.

Thank you again for your generous consideration of the County's request.

Warmest regards,

  
\_\_\_\_\_  
Jack Conway  
Chairman, Forsyth County Board  
of Commissioners

Enclosure

cc: The Honorable Sonny Perdue, Governor of the State of Georgia  
The Honorable Johnny Isakson, United States Senator  
The Honorable Saxby Chambliss, United States Senator  
The Honorable John Linder, United States Representative  
The Honorable Nathan Deal, United States Representative  
The Honorable Bill Stephens, Georgia State Senator  
The Honorable Chip Pearson, Georgia State Senator  
The Honorable Tom Knox, Georgia State Representative  
The Honorable Jack Murphy, Georgia State Representative  
The Honorable Amos Amerson, Georgia State Representative  
Chick Krautler, Director, Atlanta Regional Commission  
Forsyth County Board of Commissioners

Wednesday, February 1, 2006  
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cc via hand delivery: The Honorable Ford Gravitt, Mayor, City of Cumming, Georgia




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## Forsyth County Board of Commissioners

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COUNTY MANAGER

September 23, 2005

Colonel Peter F. Taylor, Jr.  
Department of the Army  
Mobile District, Corps of Engineers  
Attention: CESAM-DE  
Post Office Box 2288  
Mobile, Alabama 36628-0001

Dear Colonel Taylor:

We hope this correspondence finds you well. We understand that you are in the wake of Hurricane Katrina and with Hurricane Rita looming, your office is likely overloaded with work and your time is stretched thin. Be that as it may, in light of the Eleventh Circuit's ruling on September 19, 2005 striking the Alabama District Court's October 15, 2003 and February 18, 2005 injunctions, it is absolutely essential that we renew our plea for the Corps of Engineers to authorize Forsyth County to begin construction of a redundant water intake in Lake Lanier and thereby regain control of the County's destiny in the realm of fresh water supply. In light of the small window that appears to have been opened by the Eleventh Circuit's ruling, we are sure you can appreciate the urgency of this petition.

It is not our intent, at this time, to ask for an additional capacity allocation from Lake Lanier. What Forsyth County needs, desperately, is permission from the Corps to begin construction of a redundant intake into Lake Lanier to safeguard the health, safety and welfare of the citizens of Forsyth County. There is more than a little irony in the fact that twenty-one square miles of Lake Lanier sits within the jurisdictional boundaries of Forsyth County and yet we are one pump outage away from a dire human health crisis due to lack of water availability. As you are keenly aware, in the post 9/11 era all branches of government should be vigilant to protect and provide redundant infrastructure where possible to minimize the consequences of deliberate sabotage. Moreover, the intake systems currently pulling water from Lake Lanier (and upon which, Forsyth County relies), are outdated and otherwise inadequate (i.e., due to the shallowness of the current intake it is physically incapable of withdrawing the current allocated capacity) to meeting the burgeoning Forsyth County population. Moreover, and critically, this infrastructure is not controlled by Forsyth County thereby placing the health and welfare of the County's citizens outside of County control. This is an untenable position for a County of this size to find itself.

As you are well aware, Forsyth County has made repeated overtures to the Corps for a redundant intake for years. And, as you also know, the injunction(s) issued by the Alabama District Court has been unflinchingly offered as the basis by which the Corps' hands were "tied" to issue



Friday, September 23, 2005

Page 2

appropriate approvals for a redundant intake. We would direct your attention to a March 25, 2005 document titled Federal Defendants' Notice of Proposed Actions (attached hereto as Exhibit A), wherein the Corps endeavored to report and summarize to the Alabama judge the various water-related actions it was taking, and declining to take, in accord with the Court's injunctions. On the last page, you will note that Forsyth County's request for an intake was rather unceremoniously addressed with a single line: "Approval of this request would require a new withdrawal contract from the Corps in the ACF basin and is therefore enjoined." Based upon the Eleventh Circuit's ruling, the obstacle that the Corps has repeatedly advanced as the basis for its inability to take action is gone. The Corps is no longer "enjoined" from approving Forsyth County's request and we would therefore emphatically urge that the Corps' position on the County's intake authorization be reconsidered.

Please be aware that Forsyth County is not sitting on its hands. Forsyth County is pursuing other freshwater sources, including the creation of a freshwater reservoir, deep well technology, and potable water transfers from other jurisdictions. All of these measures should, in varying degrees, lessen our dependence on Lake Lanier as a freshwater source. However, every technical model that the County has reviewed mandates, indeed compels, that a sizeable part of the County's water supply must come from Lake Lanier. Forsyth County has yet to review one long-term water supply projection wherein Lake Lanier was not the primary source to service the County's needs.

Moreover, and to emphasize, all the County seeks at the present time is permission to construct the intake (including any necessary easements). As we are sure you can appreciate, construction of a deep-water intake is a time-intensive endeavor with a completion cycle of no less than three to five years. In other words, Forsyth County's request, and the Corps' corresponding authorization, simply guarantees that a critical infrastructure project gets off the ground in a timely fashion, as opposed to permission being delayed until crisis occurs. Far too often government is accused of inaction until it is in the midst of crisis. We hope the Corps will join Forsyth County in taking proactive steps to ensure crisis is averted as opposed to merely managed.

In summation, in light of the Eleventh Circuit's ruling striking the Alabama District Court's injunction(s), Forsyth County and its citizens do hereby respectfully and passionately renew our request for the following:

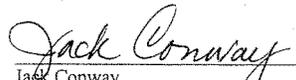
1. Immediate permission to construct a redundant intake into Lake Lanier;
2. All necessary easements to facilitate such construction; and
3. Consideration of a freshwater storage contract, if the Corps believes it has the authority to do so at this time; and
4. Corps recognition that Forsyth County is the owner of its portion (as permitted by the State of Georgia) of that capacity currently withdrawn from Lake Lanier.

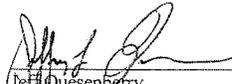
Please be mindful that the above points are listed in order of priority, with points three and four being absolutely critical but not as time sensitive as are points one and two. For your consideration, we have attached to this correspondence historical data to demonstrate the County's prolonged and tortured efforts at securing a redundant intake for our citizens.

Friday, September 23, 2005  
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Your consideration of the contents of this letter is greatly appreciated.

Best regards,

  
Jack Conway  
Chairman, Forsyth County Board  
Of Commissioners

  
Jeff Quesenberry  
Forsyth County Manager

Enclosures

cc: The Honorable Sonny Perdue, Governor of the State of Georgia  
The Honorable Johnny Isakson, United States Senator  
The Honorable Saxby Chambliss, United States Senator  
The Honorable John Linder, United States Representative  
The Honorable Nathan Deal, United States Representative  
The Honorable Bill Stephens, Georgia State Senator  
The Honorable Chip Pearson, Georgia State Senator  
The Honorable Tom Knox, Georgia State Representative  
The Honorable Jack Murphy, Georgia State Representative  
The Honorable Amos Amerson, Georgia State Representative  
The Honorable Ford Gravitt, Mayor, City of Cumming, Georgia  
Charles Krautler, Director, Atlanta Regional Commission  
Forsyth County Board of Commissioners



Forsyth County  
Board of Commissioners

110 EAST MAIN STREET  
SUITE 210  
CUMMING, GEORGIA 30130  
(770) 781-2101  
FAX (770) 781-2199

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BETTY SHADBURN  
ACCOUNTING MANAGER

June 24, 1996

Mr. Erwin Topper  
Project Manager  
Lake Lanier  
U. S. Army Corps of Engineers  
P.O. Box 567  
Buford, GA 30518

M

Dear Mr. Topper:

RE: Request for Water Contract for Lake Lanier

Please accept this as Forsyth County's request for a "water contract" in Lake Lanier.

Forsyth County, as an existing Lake Lanier water user, is experiencing record population growth which will soon exhaust the quantity of water currently permitted for distribution to Forsyth County from Lake Lanier. After a very thorough review, the Georgia Environmental Protection Division has issued a Water Withdrawal Permit to Forsyth County in the amount of 10 MGD Annual Average withdrawal (14 MGD on the maximum month and 16 MGD on the maximum day).

As a consumer of water from Lake Lanier prior to January 3, 1992, Forsyth County qualifies for the issuance of a 10 MGD annual average withdrawal permit under the terms of paragraph 3, page 3 of the "Memorandum of Agreement", dated January 3, 1992.

Forsyth County plans to begin design during 1996 and complete construction of the Water Treatment Facility and Public Education Center at Mary Alice Park in late 1998.

Attached are:

1. Forsyth County's Water Withdrawal Permit No. 058-1207-06, issued June 10, 1996.



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Mr. Erwin Topper  
June 24, 1996  
Page 2

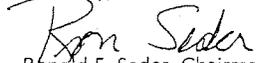
2. The Mary Alice Park Site Selection Study identifying Mary Alice Park as the best site for a Water Treatment Facility and Public Education Center.
3. Tommie Pierce's April 5, 1996 letter.

We request that you forward us the "Water Agreement" for our execution as soon as practicable. We are currently reviewing the standard lease/easement agreements and will be prepared to meet with you to discuss the appropriate documents as noted in Tommie Pierce's April 5, 1996 letter.

Upon execution of the lease agreements for the other three Corps of Engineers' parks at Lake Lanier, Forsyth County will begin pursuing sub-lease arrangements for these properties.

We appreciate the opportunity that the Corps of Engineers has given Forsyth County to locate a Water Treatment Facility and Public Education Center at Mary Alice Park. We look forward to working with you to complete this essential program.

Sincerely,



Ronald E. Seder, Chairman  
Forsyth County Board of Commissioners

RES:cgh

Attachments



## Forsyth County Department of Water and Sewer

June 29, 2004

Erwin Topper  
 US Army Corps of Engineers  
 US Army Engineer District, Mobile  
 Lanier Project Management Office  
 1050 Buford Dam Road, PO Box 567  
 Buford, GA 30515-0567

Subject: Forsyth County, Georgia Raw Water Intake on Lake Sydney Lanier

Dear Mr. Topper:

As Director of the Water and Sewer Department, I have a strong responsibility to ensure that the county's infrastructure systems are developed in such a way as to stay ahead of the needs of this county's citizens. In that respect I am writing this letter. Forsyth County is not requesting any additional water allocation but only the granting of an easement by the Corps required to build a vitally needed drinking water intake.

N

Forsyth County and the City of Cumming each operate their own water treatment plants, providing potable drinking water to the citizens in their respective service areas, in full compliance with state and federal safe drinking water rules. However, the mutual dependence of these two water systems on a single water intake sets up three problems that need to be solved in the very near future: (1) the problem of inadequate water withdrawal capacity to even use the state-permitted amounts of water out of Lake Lanier; (2) the problem of water quality; and (3) the problem of water system security and reliability.

- (1) Inadequate Withdrawal Capacity – The existing water intake and pumping station can physically move only 28.7 mgd of the needed 37 mgd peak day (32 mgd peak month) to Cumming and Forsyth County. The existing City of Cumming intakes are not very deep and when the lake level is low even less water can be delivered to the water treatment plants. At the current rates of growth in the two service areas, this 28.7 mgd physical limitation could be reached on a peak day as soon next summer depending on the weather and the maximum month demand is projected to exceed the 28.7 mgd limitation in the year 2010. As one of the fastest growing county in Georgia and one of the 10 fastest in America from 1990 through 2003, Forsyth County and the City of Cumming must be able to fully utilize the water allowed by EPD in the December 23, 1999 permits. Placing a larger pump in the existing water intake structure will only increase the physical capacity to a maximum of 35.0 mgd at the highest lake elevation, due to limits of pipeline capacity. A second water intake structure is clearly needed.



- (2) Water Quality – Generally the raw water quality of Lake Lanier is excellent, but the existing location of the City of Cumming intake is located in the near the end of a finger of the lake on Young Deer Creek and is susceptible to raw water quality fluctuations due to run off. The raw water quality is expected to improve and be less susceptible to water quality fluctuations with an intake location closer to the main channel flow through the lake.
  
- (3) Water System Security – The federal government is rightly placing great emphasis on Homeland Security, and those efforts include the security of the nation's public water systems. The single existing water intake structure serving over 100,000 people currently living in Cumming and Forsyth County will not be sufficient to serve the people that will be living in these areas in the near future. Furthermore, if any Act of God or act of terrorism were to disable the existing water intake structure, safe drinking water would be unavailable for the people served by these water systems.

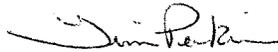
These three problems should be solved as soon as possible, and they can be solved readily by the construction of a second water intake. Forsyth County's consulting engineers have determined the ideal location, size and design of the needed facility. The Forsyth County Board of Commissioners stand ready to begin construction of the intake which includes a raw water pumping station on County owned property on Pilgrim Mill Road, upon the granting of an easement for a tunnel and submerged intake by the US Army Corps of Engineers.

We wish to emphasize that Forsyth County is not requesting any additional water allocation permit from Georgia EPD, nor is Forsyth County requesting any additional storage contract commitment by the Corps of Engineers. We are simply requesting granting of an easement for the tunnel and intake by the Corps. A copy of the legal description for the requested easement is attached.

We stand ready to meet with you and your staff to answer any questions you may have, and we will follow up shortly to schedule such a meeting.

We appreciate the continued cooperation of the US Army Corps of Engineers and look forward to your approval of this vital project.

Sincerely,



Tim Perkins  
Director, Water and Sewer

cc: Colonel Robert Keyser, US Corps of Engineers, US Army Engineer District, Mobile

STATEMENT OF KIT DUNLAP, PRESIDENT/CEO, GREATER HALL  
CHAMBER OF COMMERCE

Members of the committee, thank you for giving me the opportunity to discuss some of the water issues that we're dealing with here in North Georgia. As you may know, I'm here today wearing two hats. I currently serve as President and CEO of the Greater Hall Chamber of Commerce and have a strong interest in the economic issues associated with Lake Lanier and the entire ACF Basin. I'm also here today as Chairman of the Metropolitan North Georgia Water Planning District which is a 16-county water planning agency that was created by the General Assembly five years ago to develop regional water plans.

My comments today will focus on three areas: (1) the economic impacts of Lake Lanier and the ACF Basin, (2) the critical importance of the ACF Basin and the role of regional water planning, and (3) the Impact of Water Supply on River Flows on the Apalachicola River.

THE ECONOMIC IMPACT OF LAKE LANIER AND THE ACF SYSTEM

The economic impact of Lake Lanier is over \$5 billion annually as shown in the 2001 study by the Marine Trade Association of Metro Atlanta. Recreation is a predominant part of this figure. Lake Lanier is the most visited Corps of Engineers lake in the Southeastern United States with a variety of tourism and recreation activities.

More broadly, the portion of the ACF basin within the metropolitan Atlanta area accounts for over two-thirds of the basin population and nearly half of the population of the State of Georgia. It generates a significant majority of the total personal income in the ACF basin and roughly one-half of the personal income of the State.

Any action that would harm the economy of metropolitan Atlanta would reduce the per capita wealth and income of the ACF basin and the State as a whole.

THE ROLE OF REGIONAL WATER PLANNING

With a finite water supply and a population of over four million and growing, the need to carefully and cooperatively manage and protect metropolitan Atlanta's rivers and streams has become a priority. In September 2003, the District adopted three long-term water management plans. Of these, the Water Supply and Water Conservation Management Plan (Plan), calls for a future of intensive water demand management and an aggressive water conservation program.

When I was asked to serve as chairman of the District, many of my colleagues in Hall County questioned my decision to go down to Atlanta to talk about water. Yet it was important for all players—every county, every basin—to be at the table.

There were certainly differences of opinion during the planning process, but the plans were created and all 16 counties and 95 cities in the District are moving to put the plans into action. We are in a sense "regulating ourselves" and working toward the same water protection goals.

We learned a lot from our first planning process and are pleased to see water resources planning gaining precedence at the state level as well. We applaud Georgia EPD's efforts on the new State Water Plan and the District is pleased to be participating in the state planning process.

We also certainly realize that other parts of the state have different water needs and interests. We want to continue to work with our upstream and downstream neighbors and further our outreach efforts beyond the District's borders.

With regard to the ACF basin specifically, the District has made great strides towards meeting the Plan's water conservation goals. Currently, over 85 percent of the District's population is billed with a conservation pricing structure. The District has also trained local governments in water system leak reduction and repair, conducting commercial and residential water audits. Over 9,000 household water assessment brochures have been distributed since the spring of 2006. The District's educational program consists of commercials for television and radio, a television special, billboards, public workshops, essay contests and a variety of educational material such as brochures. In 2005, over 600 commercials were aired, 42 workshops were held with an average of 30–40 participants and over 1,000 middle school students participated in a water conservation and quality essay contest.

Aggressive water conservation is critical to the region's future. The District will continue to work with and support implementation of the Plan's water conservation measures. The District is working with local governments to implement new programs such as retrofit programs for old, inefficient fixtures and pre-rinse spray valves.

## THE IMPACT OF WATER SUPPLY ON THE APALACHICOLA RIVER

The total net diversion from the ACF Basin for water supply for the Atlanta metropolitan area ranges between 250 and 300 cubic feet per second (cfs). This is the average daily net diversion from the ACF Basin for all counties within the Metropolitan North Georgia Water Planning District. Most of this water is taken from Lake Lanier. A small amount comes from the Flint River.

To put this figure in comparison, agricultural withdrawals in South Georgia have a much larger impact on the surface water resources in the Flint River Basin. According to testimony recently offered by the U.S. Army Corps of Engineers, this impact is estimated to be between 600 and 700 cfs during the summer months.

Because there are no large reservoirs in the Flint River, withdrawals from this part of the basin have a "real time" impact on stream flow. Agricultural demands are highest during the summer, when stream flows are lowest. Therefore such demands have a disproportionate impact on stream flow.

Evaporation also has a significant impact. According to the recent testimony of the Corps official, the impact from evaporation from all of the Corps reservoirs on the Chattahoochee River totals approximately 200 cfs a day.

## CONCLUSION

As we have all gathered in this room today, we all need to be prepared to come to the table and actively seek solutions to water supply limitations.

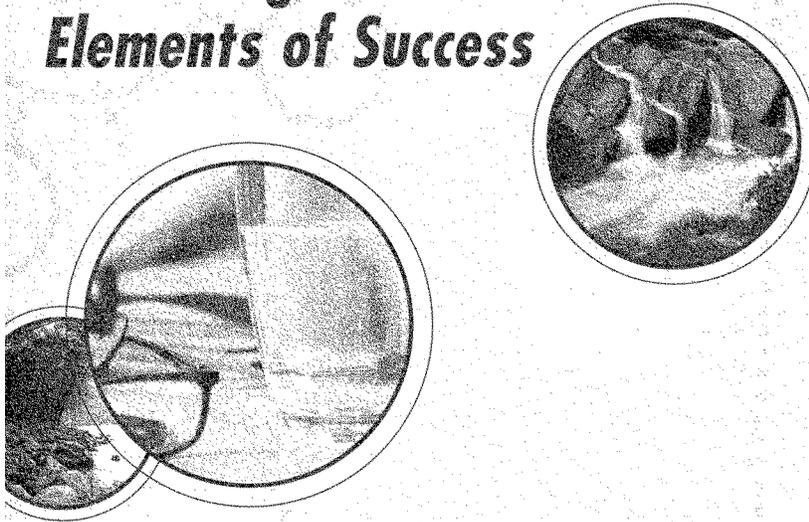
All of our various interests do not need to be fighting each other. We need to be working together (metro Atlanta, Lake Lanier Association, other advocacy groups, the Corps of Engineers, the U.S. Fish and Wildlife Service and average citizens) to conserve and clean up the water we share.

Since the District's plans were adopted in late 2003, the momentum to protect water resources in metropolitan north Georgia has continued to build. The District and its local partners are beginning to see results as local communities expand their efforts to conserve water, safeguard public health and protect rivers and streams.

Thank you for your attention, I'll be happy to answer any additional questions of the committee.

METROPOLITAN NORTH GEORGIA WATER PLANNING DISTRICT

# Protecting Water Resources: *Elements of Success*



ACTIVITIES & PROGRESS REPORT  
**2005**



## MESSAGE FROM THE CHAIRMAN



December 2005

Protecting water quality and public water supplies is an important goal of the Metropolitan North Georgia Water Planning District. Local governments, state agencies, water and wastewater utilities, technical experts, basin stakeholders and others are working together to achieve healthy rivers and streams and to ensure adequate supplies of clean water, both today and in the future.

On behalf of the governing Board and our supporters, I am proud of the District's accomplishments during the past year. The District and its partners are working hard to implement the three comprehensive water resource plans we adopted in September 2003.

This year the District offered technical assistance on stormwater ordinances, leak reduction for water utilities, commercial water audit programs, septic systems and floodplain management. Also, the District's regular Board, technical and basin advisory meetings continue to provide a forum where we can talk about the water issues we have in common and where stakeholders have the opportunity to work together. Our nationally recognized education and public awareness efforts continue as well, and more than 85 percent of local governments are actively implementing water resources education programs in their communities.

In addition, the District's planning process has become a model for other planning efforts. The District's framework is being reviewed as part of Georgia's statewide water planning process. Other regions of the country have recognized our organization and plans as a dynamic approach to comprehensive water resources management. The District is influencing actions in our region, and efforts to reduce pollution and use water more wisely are increasing.

2005 was a notable year, and momentum continues to build. We appreciate and look forward to your continued support for the District's efforts and programs.

Sincerely,

A handwritten signature in cursive script, reading "Kit Dunlap".

Kit Dunlap, Chairman

## WATER DISTRICT BOARD MEMBERS

### Elected Officials

- Atlanta: Mayor Shirley Fruskin*
- Bartow: Mayor Mike Fields, Cartersville*
- Cherokee: Chairman Mike Byrd*
- Clayton: Chairman Eldrin Bell*
- Cobb: Chairman Sam Oless (Vice Chairman)*
- Coweta: Mayor Robert Hannah, Senoia*
- DeKalb: CEO Vernon Jones*
- Douglas: Chairman Tom Worthan*
- Fayette: Mayor Ken Steele, Fayetteville (Secretary-Treasurer)*
- Forsyth: Mayor H. Ford Gravitt, Cumming*
- Fulton: Chairman Karen Handel*
- Gwinnett: Chairman Charles Bannister*
- Hall: Chairman Tom Oliver*
- Henry: Mayor Lorene Lindsay, Locust Grove*
- Paulding: Mayor Boyd Austin, Dallas*
- Rockdale: Chairman Roy Middlebrooks*
- Walton: Mayor Jim Burgess, Social Circle*

### Citizen Members

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- Robert D. Cheely*
- Kathryn "Kit" Dunlap (Chairman)*
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- P. Martin Ellard*
- Gardiner W. Garrard, Jr.*
- Birdel Jackson*
- Dennis McEntire*
- Robert Lipson*
- Laura Turner Seydel*

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(Official Code of Georgia § 12-9-366 provides: The district shall submit a written report not later than December 31 of each year to the Governor, the Lieutenant Governor, the Speaker of the House of Representatives, the chairperson of the House Committee on Natural Resources and Environment, and the chairperson of the Senate Natural Resources Committee, which report shall contain a detailed account of the activities and progress of the district throughout the previous year and an accurate accounting of all funds received and expended by the district and of the implementation of plans and attainment of goals.)

## OVERVIEW OF THE DISTRICT

### DISTRICT GEOGRAPHY

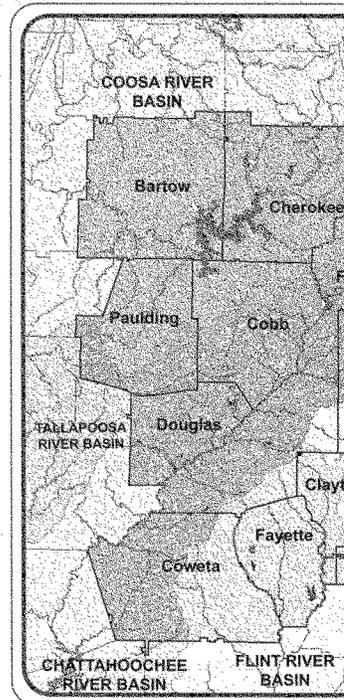
- 16 counties and 94 cities
- 5 major river basins
- Over 4 million people
- 5,250 square miles

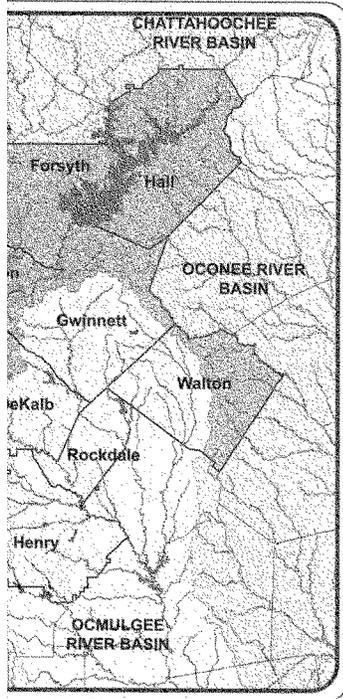
### MISSION

The District is a planning entity dedicated to developing comprehensive regional and watershed specific water resources plans that are implemented by local governments in the District. These plans will protect water quality and public water supplies in and downstream of the region, protect recreational values of the waters in and downstream of the region and minimize potential adverse impacts of development on waters in and downstream of the region. (Adapted from O.C.G.A § 12-5-571)

### DISTRICT BOARD

- 17 local elected officials
- 10 appointed citizen members
- Manages the business and affairs of the District





**TECHNICAL COORDINATING COMMITTEE**

- Composed of more than 200 water resources officials from local governments within the District
- Provides technical assistance to the staff and Board
- Divided into four subcommittees: stormwater, wastewater, water supply and conservation, and education

**BASIN ADVISORY COUNCILS**

- Involve more than 150 citizen stakeholders
- Guide the development and implementation of the District's plans and policies
- Divided into six councils: Chattahoochee, Etowah, Flint, Lake Lanier, Ocmulgee, Oconee

**STAFFING AND ENFORCEMENT**

- Atlanta Regional Commission Environmental Planning Division provides staffing.
- Georgia Environmental Protection Division (EPD) approves plans and ensures local government compliance with the District plans through the permitting process.

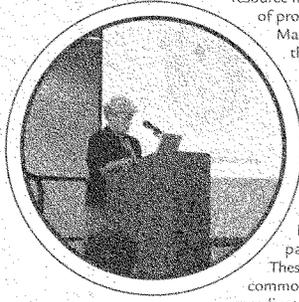
**THREE COMPREHENSIVE WATER RESOURCE PLANS ADOPTED IN 2003**

- District-wide Watershed Management Plan
- Long-term Wastewater Management Plan
- Water Supply and Water Conservation Management Plan

## DISTRICT ADMINISTRATION

The District's plans set forth strategies and recommendations for effective water resource management. Throughout 2005, the District staff administered a number of programs and activities to support the implementation of these strategies.

Many of these programs provide education about our water challenges and the solutions needed to meet these challenges. Other programs provide technical assistance on the details of plan implementation and the necessary local government programs. Lastly, the District continually reviews the plans and their implementation to ensure that the District's goals are being met.



### *Providing a Water Forum...*

Local government officials, water resources professionals and other interested parties attended more than 50 meetings hosted by the District in 2005. These training opportunities and meetings continue to provide a forum where common water issues are discussed and stakeholders have the opportunity to coordinate solutions to the region's critical water issues.

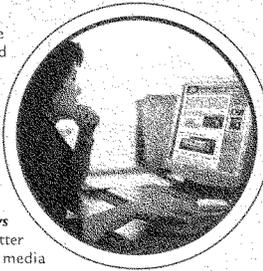
### **Water Summit**

One of the most successful District events of 2005 was a water summit, held in September. This half-day program brought together leaders from the public, private and nonprofit sectors to talk about water issues confronting the metro region. More than 140 persons attended the event. Speakers included **Kit Dunlap**, Metropolitan North Georgia Water Planning District chairman; **Dr. Carol Couch**, director of the Georgia Environmental Protection Division; **Rob Hunter**, commissioner of the City of Atlanta Department of Watershed Management; **Jim Stokes**, president of the Georgia Conservancy; **Kevin Green**, vice-president of environmental affairs for the Metro Atlanta Chamber of Commerce; and **Pat Stevens**, Metropolitan North Georgia Water Planning District.

### **Newsletter and E-News**

In addition to face-to-face meetings, the District continually works to educate and engage our stakeholders through its written and electronic publications. The District newsletter focuses on the District's planning activities, implementation actions of its members and general water resource issues. More than 2,000 District stakeholders receive this publication.

The District launched *Water E-News* in 2005. This periodic electronic newsletter includes feature stories, events, news, media coverage and updates of District activities.



### ***Evaluating the Plans...***

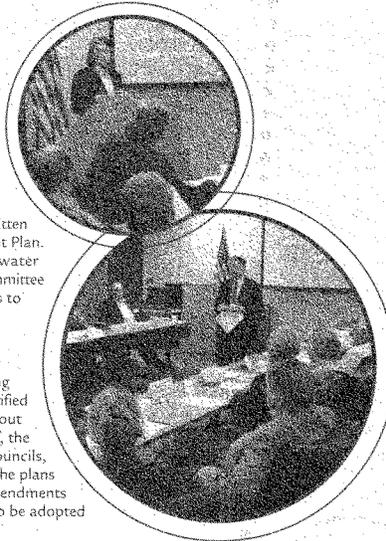
The District's plans outline a comprehensive and integrated approach to water resources management within the District. However, these plans are not static documents. The District has a process to review minor amendments to the plans on an "as needed" basis and annually reviews its plans to determine if a major update is needed.

#### **Consideration of Minor Amendments**

During 2005 a number of local governments submitted written requests to amend the Long-term Wastewater Management Plan. Most of the requests were related to changes in wastewater capacity or schedule for existing facilities. The Executive Committee considered each proposal and adopted eight amendments to the plan after public review and comment.

#### **2005 Annual Plan Review**

The District is required to review the plans annually. During this process the District considered a number of topics identified during meetings and through the Plan Review Survey sent out to local governments in August. In coordination with staff, the Technical Coordinating Committee and Basin Advisory Councils, the Board developed specific recommendations as to how the plans should be amended. The Board released the proposed amendments for public comment in December, and they are scheduled to be adopted at the District's first meeting in 2006.



#### **2005 PLAN AMENDMENT TOPICS**

- Revised Model Floodplain Management Ordinance
- Schedule modifications for water quality monitoring, stormwater operations and maintenance, and watershed improvements
- Buffer ordinance
- Septic systems in "critical areas"
- Septic system maintenance
- New wastewater facilities
- Replacement of older, inefficient plumbing fixtures
- New pre-rinse spray valve retrofit program
- Sub-unit meters in new multi-family buildings

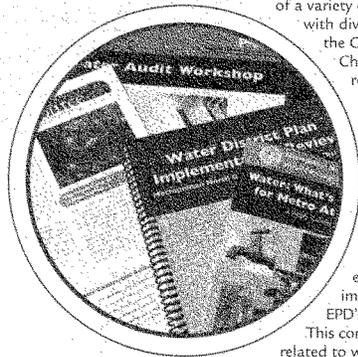
## ***Communicating with Our Partners...***

### **Reporting Our Progress**

To track implementation of the plans, the District surveyed local governments about their activities. The results of this survey are used to evaluate progress and report the findings to the director of the Georgia Environmental Protection Division and the Governor. The annual implementation report also allows local governments to compare their progress with other jurisdictions within their county and within the District as a whole.

### **Building Support**

Informed citizens and leaders are key elements of the solutions to the District's water resource challenges. Successful implementation of the plans requires modification of a variety of ordinances, policies and programs. The District collaborated with diverse audiences from across the region – from elected officials in the Georgia House of Representatives to business leaders from several Chambers of Commerce to citizen stakeholders attending community roundtable discussions – in order to build support for such policy changes and promote awareness of the region's water resources problems and solutions.



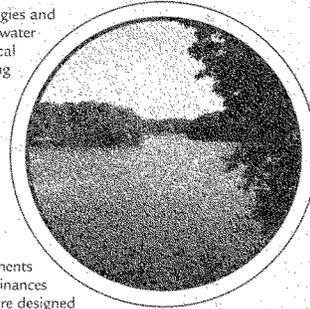
### **Sharing Our Planning Expertise**

In 2004, the Georgia General Assembly passed the Comprehensive Water Management Planning Act, charging the Georgia Department of Natural Resources Environmental Protection Division (EPD) with drafting Georgia's first comprehensive statewide water plan. Georgia EPD subsequently asked the District to share its extensive experience and the knowledge it derived from developing and implementing the District plans. In 2005, the District joined Georgia EPD's first technical advisory committee, which addresses water conservation. This committee is charged with answering scientific and technical questions related to water use and evaluating conservation policies and practices being considered for the statewide plan. Dr. Carol Couch, director of Georgia EPD, has asked the District to continue its involvement in 2006 as other parts of the plan are developed.

The District has also shared its planning experiences with other groups in Georgia as well as other regions of the country. District Chair Kit Dunlap, Vice Chair Sam Oiens and Atlanta Mayor Shirley Franklin traveled to Columbus to meet with local elected officials, water system professionals and business leaders. The District conducted technical briefings for Georgia EPD's Flint River Basin Planning Group and the Upper Etowah Habitat Conservation Planning Group. Nationally, the District presented its work at conferences in Chicago, Philadelphia and San Antonio.

## WATERSHED MANAGEMENT

The District-wide Watershed Management Plan sets forth strategies and recommendations for effective watershed management and stormwater control. The Stormwater Subcommittee of the District Technical Coordinating Committee serves as a regional forum for discussing a wide range of stormwater-related topics, including implementation of model stormwater ordinances, extent and level of service for stormwater maintenance, floodplain management and stormwater program funding.



### Promoting Best Practices...

#### Model Stormwater Ordinances

In February, the District held a workshop to educate local governments on the District's six model stormwater ordinances. These model ordinances are part of the District-wide Watershed Management Plan and are designed to address a number of issues related to stormwater runoff and watershed protection. The full-day workshop provided an overview of the model ordinances to local staff and officials, as well as useful information on how to adopt and implement the ordinances in their jurisdictions.

#### MODEL ORDINANCES

- Model Ordinance for Post-Development Stormwater Management for New Development and Redevelopment
- Model Floodplain Management / Flood Damage Prevention Ordinance
- Model Conservation Subdivision / Open Space Development Ordinance
- Model Illicit Discharge and Illegal Connection Ordinance
- Model Litter Control Ordinance
- Model Stream Buffer Protection Ordinance

#### Floodplain Mapping

More than 60 professionals attended the District's floodplain mapping seminar in August. Presenters shared efforts currently taking place in both Cobb and Gwinnett counties to determine new 100-year floodplain boundaries based on future land use conditions. By updating floodplain maps using expected future land use, District communities can better alert residents of flood risk, as well as more effectively regulate new development to keep it out of harms way.

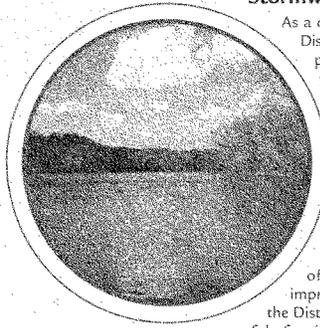
### ***Improving Ordinances...***

In early 2005, the Federal Emergency Management Agency (FEMA) and the Georgia EPD Floodplain Unit asked the District to revise the District Model Floodplain Management / Flood Damage Prevention Ordinance in order to ensure compliance with the National Flood Insurance Program (NFIP). Working with FEMA and Georgia EPD, District staff and the TCC Stormwater Subcommittee developed a revised model floodplain ordinance that ensures that District communities that adopt the ordinance are NFIP compliant. In addition, the updated ordinance incorporates a "zero-rise" approach that limits development in floodplain areas outside of the floodway to those projects that can demonstrate no adverse upstream or downstream impacts. The updated ordinance was sent out for public comment in December and will be considered for Board approval in early 2006.

### ***Providing Implementation Assistance...***

#### **Stormwater Good Housekeeping Practices**

As a component of the District-wide Watershed Management Plan, the District researched stormwater good housekeeping and pollution prevention practices. Staff is currently working with the TCC Stormwater Subcommittee on the best ways to promote and ensure adoption of these practices among businesses, governments and institutions.



#### **Watershed Improvement Plan Guidelines**

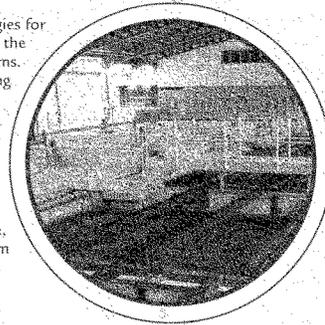
The District-wide Watershed Management Plan includes a number of complementary strategies designed to help communities in the District meet water quality standards and protect water resources. One of these strategies involves physical improvements to substantially impacted watersheds – those watersheds with an effective impervious area of 10 percent or greater. The plan recommends the development of Watershed Improvement Plans (WIPs) that establish the physical improvements required to address problems in these watersheds. In 2005, the District worked with the TCC Stormwater Subcommittee to develop a set of draft guidelines for the Watershed Improvement Plan process.

#### **Water Quality Monitoring Coordination**

The District, working with local governments and Georgia EPD, has prepared a set of water quality monitoring protocols and standards. District-wide implementation of the monitoring efforts was to begin in May 2005. However, Georgia EPD requested additional internal review of the monitoring plan and protocols. As such, the monitoring program is scheduled to begin in 2007.

## WASTEWATER TREATMENT

The Long-term Wastewater Management Plan recommends strategies for more intensive management of privately owned septic systems and the development of high-performance public wastewater treatment systems. The District's Wastewater Subcommittee of the Technical Coordinating Committee and a new Septic System Subcommittee address these issues. The septic systems group includes representatives from local water and sewer departments, county environmental health offices and private on-site wastewater industry. Previously, these groups had little formal opportunity to work together, to share ideas or to develop a coordinated approach to addressing septic systems in the metro area. This group met four times during 2005 to discuss septic system issues, including disposal of septage, minimum lot size, septic system inspection and maintenance, critical areas, septic system education and septic system databases.



### Gathering Septic System Information...

District staff surveyed each of the 16 county environmental health departments to gain a better understanding of how septic systems are managed in the District. There are an estimated 550,000 septic systems in the District, 37 percent of which are more than 20 years old. The three main reasons cited in the survey for failures were related to improper design, siting or installation, the age of the system and excessive water use. Historically, septic systems were seen as a temporary wastewater solution until communities extended the sewer line. This is no longer the case. Many communities view septic systems as a permanent wastewater solution. In seven of the 16 District counties, most new development relies on septic systems.

The survey revealed the desirability of involving local environmental health departments at the beginning of the development process (before roads and lots are cut) to identify and set aside the areas of best soils for locating septic systems. Also, lot sizes for septic systems need to be larger and based on septic siting criteria.

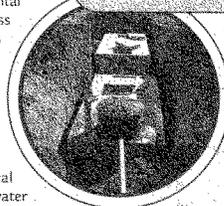
Estimated Number of septic systems in the District — 550,000

Estimated breakdown of the types of septic systems in the District:

90% Residential

9% Commercial

1% Other (schools & churches)

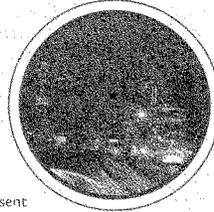


### Sharing Local Experiences...

The Long-term Wastewater Management Plan recommends local utilities establish a capacity certification program for their wastewater collection system. Capacity certification programs are a mechanism for local jurisdictions to ensure that adequate wastewater collection and treatment capacities exist within their sewer systems before authorizing new flows and sewer system connections. The Wastewater Subcommittee is a forum for local information exchange. During one such meeting this year, Atlanta and Gwinnett County shared their experiences with capacity certification programs.

**City of Atlanta**

Beginning in 2000 as part of a consent decree, the City of Atlanta put in place a capacity certification program that is tied to the building permit application process. City staff use a dynamic hydraulic model of the sewer system to understand the system's capacity. Where capacity is limited, the City issues a conditional certification. These conditional certifications allow a project to be constructed but not occupied. As part of the consent decree, every linear foot of the 1,500 miles of sewer lines will be inspected as part of the Sewer System Evaluation Survey (SSES). The City has certified more than 6,000 new sewer connections since 2000.

**Gwinnett County**

The Gwinnett County Department of Public Utilities uses a computer modeling program called SewerCAD to locate and identify "iffy" pipes. Using current sewer bills to establish actual user flows, as well as permanent flow meters interspersed throughout Gwinnett, the county can model current sewer capacity and flow and use this information to project capacity out to 2015. When a developer proposes a new project, the county runs a "what if" scenario in the model. This enables the county staff to identify any pipe sizes, system improvements or other requirements necessary to ensure that capacity is available for that development. Once the modelers have determined what changes need to be made to the sewer system, the developer is responsible for the cost of installing the larger pipe or other required infrastructure to meet the needs of his proposed development. Once the upgraded sewer line is installed, the pipe is owned by Gwinnett County. Gwinnett County has been using this system for just under a year, and they have a full-time modeling staff to handle this project.

**Tracking Wastewater Issues...**

It is critical the District be able to utilize the Chattahoochee River and its tributaries for water supply and wastewater treatment. Georgia EPD and the Wildlife Resources Division of DNR are evaluating trout habitats in the river from Buford Dam to Peachtree Creek and have presented their work to the District's Wastewater Subcommittee. The District has asked Georgia DNR to establish a mechanism for the Chattahoochee River stakeholders to stay informed of the study's progress and be given an opportunity to comment during the work. By working cooperatively on this issue, local, District and state partners can ensure that this critical resource is protected.



## WATER SUPPLY & WATER CONSERVATION

The Water Supply and Water Conservation Management Plan calls for a future of intensive water demand management and an aggressive water conservation program. The water conservation program included in the plan will reduce future demand by an additional 11 percent, beyond the eight percent savings expected with existing codes and appliances, for a total of nearly 20 percent savings. If the District can achieve this level of water savings, the needs of the District can be met through 2030 with some reserves.

### Promoting Best Practices...

#### Residential Water Audits

The District has developed a brochure to show individuals how to conduct a household water audit. This user-friendly document leads homeowners step-by-step through the process of detecting major household leaks and addressing inefficient water use behaviors.

The District recommends that each water provider distribute this information to its highest 25 percent of residential water users to encourage water conservation. The information is also helpful to customers who voice concerns about high water bills.

#### Industrial, Commercial and Institutional (ICI) Water Audit Workshop

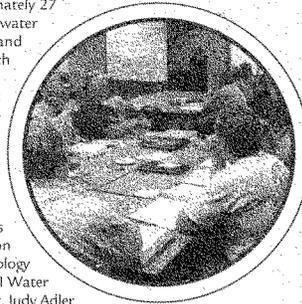
Industrial, commercial and institutional water use is approximately 27 percent of the total water demand in the District. To address water conservation for these customer groups, the Water Supply and Water Conservation Management Plan recommends that each water provider rank their water users according to annual water use and offer a free water survey to those accounts that use the most water. The program should target hotels, motels, hospitals, restaurants and other customers with large needs for water.

The District conducted an ICI Water Audit Workshop in coordination with the Georgia Department of Natural Resources Pollution Prevention Assistance Division (P2AD) in October 2005. National expert Bill Hoffman from the City of Austin's Industrial, Commercial and Institutional Water Conservation Program and Philip Paschke from the Seattle Water Smart Technology Program presented information on how to start a successful ICI Water Audit Program and what to look for in when doing a water audit. Judy Adler and Adrienne Thorpe of P2AD also presented local resources for performing ICI water audits.

#### RECOMMENDED WATER CONSERVATION ACTIONS

- Conservation pricing for all District water systems
- Water system leak reduction and repair
- Retrofit of older, inefficient plumbing fixtures
- Low-flow urinals for new buildings\*
- Rain sensor shut-off switches on new irrigation systems
- Sub-unit meters in new multi-family buildings
- Residential water audits
- Commercial water audits
- Distribution of low-flow retrofit kits to residential customers
- Education and public awareness programs

\* This measure is under review and will likely be replaced in 2006 with a spray valve retrofit education program.



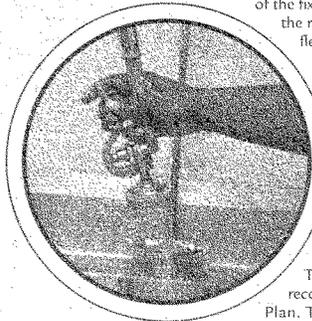
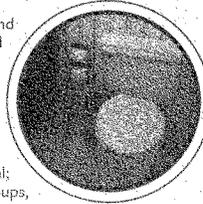
## Assessing Water Conservation Measures...

### Retrofitting Older Inefficient Fixtures

One of the original measures in the Water Supply and Water Conservation Management Plan recommended that older residential buildings meet the plumbing codes for new buildings prior to transfer of ownership. This measure was found to be impractical. In 2005, the District convened a Water Conservation Retrofit Steering Committee to develop a new approach.

The committee was composed of leaders in the real estate community, both commercial and residential; mortgage brokers, water providers, environmental groups, representatives from state government and representatives

of the fixture industry. The committee examined a variety of strategies to achieve the results projected from the original measure and recommended a more flexible approach to be implemented by the water providers in the District, beginning by 2010. The steering committee's recommendation is being considered as an amendment during the 2005 Annual Plan Review.



### Food Service Spray Valves

The food service industry uses a device called a pre-rinse spray valve to wash off dishes prior to using a dishwasher. According to the 2005 Energy Policy Act, all new pre-rinse spray valves manufactured must be low-flow devices. However, replacing the older, less efficient spray valves could save millions of gallons per day across the District. The District proposes to require local governments or water providers to distribute educational materials on these devices to food service industries.

This new measure would replace the low-flow urinal measure originally recommended in the Water Supply and Water Conservation Management Plan. The urinal measure was determined to be neither cost-effective nor technically practical.

### Multi-family Sub-Unit Meters

The Water Supply and Water Conservation Management Plan requires all new multi-family buildings be built so that individual tenants are billed for their water use. Studies show that tenants are more likely to conserve water and report leaks when they are responsible for the water bill. Buildings with sub-unit meters save 15 percent more water. During the year, the Water Supply and Water Conservation Subcommittee developed language to clarify that each water local agency could implement this measure through either local policy or ordinance and that responsibility for the management of the sub-unit meters could be with either the utility or the property owner. The subcommittee developed language that can be used in an ordinance or local policy to implement this water conservation measure.

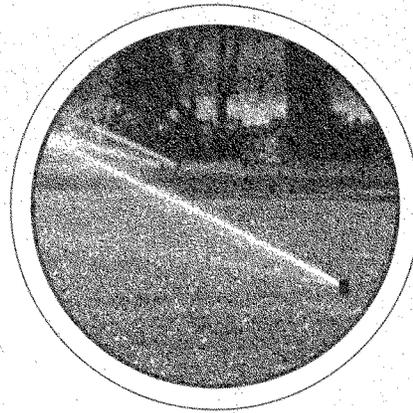
## ***Assisting Water Providers...***

### **Reducing Water System Leakage**

The District estimates that water providers in the 16-county area could save as much as 29 million gallons of water per day through aggressive water loss assessments and control methods. The District recommends water providers conduct water loss assessments using the American Water Works Association and the International Water Association (AWWA/IWA) methodology for assessing water system losses. This methodology is currently being revised, and the full document will not be available at least until 2007. However, computer software will be available by early 2006 that will allow water suppliers to calculate some elements of the full methodology. The District is monitoring the development of the software and methodology and will provide local water providers with more detailed information once it is available.

### **Enacting Water Conservation Pricing**

Conservation pricing gives customers incentive to reduce excessive discretionary water use by making the cost of water increasingly more expensive. At a minimum, all the District utilities were required to implement uniform price structures by January 1, 2004, and at least three-tiered structures are required by 2006. In 2005, the District provided technical assistance to the water providers on the required conservation pricing structures.



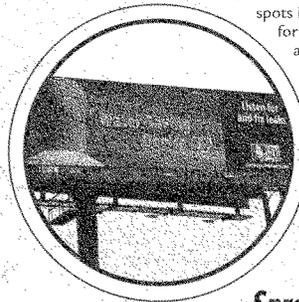
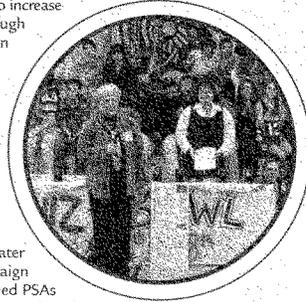
## EDUCATION & PUBLIC AWARENESS

### *Raising Awareness Through Mass Media...*

In 2005, the District continued efforts to increase public awareness of water issues through two mass media campaigns: the Clean Water Campaign (CWC) and Water Use It Wisely (WUIW). The Clean Water Campaign delivers pollution prevention messages to homeowners and businesses and produces a variety of programs designed to change behavior and reduce stormwater pollution. Water Use It Wisely focuses its messages on water conservation.

The District partnered with WXIA (Channel 11) to air more than 600 Water Use It Wisely and Clean Water Campaign spots in 2005. The District provided PSAs

for both campaigns, and WXIA produced additional spots featuring its chief weather reporter, Paul Ossmann. The campaigns also had an on-line presence on the station's Web site at [www.11alive.com](http://www.11alive.com) with banner ads on highly viewed pages. In addition to the partnership with WXIA, the District ran advertisements on the Weather Channel. The spots ran in August and September during prime viewing hours. The potential viewership was exceptionally high due to the increased interest and focus on hurricanes during the season. Lastly, with financial support from the Alcoa Foundation, the District supplemented the television ads with billboard advertisements for the two campaigns that were placed in prominent locations along interstates and highways throughout the District.



### *Spreading the Message...*

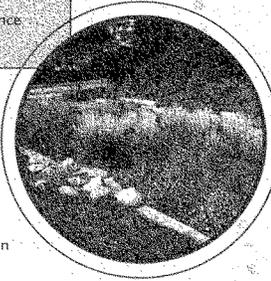
The Clean Water Campaign held 42 workshops throughout the District in 2005. Attendance at the workshops averaged 30-40 attendees; however, some workshops drew more than 100 participants. The District partnered with the University of Georgia Cooperative Extension Service to present many of the workshops. Extension agents from each county led the personalized workshops that integrated pollution prevention and water conservation tips for residents.

### WORKSHOP TOPICS

- Rain Gardens
- Landscaping
- Planting Trees to Protect Streams
- Composting
- Lawn Care
- Septic System Maintenance
- Automobile Service

#### Rivers Alive

Now in its 14th year, Rivers Alive is an annual statewide event during the month of October that draws tens of thousands of Georgians for stream clean-ups around the state. In 2005, an estimated 26,000 volunteers participated in hundreds of cleanups in Georgia's streams, rivers, lakes, wetlands and ocean from Lake Blue Ridge in North Georgia to the Ochlockonee River in the South. District staff coordinated publicity for Rivers Alive, generating newspaper articles and radio and television appearances throughout the District and statewide.

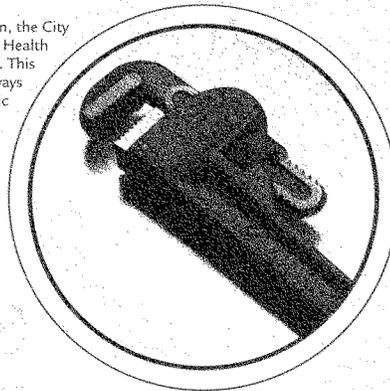


#### Educational Videos

The Water District, in partnership with Georgia Department of Natural Resources Pollution Prevention Assistance Division and the University of Georgia Urban Agriculture Program, developed a 30-minute video on how to install a rain garden which featured Dr. Rose Mary Seymour of the University of Georgia. Copies have been made available to local libraries, local government access channels, local governments and other interested agencies and organizations.

#### New – “U Fix-It Workshop”

In partnership with the Clean Water Campaign, the City of Gainesville and Hall County Environmental Health Services held a “U Fix-It Workshop” in May 2005. This new, interactive workshop highlighted simple ways to repair leaky appliances and maintain septic tanks that reduce water waste. These “fix-it” methods can help homeowners conserve water and save money. Dozens of residents participated in the workshop, which was successful in teaching practical and “hands-on” solutions to water conservation.



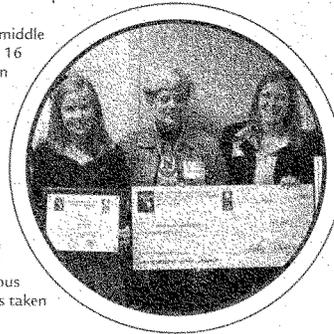
## Reaching the Kids...

### Essay Contest

Through its annual Clean Water Campaign/Water Use It Wisely Essay Contest, the District hopes to educate children about water quality and conservation efforts in Georgia. Students research and share their thoughts on why conserving water and preventing water pollution are important for the future of their rivers, lakes and streams. The main goal of the essay contest is to challenge students to think of creative ways to conserve water and improve water quality in metro Atlanta.

The essay contest was open to middle school students throughout the 16 counties (grades 6-8). More than 1,000 students participated in 2005. A winner was selected for each county that participated in the contest.

Kelley Miller from North Hall Middle School was the District-wide winner. In addition to her essay, Kelley puts her words into action by participating in stream cleanup events throughout Hall County. She has worked with various Hall County organizations and has taken part in Rivers Alive cleanups.



### Project WET Educator Workshop

The District sponsored a Project WET Educator Workshop that drew educators from around the metro area. Local government representatives and teachers participated in the interactive workshop, which covered the Conserve Water and Project WET curriculum. Participants learned creative ways to reach youth and adults in their schools and communities with messages and activities of how to protect water resources.

### Children's Water Festival

The District participated in the 2005 Children's Water Festival, held this year in Dalton. The Georgia Department of Community Affairs organizes and coordinates this festival, which drew students from the 16 counties and beyond.

Hundreds of students participated in games to learn the value of being a responsible steward of the environment. Students learned the difference that they can make individually in their community and how it can affect the health and quality of water resources.

### **Awards and Recognition...**

In 2005, the District's Clean Water Campaign public service announcements received several prestigious awards:

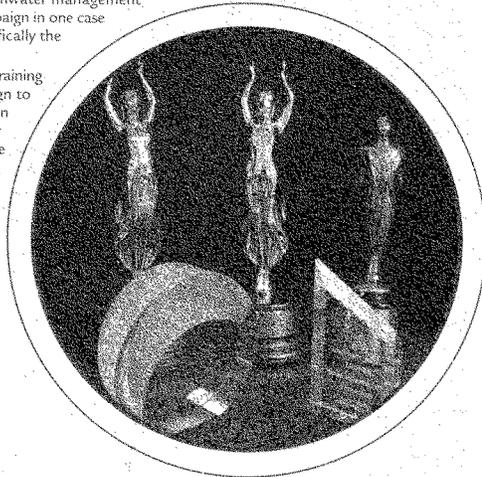
- Horizon Interactive Award Competition (Bronze)
- Atlanta Marketing Association's AMY Awards (Bronze)
- 2005 Telly Awards (Bronze)
- 2005 Aurora Awards (Platinum-Best of Show)

The award-winning public service announcements are available on the Clean Water Campaign's Web site at [www.cleanwatercampaign.com/resources/multimedia.html](http://www.cleanwatercampaign.com/resources/multimedia.html).

### **Clean Water Campaign Nationally Recognized**

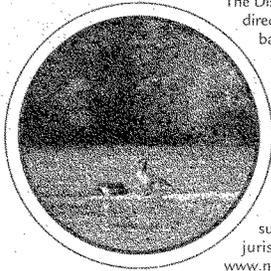
The U.S. Environmental Protection Administration has developed a series of stormwater case studies to help Phase II municipal separate storm sewer systems (MS4s) get started on or improve their stormwater management programs. EPA featured the Clean Water Campaign in one case study for its public outreach initiatives, specifically the Campaign's workshop program.

The National Environmental Education & Training Foundation invited the Clean Water Campaign to contribute to its environmental information service for broadcast meteorologists in major U.S. media markets. This service uses simple factoids to explain the link between weather and the environment and offers viewers tips for action. The foundation sent the Campaign's tips to meteorologists and weather anchors across the country.



## LOCAL GOVERNMENT ACTIVITIES

### 2005 Plan Implementation Questionnaire



The District is required to review the implementation of its plans and report to the director of the Georgia Environmental Protection Division (EPD) on an annual basis. As part of this reporting, the District surveyed the implementation activities of local governments in the fall of 2005. A questionnaire, which focused on a variety of local government implementation activities from each of the three District Plans, was sent to 120 District local jurisdictions and water and sewer authorities.

Responses to the questionnaire provided the District with significant information about progress at the local level. Local government implementation is critical to the District's goal of ensuring adequate supplies of drinking water, protecting water quality and minimizing the impacts of development on watersheds and downstream communities. Following is a summary of the responses received. A report of the full responses from each jurisdiction has been prepared and is available on the District Web site: [www.northgeorgiawater.org](http://www.northgeorgiawater.org).

### District-wide Watershed Management Plan

The District-wide Watershed Management Plan outlines strategies and tasks that cities and counties should implement to manage stormwater and protect watersheds. Eighty-one local governments responded, which represent approximately 98 percent of the District's population.

#### Stormwater Management Model Ordinances

Six model ordinances are included in the District's approach to protect water quality and address stormwater impacts. All cities and counties within the District are required to adopt either the model stormwater ordinances or ordinances at least as effective. The table on the following page summarizes the status of local adoption of the model ordinances based on the questionnaire responses.

The Post-Development Stormwater Management Ordinance is intended to address permanent stormwater runoff control on new development and redevelopment projects in the District. This ordinance provides the stormwater policies and performance criteria for managing stormwater quality and quantity, whereas the technical criteria and design specifications for stormwater controls and drainage design are typically included in a separate manual. Local governments that have adopted the Post-Development Stormwater Management Ordinance were asked if they have adopted supporting stormwater technical design criteria, such as the Georgia Stormwater Management Manual or equivalent technical manual. Fifty-one cities and counties responded that they have adopted and are currently using the manual.

Has your jurisdiction adopted the Georgia Stormwater Management Manual or equivalent?



### Stormwater Model Ordinance Adoption by Local Governments (As of October 2005)

**Local governments required to adopt the model stormwater ordinances by 2005**

<b>Bartow County (uninc.)</b> * * *	Decatur * * * *	Berkeley Lake *
Emerson *	Doraville *	Buford * * * * *
<b>Cherokee County (uninc.)</b> * * * * *	Lithonia *	Dacula *
Cartersville * * * * *	Pine Lake *	Duluth * * * * *
Holly Springs *	Stone Mountain * * * * *	Grayson *
<b>Clayton County (uninc.)</b> * * * * *	<b>Douglas County (uninc.)</b> * * * * *	Lawrenceville * * * * *
Forest Park * * * * *	Douglasville * * * * *	Litburn * * * * *
Jonesboro *	<b>Fayette County (uninc.)</b> * * * * *	Norcross *
Lake City *	Fayetteville * * * * *	Snelville * * * * *
Lovejoy *	Peachtree City * * * *	Sugar Hill *
Morrow * * * * *	Tyronne *	Suwanee *
Riverdale *	<b>Forsyth County (uninc.)</b> * * * * *	<b>Hall County (uninc.)</b> * * *
<b>Cobb County (uninc.)</b> * * * * *	Cumming * * * * *	Flower Branch *
Acworth *	<b>Fulton County (uninc.)</b> * * *	Gainesville * * * * *
Austell * * * * *	Alpharetta * * * * *	Oakwood *
Kennesaw * * * * *	Atlanta * * * * *	<b>Henry County (uninc.)</b> * * * * *
Marietta * * * * *	College Park *	Hampton * * * * *
Powder Springs * * * * *	East Point * * * * *	McDonough * * * * *
Smymna * * * *	Fairburn * * * * *	Stockbridge * * * * *
<b>Coweta County (uninc.)</b> * * * * *	Hapeville * * * * *	<b>Paulding County (uninc.)</b> * * * * *
Newnan * * * * *	Mountain Park * * * * *	Dallas * * * *
<b>DeKalb County (uninc.)</b> * * * * *	Palmetto * * * * *	Hiram *
Avondale Estates * * * * *	Roswell * * * * *	<b>Rockdale County (uninc.)</b> * * * * *
Chamblee * * *	Union City * * * * *	Conyers * * * * *
Clarkston * * *	<b>Gwinnett County (uninc.)</b> * * * * *	<b>Walton County (uninc.)</b> * * * * *
	Auburn *	Loganville * * * * *

*\* Stormwater management in Douglas County and the City of Douglasville is handled by the Douglas County-Douglasville Water & Sewer Authority*

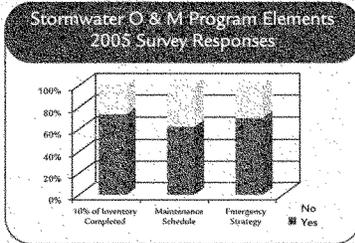
- Ordinance for Post-Development Stormwater Management for New Development and Redevelopment
- Floodplain Management / Flood Damage Prevention Ordinance
- ▲ Illicit Discharge and Illegal Connection Ordinance
- \* Conservation Subdivision / Open Space Development Ordinance
- Litter Control Ordinance
- ◆ Stream Buffer Protection Ordinance
- \* Did not return questionnaire

**Local governments required to adopt the model stormwater ordinances by April 2006**

<b>Bartow County Cities</b>	Moreland *	Gillsville *
Adairsville *	Senoia *	Lula *
Cartersville *	Sharpsburg * * * * *	<b>Henry County Cities</b>
Euharlee *	Turn * *	Lacust Grove * * * * *
Kingston *	<b>Douglas County Cities</b>	<b>Paulding County Cities</b>
Taylorville *	Villa Rica *	Braswell *
White *	<b>Fayette County Cities</b>	<b>Walton County Cities</b>
<b>Cherokee County Cities</b>	Brooks *	Between *
Ball Ground * * *	Woolsey *	Good Hope *
Nelson *	<b>Gwinnett County Cities</b>	Jersey *
Waleska *	Braselton *	Monroe * * *
<b>Coweta County Cities</b>	Rest Haven *	Social Circle * * *
Corinth *	<b>Hall County Cities</b>	Walnut Grove * * * *
Grantville *	Clermont *	
Hatfield *		

*\*\* Stormwater management in the City of Woolsey is handled by Fayette County*

### Stormwater Operations and Maintenance Programs



Operations and maintenance activities undertaken by local governments ensure that stormwater drainage, control and conveyance systems are providing for the safe passage of runoff and the removal of non-point source pollution. The District-Wide Watershed Management Plan provides that cities and counties in the District should inventory and map their stormwater system in order to support operations and maintenance activities. At least 10 percent of this inventory was to be completed by this year. In addition, the plan proposes that local communities develop an inspection and maintenance schedule for those system components for which they take responsibility as well as develop an emergency response strategy for threats to public safety.

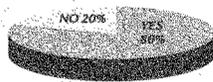
Have you coordinated your source water protection efforts with your comprehensive plan and/or greenspace plan?



### Water Supply Source Watershed Protection

In the District, the vast majority of public drinking water supplies come from surface water sources. Sixty-one percent of survey respondents indicated that they had a water supply source watershed in their jurisdiction. The Watershed Management Plan includes a number of strategies for protecting watersheds that serve a public water supply source, including the implementation of local source water assessment programs (SWAPs), stormwater management activities, Georgia Part V planning criteria, greenspace acquisition, pollution prevention education and integration with Total Maximum Daily Load (TMDL) plans.

Does your jurisdiction have a local stormwater public information and education program?



### Stormwater Public Awareness and Education

Local public awareness and outreach activities are critical to preventing stormwater pollution and protecting or improving the quality of our water resources. By working with the District's Clean Water Campaign, cities and counties can effectively leverage the regional efforts in developing their own local stormwater education programs.

Are you considering a stormwater utility if you don't already have one?



Eighty-eight percent of respondents said that they were using materials from the Clean Water Campaign in their local programs. In addition, almost 75 percent reported that they were performing stenciling or applying curb markers telling citizens to "Keep it Clean, Drains to Stream" near storm drains and inlets in their community.

### Stormwater Program Funding

As cities and counties focus more on stormwater management and watershed protection, it becomes apparent that program funding is critical to implementing an effective and successful program. In 2005, more local governments began to look at the creation of stormwater utilities as a way to provide additional funding. In addition, more jurisdictions are also looking at bond sales, review fees and development impact fees as other options to supplement funding from general revenues.

## Long-term Wastewater Management Plan

The Long-term Wastewater Management Plan contains a variety of activities that focus on wastewater collection system inspection and maintenance, septic systems, and decentralized systems, and local wastewater planning. Eighty-four percent of sewer systems in the District responded to the plan implementation questionnaire, which represent 97 percent of the sewered population in the District.

### Local Plans

Local utilities need to integrate the District plan into their own local master plans. Thirty-seven District sewer systems have reviewed their wastewater master plan to ensure consistency with the District plan.

Has your utility conducted a review of your local wastewater master plan for consistency with the District Long-term Wastewater Management Plan?



### Local Policy for Private Wastewater Systems

Local governments are required to develop policies on private wastewater systems specific to their own needs. Some jurisdictions prohibit private wastewater systems, while others may allow them under very limited situations and others may include them as part of a long-term plan. Twenty-five local governments already have local policies addressing private wastewater systems.

Does your local government have a local policy for private wastewater systems (does not include individual septic systems)?



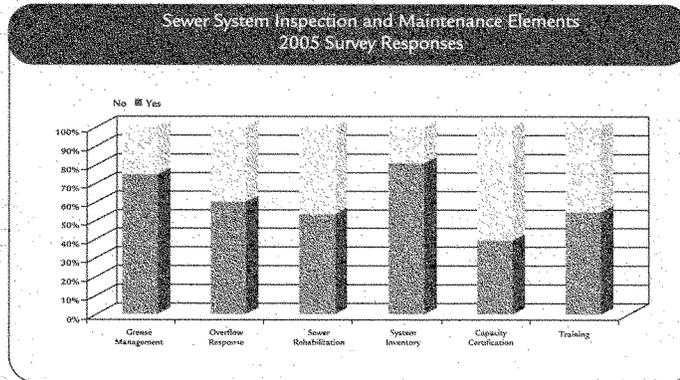
### Sewer System Maintenance Programs

Each District sewer system is required to establish maintenance procedures and implement a sewer system maintenance program. The purpose of the maintenance program is to ensure that the sewer system is maintained in a manner that minimizes failures and extends the longevity of the system. Forty-one District sewer systems utilize a sewer system maintenance program.

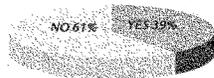
Does your utility have a Sewer System Maintenance Program?



These sewer system maintenance programs should consist of several minimum elements. Because the discharge of grease into sewer systems poses serious clogging problems and substantial costs, a **grease management program** should be developed. To help ensure adequate protection of human health and the environment from sanitary sewer overflows, a written **overflow response program** is needed. **Sewer rehabilitation** is necessary to restore the structural integrity of a sewer system and to reduce the hydraulic loads by eliminating infiltration and inflow. As the first step in developing a sewer system model, each local utility is required to develop a **sewer system inventory**. Capacity certification programs allow various jurisdictions to determine whether adequate wastewater collection and treatment capacities exist within their sewer systems, before authorizing new flows and sewer service connections. Each local utility is required to develop procedures for certifying available capacity for proposed developments as part of establishing a sewer **capacity certification program**. Prior to developing inspection and maintenance **training programs**, each local utility is required to outline training needs for program and employee training.



Does your utility accept septage at local wastewater treatment plants or provide alternative treatment locations?



### Septage Disposal

An effective method for extending the life of a septic system and insuring its proper operation is to pump out settled solids from the septic tank before excessive amounts accumulate and begin to migrate into the absorption field. As more homeowners are educated how to properly maintain their septic systems, local jurisdictions will need to plan for disposing of the septage at local wastewater plants or provide alternative locations.

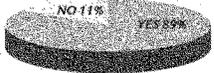
Has your local government begun to develop local plans to determine future sewer and unsewered areas of the jurisdiction?



### Sewered vs. Unsewered Area Planning

The Local Wastewater Management Plans should identify areas for long-term septic system use, as well as those areas where public sewer service will eventually be available. Forty-two District local governments have already begun to identify future sewer and unsewered areas of their jurisdiction.

Has your utility begun to develop policies for connecting to public sewer?



### Sewer Connection Policy

Each sewer system is required to establish policies concerning connection to public sewers by the end of 2005. Forty-two District sewer systems have already established policies for connecting to public sewer.

## Water Supply and Water Conservation Management Plan

The Water Supply and Water Conservation Management Plan includes a framework for water supply facilities and strategies for resource management. There was a 83 percent response rate to the questionnaire from the water suppliers in the District. The 53 suppliers who responded serve approximately 99 percent of the District's population.

### Water Conservation Actions

A critical element of the District plan is water conservation. The water conservation program includes measures that will reduce water use and water losses and help local jurisdictions.

### Conservation Pricing

By January 1, 2006, all District water suppliers are required to adopt a multi-tiered rate structure. The goal of conservation pricing is to reduce excessive discretionary water use, especially outdoor irrigation, by making water use increasingly more expensive. Twenty-five District water suppliers already meet that goal.

### System Leak Detection

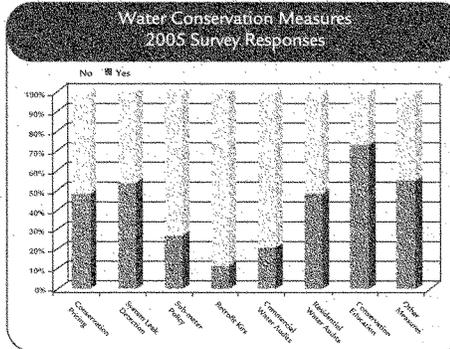
A major component of the District's program is leak reduction, which has the potential to provide much of the planned water savings. Water suppliers must identify methods to reduce leakage in their systems and to reduce unbilled water. Twenty-eight water suppliers have on-going leak detection programs.

### Multi-family Sub-Unit Meters

Local ordinances or policies requiring that new multi-family buildings (i.e. apartments, townhomes, condominiums) be built with either individual water-utility-owned meters on each unit or sub-unit meters owned and managed by the property owner with a utility-owned master meter. This measure allows water service to each unit to be based on volume of use, thus giving individuals incentive to use water efficiently. Studies show sub-unit meters can save 15 percent. Fourteen water suppliers have already implemented this measure.

### Water Audits and Retrofit Kits

The plan contains several water conservation measures that focus on helping individuals and businesses assess their water use and provide recommendations and tools to reduce water use.



Water suppliers within the District are required to begin or expand a program for residential customers that provides water audit or leak detection information. It is recommended that the water suppliers target large water users. Twenty-five water suppliers have implemented this measure.

Water suppliers are also required to begin or expand a program to provide water audits to commercial customers. Eleven water suppliers have implemented this measure.

Water suppliers are also required to begin or expand a program to distribute low-flow retrofit kits to customers. These kits could include low-flow showerheads, faucet aerators and other applicable retrofit items. The kits would be distributed to the portion of the service areas that have pre-1992 homes that were built before these low-flow fixtures were required as part of the plumbing code. Six water suppliers currently distribute low-flow retrofit kits.

**Water Conservation Public Education**

Education and public awareness are critical to achieving support of the District's water conservation goals and, ultimately, the reduction in water use. Each water provider is required by the water supply plan to create or expand its public information campaign. Thirty-eight water suppliers currently provide conservation materials to their customers.

**Other Measures**

Water suppliers also support water conservation through a variety of other measures, including the WaterSmart program, showerhead exchanges, Xeriscaping workshops, water reuse programs, service line replacement and enforcement of the state-wide "Rules for Outdoor Water Use."

Has your jurisdiction conducted a review of local water plans for consistency with the District Water Supply and Conservation Management Plan?



Has your jurisdiction developed an emergency water plan?



Is your jurisdiction developing joint water plans as identified by the District?



**Local Water Supply Planning**

Local water management plans are needed to support proposed infrastructure and improvements. In some cases, local plans need to be revised to incorporate the District's principles. Thirty-four local jurisdictions have developed local water supply plans that conform to the District plan.

**Emergency Water Plan**

Each water system needs to develop or update its emergency plan. Thirty-eight water suppliers have developed emergency water plans.

**Joint Planning**

Water supply efficiency and reliability are enhanced through the interconnection of adjoining water systems. Encouraging interconnections between water systems in the District is particularly important in the event of a drought or emergency situation. Five of the six major joint water supply plans identified in the plan are being developed. In addition, eighteen other water suppliers are working across jurisdictional lines.

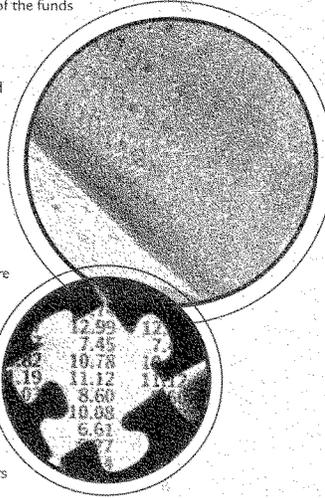
## FINANCIAL OVERVIEW

The Water Planning District operates on a calendar year. On June 3, 2004, the Board approved the District's 2005 budget. A detailed accounting of the funds received and expended by the District are listed below.

### Projects Funding

Successful implementation of the plans hinges on the ability to fund both capital improvements and the programmatic measures. Estimated costs for these improvements and activities are expected to reach into the billions of dollars over the next 30 years, with the majority of these funds raised at the local level. The District continues to work to identify additional funding at the state and federal level to supplement these local dollars. The Georgia Environmental Facilities Authority (GEFA) has met with the District to educate local governments on how they can secure financing for District projects using the state's bonding capacity.

In addition, the District is in its fourth year of working to secure federal funding for District projects and has focused on the EPA Appropriations Bill. To date, the District has secured federal grants totaling \$2.6 million dollars through the FY 2005 appropriation cycle. This work continued in 2005, and although there was strong support from the Georgia delegation, funds were not secured for this program in the FY 2006 appropriation cycle. While this is a setback, the District and its partners will continue to work with the Congressional delegation to educate the House and Senate Appropriations Committees on the importance of federal funding for the District. In 2006, the District will also investigate additional funding options through the U.S. Army Corps of Engineers and the United States Geological Survey (USGS).



### Financial Recommendations

During 2005, the Board and its committees discussed issues surrounding the funding of the District's 2006 budget (\$1,116,199). The board agreed to continue to fund the District through the per capita assessment option at a rate of \$.15 per capita. This amount generates \$596,199 in local dues for the 2006 budget. The Board has requested \$250,000 in the FY 2007 Georgia state budget for the District's 2006 calendar year.

### Funds Expended (as of December 7, 2005)

	2005 Budget	Expended or Under Contract Through 12/7/2005	Remaining Budget
Chairman's Allowance	3,000	0	3,000
District Special Projects	135,000	115,052	19,948
Public Education	207,000	206,186	814
Salaries	267,109	250,425	16,684
Fringe Benefits	157,594	147,751	9,843
Water Board Contracts	28,000	28,000	-
Miscellaneous Operating Expenses	109,585	72,137	37,448
Overhead	164,785	154,492	10,293
<b>Totals</b>	<b>\$1,072,073</b>	<b>\$974,043</b>	<b>\$98,030</b>

**Receipt Register**

Date	Payor	Interest	State	Local	Special Purpose Funds	Total
1/3/05	City of Cartersville				10,000.00	10,000.00
1/14/05	Rockdale County			1,753.00		1,753.00
1/14/05	City of Stockbridge				5,000.00	5,000.00
1/14/05	Forsyth County			14,761.00		14,761.00
1/21/05	City of McDonough				5,000.00	5,000.00
1/31/05	Clayton County			11,826.00		11,826.00
1/31/05	Interest Income	1,280.82				1,280.82
2/7/05	Henry County			17,901.00		17,901.00
2/14/05	Henry Water and Sewer				5,000.00	5,000.00
2/14/05	Logust Grove				5,000.00	5,000.00
2/14/05	Rockdale County			1,753.00		1,753.00
2/28/05	Interest Income	1,155.52				1,155.52
3/11/05	Fulton County BOC				35,000.00	35,000.00
3/11/05	Fulton County BOC			10,733.00		10,733.00
3/11/05	Fulton County BOC			10,733.00		10,733.00
3/11/05	Coweta County			13,382.00		13,382.00
3/11/05	City of Hampton				5,000.00	5,000.00
3/11/05	City of Ballground				5,000.00	5,000.00
3/30/05	Rockdale County			1,753.00		1,753.00
3/31/05	Interest Income	1,444.74				1,444.74
4/14/05	Douglasville Douglas County			13,826.00		13,826.00
4/14/05	Fulton County BOC			10,733.00		10,733.00
4/22/05	Rockdale County			1,753.00		1,753.00
4/29/05	Interest Income	1,587.47				1,587.47
5/11/05	Coweta County			13,382.00		13,382.00
5/27/05	Fulton County BOC			10,733.00		10,733.00
5/27/05	Rockdale County			1,753.00		1,753.00
5/31/05	Interest Income	1,642.94				1,642.94
6/14/05	Cobb County			91,163.00		91,163.00
6/30/05	Interest Income	1,618.54				1,618.54
7/5/05	Rockdale County			1,753.00		1,753.00
7/31/05	Interest Income	1,428.07				1,428.07
8/26/05	Henry County			17,901.00		17,901.00
8/31/05	Interest Income	1,330.48				1,330.48
9/14/05	Hall County				12,500.00	12,500.00
9/14/05	City of Atlanta			62,471.00		62,471.00
9/14/05	Rockdale County				7,500.00	7,500.00
9/14/05	City of Gainesville				10,000.00	10,000.00
9/21/05	Fulton County BOC			10,733.00		10,733.00
9/30/05	Interest Income	1,351.59				1,351.59
10/18/05	Fayette County			13,689.00		13,689.00
10/18/05	Paulding County			12,252.00		12,252.00
10/18/05	Henry County			17,901.00		17,901.00
10/31/05	Cherokee County			21,285.00		21,285.00
10/31/05	Hall County			20,892.00		20,892.00
10/31/05	Cobb County			91,163.00		91,163.00
10/31/05	Interest Income	1,230.17				1,230.17
11/9/05	Gwinnett County			88,267.00		88,267.00
11/15/05	Walton County			9,103.00		9,103.00
11/30/05	DeKalb County			95,414.00		95,414.00
11/30/05	Clayton County			11,826.00		11,826.00
11/30/05	Interest Income	1,637.19				1,637.19
12/7/05	Fulton County BOC			10,733.00		10,733.00
12/7/05	Clayton County			23,652.00		23,652.00
12/7/05	Fulton County BOC			64,396.00		64,396.00
12/13/05	GA Dept. of Natural Resources		250,000.00			250,000.00
<b>2005 Totals</b>		<b>15,707.53</b>	<b>250,000.00</b>	<b>801,369.00</b>	<b>105,000.00</b>	<b>1,172,076.53</b>

### Technical Coordinating Committee

James Abraham	Melinda Davies	Julie Kemmer	Terry Porter
Gloria Abram	Duane R. Demeritt	Wayne Kennedy	Kelly Randall
Judy Adler	Coriette Dennard	Bryan Kerlin	Chuck Rann
Bill Andrews	Doug Derrer	Cameron Kerr	John Reinhard
Nick Ammons	Nancy DeShazo	Bob King	Ted Rhinehart
Barry Amos	David Dockery	Anne Kirk	Eddie Tobinson
Reza Arat	Jack Dozier	Debbie Kirk	Barry Robson
Laurie Ashmore	Jeff Eady	Joe Krewer	Kraig A. Rock
Leigh Askew	Don Easterbrook	David Kubala	Richard Rogers
Diane Badger	Rick Eastin	Eric Lacefield	Jessica Roth
George Barnes	Tim Fquels	Pat Lacey	Juan Ruiz
Roy Barnes	Joanne Ellars	William Landrum	Jerri Russell
Johnny Barron	Katie Epps	James Lee	Susan Rutherford
Joe Basista	Lindy Farmer	Phil Lee	Colby Rutledge
Sally Bates	Nancy Faulkner	Steve Leo	Jim Sapp
Ellen Bauske	Rick Fahr	Mike Leonard	Jim Scarborough
Phillip Beard	Ron Feldner	Katherine Lewis	Dan Schulz
Harmit Bedi	Craig Ferguson	Brandon Lovett	Glenda Scott
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Tina Bennett	Roy Fowler	Barry Lucas	Charlie Sewell
Dennis Benz	Catherine Fox	Eric Lunsford	Rose Mary Seymour
Dennis Bergin	Pete Frisna	Phil Mallon	Rebecca Shelton
Troy Besuch	Peter Frost	Heather Manry	Frank Sherrill
Rick Blackwell	Frederick Gardner	Mike Martin	Majid Shirazi
Rob Blake	Jennifer Gardner	Meredith Mason	Kim Zimmerman Shorter
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Howard W. Brown Jr.	David Gipson	Richard McLeod	Harvey Stokes
Rob Brown	Carl Glover	James H. Miller	Scott Stokes
Stan Brown	Robert Gore	Sally Mills	Clyde Stricklin
Suzanne Brown	Steve Green	Becky Mixon	Ed Strong
Aaron Buckner	Jeremy Greenberg	Ali Mohajer	Andrew Sullivan
Suzanne Burnes	Brad Gresham	Lamar Moody	Rodger E. Swaim
Robert P. Butler	Sam Gueller	Ralph Moore	Bruce Taylor
Tim Callahan	Dan Hall	William Moore	Danny Taylor
Gene Camp	Stan Hall	Stu Moring	Greg Teague
Tom Campbell	Harold Harbert	Bobby Morrow	Mike Thomas
Azarina Carnical	Derrick Harris	Gene Morton	Mike Thuss
Tony V. Carnell	Kathy Hatcher	Jeff Morton	Andy Tsivoglou
Jane Chastain	Doug Hawkins	John Moskaluk	Larry Turner
David Chastant	Jon Heard	Chris New	Steve Turner
Rudolph Chen	Tom Heard	Kathy Nguyen	Scott Uhlich
Richard Chime	Bill Higgins	Phil Nungesser	Miguel Valentin
Steve Coie	Keith Higgs	Tom O'Bryant	Chris Venice
Daniel Conn	Mark Hipp	Randy Padgett	Bob Westerfield
Pam Conner	Steven Hogan	Glenn Page	William White
Cheryl Contant	Renee Hoge	Nathan Parrott	Betsy Whitehead
Charles Corbin	Jesse Howard	Tony Parrott	Dwight Wicks
Tom Couch	Walter Howard	Mike Patton	Bruce Widener
Ben Counter	Margaret Howse	Steve Payne	Bran Wiley
R.D. Cowan	Harry Hughes	Craig Pendergrast	Keith Williams
J. Carlisle Cox	Ken Jacob	Tim Perkins	Eric Wilmarth
Bruce Coyle	Rick Joffares	Ron Peters	Lindsay Wood
Boyd Cummings	Michael Jones	Guy Pihera	Chris Yancey
Ferrell Curlee	Ronnie Jones	Sabrina Piper	Siamak Yari
John Daniels	Lawrence Kaiser	Jim Poff	Bob Zeliner
	Brant Keller	Martin Poole	

### Basin Advisory Councils

#### Chattahoochee Basin

Alexandra Adams  
Michael Bennett  
Sally Bethia  
Rick Blackwell  
Birgit Bolton  
Mark Boner  
Chris Burke  
Basil Campbell  
Steve Cannon  
Lamonte Carr  
Howard Carson  
Doug Carter  
John Cheek  
Lance'ot Clark  
Lisa Collins  
Bill Couch  
Leonard J. "Jodie" Cox  
John H. Culbreth  
Mary M. Davis  
Mike Dobbins  
Lee Duncan  
Mike Dunn  
James T. Durrett  
Prescot Eaton  
Michael C. Farmer  
Bob Fox  
Dieter Franz  
Peter Frost  
Douglas J. Fuller  
Doug Gatlin  
Art Geter  
Robert M. Giannetti  
Ial Harber  
Debbie Hardy  
Linda Heard  
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Kevin Johnson  
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Emil Walcek  
Aone Webb  
David Welden  
Dewey White  
Connie Wiggins  
Virgil Williams  
Michelle Wright  
Lauri Young  
Karen Zarin

#### Etowah Basin

Sandy Adams  
Gary Ayers  
Stan Bearden  
Wayne Bisetti  
Bruce Bisetti  
Jonathan Braden  
Dan Clark  
Elyse Cochran  
Jonathon Cox  
Joe Lane Cox  
Bruce Coyie  
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Candace Stoughton  
Bob Sutton  
Diarne Tate  
Roy Taylor  
Lloyd B. "Skip" Teaster  
Ford Thigpen  
Drew Tomasiere  
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#### Flint Basin

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Fred Brown  
Dennis Chase  
Chris Clark  
Lancelot Clark  
Jerry Donovan  
Don Easterbrook  
Ron Feldner  
Chad Floyd  
Scott Formel  
Carol Fritz  
Randy L. Harrison  
Marilyn Johnson  
Ken Martin  
Garney Ingram Reid  
Julius Ross  
Tom Stivers  
Bryan Taft  
Jim Williams  
Keith Wood  
John Woody

#### Lake Lanier Basin

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Tommy Bagwell  
William Bagwell  
Darcie Boden  
Keith Breedlove  
Jim Callison  
John Cunard  
Kristin Daniel  
Mack DeVine  
Denise Deal  
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Blake House  
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Jack Kelly  
Jim King  
Emory Lipscomb  
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Faye Markey  
Mary Mayhew  
Frank McGowan  
Tom O'Bryant  
Joni Owens  
Reggie Perry  
Brian Rochester  
Lewis Rogers  
Kirby Scheimann  
Ron Seder  
Bryan Shuler  
Jeff Simmons  
Tyler Smith  
Erwin Topper  
Frank Turk  
John Watson  
John Wayne  
Anne Webb  
Glenn White  
Sheryl Williams

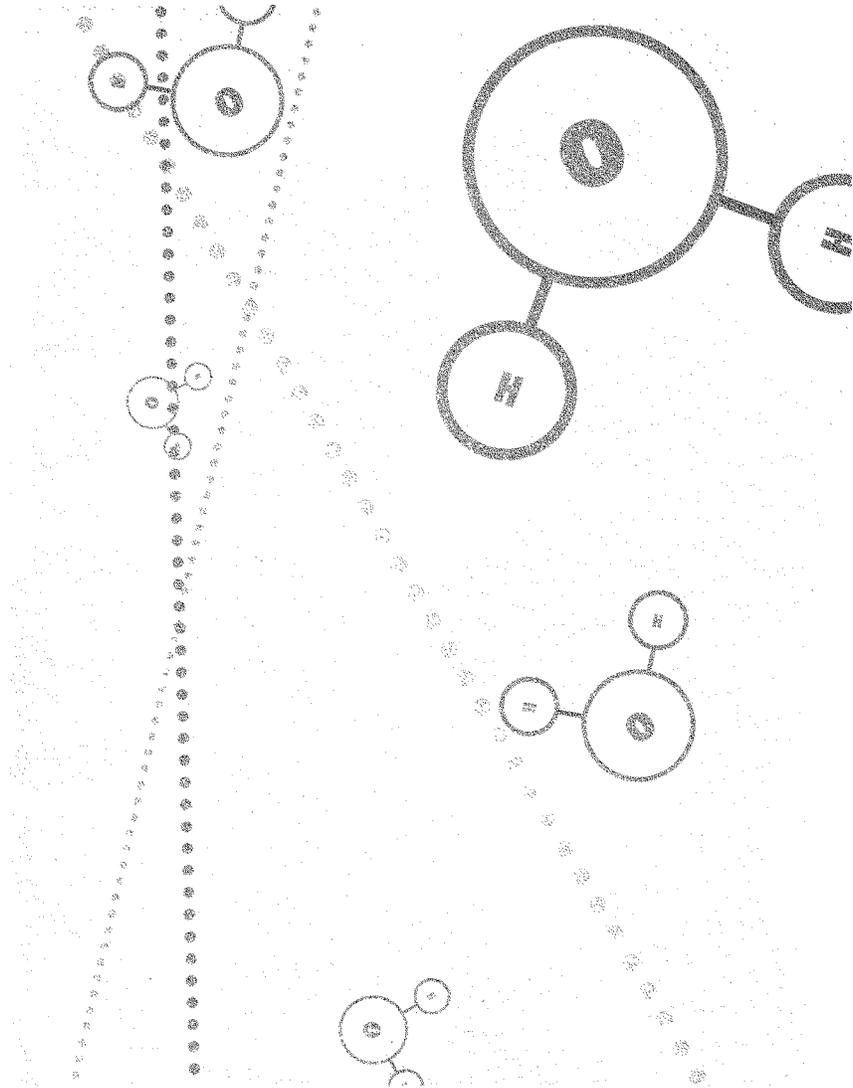
#### Ocmulgee Basin

Bill Atkinson  
David Ausdemore  
Bill Banks  
Paul bowan  
Mark Brock  
Robert A. Burroughs  
Lowell Chambers  
Terry Clark  
Phil Cuthbertson  
Beverly Dockeray-Ojo  
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Lindy Farmer  
Mike Horne  
Jim Hutchens  
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Mike Richter  
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Keith Seiler  
Russ Spears  
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Annie Valenty  
Steve Vance  
Judy Waters  
A. J. "Buddy" Welch  
Greg Williams

#### Oconee Basin

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Frank Armstrong  
Leigh Askew  
Benny Bagwell  
Sharon Cassidy  
Sam Chagman  
Jimmy Echols  
Peter Gordon  
Dana M. Heil  
Jim Henderson  
Brent Hoffman  
Tommy Howard  
Rhett Jackson  
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# Do It Yourself Household Water Assessment

## How Water-Smart Is Your Household?

Is your house as water-efficient as it can be? This do-it-yourself household water use assessment will help you understand how much water you use, identify leaks and show you ways to reduce your water use. It will help you conserve water and save money at the same time!

### How much water do you use?

#### Look at your water bill

The best way to determine how much water you use in a day is to calculate it from your water bill. Check how your bill measures water; it may be in cubic meters (m<sup>3</sup>), cubic feet (CF or CCF), gallons (gal) or liters (L). If your bill is not in gallons, use the conversion table to the right. If your water bill does not display average daily use, you can calculate it by dividing the number of gallons by days in the billing cycle. Divide this by the number of people living in your home. Record your answers on the included worksheet.

#### Check your water meter

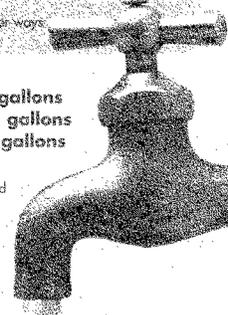
Another way to estimate use is by reading your water meter. Water meters record how much water is used per household. Water meters are usually located near the front of your property. To determine how much water is used in your household, read your meter at the same time on two consecutive days. Subtract the first reading from the second one to see how much you use in a day. Repeat including weekends and weekdays and take the average reading.

### How to conduct a Household Water Use Assessment

The assessment includes:

1. Analyzing how much water you use
2. Detecting leaks (pipes, toilets and faucets)
3. Checking for and using water-efficient appliances
4. Outdoor water use
5. Changing your water ways

**m<sup>3</sup> x 264 = gallons**  
**CCF x 748 = gallons**  
**L x 0.264 = gallons**



How Efficient Is Your Water Use?			
How does your water usage measure up? Note that water use varies by season. Now that you have calculated your water use per person per day, as described above, use that number to compare your usage to the rest of the metro area.			
Gallons per Person per Day			
Winter	Summer	Rank	Comments
50 to 65	65 to 80	EFFICIENT	You are using water wisely!! Share your techniques with your friends and neighbors.
70	91	AVERAGE	You use water like the average north Georgia resident. Learn how to conserve water and reduce your water bill.
Exceeds 70	Exceeds 100	INEFFICIENT	You are using too much water. Find out how to reduce waste and significantly reduce the bill.

Source: Metropolitan North Georgia Water Planning District Water Supply and Water Conservation Plan, Georgia Department of Natural Resources Water Conservation Plan Guidelines (Draft)

## 2 Detecting Leaks



Check for leaks within your house by first turning off all water-using fixtures. Then check the meter dial for any movement. If the meter is moving when all the water in the house is turned off, you have a leak somewhere in your home. Also, any sudden increases in your water bill may indicate a leak.

### Pipes

There are some easy ways to look for leaks in a house. Water marks on floors, walls or ceilings can indicate indoor pipe leakage. Outside, standing water on the ground or on pavement when there has been no rain can indicate a broken underground pipe.

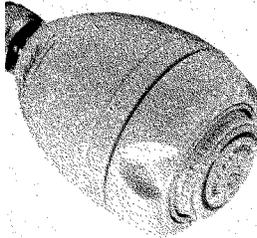
### Toilets

Check for toilet leaks by putting some food coloring or dye tablets in the tank. Wait 30 minutes. **DO NOT FLUSH THE TOILET.** If the water in the bowl changes color, you have a leak. To determine which part is the problem, draw a line on the tank at the water level. Turn off the water supply to the toilet. Wait another 30 minutes. If the water level stays the same, the leak is the refill valve or float. If the water level drops below the line, the problem is the flush valve or flapper.

### Faucets

Simple observation can tell you if you have a bathtub or sink faucet leak. All those drips can add up, so if you see one, replace worn washers and valve seals as soon as possible. Visit <http://www.awwa.org/advocacy/learn/conserv/dripcalc.cfm> to use the Drip Calculator and determine how much water those leaks can waste.

## 3 Checking & Changing Fixtures to Save Water



### Faucets and showerheads

Your current fixtures may not be very efficient. Measure the flow rate of each faucet and showerhead in the house. To do this, you will need a plastic bag or bucket, a measuring cup and a second timer or a watch with a second hand. Use the included worksheet to record your answers.

- Place a bag or bucket to catch the entire stream of water before turning it on.
- Turn the water on full blast for exactly **five seconds**.
- Use a measuring cup to determine the volume of water in the bag/bucket.

### Convert to gallons

- Multiply the number of cups of water in the bag/bucket by 0.0625 = \_\_\_\_ gallons
- Multiply the number of gallons by 12 to get a flow rate in gallons per minute (gpm).

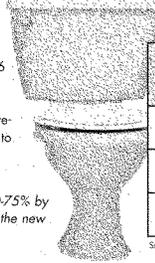
*If your showerhead uses more than 2.5 gpm, you could save water by replacing it with a new low-flow showerhead. These showerheads conserve water by mixing air with water to reduce the amount of water but still feel like higher flowing fixtures.*

*If your faucets (bathroom, kitchen or other) use more than 2.0 gpm, you need to change your existing aerator.*

### Toilets

If your home was built before 1992, it may contain inefficient toilets and can use as much as five times more water than newer toilets! If you don't know how old your toilet is or if a toilet is not labeled as 1.6 gpf (or gallons per flush), you may need to measure how much water the tank uses. Carefully shut off the valve to the toilet tank supply line. Then mark the water level in the tank reservoir. Flush the toilet. Now, refill the tank reservoir to the marked level using a measuring container to determine how much water is needed to flush the toilet. Once you've completed this task, don't forget to open the valve under the toilet.

*If your toilet uses more than 1.6 gallons per flush you could save 50-75% by installing a new toilet. The savings on your water bill could pay for the new toilet within a few years.*



Year Manufactured or Installed	Toilet Water Use Rate (gpf)
1994 - Present	1.6
1980 - 1994	4.5 - 3.5
1930 - 1980	8.0 - 5.0

Source: Amy Vickers, 2001

### Other Appliances

Clothes washers and dishwashers are other large water users in the home. Older appliances typically use more water and do not offer low water using options. Replacing these appliances with more efficient ones can save on both water and energy.

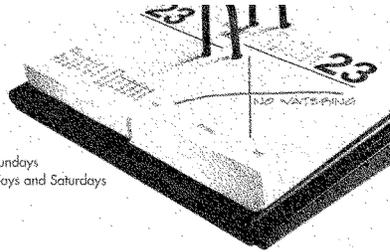
- **Washing Machine-** A non-conserving washer uses an average volume of 40.9 gallons of water per load. A water conserving front loading washer uses an average 24.3 gallons of water per load. (Source: AWWA/H2ouse.org)
- **Water Conserving Dishwashers-** A family that replaces a 12-gallon per load machine with a 6-gallon per load machine, and runs the dishwasher four times per week will save about 1,250 gallons of water per year. (Source: AWWA)

## 4 Outdoor Water Use

Here are the simple steps in saving water outside:

- Have a sprinkler? Make sure the spray heads are not watering hard surfaces like your driveway.
- Don't over water your lawn. To promote strong root growth and drought tolerance in plants, water deeply and infrequently.
- Place an empty tuna can on your lawn to catch and measure the water output of your sprinklers. Water only 1" per week.
- Water during the early morning and the late evening. There is generally less wind and lower temperatures and therefore less water lost to evaporation.
- Use efficient irrigation method (drip irrigation) or hand water (if possible).
- Mulch around trees and plants to retain moisture around roots.
- Check for leaky hoses and faucets outside.
- Never leave the water running when using a hose. A hose nozzle with shut-off switch can save hundreds of gallons.
- Use a broom, not a hose, to clean the driveway or sidewalk. (Burn calories too!)
- Plant drought resistant trees and shrubs and minimize turf areas.
- Raise your lawnmower blade to at least three inches. A lawn cut higher encourages grass roots to grow deeper.





**It's the Law!**

All Georgians using public water must follow the Department of Natural Resources schedule for year-round outdoor watering:

- Odd-numbered addresses can water on Tuesdays, Thursdays and Sundays
- Even-numbered and unnumbered addresses on Mondays, Wednesdays and Saturdays
- No watering on Friday

**Rain Sensor Shut Off Switch**

In the metro North Georgia area, all new in-ground landscape irrigation systems must have an automatic rain sensor shut-off switch. A rain shutoff device (also called a rain sensor) is designed to halt irrigation in response to rainfall.

# 5 Changing Your Water Ways

Here are some tips that can significantly help you conserve water and save money indoors.

- Keep showers under five minutes.
- Turn off the water while brushing your teeth or shaving.
- Turn water faucet off tight.
- Run the dishwasher only when it is full.
- Run the clothes washer only when it is full.

## Resources

**For general information on water conservation**

- [www.watersenseinwisley.com](http://www.watersenseinwisley.com)
- [www.northgeorgiawater.org](http://www.northgeorgiawater.org)

**Information on inefficient fixtures & repairs**

- [www.h2ouse.org](http://www.h2ouse.org)
- [www.diy-network.com](http://www.diy-network.com)
- [www.gchello.org](http://www.gchello.org)
- [www.toiletoology.com](http://www.toiletoology.com)

**Ultra Low Flow Toilet Performance**

- [www.northgeorgiawater.org/MapFinalReport.pdf](http://www.northgeorgiawater.org/MapFinalReport.pdf)
- [www.savingwater.org/docs/flushstor.pdf](http://www.savingwater.org/docs/flushstor.pdf) (Seattle, WA list)
- [www.ci.austin.tx.us/watercon/toiletrobotlist.htm](http://www.ci.austin.tx.us/watercon/toiletrobotlist.htm) (Austin, TX list)

**Toilet Flapper Information**

- [www.toiletflopper.org](http://www.toiletflopper.org)
- <http://www.scws.org/conservation/h2ome/toilet/flapper.shtml>

# Household Water Assessment Worksheet

## 1. How much water do you use?

- Water consumption or use from your water bill \_\_\_\_\_ gallons CCF L m<sup>3</sup> (circle one)
- Convert to gallons (see Table 1) \_\_\_\_\_
- \_\_\_\_\_ days in billing cycle
- Household use = gallons (b.) ÷ days in billing cycle (c.) \_\_\_\_\_
- \_\_\_\_\_ number of people living in your home
- ANSWER: Divide household usage (d.) by number of people living in your home (e.) \_\_\_\_\_  
Compare this number with the chart

m <sup>3</sup> x 264 = gallons
CCF x 748 = gallons
L x 0.264 = gallons

## 2. Detecting Leaks: Check for and fix any leaks

- Pipes **yes no** (circle one)
- Toilets **yes no** (circle one)
- Faucets **yes no** (circle one)

Gallons per Person per Day		
Winter	Summer	Rank
50 to 65	65 to 80	EFFICIENT
70	91	AVERAGE
Exceeds 70	Exceeds 100	INEFFICIENT

## 3. Conserving Water

- Faucet and showerhead efficiency

	Faucet 1	Faucet 2	Faucet 3	Faucet 4	Faucet 5	Showerhead 1	Showerhead 2
Cups of Water in Bucket/Bag X 0.0625 = _____ # of Gallons							
# of Gallons multiply by 12 = _____ gallons per minute							

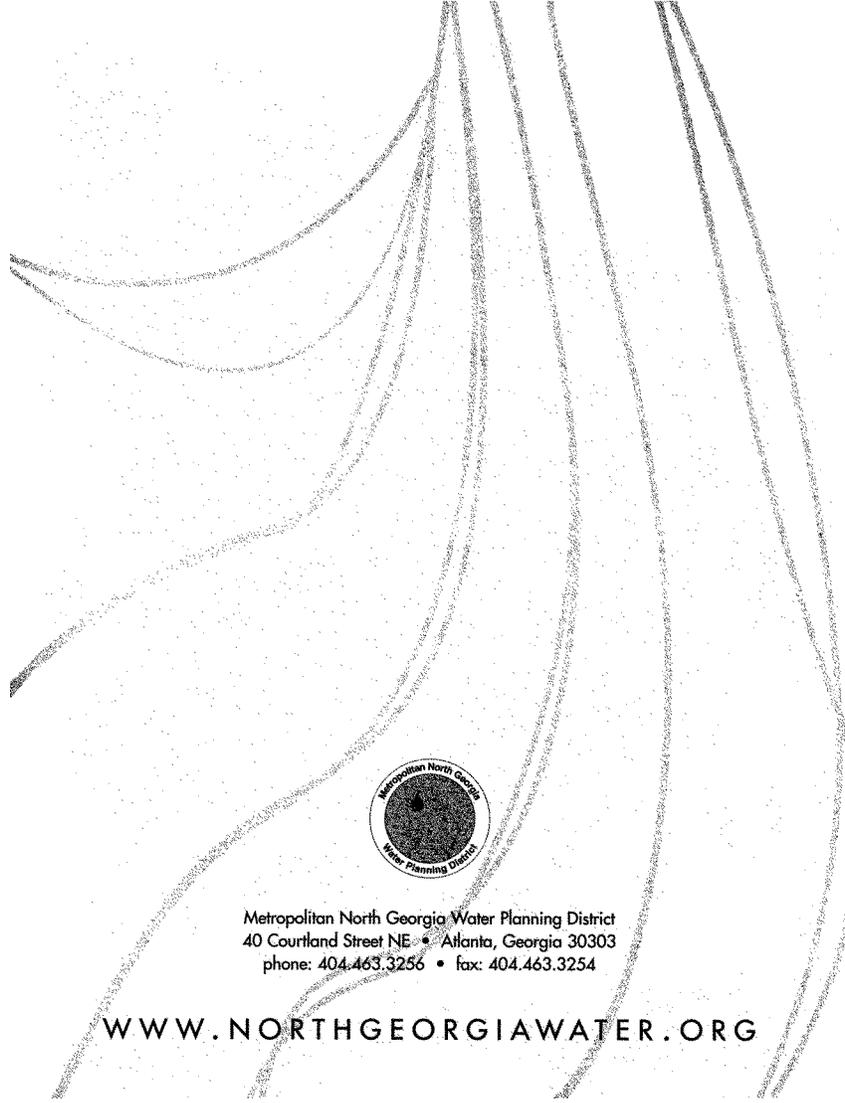
- Toilet 1** - Does the toilet have a stamp on the back (behind the seat) with 1.6 gpf (gallons per flush) on it?  
\_\_\_\_\_ cups of water in toilet tank x 0.0625 = \_\_\_\_\_ # of gallons per flush

**Toilet 2** - Does the toilet have a stamp on the back (behind the seat) with 1.6 gpf on it?  
\_\_\_\_\_ cups of water in toilet tank x 0.0625 = \_\_\_\_\_ # of gallons per flush

**Toilet 3** - Does the toilet have a stamp on the back (behind the seat) with 1.6 gpf on it?  
\_\_\_\_\_ cups of water in toilet tank x 0.0625 = \_\_\_\_\_ # of gallons per flush
- Other Appliances
 

Does your washer machine allow you to change the water level for smaller loads? **yes no** (circle one)

Does your dishwasher allow you to change the amount of water used per cycle? **yes no** (circle one)
- Outdoor Water Use
  - Check for outdoor hose or spigot leaks.
  - If you have an automatic irrigation system, install a rain sensor.
  - Is the last number of your street address odd or even?  
ODD - outdoor watering allowed Tuesday, Thursday, Sunday  
EVEN - outdoor watering allowed on Monday, Wednesday, Saturday



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# Lake Sidney C. Lanier

## A Study Of The Economic Impact Of

# R e c r e a t i o n

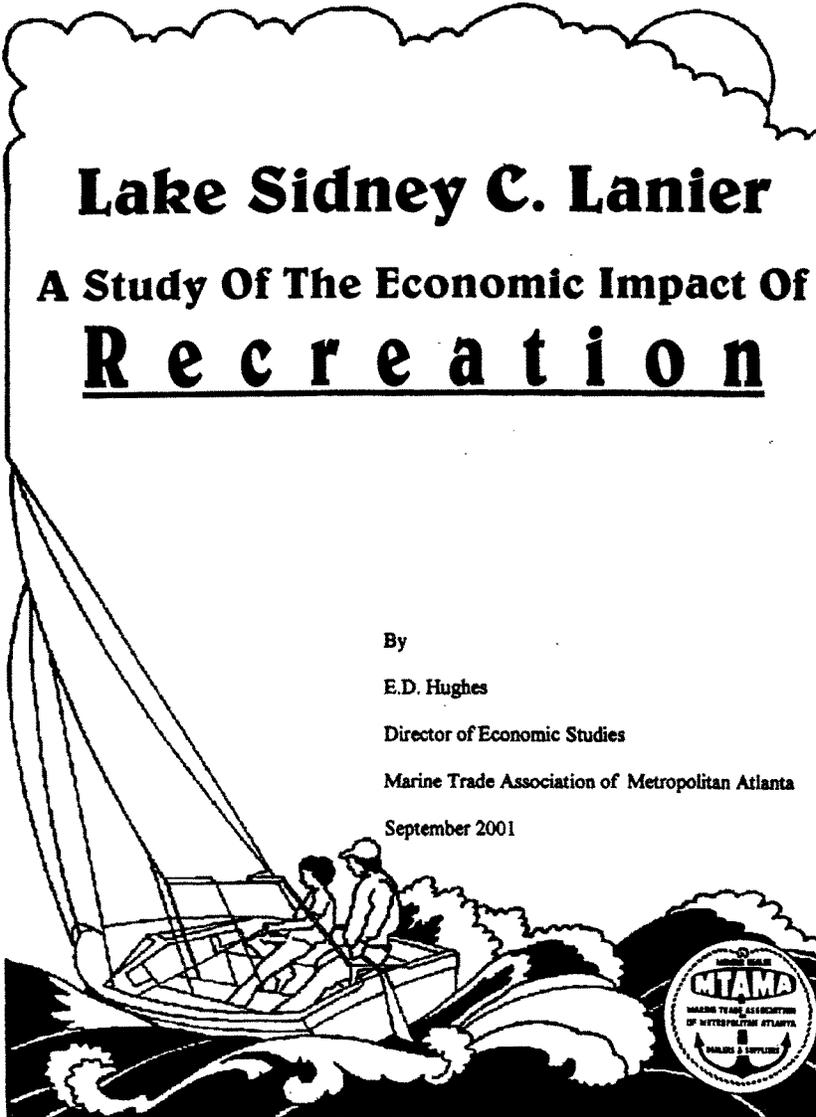
By

E.D. Hughes

Director of Economic Studies

Marine Trade Association of Metropolitan Atlanta

September 2001





"From Islands to Highlands... We've Got it All!"

-Foreword-  
Lake Sidney Lanier  
A Study of the Economic Impact of Recreation

Lake Sidney Lanier celebrated its 50<sup>th</sup> Anniversary recently...and what a positive economic impact it has made on this region of Georgia. The majority of Lake Lanier's waters and shoreline bound Hall County...but it serves all of the Atlanta Metro North Georgia region (Lumpkin County to Atlanta) and South to the Gulf of Mexico. How appropriate we name this body of water after Sidney Lanier. Read his "*Song of the Chattahoochee*"...*Out of the Hills of Habersham, Down the valleys of Hall*... Lanier was a major American poet, a native Georgian.

The economic impact is over \$5 billion annually...recreation a predominant part of that number. Lake Lanier is the most visited Corps of Engineers lake in the Southeastern United States. With the tourism and recreation activities, the lake residences and other industrial uses of Lake Lanier's waters, come many challenges.

All of us who enjoy the benefits must work together as a region...to enhance the water quality and quantity of our precious resource...Lake Lanier. Most folks are very passionate in their feelings about Lake Lanier...we feel it belongs to us individually. Let's put aside our personal agendas and work together so future generations can enjoy these beautiful waters.

It has been my pleasure to read this study by the Marine Trade Association of Metropolitan Atlanta...I found it interesting and comprehensive. I congratulate Ed Hughes for providing this study to the public.

Kit Dunlap  
President / CEO  
Greater Hall Chamber of Commerce

September 2001



*Marine Trade Association of  
Metropolitan Atlanta*

August 28, 2001

Dear Ed;

Your report on The Economic Impact Of Recreation at Lake Sidney C. Lanier was the most thorough study I have ever read. The statistics are easy to understand and your sources are impeccable. This report will be a great resource for years to come.

Congratulations on a job well done.

Sincerely yours,

Charlie Knight  
President  
Marine Trade Association of Metropolitan Atlanta



## **MARINE TRADE ASSOCIATION OF METROPOLITAN ATLANTA**

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Allatoona Landing and Marine Resort	JOA Distributors
American Boat Brokers	Knight Marine
Ambush, Inc.	Lakesports, Inc.
Aqualand Marina	Lake Lanier Islands
Atlanta Dock, Inc.	Lake Lanier Lodges
Atlanta Marine	Lan-Mar Marina
B&B Marine	Lanier Publishing
B&W Boating	Lanier Sailing Academy
Bald Ridge Marina	Lazy Days Marina
Bass Pro Shops	Little River Marina
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Cartersville Marine	Southern Sailing Center
D&P Marine	Starboard Marina
Dalton Marine	Stovall Marine / Marine Max
Dream Marine	Sunrise Cove Marina
Ferguson - Poole	TAL Marine
Forever Resorts	Travis Boating Center
G.H. Martin Boathouse & Dock	Watersports Central
Gainesville Marina	
Georgia Marine	
Grass Shack	
Gwinnett Marine	
H.D. Marine	
Habersham Marina	
Holiday Marina	

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A very special thank you to members of the Marine Trade Association of Metropolitan  
Atlanta – Charlie Knight, President.

### Executive Summary

This study was commissioned by the Marine Trade Association of Metropolitan Atlanta (MTAMA) on April 1, 2001.

The scope of this project is to identify a substantial number of financial indicators which will best illustrate the economic impact of the recreational resources provided to this area by Lake Lanier.

During the past five months, primary data was gathered from interviews with 173 individuals representing 57 organizations that have a vested interest in the Lake. Secondary data in the form of financial documentation was received from the MTAMA, U.S. Army Corps of Engineers, Georgia Department of Natural Resources, Georgia Mountains Regional Development Center, and other organizations of equal significance, represented herein. Since this report represents more of a thesis than an audit, an exact evaluation of the economic impact of the recreational resources of Lake Lanier could not be measured because of time constraints and resource limitations. However, an analysis of this data by members of the academic community, business leaders, and patriachs of the Lake confirmed that recreational resources complement the general economy of this region tremendously and directly enhance the quality of life immeasurably.

With the application of the 2.5 multiplier (a conservative estimate of the direct economic impact of recreational spending and investment in this area) complemented

by the indirect economic impact on the entire business community, a conservative figure of over 5.5 billion dollars was identified as the economic impact of recreational interests in Atlanta and North Georgia. The multiplier was not used on revenue received by city-county, state and federal organizations, nor was it used on the evaluation of fixed assets.

**What is Economic Impact?**

Economic impact begins when a resident or visitor to an area spends money in that area ---no matter what the reason. The benefits to local economy, however, go beyond the basic impact of the dollars spent in the area. These resident/visitor expenditures create a chain effect. The direct effects or impacts of these expenditures become evident as the recipients of these monies in turn pay wages, earn income, and pay taxes. Furthermore, these direct recipients spend their income thereby creating indirect impact for more jobs, wages, salaries, proprietary income and tax revenues. These direct and indirect effects together equal the total economic impact of all expenditures in the area.

Prior to presenting the Financial Appendix in support of the economic impact estimate, the following information is presented for the purpose of establishing a better perspective of this project and to guarantee quality assurance protocols with all organizations presently involved in the economics of recreation affecting Lake Lanier.

**Purpose of Study**

Historically, Lake Lanier has been an up-and-down lake with water levels taking huge swings, reaching incredible lows and returning to full pool in a few months.

It hasn't happened this time! The last time the Lake was at full pool, a level of 1,071 mean sea level ("MSL"), was June 30, 1998. We are in the fourth year of a major

drought, and Florida and Georgia have been hit especially hard.

The Lake Lanier area and its watershed, the region draining into the Chattahoochee and Chestatee river systems, has received less rainfall during the past year than the river systems south of Atlanta, to the Gulf of Mexico. To further compound this shortage, the inflow from small rivers, creeks and streams of North Georgia have been providing only 47% of the water needed to maintain a constant, consistent elevation of the Lake. The anticipation of filling the Lake with an external resource flow, at this time, does not meet existing conditions.

The following extreme conditions have developed during the past three years as the result of a rainfall deficit.

Boat sales are flat! Real estate sales for lake front property are flat! Hundreds of boat docks are setting in the mud and hundreds of others are hanging from the bank. In some instances, the lake water line is more than 75 feet beyond these docks.

On July 26, 2000, the water elevation of the Lake dropped below 1,064 MSL, almost eight feet below pool. At that level, the U.S. Army Corps of Engineers ("Corps") initiated phase one of "The Drought Management Action Plan". This plan requires the closing of a number of boat launch ramps, the moving of swim buoy safety lines, the marking of dangerously low water areas throughout the Lake and the suspension of approval of new private dock permits.

Prior to the Lake reaching the 1,064 MSL water level, private dock owners and marina operators initiated plans to move their docks to deeper waters. These moves are costly and labor intensive. There are 8,366 private docks on the Lake.

During the middle of the 2000 summer recreational season, boat sales and major lake recreational resources began to lose their attraction, slow down to a counter productive level, or STOP. The boat sales famine began in June 2000. Dealers were left with large inventories and the overhead operating costs were always present. The anticipation of a successful winter boat show in January 2001, did not materialize.

On January 3, 2001, The Atlanta Boat Show opened, and the Lake level was 1,055.81 MSL, more than 15 feet below full pool. Attendance at the Show was 22% below average, and the collective sales from each boat dealer was 50% below average. Follow-up sales attempts with prospective customers during the spring was only marginally productive. As of July 31, 2001, the average sales for the boat dealers in the Lake Lanier community were down 23-26% from the previous year.

There is a correlation between boat sales and other sales of recreational equipment in the Lake Lanier community. One major distributor of fishing tackle stated that his sales are down about 30% from the previous year.

Never before have we been confronted with a more serious challenge to our water

supply and sustainability of water as a resource. We are 20 years behind in our efforts to support and protect our waters, and now we have emerging outside voices attempting to control our water. Now, we find ourselves competing for this river of life with Alabama and Florida.

It is anticipated that the economic impact identified in this study will present an accurate evaluation of the value of our 38,000 acre playground. This study will also identify the magnitude of the investments the boat dealers, marina operators, and water sports community have in the recreational resources of Lake Lanier. At this time, these investors are not receiving a satisfactory return for their risk and hard labor. Worry is considered to be the heaviest load to carry for the business person.

Lake Lanier and its associated businesses are the region's largest employer, tourism attraction and executive recruiting tool. Doctors, lawyers and other professionals are attracted to the beauty of the Lake and the quality of life enjoyed in this community. The Lake is the engine that drives the economy in this area.

The annual visitor spending on and around Lake Lanier promotes our retail market, fills our sales tax coffers and fund our local school expansion. During the conduct of this study, the candor of those interviewed disclosed a direct correlation with Lake levels and visitor spending. Extended members of the recreational community have suffered a decrease in revenue during the summer season. This extended community includes convenience stores, restaurants near to the Lake, fishing tackle stores, etc.

Atlanta has been the largest inland sales market for boats in the United States. No other major metropolitan market of four million people has as large a body of fresh water for recreational purposes as we do. So, here we have a regional water reservoir with 38,000 surface acres and 544 miles of shoreline, 3.3 million acre feet of storage capacity, but we find ourselves in a water quandary. Of the 13 lakes in the Chattahoochee water basin, 65% of the total storage capacity is in Lake Lanier.

Since the headwaters of the Chattahoochee River mark the northern most reaches of the Apalachicola – Chattahoochee - Flint River basin ("ACF") and the major stream regulation in the basin is provided by Lake Lanier, the Lake is of critical importance to the water resource needs of North Georgia, as well as the entire basin.

Over 60% of the total population within the ACF basin is dependent upon water supplied by Lake Lanier. Before reaching Apalachicola Bay, at the Gulf in Florida, a distance of 434 miles, this water passes through eight hydropower generators and 13 dams.

Lake Lanier also provides a major portion of water for four large impoundments in the basin: Lake West Point, Walter F. George, George W. Andrews, and Seminole. All are multipurpose reservoirs which provide water supply, flood control, recreation, fish and wildlife enhancement, hydropower, navigation, and irrigation.

Contributors for this segment: Frank Norton, Jr., Jean Ferris, Susan McClendon,

The Norton Agency, Pat Taylor, Ed Burkett, Corps of Engineers, Mark Lusink, Charlie Knight,  
MTAMA, Matt Sena, U. S. Weather Bureau and Marine Retail Association of America,  
Chicago, Ill.

#### Structure and Format

For purposes of presenting this study at the very highest level of integrity, the most knowledgeable sources of information were selected for interviews. The documentation provided by these individuals is also the most current, well-researched material available.

To support this format of credibility, the source of the information and individuals providing this data are named at the end of each segment.

Because of unquantifiable boundaries where millions of individuals are buying goods and services from thousands of businesses in North Georgia, and then using the recreational resources of Lake Lanier, we use an empirical formula guided by practical experience in identifying a ratio or realistic estimates of purchases. This is especially applicable in identifying an increase in seasonal purchases of beverages, fuel, snack foods and other picnic items from convenience stores, fast food restaurants, etc.

We will not include the formidable number of 1.557 billion dollars expended by tourists in our 10 county area, and reported by the Department of Industry, Trade and Tourism. We feel most of these expenditures are included in other segments of this

study and we try as best we can to avoid duplication of numbers.

Several "items of interest" are mentioned in this study. These expenditures are not included in the totals. They are so marked.

#### Where Does the Water Go?

The most controversial, and least understood, issue involving Lake Lanier is the release and withdrawal of water. Who is to blame and why is it being done? It is intended that this segment present matters of fact which provide a better understanding of the management principles, and integrity applied, in the release and withdrawal of water.

The Corp of Engineers is responsible for the management of the Lake. Therefore, they receive the blame for just about everything that is considered to be an unnatural happening on and around the Lake. This is especially true when Lake levels are unseasonably low, as they have been since July of 2000.

Lake Lanier operations are guided by a "Master Systems Management Plan". Every lake operated and managed by the Corps follows the exact same procedures, and the same set of values, needs and principles. At the present time, the "Drought Management Action Plan" is in effect because the water elevation is below 1,064 MSL. As mentioned in the first segment, the inflow is 47% of what is needed to maintain a constant, consistent water level. Filling the Lake under these conditions is not feasible.

In order to describe some of the demands and conditions under which the Lake is managed, the following facts and circumstances are presented.

The city-county water systems of Clarkesville, White County, and Cornelia withdraw from small rivers and tributaries which ultimately drain into the Chattahoochee River. The cities of Demorest/ Baldwin withdraw from the Chattahoochee.

The cities of Gainesville, Cumming, Buford and Gwinnett County withdraw from Lake Lanier. Gwinnett then sells a quantity of water to Rockdale County, which is out of the ACF basin. None of that water is returned. The combined withdrawal for the above mentioned cities and counties is more than 220 million gallons per day ("MGD").

#### Drinking Water Intakes on Lake Lanier

NAME	COUNTY	SOURCE	WITHDRAWL
City of Clarkesville	Habersham	Soque River	?
White County Water & Sewer	White	Turner Creek Pump Station	?
City of Cornelia	Habersham	Hazel Creek	?
City of Cornelia	Habersham	Camp Creek #2	?
City of Dahlonega	Lumpkin	Yahoola Creek Dam	1.5 MGD
City of Demorest/Baldwin	Habersham	Chattahoochee River	?
City of Cornelia	Habersham	Camp Creek #1	3.5 MGD
City of Gainesville	Hall	Lake Lanier (Chattahoochee River)	25 MGD
City of Cumming	Forsyth	Lake Lanier	38 MGD
City of Buford	Hall	Lake Lanier (Big Creek Pump Station)	2.0 MGD (2.5 but not exceed averaged 2.0 per month) **
Gwinnett County Public Utilities	Hall	Lake Lanier	150 MGD (Monthly Average)
Total			220 MGD

At the present time, Gwinnett County has a permit application on file with the State EPD to increase their withdrawals by 75 million gallons per day. This is needed to supplement the increased demand for water by the Mall of Georgia business community and the planned complex near State Route 316 and I-85. Also, in addition to the above withdrawals, 131.54 million gallons per day are withdrawn from Lake Lanier for industrial use. Buford Dam is required to release an average of 648 million gallons each day to meet the flow demand of 750 cubic feet per second ("CFS") at the Peachtree Creek water gauge above Atlanta. Prior to measuring this water at Peachtree Creek, a large portion of clean, cold water is removed at the Department of Natural Resources ("DNR") Trout-Fish Hatchery, between the dam and the City of Buford. The total demand of withdrawals and releases is 999.54 MGD.

The water passing Peachtree Creek is a multi-purpose flow. It provides hundreds of millions of gallons to the City of Atlanta system as well as a number of cities and counties in the metropolitan area. Four million people use this water.

The population of Metropolitan Atlanta has expanded 400% since the Lake was filled in 1957. The United States is one of the few countries in Western Civilization that uses drinking water to wash cars, water lawns and gardens, mix concrete, and fill swimming pools and toilets. We have established our standards of living based on an unlimited supply of clean water.

The water which flows beyond Peachtree Creek also serves to dilute the sewage over-

flow from the antiquated sewer system of Atlanta, and to neutralize the effluent (i.e., run off) from streets, parking lots, fertilized lawns, golf courses, etc. This wastewater and effluent continues south with the run of the river through small cities to Lake West Point. At the mouth, or northern most part of the lake, a eutrophic body of water may form which indicates that there is an increase of mineral and organic nutrients that has caused the reduction of dissolved oxygen, producing an environment that favors plant over animal life.

The effluent and wastewater from the Atlanta system is diluted as it moves into the main body of the lake and it then becomes suitable for recreation. The health of the stream flow has returned as it continues its journey to the Gulf of Mexico.

During the summer months, billions of gallons of water are lost from Lake Lanier to what is described as PAN evaporation. This occurs when the sun shines on the Lake, accompanied by a breeze or high wind from the mountains, and the dry air absorbs moisture quickly and more water is lost. On a ninety degree day, 1.034 billion gallons are lost from the entire 38,000 acre Lake; however, the actual daily loss is slightly less due to the fact that only 30,000 acres are present at the current water level of 1,062+- feet.

Other losses occur when pumps are installed on private docks to water lawns, flowers and gardens. Also, dry soil around the shore line absorbs water and returns it to the aquifer.

Another hot button issue is the release of water for navigational windows for use in the lower basin. Three feet was released in April of 2000 to float 10 barges to Bainbridge, Georgia, Dothan, Alabama and Columbus, Georgia. Agriculture commodities were transported to the first two locations and aviation fuel was transported to Columbus. Low rainfall did not allow the return of the water removed, and that three foot deficit is conspicuous at this time. This deficit cannot be repurchased.

As a matter of interest, the Congress approved navigation on the lower basin with the passage of the "Safe Harbors Act" in 1946. The act was incorporated as a national defense mechanism in the event transportation of heavy equipment is required from Fort Benning, which is on the river. On July 18, 2001, the Congress approved a nine million dollar budget to provide for continued dredging in the lower basin.

Hydropower production is also a controversial and misunderstood issue. You will remember that water releases are required to maintain the 750 cubic foot flow. Therefore, it is logical to run this water through the generators when releases are made.

The staff at the Corps management facility at Buford Dam receive a "Water Release Schedule" from the Mobile District every Friday at 2:00PM. This schedule identifies the water releases for the following week. All water releases are initiated from the Mobile District by microwave to Carters Lake and then transmitted to a microwave receiver at Buford Dam to switch the generators to full production. The Corps office at

Buford Dam does not activate any water release mechanisms at the Dam. As mentioned, they are notified by the decision makers. (As a matter of fact, the last two water releases for navigation windows were ordered from Corps headquarters in Washington, D.C.)

Without including evaporation, this segment of our study has accounted for approximately 1,000 million gallons of water removed from Lake Lanier. Considering that the inflow represents approximately 47% of the amount needed each day, the reason Lake Lanier water levels are so low is readily apparent.

Contributors to this segment: Ben Hulsey, Larry Sparks (Georgia Mountain Regional Development Center) Ed Burkett, Erwin Topper, Pat Taylor, John Watson, Corps of Engineers, Nap Caldwell, Ade Obe, Georgia EPD, Jackie Joseph, Ron Seder, Lake Lanier Association, Native Intelligence 2001, Jean Ferris, Susan McClendon, The Norton Agency.

Financial AppendixCorps of Engineers (FY 1999)

## (Monies Received)

Revenue Commission	\$18,347,487
Public Marinas	\$686,087
Private Clubs	\$207,420
Visitor Expenditures	\$222,000,000
Per Annum Dock Permits	\$108,758
Fixed Assets	\$50,000,000

Lakeside Restaurants

Revenue	\$2,120,000
Fixed Assets	\$1,530,000

Marinas (2000)

Public (ten)	\$30,000,000
Private (six)	\$3,100,000
Dry Stack (four)	\$2,600,000
Total Boat On Trailer Storage (2000)	\$28,090,000

Marine Sales -Atlanta Metro - North Georgia (2000)

Boat- Motor-Trailer Dealers	\$713,962,500
Fixed Assets – Marine Dealers	\$43,050,000
Marine Equipment and Accessories	\$14,000,000

<u>Fishing Tackle Equipment and Accessories - Atlanta-North Georgia</u>	\$125,000,000
<u>Lakeside Real Estate</u>	\$4,074,000,000
<u>Dock Manufacturers and Dock Repair Facilities (2000)</u>	
Combined Gross Income	
Manufacturers (12)	\$4,320,000
Combined Gross Income	
Repair facilities (13)	\$2,600,000
Fixed assets (Private Docks)	\$125,490,000
<u>Marine Insurance (2000)</u>	
Boats, motors, and trailers	\$28,752,434
Dwelling Insurance 14,000 homes X \$879.00	\$12,306,000
(Note: Premium for Value Added Assessment for each dwelling is \$291,000)	
<u>Department of Natural Resources</u>	
DNR Law Enforcement Budget	
Lake Lanier (2000)	\$408,032
Wildlife Resources	\$ 53,737
Buford Fish Hatchery	\$413,514
Boat Registration	
10 Counties (2000)	\$587,784
Fishing License	
10 Counties (2000)	\$521,847

Boat - Marine Equipment (2000)

Valuations (10 counties) <b>**Not in total**</b>	\$245,983,976
Ad Valorem Taxes Collected (10 counties) – Marine Equipment	\$2,459,840
Cost per county to administer ad valorem taxes (Average - 40K, per county)	\$400,000
Boat trailer license fees (10 counties)	\$470,112

Hall County Recreation and Parks (2000)

Rent and User Fee	\$352,000
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<u>Lake Lanier Rowing Club</u>	\$4,008,517
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<u>Bass Tournaments (2000)</u>	\$1,168,850
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<u>Bell South Yellow Pages</u>	\$483,000
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<u>Lake Lanier Association (2000)</u>	IRS 501.C.3
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<b>Total</b>	<b>\$5,513,597,919</b>
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Note: A preceding study, conducted in 1994, used financial information from 14 counties to calculate the economic impact of recreation on Lake Lanier. Four of those counties (Bartow, Cherokee, DeKalb and Fulton) are omitted from this analysis. The ten counties surveyed for this 2001 study are more closely associated with the recreational resources of Lake Lanier. The ten counties are Banks, Barrow, Dawson, Forsyth, Gwinnett, Habersham, Hall, Jackson, Lumpkin, and White.

**Unique Characteristics of Lake Lanier**

•During the past 44 years, Lake Lanier has provided a variety of recreational activities for hundreds of millions of visitors. The combination of recreational facilities, panoramic beauty, climate, and proximity to Atlanta has attracted more visitors to this 38,000 acre lake than to any other U.S. Army Corps of Engineers project, in the southeastern United States.

•Lake Lanier stores 1,049,400 acre feet of clean, fresh, deep water at a pool level of 1,071 feet above sea level. (As a matter of interest, an acre foot is the volume of water that will cover an area of one acre to a depth of one foot. There are 43,560 cubic feet of water in an acre foot, representing 325,828 gallons.)

•Sixty percent of the total population within the ACF basin is dependant upon water supplied from Lake Lanier. Before reaching Apalachicola Bay, Florida, a distance of 434 miles, this water passes through eight hydropower generators and thirteen dams.

•Atlanta, Georgia, and Calgary, Canada, are the only cities in the world with metropolitan populations of more than two million that have a trout stream running through them. Trout living in the reaches of the Chattahoochee thrive on the periodic releases of cold clean water from Lake Lanier.

•There are more than 23 ,076 boats moored or dry-stored on and around the lake. Ten public marinas, six private club marinas, 32 community docks with 1,000 slips, and four

major dry-stack storage facilities provide storage for 17,232 boats. There are 14,066 wet slips and 3,166 dry-stack storage racks. More than 3,783 boats are stored on trailers at marinas around the lake.

•As of July 28, 2001, there were 8,366 private dock permits issued to individuals around the 544-mile shoreline. Each private dock averages 1.6 boats.

•In 2000, more than 22 million visitor days were recorded by the Corps of Engineers. (A visitor day is recorded when an individual spends more than four hours for recreational or leisure purposes.) An average of 600,000 people visit Lake Lanier on Memorial Day weekend, the largest visitor holiday.

•A major resort, the Lake Lanier Islands Resort complex, is located in the middle of the Lake.

•The highest Lake water level recorded was 1077 on April 1, 1964.

•Since 1959, the lowest water level recorded was 1052.66 on December 24, 1981.

Information for this segment was provided by: the Corps of Engineers, The D.N.R., and the Lake Lanier Association.

**U.S. Army Corps Of Engineers**

The U. S. Army Corps of Engineers, hereinafter referred to as the Corps, is responsible

for the management of the lake. The resource manager has a staff of 43 rangers and administrators at its facility adjacent to Buford Dam. Lake Lanier is aligned within the Corps Mobile District, and it represents the most active recreational project within the system.

Interviews with Erwin Topper, Resource Manager, and with members of his staff revealed that 67% of their time and resources is devoted toward recreation.

A review of records for calendar year 2000 disclosed that marina concessionaires received \$18,347,487 in revenue from public and private facilities around the Lake. Rent paid by public marinas was \$686,087 and \$207,420 was collected from six private clubs. Fixed assets for these public marinas represent \$50 million.

As of July 28, 2001, the following breakdown of facilities is identified as follows:

<b>Docks</b>	<b>Wet</b>	<b>Dry</b>	<b>Total</b>
Marinas	6,204	3,078	9,282
Clubs	817	276	1,093
Private	8,366	-0-	8,366
<b>Totals</b>	<b>15,387</b>	<b>3,354</b>	<b>18,741</b>

There are 32 community boat docks with over 1,000 slips. There are 48 boat launching ramps around the 544 mile shoreline. Seventy-five percent of the revenue collected by the Corps is repaid to the respective counties where the facilities are located.

Contributors to this segment: Erwin Topper, Pat Taylor, John Watson, Corps of Engineers.

**Lakeside Restaurants**

The following listed restaurants and snack bars are located on the Lake Lanier Islands complex, the first perimeter of the Lake or on roadways in the immediate vicinity of the Lake. They represent, as a group, a tremendous economic impact to this area. Hundreds of individuals are employed in these businesses and the combination of revenue, payroll, purchases of fixed assets compliment the multiplier principle or direct and indirect economic impact.

These restaurants and snack bars are as follows:

- Three restaurants located in the Renaissance Hotel & Conference Center (part of Lake Lanier Islands Resort)
- Three restaurants located in the Emerald Point Complex (part of Lake Lanier Islands Resort)
- Golden Parkway Restaurants
- Ole McDonalds
- The Fish House
- Anthony's
- Bald Ridge Deli and Snack Bar
- Lanier Harbor Restaurant
- Dock Holliday's at Holiday Marina
- Up the Creek Café
- Big Creek Restaurant
- The Deli at Gainesville Marina

- Aqua Land Deli and Sandwich Shop.

Fixed assets of some of these establishments are included in marina complexes and hotels. However, we were able to isolate the following figures through interviews and a conservative empirical resource method. Revenues of \$2.12 million were identified. Fixed assets not included elsewhere total \$1.53 million.

Contributors to this segment: Barkley Geib, Ray Williams, Philip Burton, and Jackie Joseph.

#### **Comprehensive Spending Profile (WES)**

In February 1992, the most recent study, Corps completed a three-year study which identified "Spending Profiles for Recreation Visitors to Corps of Engineers Projects." This study was commissioned by their Environmental Laboratory, Waterways Experiment Station (WES), Vicksburg, Mississippi.

The results of the February 1992 study were used as part of a process of assessing the economic impact of recreational opportunities at all Corps projects. This spending profile was designed to include visitor expenditures for both trip and durable goods. Trip spending is identified as monies exchanged for goods and services consumed during a single trip; e.g., food, lodging, day rentals, etc. Durable goods are used for multiple trips; e.g., personal water craft, water toys, inflatables, camping gear, campers, etc.

Day users account for 94% of the visitors and spend an average of \$63.00 per trip. Camping parties spend \$270 per trip. Camper spending is divided into the following proportions:

Food and beverage	32%
Auto/transportation	22 %
Lodging	13%
Boating	13%
Miscellaneous	20%

Documented spending profiles are as follows:

Resident day users who boat	\$75.00
Resident day users who do not boat	\$104.00
Non-resident campers who boat	\$334.00
Non-resident campers who do not boat	\$300.00
Non-resident overnight users who do not boat	\$362.00
Non-resident overnight users who do boat	\$537.00

Resident day users not boating spend more monies on rentals (houseboat, personal watercraft, water toys, excursions, etc.). Because their trips are more infrequent, they tend to splurge for the occasion. Non-resident overnight visitors who boat incur the added expense of boating operations as well as lodging.

One of the most impressive expenditures included in this study indicated that visitors to Lake Lanier spent \$222,000,000 during calendar year 1989 and 80% of this amount was expended in the local area.

Contributors: Erwin Topper, Pat Taylor, John Watson, Scott Jackson, The Corps.

Documentation for this spending profile is found on Pages 1 and 2, Section 3 in "A Summary of Spending Profiles for Recreation Visitors to Corps of Engineer Projects," dated February 1992, C.O.E. Waterways Experiment Station, Vicksburg, Mississippi 19180-6199.

**Lake Lanier Seasonal Water Levels and Boater Trips Value Functions**

Water Levels	Winter Visits	Spring Visits	Summer Visits	Fall Visits
1051	0	0	0	0
1052	5253	10272	15926	5093
1053	10506	20544	31852	10186
1054	15759	30817	47778	15279
1055	21013	41089	63704	20371
1056	26266	51361	79630	25464
1057	31519	61633	95556	30557
1058	36772	71906	111482	35650
1059	42025	82178	127408	40743
1060	47278	92450	143334	45836
1061	52531	102722	159259	50929
1062	57784	112995	175185	56022
1063	66460	129960	201488	64433
1064	75136	146925	227791	72844
1065	83812	163890	254093	81255
1066	92488	180855	280396	89666
1067	106637	208523	387635	123960
1068	120786	236191	494874	158253
1069	134935	263859	494874	158253
1070	149084	291526	494874	158253
1071	163233	319194	494874	158253
1072	163233	319194	494874	158253
1073	163233	319194	494874	158253
1074	163233	319194	494874	158253

Marinas

As mentioned earlier, there are ten public marinas and six private club marinas located on the lake. These facilities provide wet slips for 15,387 boats. The following is a list of these marinas:

**Public Facilities**

**Aqualand Marina**  
P.O. Box 1200  
Flowery Branch, GA 30542  
Attn: Kirby Scheimann  
Phone: 967-6811  
Fax: 967-0855

**Bald Ridge Marina**  
P.O. Box 836  
Cumming, GA 30501  
Attn: Jon Stovall, Manager  
Phone: 887-5309  
Fax: 887-3220

**Gainesville Marina**  
2145 Dawsonville Highway  
Gainesville, GA 30501  
Attn: Phillip Burton, Manager  
Phone: 536-2171  
Fax: 534-2678

**Habersham Marina**  
2200 Habersham Road  
Cumming, GA 30131  
Attn: Kenny Haddock, Manager  
Phone: 887-3107  
Fax: 887-3120

**Holiday on Lake Lanier**  
6900 Holiday Road  
Buford, GA 30518  
Attn: Phil Barnhorst, Manager  
Phone: 945-7201  
Fax: 945-0857

**Lan-Mar Marina**  
9200 Lan-Mar Road  
Gainesville, GA 30506  
Attn: Bram Frankel, Vice President  
Phone: 887-5715  
Fax: same as phone number

**Lanier Harbor Marina**  
2110 Pinetree Drive  
Buford, GA 30518  
Attn: Barkley Geib, Mgr.  
Phone: 945-2884  
Fax: 945-0052

**Lazy Days Marina**  
6700 Holiday Road  
Buford, GA 30518  
Attn: Bill Sommerfield, VP or  
Bill Brewster, Manager  
Phone: 945-1991  
Fax: 271-7032

**Starboard Marina**  
P.O. Box 60  
Mitchell Street  
Flowery Branch, GA 30542  
Attn: Jim Milner President/CEO or  
Randy Crowe, VP/General/Manager  
Phone: 967-6231  
Fax: 967-9479

**Sunrise Cove Marina**  
5725 Flat Creek Road  
Gainesville, GA 30504  
Attn: Janice Wagner, Manager  
Phone: 536-8599  
Fax: 532-7667

**Private Clubs Sites**

Note: All (770) area codes except Athens

**American Legion:** Leonard Hayes, Commander

**Athens Boat Club:** Jerry Blair, Mgr: 706-216-2256

**Atlanta Athletic Yacht Club:** Call Tuesd. thru Sun., Vinny Longo, Mgr: 967-6611

**Chattahoochee Country Club:** Bill Campbell, Mgr: 536-4461

**Georgia Lockheed Employees Rec Club:** Bobby Saxon, Mgr, 887-2161

**Lake Lanier Sailing Club:** Rick Sevmore, Mgr: 967-6441

**University Yacht Club:** Call Tuesdays thru Sundays , Jeff Giddens, Mgr: 967-2814

\*There are four major dry-stack facilities within this dual function grouping. These four provide storage racks for 3, 354 boats.

\*\*Predominant storage for 450 combination boat-trailer (covered) facilities.

Combined gross revenue from ten public marinas per annum estimated total is \$30 million. Combined gross revenues from six private club marinas per annum is estimated to be \$3.1 million.

Combined gross revenue from four dry-stack marinas per annum is estimated to be \$2.60 million. Dry-stack revenue percentages are identified by category as follows:

Storage	83%
Fuel	10%

Sub-leases	6.5%
Other	0.5%

Combined gross revenue from 73 off-site boat on trailer storage is \$12,500,000.

Contributions to this segment: MTAMA members Doug Beachem, Philip Burton, Bill Sommerfield, Barkley Geib, and Jon Stovall.

**Off-Site Privately Owned Boat-Trailer Storage Facilities**

There are an estimated 73 off-site storage facilities within a three-mile perimeter of the lake. These facilities provide an occupancy range of 25 to 450 on-trailer storage slips.

Several of the larger facilities are as follows:

Bud Ray  
 Guler Marine  
 H & H  
 Hammond's  
 Lanier Harbor  
 R & G Marine Collectibles  
 Robert Young  
 Vanns Tavern

Total combined revenue from boat and trailer storage for the eight facilities is estimated to be \$15,590,000.

Contributors to this segment: Barkley Geib, Jack Jones, Jim Guler, Tom Hammond, and Rodney and Gina at R&G Marine.

#### Marine Sales

The Atlanta metropolitan area and 10 counties of North Georgia are recognized by the Marine Manufacturers Association of America and by the Marine Retail Association of America as the largest inland marine product sales market in the United States. (The 10 counties are named later in this report.)

Marine sales in the Atlanta-North Georgia area by MTAMA members represent \$713,962,500. These dealers employ over 350 people and purchase watercraft from 76 boat and personal watercraft manufacturers. Four of the largest engine manufacturers have production or major marine distribution and training facilities in north Georgia. Fixed assets for these dealers is listed at \$43,050,000.

Major marine equipment stores in the 10 county area are comprised of West Marine, Boaters World, Benrock and Southern Marine. Combined gross revenue for these stores is \$14 million.

Contributors to this segment: MTAMA members Charlie Knight, Philip Burton, Mark Lusink, Barkley Geib.

**Fishing Tackle Equipment and Accessories**

Information was provided by manufacturers' representatives, Fishing Tackle Retailer Publications, and wholesalers of marine equipment.

An estimated revenue of \$125 million is expended for fishing tackle and equipment in Atlanta and this 10 county area. These figures combined from the gross sales of a group of retailers (Sports Authority, K-Mart, Wal-Mart, and Bass Pro Shops) and independent retail fishing equipment centers (Hammond's Fishing Center and Satterfield's).

Sales from catalog retailers (Bass Pro Shops, Cabela's, Gander Mountain, Overton's, Orvis, Outer Banks, West Marine, and Boaters World) are not included in this sales equation.

The Atlanta area is as dominant in tackle equipment sales as it is in the inland sales of watercraft and accessories. It is considered to be a mecca for water sports because of its geographical relationship to Lake Lanier and the recreational resources it provides.

Contributions to this segment: Scot Rogers, Betty Busher, Rogers Southeast Associates, Joyce & Matthew Wilbanks, Satterfields, John Overton, West Marine, Don Robinson, Hammonds, Cliff Craft, Browns Bridge Marine.

**Dock Manufacturers and Repair Facilities**

There are 12 dock manufacturers and 13 dock repair facilities located around the lake.

On July 28, 2001 there were 8,366 privately owned dock-in-use permits issued by the Corps to individuals around the lake. The average sales price of the docks was \$15,000. The valuation of these docks is \$125,490,000. The average sales figure for dock manufacturers per annum is \$360,000, which represents a combined gross sales figure of \$4,320,000. The average annual income for dock repair facilities is \$200,000. The gross combined revenue produced is \$2,600,000. These dock manufacturing and repair facilities employ 91 people. Permits for 8,366 docks average \$65.00 for a five-year lease agreement (an average of \$13.00 per year). The per annum revenue received by the Corps for this particular source group is \$108,758.

Contributions to this segment: The Corps, MTAMA members Nick Martin and Davis Weaver.

#### Marine Insurance

There are 48,982 boats and marine vehicles (e.g., Jet Ski) in the 10 county area named in this study. Three examples were used to establish an average insurance Premium:

	<u>Premium</u>
2001 Somerset House Boat	\$1,194.00
2001 Tracker 25' Pontoon Boat	\$ 156.00
2001 Ranger Bass Boat (200 HP)	\$ 413.00
Total	\$1,763.00
Average	\$ 587.00
Total Premium 48,982 X \$587	\$28,752,434

Contributor to this segment: Bill Bennett, Allstate Insurance.

**Insurance-Dwelling on Lake Lanier**

Added value Assessment	\$291,000
Premium (Based on \$300,000)	\$879.00
Total Premium 14,000 X \$879.00	\$12,306,000

Contributor to this segment: Bill Bennett.

**Boat Trailer License - D.M.V.**

Of the 48,982 watercraft registered in the 10 counties named in this study, 80% or approximately 39,176 are on trailers. The license fee for these trailers is \$12 (39,176 x \$12 = \$470,112). Ad valorem tax information was not available.

Contributors to the segment: David Laws, Cliff Craft, other MTAMA members, and Georgia D.M.V.

**Department of Natural Resources**

The Gainesville Region of the DNR has a staff of 33 Rangers. Nine of these Rangers are assigned full time to law enforcement on Lake Lanier. During holidays, the enforcement Staff may be increased to 16 Rangers. They are assigned 10 performance boats. Their budget for 2000 was \$408,032.00. The Gainesville Region issued 5,988 criminal citations. There were 42 citations for Boating Under the Influence ("BUI"), 72 boating accidents and three drowning incidents.

Contributors to this segment: Captain Terry Lovell, Sergeant David Cochran and Candy Pirkle.

Lonice C. Barrett, Commissioner  
David Waller, Director

**Georgia Department of Natural Resources**  
**Wildlife Resources Division**

Fisheries Management Section  
2150 Dawsonville Hwy., Gainesville, GA 30501  
(770) 535-5498; FAX (770) 535-5953

August 17, 2001

Mr. Ed Hughes  
Marine Trade Association of Metropolitan Atlanta  
3197 Arrowhead Drive  
Gainesville, Georgia 30506

Dear Mr. Hughes:

This brief note is in response to your request for information on Fisheries Section expenditures related to Lake Lanier. I understand that you have a very short deadline (today at 2 PM) to your publisher, so I have tried to compile some data very quickly to meet your needs.

I estimated that about 25% of my Gainesville biologist/technician team's time and operating costs are associated with Lake Lanier issues. About 10% of the time spent by my secretary and me are dedicated to Lanier issues. Given those allocations, we spent \$53,737 in Fiscal Year 2000 on Lake Lanier management and public information efforts.

Buford State Trout Hatchery in Cumming, Georgia is dependent on the cold water releases from Lake Lanier to grow trout for our statewide stocking program. In Fiscal Year 2000 the facility stocked 502,807 trout into northeast Georgia waters and cost \$413,514 to operate. Of the total trout stocked, 305,247 fish were released into the Lake Lanier Tailwater below Buford Dam.

Hopefully this information will give you a good "ball park" estimate of Fisheries program expenditures associated with Lake Lanier. If you have any questions, feel free to contact me.

Sincerely,



Jeffrey P. Durniak  
Regional Fisheries Supervisor

cc: Charles Coomer, Chief of Fisheries

**Georgia Department of Industry, Trade, and Tourism**

During the 2000 calendar year, tourist expenditures in Georgia were \$16,211,051,376. The ten counties included in this particular segment are Banks, Barrow, Dawson, Forsyth, Gwinnett, Habersham, Hall, Jackson, Lumpkin, and White. The tourist dollars spent in these counties are recorded at \$1,557,668,860.

The breakdown is as follows:

Lodging	16%	\$249,227,021
Shopping	30%	\$467,300,644
Food	29%	\$451,723,975
Recreation	15%	\$233,650,332
Transportation	10%	\$155,766,888

These totals are included as a matter of interest, and are not included in the total figures for this study as every effort has been made to avoid duplication. The survey produced by the Corps and located in the Corp's section showed that \$222,000,000 was spent in this area; this figure is included in the total.

Contributors to this segment were Bryan Cummins, Cheryl Smith, Georgia Department of Industry, Tourism and Trade.

**Lakeside Real Estate**

There are more than 14,000 houses located on the first perimeter of the 544 mile shoreline of Lake Lanier. The average valuation of these homes is \$425,000. The

average valuation of Hall County homes that are not located on the Lake is \$134,000. The difference in these two valuations is \$291,000, which represents the value added assessment of Lake property.

This figure is presented as follows:  $14,000 \times \$291,000 = \$4.074$  billion.

The \$4.074 billion dollar figure represents the largest purchasing expenditure group on the Lake. These purchases are directly related to the economic impact of recreation on the Lake. Each house was purchased as the result of its proximity to the recreational resources provided by the Lake.

Another interesting factor related to the occupants of these houses is, as a group, they represent the largest purchasing body of boats and marine products, durable goods, recreational items, docks, home improvement materials and accessories. It is impossible to accurately identify these expenditures, but they are estimated to be in the tens of millions of dollars per annum.

Contributors to this segment: Frank Norton, Frank Norton, Jr., Jean Ferris, Susan McClendon, Tommy Howard, The Norton Agency, Jerry Wyatt, Sun Home Builders LTD, Talmedge Scroggs, J&G Grading, Dennis Hollifield, Century South Bank.

#### **Boat Registration**

As mentioned previously, 48,982 watercraft are registered in the 10 counties included in

this study. Using a conservative figure of \$36 registration fee per unit for a three-year period, the following example of \$12 per year multiplied by these units equal \$587,784 per annum.

#### Fishing License

For this particular segment, ten counties were selected for presentation because of the influence of trout fishing in these areas north of Atlanta. (As mentioned previously, trout fishing on the Chattahoochee River reach, located below Buford Dam, covers approximately 43 miles, a distance limited by the increase in water temperature below Atlanta. This also covers the headwaters from above Helen to the Lake. There are no trout in Lake Lanier, they became extinct in 1987.

These counties are Banks, Barrow, Dawson, Forsyth, Gwinnett, Habershatn, Hall, Jackson, Lumpkin and White.

Due to the way that hunting and fishing licenses are issued and tracked, it is difficult to isolate fees associated with fishing licenses alone. To arrive at an approximation of fishing license revenue for the ten county area, total revenue of \$1,043,693 for hunting and fishing licenses was divided in half to yield \$521,847.

Contributors to this segment: Jeff Durniak, Mike Hughes, D.N.R., Toby Bowdich, MTAMA.

**Hall County Department of Recreation and Leisure**

Hall County has two park facilities that provide revenues: Laurel Park and River Forks Park. Aqualand and Sunrise Cove Marinas on Lake Lanier are also located on Hall County property. Rent paid to the County is based on a percentage of revenue received by the marinas. The estimated combined totals from these four facilities is: \$352,000.

Contributors to this segment: Cary Wright and Bob Gentile.



## LAKE LANIER ROWING CLUB

3105 Clark's Bridge Rd  
Gainesville, GA 30506

770-287-0077

llrc@mindspring.com



## SUMMARY OF POST-OLYMPIC VISITORS

## EVENTS / GUESTS OF THE LAKE LANIER ROWING CLUB

## 2001 DETAIL LISTING OF EVENTS

Estimated Visitors: 8077  
Estimated Room Nights: 6863  
**Estimated Economic Impact: \$4,008,517.00**

*Visiting Crews*, January - March 2001

24 Colleges, 950 athletes, average of 7 nights each  
Estimate 1884 room nights, Economic impact of \$1,152,365.00

*Champion International Collegiate Regatta*, May 2001

1300 Athletes, 200 Spectators, 87 Coaches; average of 3 days, 2 nights  
Estimate 737 room nights, Economic impact of \$656,098.00

*NCAA Women's Championships*, May 2001

427 athletes, coaches, staff; 1000 paid spectators; average of 6 days, 5 nights  
Estimate 2567 room nights, Economic impact of \$1,171,739.00

*Hooch/Chase Regattas*, November 2001

4050 athletes, coaches, & spectators; average 1.5 days  
Estimate 1675 room nights, Economic impact of \$1,028,315.00

## SUMMARY OF ALL YEARS:

2001	Estimated Visitors: 8077	Estimated Room Nights: 6863
2000	Estimated Visitors: 3850	Estimated Room Nights: 2589
1999	Estimated Visitors: 4000	Estimated Room Nights: 3854
1998	Estimated Visitors: 2952	Estimated Room Nights: 3466
1997	Estimated Visitors: 1500	Estimated Room Nights: 860

**Bass Tournaments**

A survey disclosed that local participants spend \$100.00 per boat for fuel, oil, food, and beverages for each fishing trip. With two fishermen per boat, each fisherman pays an average of \$50.00 for entry fees.

In 2000, fishing tournament sponsors purchased 194 fishing tournament permits at \$25.00 each for a total of \$4,850.00. With an average of 60 boats per tournament, each event would gross an average of \$6,000.

$$\$6,000 \times 194 + \$4,850 = \$1,168,850$$

Contributors to this segment: Cliff Craft, LaVern Headrick, Barkley Geib, and other MTAMA members, Russ Lundstrom, The Corps of Engineers.

**Lake Lanier Association**

The mission of the Lake Lanier Association is to "protect and preserve Lake Lanier".

The Association membership is composed of 6,000 individuals and 2,500 homes and businesses. The Association is supported by the Lake Lanier Foundation, an organization of benevolent business leaders, community organizations and individual donors.

The Association is led by President Jackie Joseph and Vice President Ron Seder. It is a non-profit Association protected and approved by IRS Rule 501.C. 3. For that reason, no numbers in support of the Association or its foundation are published.

**Marine Equipment Ad Valorem Tax**

County	Boats	Valuation
Banks	512	\$1,317,000
Barrow	697	\$1,647,021
Dawson	1,897	\$3,775,143
Forsyth	10,058	\$4,497,000
Gwinnett	15,245	\$26,875,300
Habersham	1,866	\$512,422
Hall	14,598	\$198,007,962
Jackson	1,671	\$2,844,000
Lumpkin	1,698	\$4,631,087
White	740	\$1,877,041
Totals	48,982	\$245,983,976

Ad valorem tax at 1%. average mil = \$2,459,840

**Population Projections**

The following chart shows population projections for nine counties.

	1993	1995	2000	2005	2010	2015
Banks	11,149	11,439	12,638	13,908	15,273	16,727
Barrow	29,721	N/A	41,500	N/A	N/A	N/A
Dawson	11,504	13,171	18,403	25,691	30,365	N/A
Forsyth	50,123	54,257	64,983	76,289	88,207	N/A
N. Fulton	39,400	N/A	48,377	N/A	60,084	N/A
Gwinnett	370,000	N/A	541,000	N/A	721,000	N/A
Habersham	39,016	29,956	32,339	34,774	37,259	N/A
Lumpkin	16,129	16,726	18,314	20,054	21,959	24,007
White	13,935	15,461	17,453	19,509	21,596	N/A

Source: Georgia Mountains Regional Development Center

**Hall County's Growth**

Year	Population	10 Year Rate of Growth
1920	26,872	
1930	30,313	+11%
1940	34,822	+12.9%
1950	40,113	+13.2%
*1960	49,739	+19.3%
1970	59,405	+16.3%
1980	75,649	+21.5%
1990	95,200	+20.5%
2000	142,000	+25.8%
2010	165,000	+24.2%

\* Lake Lanier reached full pool

**Other Marine Related Business**

There are a variety of marine related businesses located in close proximity to the lake that have not been included in other segments of this report. These businesses include independently owned fishing tackle, bait, and equipment stores, boat brokerage companies, repair facilities for engines, fiberglass fabricators, propeller sales and repair, and a number of professional fishing guide services. Time and resources would not allow an estimated accounting of these businesses; however, collectively they represent a substantial economic impact to this area.



BellSouth Advertising  
& Publishing Corporation  
Room 4B59  
2247 Northlake Parkway  
Tucker, Georgia 30084

Brad Hightower  
Administrative Sales Support Manager  
678.406.5005

August 17, 2001

Mr. E. D. Hughes  
3197 Arrowhead Drive  
Gainesville, GA 30506

Dear Mr. Hughes:

This is in response to your request regarding approximate yellow page advertising revenue in the marine industry for the Lake Lanier area directories published by The Real Yellow Pages®.

The headings Boat Dealers, Boat Renting, Boat Repairing and Marinas account for more than 81% of the related advertising revenue in the area. The total annual revenue for these headings is approximately \$483,000.

The directories reviewed were Roswell-Alpharetta, Atlanta, Gwinnett, Cumming and Gainesville. When you were provided this information in 1994, the \$413,000 estimate included these books plus six others (Austell, Calhoun, Carrollton, Cartersville, Conyers and Marietta) that were deleted from this study.

Keep in mind that the advertising revenue from other directory publishing companies in the Lake Lanier area is not captured in this study. Please feel free to contact me should you require any additional information.

Sincerely,

A handwritten signature in black ink that reads "Brad Hightower".

Attachment

### Summary

#### What needs to be done!

Since this is a study of the economic impact of recreation, environmental issues and the recent downturn of the economy are outside the scope of this analysis. Also, for the purpose of continuing the integrity of this study, we are very much aware that the drop in the economy had a profound effect on the decrease in sales of leisure items, boats, motor homes, etc. We cannot blame the low water levels of the Lake as being fully responsible for the general downturn in sales, for a great variety of products. In order to continue on our low water issues, we would like to summarize the study in the following way:

Since the first of May 2001, we have had above average rainfall in Gainesville. The months of June, July, and so far in August, the weather patterns have returned to normal. Associates of the U.S. Weather Bureau, William and Miriam Sellers of Gainesville, have applied their experience and recognized expertise to the most recent series of weather cycles and stated that "normal weather patterns will continue. If above average rainfall is as anticipated, Lake Lanier has a possibility of returning to full pool by April 1, 2002."

This is welcomed news, but it is not the end of our story. Each person who reads this study must become an advocate of the Lake and participate in establishing a task force to assist the professionals and appointed public servants in the identification of areas with the topographical advantages to support major water storage systems. The run of the Chattahoochee River from Brasstown Bald to the Lake is no longer feasible. The Shoals project, which was identified recently as a storage facility, closed the choice of areas to be dammed on the Chattahoochee. This facility is a work in progress and is scheduled to "come on line" in ten years.

The last is a profound statement, ten years! We are 20 years behind in the identification of proposed sites for reservoirs. Native Intelligence, a research vehicle of the Norton Agency, suggests that the search group should explore areas in the Chattahoochee National Forest, and the Smoky Mountain National Forest. Lake Hartwell has a tremendous water shed and considerations should be undertaken to pipe water to the northern sections of Hall County. If water resource storage areas are identified they will also require ten years to become operational. Growth is coming very fast and water is needed. Growth and expansion is not greed. In this and many other areas of North Georgia it is based on demand. "Build it and they will come".

In support of the segment in this study "Lakeside Real Estate", the following article appeared on the front page of the Sunday Edition of the Atlanta Journal-Constitution, dated August 19, 2001.

By JOHN MCCOSH / jmccosh@ajc.com  
and RUSSELL GRANTHAM / rgrantham@ajc.com

**M**ore aside, Buckhead. With a typical house selling for \$532,400, southern Forsyth County's 30097 ZIP code just trumped metro Atlanta's longtime leader in expensive housing.

Many houses in Forsyth are fetching more than \$1 million. An 18,000-square-footer on the Forsyth side of Lake Lanier is on the market for \$6.5 million. And the community commonly known just a decade ago by the folksy name of Shale Rag is now better known for places named Olde Atlanta Club, St. Mark and Laurel Springs.

"We see that as being the next Buckhead," said Frank Norton Jr., president of the Norton Agency, a North Georgia real estate firm. "It's already happening."

The Atlanta Journal-Constitution Annual Home Sales Report tracked 91 sales in the Forsyth portion of 30097 from April 2000 through March 2001. The data is provided by Smart Numbers, a real estate analysis firm.

Population projections for 2030 indicate that the Atlanta metro area will be comprised of 10 million people. They also project a continuous series of developments from Atlanta to the Greenville-Spartanburg area of South Carolina. And then there is Charlotte!

The economic impact of Lake recreation on our community is over \$5.5 billion. Additionally, the Lake is a critical source of drinking water locally and beyond. For these reasons, it is critical that immediate, proactive measures are undertaken to identify alternative sources of water. Full cooperation of all affected parties is essential in developing long term solutions. We must make every effort to remedy the water problem soon, for ourselves, and for future generations.

With the highest, most difficult equations, reduced to reason and logic, we have no choice! To quote a visionary with NASA, "First, we imagine what can be, then we work to make these dreams come true."



---

E.D. Hughes  
3197 Arrowhead Drive

STATEMENT OF JACKIE JOSEPH, PRESIDENT, THE LAKE LANIER ASSOCIATION, INC.

CONTENTS

ASSOCIATION INTRODUCTION

LAKE LANIER RESOURCE

CLEAN WATER ISSUES

FULL LAKE ISSUES

SUMMARY

LAKE LANIER ASSOCIATION

INTRODUCTION

MISSION

Dedicated to a Clean and Full Lake Lanier to Enhance its Economic Value to Georgia

*Established in 1966*

4,000 Members (1,700 Memberships) Homeowners, Businesses, Water Users, Dock Owners, Recreation Users

*Active Board of Directors*

Many Solid Programs.—Shore Sweep (Lake Clean up); Adopt a Lake (Lake Monitoring); Advocacy

LAKE LANIER FACTS

- Finest Natural Resource in Georgia
- Created 1958–1960
- 39,000 Acres of Water
- 640 Miles of Shoreline
- 8,500 Private Docks
- 10,000 Boats at 10 Marinas
- 8 Million Annual Visitors
- Drinking Water for 4+Million Georgians
- \$5 Billion Annual Economic Contribution
- 66 percent of the ACF Water Storage
- 5–7 percent of the ACF Watershed

ISSUES “KEEPING THE LAKE CLEAN”

Municipalities Calling for Sewage Discharges Into Lanier (MNGWPD Calls for 200+ MGD in 2025)

Georgia Courts Have Supported the LLA and Denied EPD Sewage Discharge Permits

Sewage Discharges are Necessary for Sustained Georgia Growth. However the Sewage Discharge Must be as Clean as Possible Through Treatment Processes

Gwinnett County has Agreed with the LLA to Make Their Discharge Very Clean and Deep (Keeps Pollution at the Bottom)

Georgia EPD has not Issued the Gwinnett Permit that was Applied for in the summer of 2005

SUGGESTIONS FOR KEEPING THE LAKE CLEAN

- EPD Should Issue the Gwinnett Sewage Discharge Permit
- EPD Should Direct that all Future Lake Lanier Sewage Discharges Must be at Least as Clean and Deep as the Gwinnett Permit Request
- Georgia Should Insure that the “Water Management Plan” Specifically Addresses Cleanliness of Sewage Discharges and Reuse Strategies Which Have not Been Discussed in the Basin Advisory Committee Meetings

ISSUE: KEEPING THE LAKE FULL

The ACF Must be Managed as a System in a Prudent Manner

Low Lake Levels are Very Dangerous to Boaters, Swimmers and the Economy  
Reservoirs are Significant Investments, and Should be Managed Accordingly

A Balance Between Endangered Species and Human Requirements Must be Effected. The Loudest Voice Should not Always Prevail

Water Flows at the Florida Line for Mussels and Sturgeon Should not be Artificially Inflated to a Level Greater than the Natural Water Flows, Without Reservoirs, Unless Excess Water Flow Capability Exists

Economic Value of Water Must be Evaluated Before Release Decisions are Implemented. Economic Impact of Lake Lanier is in Excess of \$5 Billion Annually as Determined by a Study Done by the Marine Trade Association of Metro Atlanta. (Example: Lake Lanier Contribution to Georgia Versus a Very Small Oyster Industry in Florida)

#### SUGGESTIONS KEEPING THE LAKE FULL

- Establish a Fair Level of Support for the Endangered Species, But not to the Detriment of Drinking Water and Safety. Mussels Should not Trump People
- Implement Solid Reinforced Management of the ACF System, Rather than Over Reacting to Specific Requests
- Pre Validate All Water Release Decisions with Onsite Visual Inspections
- Set a Lower Limit for Lake Lanier (Example 1060) and do not go Below that Minimum.
- Consider Raising Full Pool at Lanier to 1073 FT. This Would be Like Adding a 25 Billion Gallon Reservoir to the System.
- Consider Closer Management of the Flint River, Particularly the Withdrawal and Permitting Process

#### SUMMARY

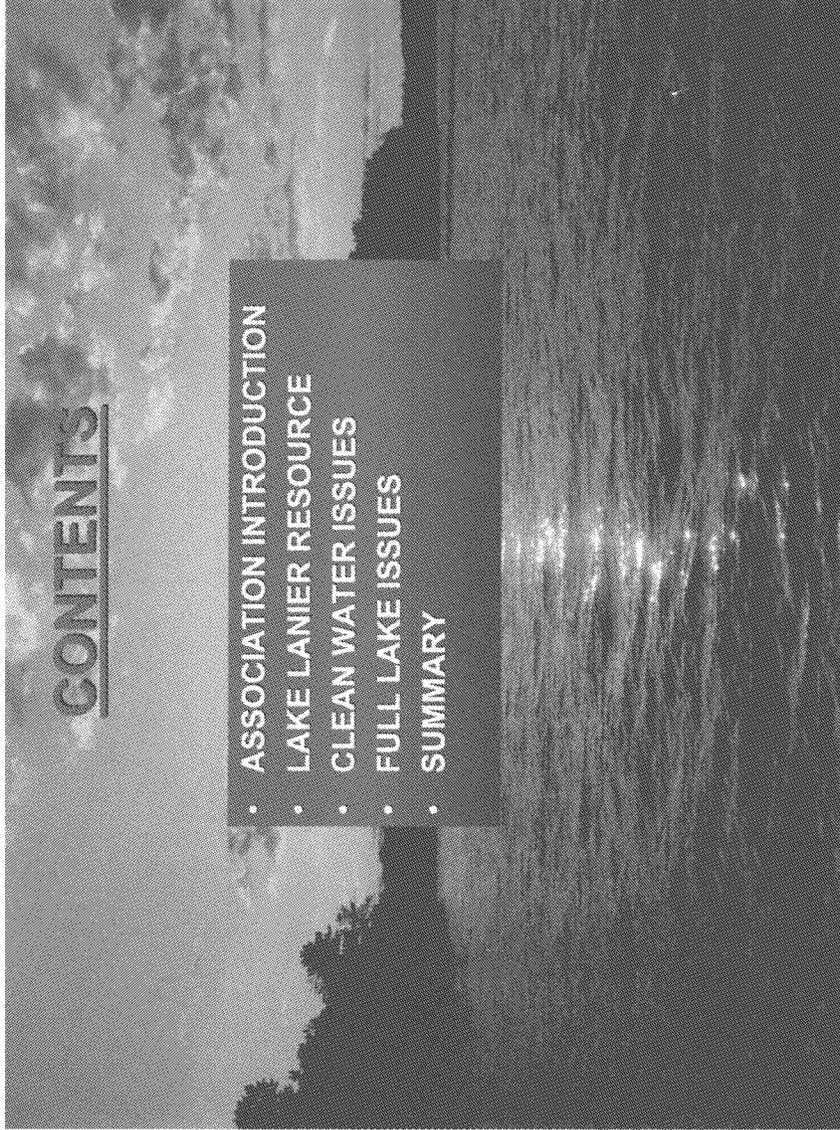
Lake Lanier is the Most Valuable Natural Resource in Georgia.

Lanier Must be Kept Clean and Full for the Economic Vitality and Growth of Georgia

Prudent Management of the System is Essential for the Success of Georgia's Objectives

Note: [Lake Lanier Community Magazine, Volume 1, Issue 1; August/September 2006 is retained in committee's file.]





# LAKE LANIER ASSOCIATION

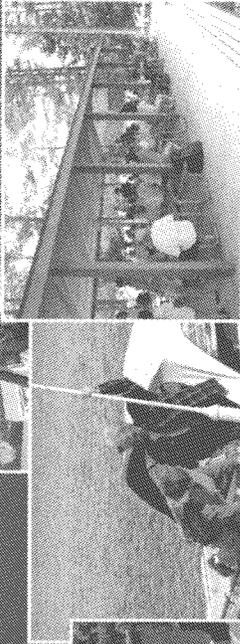
## INTRODUCTION

- MISSION: DEDICATED TO A CLEAN AND FULL LAKE LANIER TO ENHANCE ITS ECONOMIC VALUE TO GEORGIA
- ESTABLISHED IN 1966
- 4000 MEMBERS (1700 MEMBERSHIPS)
  - HOME OWNERS, BUSINESSES, WATER USERS, DOCK OWNERS, RECREATION USERS

## ACTIVE BOARD OF DIRECTORS

### MANY SOLID PROGRAMS

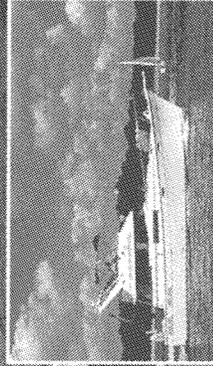
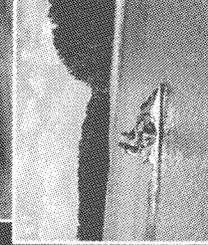
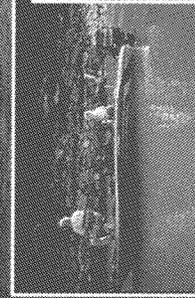
- SHORE SWEEP (LAKE CLEAN UP)
- ADOPT A LAKE (LAKE MONITORING)
- ADVOCACY



## LAKE LANIER FACTS

- "FINEST NATURAL RESOURCE IN GEORGIA"
- CREATED 1958 – 1960
- 39,000 ACRES OF WATER
- 640 MILES OF SHORELINE
- 8,500 PRIVATE DOCKS
- 10,000 BOATS AT 10 MARINAS
- 8 MILLION ANNUAL VISITORS

- DRINKING WATER FOR 4+ MILLION GEORGIANS
- \$5 BILLION ANNUAL ECONOMIC CONTRIBUTION
- 66% OF THE ACF WATER STORAGE
- 5-7% OF THE ACF WATERSHED

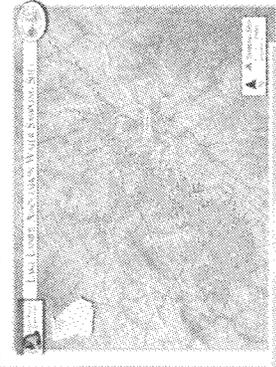




**ISSUE**

**“KEEPING THE LAKE CLEAN”**

- **MUNICIPALITIES CALLING FOR SEWAGE DISCHARGES INTO LANIER (MNGWPD CALLS FOR 200+ MGD IN 2025)**
- **GEORGIA COURTS HAVE SUPPORTED THE LLA AND DENIED EPD SEWAGE DISCHARGE PERMITS**
- **SEWAGE DISCHARGES ARE NECESSARY FOR SUSTAINED GEORGIA GROWTH**
  - **HOWEVER THE SEWAGE DISCHARGE MUST BE AS CLEAN AS POSSIBLE THROUGH TREATMENT PROCESSES**

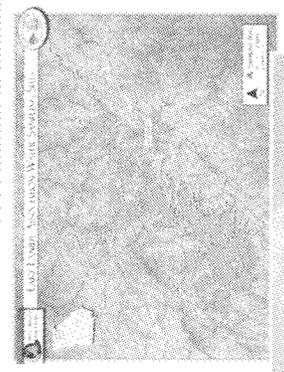
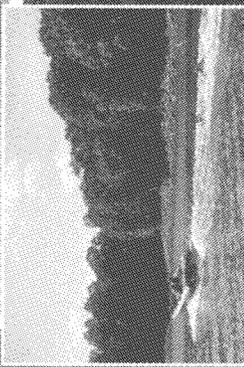


**ISSUE**

**“KEEPING THE LAKE CLEAN”**

(CONTINUED)

- GWINNETT COUNTY HAS AGREED WITH THE LLA TO MAKE THEIR DISCHARGE VERY CLEAN AND DEEP (KEEPS POLLUTION AT THE BOTTOM)
- GEORGIA EPD HAS NOT ISSUED THE GWINNETT PERMIT THAT WAS APPLIED FOR IN THE SUMMER OF 2005



## SUGGESTIONS FOR KEEPING

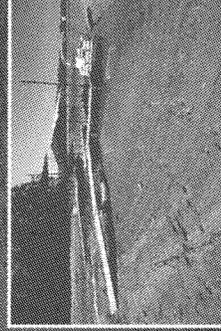
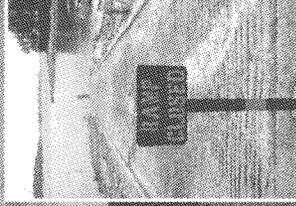
### THE LAKE CLEAN

- EPD SHOULD ISSUE THE GWINNETT SEWAGE DISCHARGE PERMIT
- EPD SHOULD DIRECT THAT ALL FUTURE LAKE LANIER SEWAGE DISCHARGES MUST BE AT LEAST AS CLEAN AND DEEP AS THE GWINNETT PERMIT REQUEST
- GEORGIA SHOULD INSURE THAT:
  - THE "WATER MANAGEMENT PLAN" SPECIFICALLY ADDRESSES CLEANLINESS OF SEWAGE DISCHARGES AND REUSE STRATEGIES WHICH HAVE NOT BEEN DISCUSSED IN THE BASIN ADVISORY COMMITTEE MEETINGS

## ISSUE KEEPING THE LAKE FULL

- THE ACF MUST BE MANAGED AS A SYSTEM IN A PRUDENT MANNER
- LOW LAKE LEVELS ARE VERY DANGEROUS TO BOATERS, SWIMMERS AND THE ECONOMY
- RESERVOIRS ARE A SIGNIFICANT INVESTMENT AND SHOULD BE MANAGED ACCORDINGLY
- A BALANCE BETWEEN ENDANGERED SPECIES AND HUMAN REQUIREMENTS MUST BE EFFECTED

**THE LOUDEST VOICE SHOULD NOT  
ALWAYS PREVAIL**



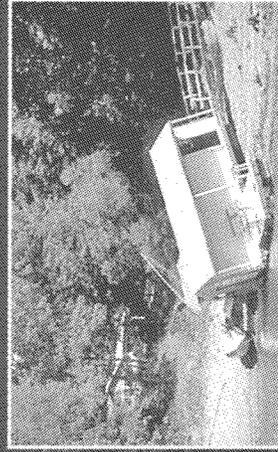
## ISSUE KEEPING THE LAKE FULL

- WATER FLOWS AT THE FLORIDA LINE FOR MUSSELS AND STURGEON SHOULD NOT BE ARTIFICIALLY INFLATED TO A LEVEL GREATER THAN THE NATURAL WATER FLOWS, WITHOUT RESERVOIRS, UNLESS EXCESS WATER FLOW CAPABILITY EXISTS
- ECONOMIC VALUE OF WATER MUST BE EVALUATED BEFORE RELEASE DECISIONS ARE IMPLEMENTED.
  - (EXAMPLE: LAKE LANIER CONTRIBUTION TO GEORGIA VERSUS A VERY SMALL OYSTER INDUSTRY IN FLORIDA)



## SUGGESTIONS FOR KEEPING THE LAKE FULL

- ESTABLISH A FAIR LEVEL OF SUPPORT FOR THE ENDANGERED SPECIES, BUT NOT TO THE DETRIMENT OF DRINKING WATER AND SAFETY. MUSSELS SHOULD NOT TRUMP PEOPLE
- IMPLEMENT SOLID REINFORCED MANAGEMENT OF THE ACF SYSTEM, RATHER THAN OVER REACTING TO SPECIFIC REQUESTS
- PRE VALIDATE ALL WATER RELEASE DECISIONS WITH ONSITE VISUAL INSPECTIONS



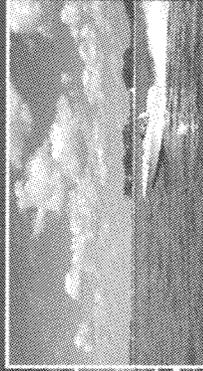
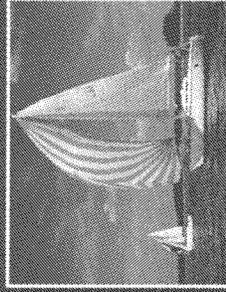
## SUMMARY

- LAKE LANIER IS THE MOST VALUABLE NATURAL RESOURCE IN GEORGIA
- LANIER MUST BE KEPT CLEAN AND FULL FOR THE ECONOMIC VITALITY AND GROWTH OF GEORGIA
- PRUDENT MANAGEMENT OF THE SYSTEM IS ESSENTIAL FOR THE SUCCESS OF GEORGIA'S OBJECTIVES

## SUGGESTIONS FOR KEEPING THE LAKE FULL

(CONTINUED)

- SET A LOWER LIMIT FOR LAKE LANIER (EXAMPLE 1060) AND DO NOT GO BELOW THAT MINIMUM
- CONSIDER RAISING FULL POOL AT LANIER TO 1073 FT. THIS WOULD BE LIKE ADDING A 25 BILLION GALLON RESERVOIR TO THE SYSTEM
- CONSIDER CLOSER MANAGEMENT OF THE FLINT RIVER, PARTICULARLY THE WITHDRAWAL AND PERMITTING PROCESS



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**COLLEEN M. CASTILLE  
SECRETARY  
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Testimony Before the  
Committee on Environment and Public Works  
United States Senate**

**Field Hearing:  
Oversight of the Army Corps of Engineers' Management  
of the ACT and ACF River Basins**

**August 8, 2006  
Riverside Military Academy's Sandy Beaver Center  
2001 Riverside Drive Gainesville, GA 30501**

**Submitted August 15, 2006**

The State of Florida welcomes this opportunity to provide the Senate Committee on Environment and Public Works with its views concerning the shared water resources of the Apalachicola-Chattahoochee-Flint (ACF) River Basin. For nearly two decades, Florida, Georgia and Alabama have grappled with their competing demands for these precious resources—frequently through litigation, once through extended negotiations under an interstate compact, and now through mediation among the three States and the U.S. Army Corps of Engineers (Corps). As the Committee begins to consider the matter, it is important to understand each State's needs for water from this Basin and the reasons why their disputes have proved difficult to resolve.

Even though municipal and industrial (M&I) water supply is not an authorized purpose of the ACF reservoir system, Florida has always been willing to consider a resolution of the States' competing water needs that minimizes risks to the availability of water for consumers in the metro-Atlanta region while protecting the economic and ecological needs of downstream users. Unfortunately, the Corps' unauthorized actions and inexact calculation of basin inflow, coupled with a lack of water conservation measures upstream, even in periods of severe drought, have already compromised significantly the economic and ecological health of the Apalachicola Basin. The issue is not one of human interests versus those of protected aquatic species. Rather, the question is whether upstream users share adversity and abundance and manage a limited resource such that the economic and ecological interests of the Apalachicola Basin and its people are protected.

The ecological health of the Apalachicola Basin has been significantly compromised as a result of upstream water management and use. Floodplain habitats and the species that occupy those habitats have been notably altered by water retention and use in the Chattahoochee and Flint River Basins. Federally listed threatened and endangered species have been impacted by the altered and diminished flows. Equally as important, these altered flows have jeopardized the local economies and historic way of life of the people and industries supported by the Apalachicola River, particularly the oystermen and women of Apalachicola Bay.

The Apalachicola River and Bay provide the economic foundation for six counties within the Florida Panhandle—a predominantly rural region with little diversity in employment and industry. While tourism is a growing part of the economic base, the commercial fishing industry provides direct employment for up to 85 percent of the local population. Seafood landings, worth \$14 million to \$16 million dockside annually, represent a \$70 million to \$80 million industry at the consumer level. While the needs of upstream users must be addressed, so too must the ecological needs of Florida's Apalachicola River and the economy it supports, which consistently have borne a disproportionate burden of recent droughts experienced in the ACF Basin.

Protection of the economic and ecological needs of the Apalachicola River Basin has been undermined by the Corps' practice of calculating "basin inflows" only **after** Georgia's depletions are made. This practice must be discontinued. Because the Corps' reservoir operations in the ACF Basin are keyed to this

fundamental hydrologic concept, those operations will remain inequitable until the practice is terminated. The Corps must consider true basin inflow, which accounts for the impact of Georgia depletions on the ACF System. By recognizing true basin inflow, the Corps will find it has far more operational flexibility.

In addition to this fundamental accounting issue, a variety of other water management practices in Georgia adversely impacts Florida's economy and ecosystem. The Corps' excessive retention of water in reservoir storage designed to "drought-proof" Georgia at the expense of downstream uses, the lack of meaningful water conservation practices or efforts to develop alternative water supplies in the Atlanta metropolitan area, and excessive agricultural depletions in the Flint River Basin are among the principal factors.

Florida believes these reservoir management and water conservation issues, together with a realistic assessment of flows needed to sustain ecological values and economies in the Apalachicola River Basin, should be addressed through a comprehensive resolution among the three States. Florida, Georgia and Alabama are working toward that objective. Florida does not believe it is necessary or appropriate for Congress to address any isolated portion of these issues until a resolution is achieved or negotiations between the three States have been fully exhausted.

**I. Florida's Interests in the ACF Basin**

Florida's need for the water resources of the ACF Basin centers on the Apalachicola River and Apalachicola Bay. The largest river in Florida in terms of flow and the fourth largest river in the southeastern United States, the Apalachicola River is formed at the confluence of the Chattahoochee and Flint Rivers. Thus, the waters of the Chattahoochee and Flint Rivers are interstate in nature, and cannot simply be regarded as the property of a single state. These rivers must be managed as interstate waters, taking both upstream and downstream needs into account.

Of its 106-mile length, the lower 20.6 miles are influenced by the Gulf of Mexico and considered "tidal." The long-term average discharge of the River at Chattahoochee, Florida is 21,900 cubic feet per second (cfs).

The Apalachicola River and its floodplain ecosystem are extensive and diverse. The non-tidal portion of the floodplain flanking the River supports a complex forest/swamp ecosystem covering about 82,200 acres. More than 200 miles of off-channel floodplain sloughs, streams, and lakes within the Apalachicola River Basin are directly influenced by the volume of flow in the River itself. These off-channel areas provide important habitat for a wide variety of organisms including mollusks, crustaceans, fishes, amphibians, reptiles, mammals and birds. More than 80 percent of all freshwater and anadromous fish species found in the Apalachicola River spend some portion of their life cycle in these floodplain habitats, and the

diversity of tree species found in the floodplain is among the highest in North American river floodplains.

Large coastal plain ecosystems such as the Apalachicola River and Bay evolved around the river's flow regime—i.e., the magnitude, timing and duration of flows. Organisms that survive in such areas depend upon the habitat created by the unique flow regime of each river system. Streams, sloughs, ponds, lakes, and swamps in floodplains are alternately connected and disconnected to various degrees as river levels fluctuate. This occurs due to both direct inundation of floodplains and discharge of ground water that is hydrologically connected with the rivers. Complex relationships exist between biological communities in floodplain habitats and river stage levels, with floral and faunal diversity and distributions varying significantly based upon the particular flow regime of the river. As a result, the historical magnitude, timing and duration of flows in the Apalachicola River have created and maintain the ecosystem that has evolved there.

The populations of more than one hundred species of plants and animals found within the Basin have, unfortunately, become so depleted that they are listed as rare, threatened or endangered by the State or federal government. Of these species, at least three require specific, minimum flows to survive. Higher flows than have recently been experienced, as well as a more natural flow pattern, are required if these species are to recover to the point that Federal protection no longer will be required.

The Apalachicola River discharges its nutrient-rich freshwater into the Apalachicola Bay, one of the most productive estuarine systems on the Gulf of Mexico coast. The 210-square-mile Bay provides 90 percent of Florida's rich oyster harvest (10 percent of the national harvest), supports an active finfish industry, and serves as an important nursery area for many marine species. The Bay also is home to the Apalachicola National Estuarine Research Reserve (ANERR), one of only 27 sites so designated by the National Oceanographic and Atmospheric Administration as a research reserve. Encompassing some 193,758 acres of land and water, ANERR is the largest of all such reserves in the country.

The biological productivity of the Bay is strongly influenced by the amount, timing and duration of the freshwater inflows from the River. The freshwater flowing into the Bay brings with it essential nutrients that support critical microorganisms that form the base of the Bay's foodweb. Alteration of the River's flows disrupts the input of these nutrients and undermines the very foundation for the unique ecosystem found there. The freshwater flow regime into the Bay also affects the salinity of water in the Bay. Water salinity in itself is a constituent habitat element that determines species composition and health. Oysters, the hallmark species of the Bay, require a constant source of freshwater to regulate Bay salinity. Moderated salinity levels ensure that oysters are protected from excessive predation by salt-water predators and reduce the impact of diseases that attack with the potential to destroy oyster beds. Reducing or altering the flow of

freshwater to the Bay results in higher salinity levels that will adversely impact oyster survival.

The people of Florida are deeply committed to protecting the economy, environment and quality of life within the Apalachicola River and Bay Basin. Virtually all of the riparian land in the Apalachicola Basin has been placed in State or federal ownership, and very little water is withdrawn from the River for water supply or agricultural uses. To date, Florida has purchased more than 280,000 acres of land and water in the Basin to protect and preserve the natural ecosystem. Toward that total, Florida invested more than \$100 million to acquire 102,624 acres in 1999. With private conservation/preservation organizations and the United States, more than 500,000 acres have been acquired in the Apalachicola Basin and Bay areas.

In addition to these significant expenditures, important cultural and social values have evolved around the fishing industries of the Bay. The Apalachicola Bay Oyster, Apalachicola Bay Shrimp, Apalachicola Bay Blue Crab and several varieties of finfish have been commercially harvested from the Bay for generations. Entire communities have survived on economies that rest on Bay fishing.

In summary, maintenance of a healthy ecosystem in the Apalachicola River and Bay requires two fundamental components. First, the River's flow regime—the magnitude, timing and duration of flows—must continue to resemble the natural flow regime that supported the creation of this ecosystem in the first place. This cannot be accomplished by managing the ACF River Basin with the solitary focus of

providing minimum stateline flows. Such an approach will result in an Apalachicola River hydrograph with diminished variability or with flows of insufficient magnitude and duration at critical times to meet the biological needs (e.g. spawning) of aquatic species. Second, minimum River flows are essential to the very survival of key aquatic species, and those minimum flows vary with the seasons of the year. The Gulf sturgeon must have substantial minimum flows before, during and after their spawning season, and listed mussels require somewhat lower minimum flows at all times of the year to avoid stress and death. These needs cannot be met, especially during dry periods, if depletions continue and increase in the Flint River Basin and the Corps continues to retain stored water in federal reservoirs on the Chattahoochee River when it is needed to sustain minimum flows in the Apalachicola River.

## **II. Florida's Concerns about Operation of the ACF River Basin**

The Apalachicola River Basin and Bay have experienced marked changes since the early 1950s when the Corps began constructing and operating a series of dams on the Chattahoochee River in Georgia. Located near Atlanta, Lake Lanier was formed by the construction of Buford Dam, and has a conservation storage capacity of 1,049,000 acre-feet, or about 64 percent of the total storage capacity of the ACF River Basin. West Point Dam and Lake is located approximately 155 miles south of Buford Dam and was completed in 1974. Below West Point is Walter F. George Dam and reservoir, which was completed by the Corps in 1963. Below

Walter F. George is George W. Andrews Lock and Dam, also completed by the Corps in 1963. Finally, at the Georgia/Florida Stateline is Jim Woodruff Dam and Lake Seminole. Jim Woodruff Dam, like Buford, was completed by the Corps in 1954. These reservoirs were authorized by Congress to provide flood protection, hydropower generation and downstream flow maintenance.

The Corps, however, has operated these dams to support recreational and municipal water uses in Georgia at the expense of downstream community and environmental needs. As noted above, species such as the Gulf sturgeon require springtime flows sufficient to inundate spawning areas in the Apalachicola River, but the Corps has refused to provide enough flows by releasing stored water from the Chattahoochee River reservoirs. The Corps keeps lake levels artificially high to maintain a full conservation pool to serve recreational boaters in Lake Lanier and to ensure that stored water for municipal uses is maximized at all times. These practices have resulted in diminished sturgeon spawns and have directly caused the deaths of many thousands of protected mussels. This is true even though the Corps has analyzed alternatives that provide additional flow support to the Apalachicola River and has concluded that those alternatives will in no way compromise M&I water supplies.

The past several decades also have witnessed a significant increase in the amount of water used upstream in Georgia, primarily in the metro-Atlanta region and agricultural areas along the Flint River. The Flint River is primarily fed by the discharge of hydrologically connected ground water into the River. Over the past 25

years, and particularly in the past decade, Georgia has allowed thousands of high-capacity irrigation wells to tap into the Floridan Aquifer that intersects the Flint River. This agricultural use has diminished inflows to the Flint River which, in turn, has resulted in lower contributions of flows into Lake Seminole. The effect of these diminished flows is most acute during the summer and fall months of the year. While Georgia has authority during drought years to implement conservation measures to protect Flint River flows, it chose not to do so this year.

Alteration of the flow regime already has harmed the ecosystems of the Apalachicola River Basin and Bay. Additional river flow alterations resulting from the Corps' water retention policies and further withdrawals in Georgia will result in additional deaths of federally listed species, alter the floodplain habitat for numerous fishes, amphibians, reptiles and plants, and thereby undermine the enormous investments made by Florida's citizens. In addition, such flow alterations will significantly harm the Bay's production of oysters and other commercially viable species, which could destroy the already fragile fishing industries and seriously alter the social and economic structure of entire communities.

### **III. Current Disputes and the Path Forward**

Since 1989, there has been ongoing litigation over the resources of the ACF River Basin. All three States have sued the Corps in various courts seeking changes in the operation of federal reservoirs on the Chattahoochee River. In Birmingham, the States of Alabama and Florida have sued the Corps, with Georgia

intervening on the side of the Corps. In Atlanta, Georgia has sued the Corps twice, with Alabama and Florida intervening to oppose Georgia's claims in both cases. In Washington, D.C., hydropower interests sued the Corps, and Georgia intervened in order to join in a privately negotiated Settlement Agreement. When Alabama and Florida learned of the Settlement Agreement, they intervened to oppose it.

In the Birmingham case, the court has ordered all three States and the Corps to negotiate their differences with the assistance of a court-appointed mediator. A series of meetings took place in June and July. Florida remains hopeful that these negotiations will resolve the States' disputes and believes a comprehensive settlement is achievable.

As a consequence of the Birmingham litigation, the Corps has entered into formal consultation with the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act. The purpose of this consultation is to evaluate the effect on Florida's protected species of the Corps' current reservoir operations, now embodied in its "interim operations plan" (IOP). Florida believes that the IOP provides less water than required for species survival. On or before September 5, 2006, the Service is scheduled to issue its Biological Opinion concerning the Corps' IOP and other measures that will be needed to sustain and support recovery of the protected Gulf sturgeon and mussels.

In the Washington, D.C. litigation, Florida and Alabama have taken appeals to the U.S. Court of Appeals from the lower court's approval of the Settlement Agreement among the Corps, Georgia, hydropower users and Atlanta-area

municipal interests. That Settlement Agreement is of considerable interest to many of the witnesses in this hearing. It commits the Corps to entering into long-term contracts for the purchase of approximately 25 percent of the storage space in Lake Lanier for M&I water supply. In addition, it commits all of the parties to an effort to secure congressional approval of permanent storage contracts. If the settling parties' plan of action is allowed to proceed, their effort must commence in this Committee.

Florida is strongly opposed to the reservation of such a substantial portion of the ACF River Basin's storage in the absence of any consideration of Florida's needs. These two matters—Atlanta's desire for permanent M&I storage rights, and Florida's need for flows to sustain the Apalachicola River and Bay ecosystems—must be considered together. Because these are competing interests in a limited resource, neither should be addressed in isolation. Florida had no choice but to oppose the D.C. Settlement Agreement because, having been negotiated without Florida's involvement, the Agreement was designed to meet Atlanta's desires without considering Florida's needs.

It is important to be clear about why Florida opposes a decision to reserve M&I storage in Lake Lanier without considering ecosystem needs in the Apalachicola River and Bay. Although substantial M&I uses of Lake Lanier are unauthorized, Florida does not oppose a negotiated resolution allowing for some M&I uses, provided that Georgia water management entities incorporate good water management practices that promote, conserve and reuse a variety of water

resources and return substantial portions of adequately treated wastewater to the ACF River Basin. Of course, the implementation of any resolution that allows for M&I uses would require Congressional action.

On the other hand, the allocation of storage space in Lake Lanier to support those M&I uses contributes to a combination of factors that, in the aggregate, will adversely affect Florida's economy and ecosystem unless ecological needs also are considered. These factors include:

- The Corps' excessively cautious retention of water in storage to ensure that M&I uses can be satisfied from Lake Lanier resources under all circumstances, no matter what the cost to Florida's economy and ecosystem;
- The Corps' retention of additional water in storage to support recreational activities in Lake Lanier irrespective of downstream needs;
- M&I wastewater discharges that exit the ACF River Basin and therefore cannot even reach the Apalachicola River;
- Atlanta's ever-increasing reliance on Lake Lanier as its sole source of water for M&I uses, which in turn puts additional pressure on the finite storage capacity of the reservoir;
- An absence of meaningful water conservation measures by metro-Atlanta to relieve those pressures; and
- Georgia's allowance of significant depletion of Flint River flows, which diminishes flows to the Apalachicola River and exacerbates the concerns noted above.

These concerns are not hypothetical in nature; they are all too real and significant for Florida. This spring, as Lake Lanier remained near full pool, the Corps refused to release sufficient flows into the Apalachicola River to support fully the annual Gulf sturgeon spawn below Jim Woodruff Dam. As we moved into summer, risks to the survival of Florida's threatened and endangered mussels

reached crisis proportions. Just last month, as the level in Lake Lanier hovered a few feet below full pool, the Corps refused to release flows into the Apalachicola River to sustain these mussels. A significant portion of the mussel population was stranded by low flows and left to simmer and die in shallow, stagnant pools. The remedy—additional release of just 1,300 cfs of water from upstream storage—would have resulted in a decline in Lake Lanier of less than two feet.

All the while, recreation at Lake Lanier continued as usual, Atlanta-area water use continued without significant interruption or inconvenience, and agricultural depletions in the Flint River Basin accelerated. In fact, the Corps' Mobile District water management website shows that, even during the height of drought conditions, the level of Lake Lanier remains no more than a few feet below the level experienced at this time of year during an average year.

There appears to be a perception that the Corps, under its IOP, is causing Lake Lanier to decline more than it should by releasing excess water from storage—beyond “what nature would provide.” This is incorrect. As a convenient surrogate for “what nature provides,” the Corps measures “basin inflow” in such a way as to exclude M&I and agricultural depletions from the Chattahoochee and Flint Rivers. Those depletions amount to 1,500-2,000 cfs on average. By using this net basin inflow to determine how much water to release from storage, the Corps' policy is that Florida should receive whatever nature provides after Georgia takes whatever amount it wants. This is among the reasons why it is so important to Florida that Georgia control its depletions and diversions from the Basin. For example, in a

recent 18-day period (July 1-18, 2006), true basin inflow averaged 6,200 cfs, but the Corps was releasing only 6,000 cfs to the Apalachicola River and Georgia was protesting that this was too much. The plain fact is that, under the IOP, the Corps is not releasing more than nature provides. Rather, the significant depletions upstream in Georgia make it necessary, in times of drought, for the Corps to release water from storage to provide the flows specified by the IOP.

Depletions in Georgia can be addressed. With respect to M&I uses in the metro-Atlanta area, Florida hired the Pacific Institute to determine whether cost-effective conservation measures could be used to ease the impact of water shortages downstream. The Pacific Institute is the nation's leading center for assessing water conservation and efficiency potential. In examining water conservation and efficiency in the metro-Atlanta region, the Pacific Institute's report concluded that the region's present conservation goals were "modest," and that the region's actual efforts were falling behind even the modest goals it has established. Most importantly, the report demonstrates that there is significant potential for cost-effective water saving measures. These water saving measures are so substantial that, if they were to be implemented, the water demands of metro-Atlanta through the year 2030 could be met using existing water supplies. In short, Georgia has the ability to meet its present and future M&I water supply needs in a cost-effective manner that will not harm downstream economies and ecosystems. The Pacific Institute's report is attached for your review.

This current combination of water management decisions by the Corps and Georgia is neither fair nor equitable for the downstream States, and the situation would be made worse, not better, if Congress were to approve permanent storage rights for M&I uses of the water in Lake Lanier. This Committee should reject any such proposal unless and until all of these interrelated issues and needs are addressed together in a comprehensive resolution of the ACF River Basin dispute.

Likewise, Florida has opposed any revision of the water control plans and operating manuals of the ACF River Basin that would “grandfather in” the ever-increasing depletions from Georgia during the past 17 years and fail to take into account the needs of Florida’s ecosystem. The Corps has recently stated its intention to revise the plans and manuals to reflect the current existing conditions in the Basin, including increased M&I withdrawals. Florida maintains that those conditions are unlawful because M&I water supply is not an authorized purpose of the reservoirs in the Basin. These reservoirs, including Lake Lanier, were authorized by Congress to provide flood protection, hydropower generation and maintenance of downstream flows. While Florida does not oppose the revision of the plans and manuals, per se, such revision must not be used to rubber-stamp water supply withdrawals that exceed the authorized purposes of the Corps’ reservoirs.

In the end, only the three States, working together with the Corps, can develop a comprehensive and equitable solution. Congress will not be able to solve this problem, and should reject suggestions that it address the needs of any one

State or region in isolation from the others. To do so at this time will only make the issues more difficult to solve.

The States are engaged in a serious effort to devise a comprehensive solution. A mediation process is underway pursuant to the authority of the court in Birmingham. On August 4, 2006, Florida Governor Jeb Bush wrote to Governors Perdue and Riley recommending aggressive efforts to pursue the mediation (attached). Florida believes the mediation process holds promise for the future and looks forward to serious discussions of the issues with Georgia and Alabama.

**Attachment to the Statement of  
Secretary Castille, Florida DEP**

**Pacific Institute Report on  
Water Conservation Planning in Georgia**

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**PACIFIC  
INSTITUTE**

*Research for People and the Planet*

**A Review of Water Conservation Planning for the  
Atlanta, Georgia Region**

**Pacific Institute for Studies in Development,  
Environment, and Security  
Oakland, California**

**August 2006**

**Prepared for the Florida Department of Environmental Protection**

## **Abbreviations and Acronyms**

AADD: annual average daily demand  
AF: acre-feet  
ACF: Apalachicola-Chattahoochee-Flint  
ARC: Atlanta Regional Commission  
BACs: basic advisory councils  
Board: governing board of the Metropolitan North Georgia Water Planning District  
CB analysis: cost-benefit analysis  
CE analysis: cost-effectiveness analysis  
CUWCC: California Urban Water Conservation Council  
District: Metropolitan North Georgia Water Planning District  
DNR: Georgia Department of Natural Resources  
DSS model: Demand Side Management Least-Cost Planning Decision Support System model  
gpcd: gallons per capita per day  
gped: gallons per employee per day  
gpm: gallons per meter  
MGD: million gallons per day  
MNGWPD: Metropolitan North Georgia Water Planning District  
NPDES: National Pollutant Discharge Elimination System  
RDC: Regional Development Commission  
TCC: technical coordinating committee  
UFW: unaccounted-for-water  
WS Plan: Water Supply and Water Conservation Management Plan  
\$/MG: dollars per million gallons

## Introduction

The Pacific Institute<sup>1</sup> is one of the nation's leading centers for assessing water conservation and efficiency potential. In 2005, the Institute was requested to review the history of water conservation and efficiency programs and water demand forecasts in the region around Atlanta, Georgia as part of an effort to improve understanding of the potential for reducing water waste in the region and maintaining critical water flows for downstream ecosystems in Georgia and Florida. This report provides that review and concludes that significant untapped potential exists for reducing water use while providing for population growth and economic development, and that traditional water planning documents and efforts in the region underestimate this potential.

The Metropolitan North Georgia Water Planning District (MNGWPD), created in 2001, produces the principal water-planning document for the metropolitan Atlanta area. The first comprehensive water supply plan, the Water Supply and Water Conservation (WS) Plan, was released in 2003. The WS Plan projects substantial increases in 2030 water demand, rising from 650 million gallons per day (MGD) in 2001 to 1080 MGD in 2030. To meet future demand, the District largely relies upon new supply options, specifically five new reservoirs and reallocation of Lake Lanier and Lake Allatoona.

The WS Plan may significantly overestimate future regional demand for water and underestimate the potential for cost-effective demand management. Our analysis reveals the following:

- The District's population projection is too high, thereby overestimating future demand.
- The conservation analysis is incomplete. The list of efficiency measures evaluated does not include all cost-effective approaches. Even the more aggressive Program "C" in the WS Plan (which was not adopted) appears incomplete.

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<sup>1</sup> Pacific Institute, 654 13<sup>th</sup> Street, Oakland, California. [www.pacinst.org](http://www.pacinst.org). Dr. Peter Gleick, President

- The economic analysis used in the WS Plan gives an incomplete and misleading picture of the conservation potential in the District because of the type of analysis employed, the perspective taken, and the assumed implementation levels.
- Recycling and reuse can be expanded to meet future demand, reducing the need to develop new supply sources, such as the reallocation of Lake Lanier and Allatoona.

Recent water conservation assessments support our conclusion that the conservation potential identified in the WS Plan is low. For example, the District fails to meet the Georgia Department of Natural Resources' efficiency benchmarks. Moreover, implementation of actual conservation activities appears inadequate to effectively capture potential savings and some anticipated conservation programs have not been implemented.

## **Overview of Water Agencies**

### ***Regional description***

With Senate Bill 130 in 2001, the Georgia legislature created the Metropolitan North Georgia Water Planning District (MNGWPD) (hereafter the District) to address water resource management planning in the metropolitan Atlanta area. As described on the District's website: "The general purposes of the District are to establish policy, create plans, and promote intergovernmental coordination for all water issues in the district; to facilitate multi-jurisdictional water related projects; and to enhance access to funding for water related projects among local governments in the District area."<sup>2</sup>

The District is located in northwest Georgia. Sixteen counties surrounding metropolitan Atlanta lie within the boundaries of the District, including Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Fulton, Forsyth, Gwinnett, Hall, Henry,

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<sup>2</sup> <http://www.northgeorgiawater.org/>

Paulding, Rockdale and Walton Counties. The District is situated within the upstream headwaters of five river basins: Chattahoochee, Etowah, Flint, Oconee, and Ocmulgee.

The population of the sixteen counties within the District in 2000 was 4.0 million, roughly half of Georgia's total population. The District is composed of both rural and urban counties; for example, Fulton County, which includes Atlanta, has a population of over 800,000 and a density greater than 1,500 people per square mile, while Walton County has a population of only 60,000 and a density of less than 200 people per square mile. Between 1990 and 2000, the overall population of the counties within the District grew at an average rate of 3.3 percent per year, with significant differences among the counties.<sup>3</sup>

The counties within the District experienced large growth in employment between 1991 and 2000. Total employment in these counties was 2.1 million in 2000, up from a low of 1.4 million in 1991. Since 2000, however, employment has been stable.<sup>4</sup> The service industry is the largest and fastest growing sector. Employment in the service industry was 1.8 million, an increase of over 50 percent since 1990. Non-service industries (manufacturing, natural resources/mining, and construction) employed only 305,000 people in 2001. Manufacturing and natural resources/mining were among the slowest growing industries in the region between 1990 and 2001.<sup>5</sup>

Agriculture is practiced throughout the District, although it is not the dominant industry. Over 500,000 acres were in farms in 2002, and less than one percent of those farms were irrigated. Field crops are the dominant crop type.<sup>6</sup>

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<sup>3</sup> United States Census. 1990. 1990 Summary Tape File 1 (STF 1) - 100-Percent data.  
[http://factfinder.census.gov/servlet/GCTSubjectShowTablesServlet?\\_lang=en&\\_ts=147270827615](http://factfinder.census.gov/servlet/GCTSubjectShowTablesServlet?_lang=en&_ts=147270827615)  
United States Census. 2000. Population, Housing Units, Area, and Density: 2000.  
<http://www.census.gov/census2000/states/ga.html>

<sup>4</sup> The University of Georgia. 2004. Georgia Statistics System: Analysis of Employment Changes.  
<http://www.georgiastats.uga.edu>

<sup>5</sup> The University of Georgia. 2004. Georgia Statistics System: Analysis of Employment Changes.  
<http://www.georgiastats.uga.edu>

<sup>6</sup> United States Department of Agriculture. 2002. 2002 Census of Agriculture.  
<http://www.nass.usda.gov/census/>

### ***Regional Water Agency Description***

The organizational structure of the District includes a governing board (the Board), technical coordinating committee, and basin advisory councils. The 27-member Board has representatives from each county in the District as well as members appointed by the governor. The technical coordinating committee (TCC) is comprised of water and wastewater officials who provide technical expertise on water, wastewater, and stormwater management. The basin advisory councils (BACs) “provide support to the Board by supplying stakeholder and public input in the course of the water planning process” as well as “advise on the implementation of policy, the development of minimum standards, and the content of the plans.”<sup>7</sup>

The District is strictly a planning body without regulatory authority. With the assistance of the TCC and BACs, the District develops resource management plans and designs model ordinances. “Once the plans are developed, the Director of the Environmental Protection Division of the Department of Natural Resources will be responsible for ensuring that local governments implement the water plans.”<sup>8</sup> Governments who do not implement the plans may have their current permits for water withdrawal, wastewater capacity, or National Pollutant Discharge Elimination System (NPDES) stormwater permits frozen.<sup>9</sup> Governments that do not “substantially” adopt model ordinances may be ineligible for state grants and loans for stormwater-related projects.<sup>10</sup>

As required in Georgia Senate Bill 130, the District produced a Water Supply and Water Conservation Management (WS) Plan in 2003. Prior to the WS Plan, the Atlanta Regional Commission (ARC) prepared the Atlanta Regional Water Supply Plan, which assessed the current and future water use of 13 of the 16 counties in the District. The ARC has not updated this plan since 1997 and now cites future water use estimates based

<sup>7</sup> Metropolitan North Georgia Water Planning District. 2001. Activities and Progress Report 2001. <http://www.northgeorgiawater.org/pdfs/2001progressrpt.pdf>

<sup>8</sup> [http://www.northgeorgiawater.org/pdfs/Newsletters/waterresource\\_VOL1.pdf](http://www.northgeorgiawater.org/pdfs/Newsletters/waterresource_VOL1.pdf)

<sup>9</sup> There are no reported cases of actions taken against local governments for failing to implement the District plans.

<sup>10</sup> Metropolitan North Georgia Water Planning District. Undated. About the District: Background. <http://www.northgeorgiawater.org/>

on the WS Plan. Thus the WS Plan has become the primary water-planning document in the region.

The WS Plan projects substantial increases in 2030 water demand, rising from 650 MGD in 2001 to 1,080 MGD in 2030. This projection is based on population projections, current water use, and modeled conservation potential. To meet the anticipated demand, the District concludes it will require additional supply:

“All of the District’s existing permitted surface and groundwater sources, plus currently planned reservoirs will supply up to 1,047 AADD-MGD. However, this yield is not secure. The reallocation of water storage at Lakes Lanier and Allatoona must be implemented to assure that dependable water supplies will be available to the District.”<sup>11</sup>

Our analysis, however, reveals that the WS Plan may significantly overestimate future regional demand for water and underestimate the potential for cost-effective demand management. Overestimating demand is not unusual; in fact, it is very common. Planners tend to rely on simplistic assumptions about future demand based on fairly constant water-intensity projections and population growth. In addition, risk aversion drives planners to emphasize supply and adopt conservative estimates about the potential for demand management. While overestimating demand is perceived as a “safer” choice, it can lead to unnecessary infrastructure investments in infrastructure and harm to downstream users and the environment. The demand projections for the District are discussed in greater detail below.

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<sup>11</sup> Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Plan. Pp. 6-1.

## Population Review

### *Population Projections*

Future water demand and use depend on many factors. One of the most important and influential is the size of the population to be served. Because official Regional Development Commission (RDC)-derived population projections were not available to meet the WS Plan deadline, the District developed interim projections for two scenarios: a moderate- and a high-growth future.

The District developed population projections for the moderate-growth scenario based on national population projections, historical data, and land-use information. The District's future share of the US population was calculated according to a linear regression of the District's historical share of the US population between 1950-2000. The District's share of the population was then multiplied by the national population projection from Woods and Poole to obtain the District's future population. The District population was divided among the 16 counties based on historical growth rates. Land-use information from the ARC and comprehensive land-use plans placed an upper bound on the population for each county. Projected populations that exceeded the upper bound were shifted to less-developed counties. The ARC and other RDCs provided input on the final results.

Based on the method outlined above, the District's 2030 population is projected to reach 6.8 million in the moderate-growth scenario. Population in the high-growth scenario was simply defined as 15 percent greater than that in the moderate-growth scenario, or 7.8 million. This corresponds to average annual growth rates of 1.8 and 2.3 percent in the moderate- and high-growth scenarios, respectively. "To conservatively plan for District water supplies"<sup>12</sup> **the MNGWPD used the high-growth scenario for all water demand projections in the WS Plan.**

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<sup>12</sup> Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. p. 4-1.

### ***Analysis and Review of Population Projections***

Our analysis suggests that the population assumptions in the WS Plan are significantly higher than are likely to materialize and that this assumption alone has a large influence on future water demand projections. This suggests the need for a re-evaluation with another, more realistic population projection. In April 2005, the U.S. Census Bureau released population projections for the State of Georgia. According to the U.S. Census, Georgia's population was 8.2 million in 2000 and is projected to reach 12.0 million by 2030, an increase of 3.8 million. The WS plan, however, claims that population in the 16-county Atlanta region alone will increase by 3.8 million between 2000 and 2030. Thus the growth projected in the WS plan for this one region is the same as is projected by the U.S. Census Bureau for the entire state of Georgia. While Atlanta is one of the fastest growing metropolitan areas in the United States, counties outside of the Atlanta region are also experiencing growth;<sup>13</sup> counties outside of the District grew at an annual average rate of 1.5 percent between 1990 and 2000.<sup>14</sup> Thus, the U.S. Census Bureau estimate for the Atlanta region is likely to be significantly lower than 3.8 million in 2030.

As described above, the District developed interim projections for the WS Plan because official RDCs, such as the ARC, had not yet released their population projections. The ARC has since completed its projections.<sup>15</sup> The ARC projects that the population in the 13-county Atlanta Region will reach 6 million in 2030, a 62 percent increase over the 2000 population. There is a slight difference between the areas covered in the ARC and District projections; the ARC estimate covers 13 of the 16 counties in the District. In 2000, approximately 275,000 people lived in the three counties not included in the ARC projections. Assuming that these counties grow at the same rate as projected in the 13-county ARC region (~62 percent), then the population of these three counties in 2030 would be approximately 450,000. Thus according to the ARC, the population of the 16-

<sup>13</sup> University of Georgia. 2001. Georgia County Historical Population Profiles Website. <http://www.cviog.uga.edu/Projects/gainfo/countypop/>

<sup>14</sup> United States Census. 1990. 1990 Summary Tape File 1 (STF 1) - 100-Percent data. [http://factfinder.census.gov/servlet/GCTSubjectShowTablesServlet?\\_lang=en&\\_ts=147270827615](http://factfinder.census.gov/servlet/GCTSubjectShowTablesServlet?_lang=en&_ts=147270827615)  
United States Census. 2000. Population, Housing Units, Area, and Density: 2000. <http://www.census.gov/census2000/states/ga.html>

<sup>15</sup> Atlanta Regional Commission. 2004. Population and Employment Forecasts: 2000-2030. <http://www.atlantaregional.com/regionaldata/forecastreport.pdf>

county metropolitan Atlanta area would be 6.5 million in 2030. This projection is much lower than District's high projection of 8 million, and around 300,000 people lower than the moderate projection of 6.8 million (Figure 1). Because future water demand in the District is based on the high-growth population scenario, the results of the ARC study also suggest that the WS Plan overestimates 2030 water demand.

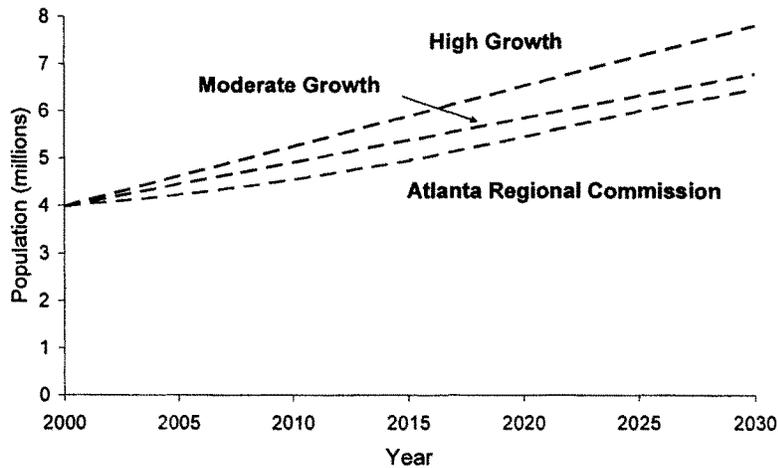


Figure 1. District population projections in the high- and moderate-growth scenarios. The Atlanta Regional Commission's population projection, expanded to include all 16 counties, is also shown.

## Water Review

### *Water Resources*

Although parts of Georgia receive up to 50 inches of precipitation per year, adequate water supply has been an issue of concern in the metropolitan Atlanta area, particularly during prolonged droughts. This is in part due to the physical location of the region. Because the District lies in a region characterized by "fractured rock geology, with relatively unreliable and unproductive groundwater aquifers," groundwater wells tend to

be low yielding.<sup>16</sup> Further exploration, however, may identify high-yielding wells.<sup>17</sup> Currently groundwater supplies are relatively small, while surface water supplies over 99 percent of the District's water supply. The metropolitan Atlanta area, however, is located in the upper reaches of the river basin, where "there is less water available for withdrawal and use than in areas further downstream. The same vulnerability exists with respect to reservoir storage as well...it takes a longer time to collect and accumulate water for storage."<sup>18</sup>

The total developed water supply in the District is 933 million gallons per day (MGD), of which approximately 652 MGD is supplied to customers. The largest supply sources are Lake Allatoona and the Chattahoochee River system, which includes Lake Lanier.

Interbasin transfers are "a key element in supplying water throughout the District; there are water supply and wastewater transfers into and out of every basin in the District."<sup>19</sup> Interconnections provide a number of benefits, including improved reliability and protection in the event of an emergency. Interconnections also allow development in regions without an adequate local water supply. The Chattahoochee basin is the largest supplier, transferring nearly 157 MGD of water to other basins. While interbasin transfers are common throughout the District, there is some concern about these transfers; specifically that Atlanta will take water to benefit itself while harming other parts of the state. Because of this concern, the Georgia Board of Natural Resources (DNR) recommended passage of legislation prohibiting long-distance interbasin transfers (long-distance meaning crosses more than 2 counties) except in emergencies. Existing transfers would be grandfathered, as altering the current water and wastewater infrastructure would be expensive.<sup>20</sup>

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<sup>16</sup> Georgia Board of Natural Resources. 2001. Water Issues White Paper. p. 38

<sup>17</sup> Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. Pp. 6-16.

<sup>18</sup> Georgia Board of Natural Resources. 2001. Water Issues White Paper. p. 38

<sup>19</sup> Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. p. 3-5.

<sup>20</sup> Georgia Department of Natural Resources. 2001. Water Issues White Paper. p. 14.

**Current (2001) Total Water Use**

Current (2001) potable water use in the District is approximately 652 MGD on an average annual daily basis. Water use can be divided into the following four categories (with the percent of total use in parentheses): single-family (43 percent), multi-family (12 percent), commercial, industrial, and institutional (27 percent), and unaccounted-for-water (18 percent).<sup>21</sup> Unaccounted-for-water (UFW) includes water that does not go through a meter, i.e., water loss due to system leakage, hydrant flushing, and unmetered connections. These figures are consistent with ARC's water-supply study completed in 1997.<sup>22</sup> For residential water use, 79 percent is used indoor and 21 percent is used outdoor. For non-residential water use, 69 percent is used indoor and 31 percent is seasonal.<sup>23</sup>

The District practices both potable and non-potable reuse. Reclaimed water, however, is only a minor component of the District's water supply. In 2001, non-potable reuse accounted for only one percent of the wastewater treatment capacity.<sup>24</sup> This water meets golf course and limited urban irrigation needs as well as industrial process needs.

Potable reuse is both incidental and indirect. Incidental reuse occurs where wastewater effluent is discharged upstream of a water-intake system. This occurs widely throughout the United States. Indirect potable reuse occurs when treated wastewater is discharged into a lake or reservoir, such as Lakes Allatoona and Lanier, which provides water to be treated for future potable use. In some cases, land application of wastewater percolates through the soil and recharges the potable water supply. Currently five percent of the wastewater treatment capacity is subject to land application and some fraction of this is reused. Estimates of total indirect and incidental potable reuse were not provided in the District's Wastewater Management Plan.

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<sup>21</sup> Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. p. 4-8.

<sup>22</sup> Atlanta Regional Commission. 1997. Regional Water Supply Plan.  
<http://www.atlantaregional.com/water/supplyplan.html>

<sup>23</sup> Calculated based on Metropolitan North Georgia Water Planning District. 2003. Task 6. Pp. 6.

<sup>24</sup> Metropolitan North Georgia Water Planning District. 2003. Long-Term Wastewater Management Plan. Pp. 3-3.

**Box 1: Consumptive vs. Non-consumptive Water Use**

The water literature is rife with confusing and often misleading terminology to describe water use, e.g. water withdrawal, consumptive use, non-consumptive use, etc. It is important, however, to clarify these terms, as different meanings can lead to different or conflicting conclusions about the water conservation potential. To be clear, water withdrawals refer to water taken from a source and used for human needs. These withdrawals can be divided into two water-use categories: consumptive and non-consumptive. Consumptive use is sometimes referred to as irretrievable or irrecoverable loss. According to Gleick (2003), "The term *consumptive use* or *consumption* typically refers to water withdrawn from a source and made unavailable for reuse in the same basin, such as through conversion to steam, losses to evaporation, seepage to a saline sink, or contamination." Additionally, water that is incorporated into products or plant and animal tissue is typically exported out of the basin of origin, and thus is also a consumptive use.

Throughout the world, agriculture is the largest consumer of water. In 1995, for example, agriculture in the United States consumed 60 percent of the water withdrawn for its use and accounted for nearly 85 percent of total consumptive water use. Irrigation water is consumed via a number of processes, including evaporation from the soil and plant surfaces, plant transpiration, animal consumption, the production of food and fiber (and subsequent export out of the basin), and deep percolation to groundwater. By contrast, domestic-commercial and industrial-mining purposes consumed 19 percent and 15 percent, respectively, of the water withdrawn for its use (Solley et al. 1998).

Confusion about consumptive and non-consumptive water use has led many planners to underestimate the value of conserving non-consumptive water use and, consequently, the water-conservation potential. Many water planners believe that conservation measures that produce savings in non-consumptive water uses are less important than that from consumptive water uses. They argue that water that is used non-consumptively is available for reuse by downstream users and thus conserving this water does not produce any new water. These planners, however, fail to realize that *any* demand reductions reduce the amount of water taken from ecosystems and the need for new infrastructure investments to capture, treat, and distribute water. All reductions in water withdrawals maximize the amount of water left in the natural environment, providing benefits to downstream water quality, the environment, recreational uses, and even upstream use.

## Sources:

Gleick, P.H. 2003. Water Use. *Annu. Rev. Environ. Resour.* Vol 28: 275-314.

Solley, W.B., R.R. Pierce, and H.A. Perlman. 1998. Estimated Use of Water in the United States in 1995. United States Geological Survey. USGS National Circular 1200.

### Current (2001) Per-Capita Water Use

The total per-capita water use in the District, which includes publicly and self-supplied water and unaccounted-for-water, ranges from 95 gallons per capita per day (gpcd) in Paulding County to 254 gpcd in Bartow County and averaged 168 gpcd in 2001.<sup>25</sup> Single-family residential water use averaged 91 gpcd (70 and 21 gpcd for indoor and outdoor water use, respectively). Multi-family residential water use was 75 gpcd (65 and 11 gpcd for indoor and outdoor water use, respectively). Commercial, industrial, and institutional water use (typically measured and reported as gallons per employee per day) was 97 gped (70 gped for indoor use and 27 gped for seasonal use) (Figure 2).

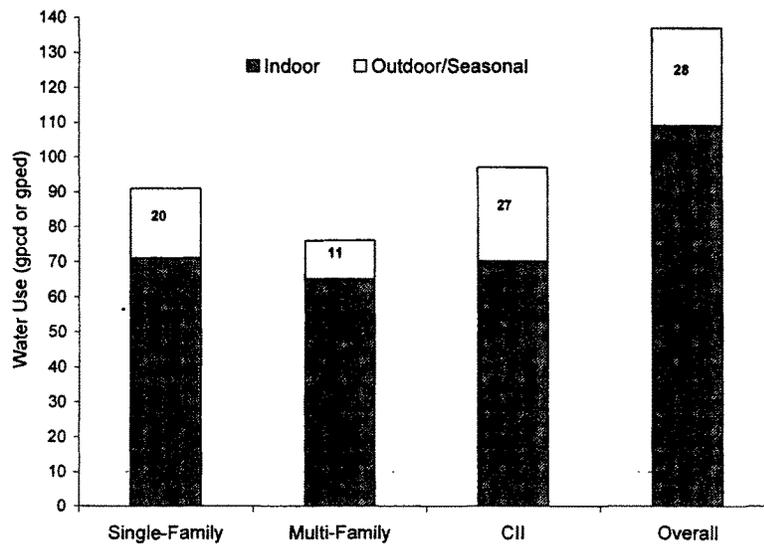


Figure 2: 2001 Per-capita (gpcd) and Per-Employee (gped) Water Use in the District. The water-use estimates for the single-family and multi-family residential and commercial, industrial, and institutional (CII) sectors are based on publicly supplied water. The overall estimate includes both publicly and self-supplied water, but does not include unaccounted-for-water.

<sup>25</sup> Metropolitan North Georgia Water Planning District. 2003. Pp. 4-12.

### ***Current Conservation Programs and Policies***

Water conservation and efficiency programs typically take two forms: programs to reduce water use without reducing services by improving efficiency and reducing waste (such as installing high-efficiency appliances); and short-term emergency measures that cut services (such as restrictions on lawn watering or car washing during droughts). The focus of this analysis is on the former – measures to improve water-efficiency and reduce waste.

Table 1 summarizes the District conservation programs and policies as of 2001. Conservation efforts range from fair to poor. Half of the local districts lack conservation programs altogether. Those districts with conservation programs emphasize school and public education, and only one district (City of Atlanta) distributes low-flow fixtures. Rate structures that encourage water use, such as uniform and declining block rate structures, are still used throughout the District. In addition, the reported rates of unaccounted for water (UFW) are high, ranging from one to 25 percent and averaging 18 percent. One district reports a UFW of over 80 percent due to frequent flushing of a new distribution system. The standard for UFW recommended by the American Water Works Association is typically 10 percent.<sup>26</sup> These data, and other data described below, suggest that significant untapped conservation potential exists in many different forms.

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<sup>26</sup> American Water Works Association. 1996. "Committee Report: Water Accountability." *Journal of the American Water Works Association*, 88(7): 108-111.

Table 1. District Conservation Programs and Policies in 2001.

County	Entity	Year	Percent UFW	Water Rate Type (gpm)	Other Conservation Programs	Conservation Pricing Structure
Bartow	Bartow County	2001	22.7%	Uniform	Xeriscape, School Education, WTP Tours	NA
	City of Cartersville	2001	8.9%	Uniform	Xeriscape, WTP Tours	Rate Study Underway
	City of Riverdale	1995	3.0%	Uniform (≤3000), Inclining Block (>3000)	NA	NA
Clayton	Clayton County	2000	10.0%	Uniform, Base	WTP Tours, School Education, Public Education	NA
	Cherokee County	1999	16.8%	Uniform (≤10,000), Inclining Block (>10,000)	School Education, Support WaterSmart, WTP Tours, Public Education	Summer surcharge
Cherokee	City of Ball Ground	2001	25.0%	Uniform	NA	NA
	City of Canton	1995	12.0%	Declining Block	NA	Considering summer surcharge
	Lake Arrowhead	NA	NA	Uniform (≤5000), Inclining Block (>5000)	Education, Xeriscape	NA
	City of Waleska	1995	16.0%	Uniform (≤2000), Declining Block (>2000)	NA	NA
	City of Woodstock	NA	NA	Uniform (≤1000), Inclining Block (>1000)	NA	NA
	City of Holly Springs	1996	NA	Uniform (≤2000), Inclining Block (>2000)	NA	NA
Cobb	City of Austell	2000	11.1%	Uniform	NA	Summer surcharge
	City of Smyrna	NA	NA	Uniform	NA	Summer surcharge
	City of Powder Springs	NA	NA	Uniform	NA	NA
	City of Marietta	1995	13.0%	Uniform	NA	NA
	City of Kennesaw	NA	NA	Uniform	NA	Summer surcharge

County	Entity	Year	Percent UFW	Water Rate Type (gpm)	Other Conservation Programs	Conservation Pricing Structure
Cobb cont.	Cobb County-Marietta Water Authority	2000	3.0%	Uniform	WaterSmart Campaign, School Education	Summer surcharge
	Cobb County	1995	13.0%	Uniform	NA	Summer surcharge
Coweta	City of Newman	1994	8.8%	Declining Block	School Education	NA
	City of Senoia	2001	3.0%	Base, Uniform	NA	NA
DeKalb	Coweta County	2000	1.0%	Inclining Block	School Education	NA
	DeKalb County	2000	14.8%	Uniform	Xeriscape, School Education	NA
Douglas	Douglasville-Douglas County	1999/2000	9.3%	Uniform	Xeriscape, Public Education, School Education	Surcharge rate above base rate
Fayette	Fayette County	2001	11.3%	Base (<=2000), Uniform (>2000)	Xeriscape, Public Education	NA
	City of Fayetteville	2001	9.0%	Base (<=2000), Uniform (>2000)	School Education, WTP Tours	NA
Forsyth	City of Brooks	2001	NA	Inclining Block	NA	NA
	City of Cumming	1997	18.1%	Uniform	Xeriscape, WTP Tours, Public, School Education	NA
Fulton	Forsyth County	2000	8.2%	Uniform	School Education, Public Education	NA
	City of Atlanta	2000	14.3%	Uniform	Xeriscape, Care and Conserve, Low Flow Fixtures Distribution, School Education, Public Education, Videos/PSA's, Leak Repair, Multi-family owner training	NA
Fulton	City of East Point	1996	NA	Inclining Block	Newsletter	NA
	Union City	1996	3.0%	Base Rate + Uniform	NA	NA

County	Entity	Year	Percent UFW	Water Rate Type (gpm)	Other Conservation Programs	Conservation Pricing Structure
Fulton cont.	City of Roswell	2000	12.0%	Base (<4500), Uniform (>4500), Cons. Rate (>24,000)	Public Education, Xeriscape, Enforcement Team	NA
	City of Palmetto	2001	14.2%	Base (<2000), Uniform (>2000)	NA	NA
	City of Mountain Park	2001	9.8%	Base, Uniform	Newsletter	NA
	City of Hapeville	NA	NA	Base (<2000), Declining Block (>2000)	Newsletter	NA
	City of Fairburn	NA	NA	Declining Block	NA	NA
	City of College Park	1996	11.0%	Base (<3000), Uniform (>3000)	NA	NA
Gwinnett	Fulton County	2001	10.0%	Uniform	Xeriscape, Public Education, Bill Inserts, Website, Publications	NA
	City of Alpharetta	NA	NA	NA	School Education	NA
	City of Buford	2000	13.5%	Base (<4000), Uniform (>4000)	NA	NA
	Gwinnett County	1999	16.4%	Uniform	Xeriscape, School Education	Summer surcharge
	City of Suwanee	NA	NA	Base (<3000), Inclining Block (>3000)	NA	NA
	City of Norcross	1995	6.0%	Uniform	NA	NA
Hall	City of Lawrenceville	1996	16.0%	Uniform	NA	NA
	City of Gainesville	1999	13.9%	Base, Uniform	WTP Tours, School Education, Public Education	NA
Henry	Hall County	1999	80.8%	Base, Uniform	Tied to Gainesville programs	NA
	Henry County	1998	23.8%	Declining Block	WTP Tours, School Education, Public Information, Recycle Water at Public Pools, Pamphlets	NA
	City of Stockbridge	NA	NA	Declining Block	NA	NA

County	Entity	Year	Percent UFW	Water Rate Type (gpm)	Other Conservation Programs	Conservation Pricing Structure
Henry cont.	City of Locust Grove	1995	NA	Base (≤2000), Inclining Block (>2000)	NA	NA
	City of Hampton	NA	NA	Base (≤3000), Uniform (>3000)	NA	NA
	City of McDonough	2001	14.3%	NA	NA	NA
Paulding	Paulding County	2001	14.0%	Base (≤2000), Uniform (>2000)	Xeriscape	NA
	Rockdale County	1998	17.0%	Inclining Block	NA	NA
Walton	Walton County	NA	NA	NA	NA	NA
	City of Monroe	2000	16.2%	Declining Block	Public Education, Xeriscape, Bill Inserts	NA
	City of Social Circle	2001	13.0%	Base (≤2000), Uniform (>2000)	NA	NA

Note:

gpm: gallons per minute

NA: Data not available

UFW: Unaccounted-for-water

WTP: Water treatment plant

Source: Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. p. 5-1 to 5-4.

## Water Use Projections

In the WS Plan, the conservation potential was evaluated using the Demand Side Management Least-Cost Planning Decision Support System (DSS) model (Maddaus Water Management 2003). The DSS model is an end-use model that employs a cost-benefit analysis to assess conservation measures from a utility perspective. An initial set of 100 conservation measures was screened based on qualitative criteria: technology/market maturity, service area match, customer acceptance/equity, and if better measures are available. Nearly half of the measures passed the initial screening process. Measures that could be managed as one program were combined to produce a final set of 25 measures. The DSS model was then used to individually evaluate these 25 measures, and the measures were ranked on the cost of the water saved. Conservation measures were combined to form three programs (A, B, and C) with increasing levels of water savings. The programs are briefly described below:

- **Program A** includes measures considered the most cost-effective and is a small increase from current efforts. It includes three measures, Public Education, Unaccounted for Water Reduction (where needed), and Residential Retrofit.
- **Program B** includes Program A measures plus a few additional measures. It was designed to be the midpoint, and generally consisted of 10 measures, all relatively cost effective, but less aggressive, yet still able to save significant amounts of water.
- **Program C** includes 20 measures [described by the Plan as a practical limit for conservation program managers to handle at one time], including all Program A measures and most Program B measures, plus additional measures. Measures that either saved a small amount of water or were not cost-effective (benefit-cost ratio less than 1.0 and a high cost of water saved) were eliminated. Aggressive regulatory measures are included.<sup>27</sup>

Table 2 shows the estimated savings for each of the option programs. The “no conservation” option, roughly based on multiplying current per-capita demand by the projected future

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<sup>27</sup> Metropolitan North Georgia Water Management District. 2003. Water Supply and Water Conservation Management Plan.

population, results in a 2030 demand of 1299 MGD.<sup>28</sup> Continued implementation of existing state and federal plumbing codes would reduce 2030 water demand to 1,199 MGD and per-capita demand to 154 gpcd, an eight-percent reduction over projected demand without the “no conservation” option. Programs A and B would reduce demand an additional four and 10 percent, respectively, below the demand with the plumbing codes alone. The most comprehensive package evaluated, Program C, was estimated to reduce per-capita demand to 137 gpcd, 11 percent less than demand with the plumbing codes alone.

Additional cost-effective conservation savings have been identified in other water-conservation analyses.<sup>29</sup> These are discussed further below, following review of the conservation assessment used in the WS Plan.

Table 2. Estimated Water Savings for Each of the Option Programs in the WS Plan.

	2030 Water Savings (MGD)	2030 Water Use (MGD)	Per Capita Use (gpcd)	2030 Reduction Below Baseline	Cost of Water Saved (\$/MG)	Water Utility Benefit-Cost Ratio
<b>No Conservation</b>		1,299	168			
<b>Plumbing Codes (Baseline)</b>		1,199	154		0	
<b>Package A</b>	52	1,147	147	4.3%	326	2.9
<b>Package B</b>	118	1,081	139	9.8%	199	4.8
<b>Package C</b>	132	1,067	137	11.0%	212	4.5

Source: Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. p. 5-15.

All three of the programs assessed in the WS Plan are highly cost-effective, and the cost of the water saved is relatively cheap. Program B is the most cost-effective, with a water utility cost-benefit ratio of 4.8. The cost of the water saved ranges from \$199/MG (\$65/AF) in Program B to

<sup>28</sup> We note that water withdrawals for the MNGWPD are from a number of basins, including the Apalachicola-Chattahoochee-Flint (ACF) basin. Additionally, there are withdrawals from the ACF basin that are from users outside of the MNGWPD.

<sup>29</sup> Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California.” Pacific Institute for Studies in Development, Environment, and Security. See also, Mayer, P.W. et al. 1999. Residential End Uses of Water. AWWA Research Foundation. Denver, Colorado.

\$326/MG (\$106/AF) in Program A.<sup>30</sup> This is supported by a conclusion in a recent Pacific Institute report that “it is much cheaper to conserve water and encourage efficiency ... than to build new water supplies or even, in some cases, expand existing ones.”<sup>31</sup>

Figure 3 shows the effect of each of the option programs on 2030 demand. With the projected population growth of 95 percent and implementation of the plumbing codes, 2030 water demand would be 1,199 MGD, or 84 percent higher than 2000 demand. With the implementation of Program C, however, 2030 water demand would be 1,067 MGD, or 64 percent higher than 2000 demand. Note that each subsequent program contains the conservation measures from the preceding program, i.e., Program B includes the plumbing codes plus the measures in Programs A and B. Likewise, Program C includes the plumbing codes plus the measures in Programs A, B, and C.

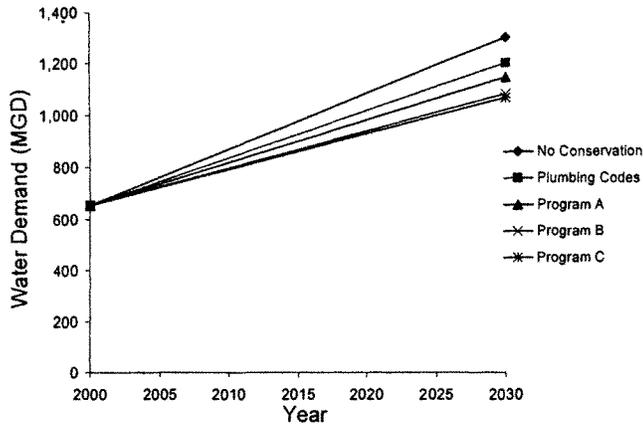


Figure 3: Projected Water Demand Under Each of the Conservation Option Programs in the WS Plan, assuming the High Growth Scenario.

<sup>30</sup> The cost of the water saved for Program B is less expensive than Program A, because two measures included in Program B, conservation pricing and retrofit-on-resale, save a significant amount of water at a low cost. These highly cost-effective measures are not included in Program A because this program is intended to represent minor increases over current efforts.

<sup>31</sup> Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California.” Pacific Institute for Studies in Development, Environment, and Security. Pp. 117.

The District adopted Program B as the recommended program, even though Program C is still cost-effective and includes a broader set of savings. Program B contains the following measures:

- Retrofit kits for older residences (both single-family and multi-family) that include low-flow showerheads, toilet leak detection dye tablets, displacement device or early closure device, faucet aerators, faucet washers, and pamphlets
- Increased public education
- System water audits/leak detection
- Conservation pricing
- Residential water audits to high-users
- 0.5 gal flush urinals in new commercial construction and remodels requiring a building permit
- Commercial water audits
- Rain-sensor/shut-offs on new developments with automatic irrigation systems and rebates for old systems
- Incentives for sub-metering on existing apartments and required sub-meters on new MF units
- Retrofit on resale for single-family and multi-family homes

Under Program B, projected 2030 water demand is 1,081 MGD, with a per-capita demand of 139 gpcd. This represents a 10 percent reduction over demand with plumbing codes alone. Three measures provide the majority of water savings (with the percent of total savings listed in parentheses): system leak reduction (35 percent), conservation pricing (24 percent), and retrofit on resale (20 percent).

Adoption of Program C would reduce 2030 demand to 1,067 MGD and per-capita demand to 137 gpcd, 11 percent below demand with plumbing codes alone. Program C contains all of the measures in Program B, plus nine additional measures. All nine measures, which include cooling tower meters and irrigation audits of large turf areas, are designed to reduce demand in the commercial, industrial, and institutional sector.

## **Analysis and Review of the District's Conservation Potential**

Our society, economy, and environment use water for a variety of purposes. For the most part, however, we do not want water; we want the services that water provides, i.e., clean clothes and dishes and healthy lawns, etc. Many of these services, however, can be accomplished with substantially less water than is currently used, a concept that lies at the heart of water conservation and efficiency. The term *water conservation and efficiency* refers to actions and technologies that reduce water use without compromising services. Conservation and efficiency measures can be either short- or long-term. Most conservation programs established by water utilities, as well as the programs assessed in the WS Plan, however, are based on long-term measures that save water over the lifetime of the device or action. Additional short-term, temporary measures, such as outdoor watering moratoriums, can also be employed to reduce demand during severe droughts or water-supply interruptions. These additional, temporary measures are not reviewed here.

This section reviews and analyzes the long-term conservation potential in the District. Our analysis indicates that official projections of water savings are likely to significantly underestimate the District's actual conservation potential. Recent water conservation assessments indicate that the conservation potential identified in the WS Plan is low. For example, the District already fails to meet the Georgia Department of Natural Resources' efficiency benchmarks, described in more detail below. Moreover, implementation of actual conservation activities appears inadequate to effectively capture potential savings.

### ***Efficiency Benchmarks***

Benchmarks provide a standard by which water-management efforts can be compared or judged. In May of 2004, the Georgia Department of Natural Resources (DNR) issued efficiency benchmarks to serve as a guide for water utilities, which stated:

“Benchmarks help water users measure their relative water use efficiency and to judge whether improvements could be made to save water. Water efficiency benchmarks are a

direct, simple and practical measurement tool for the public, private sector, government, and the media to understand what is efficient water use and what is wasteful water use.”<sup>32</sup>

According to these benchmarks, efficient indoor water use is between 50 and 70 gpcd for single-family users and 50 to 60 gpcd for multi-family users; efficient outdoor watering is 15 gpcd; and system UFW should not exceed 10 percent. Thus, a target of around 100 gallons per capita per day is considered minimally efficient use. This is comparable to the level determined to be moderately efficient for users in other parts of the United States as well, though these analyses also identified considerable improvement potential, as noted below.<sup>33</sup>

While detailed projected 2030 water use in the WS Plan is not reported by sector, a simple analysis enables us to assess whether future per-capita demands achieve the efficiency benchmarks. As described above, the average single-family and multi-family indoor efficiency benchmarks are 60 and 55 gpcd, respectively; the outdoor efficiency benchmark is 15 gpcd. In 2001, single-family water use accounted for 79 percent of residential water use; multi-family water use accounted for the remaining 21 percent of residential use. Thus the weighted average efficient residential water use should be 59 gpcd for indoor uses and 15 gpcd for outdoor uses, for a total residential water use of 74 gpcd (Table 3). Note that because we used the *average* efficiency benchmarks, this is a conservative estimate of efficiency. We also note that most of the savings appear to accrue in the residential sector, even though studies (see below) suggest the potential for substantial commercial and industrial efficiency improvements.

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<sup>32</sup> Georgia Department of Natural Resources. 2004. Water Conservation Program: Water Conservation Plan Guidelines. Pp. 4.

<sup>33</sup> Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California.” Pacific Institute for Studies in Development, Environment, and Security. Also, AWWA WaterWiser. 1997. Residential Water Use Summary – Typical Single Family Home.

Table 3: Indoor, Outdoor, and Total Efficiency Benchmarks for the Residential Sector.

	2001 Water Use (MGD)	Percent of Residential Use	Indoor Benchmark (gpcd)	Outdoor Benchmark (gpcd)	Residential Benchmark (gpcd)
<b>Single-Family Residential</b>	280.4	0.79	60	15	75
<b>Multi-Family Residential</b>	78.2	0.21	55	15	65
<b>Weighted Average</b>			<b>59</b>	<b>15</b>	<b>74</b>

Projected 2030 demand in the WS Plan with implementation of Programs B and C does not achieve the efficiency benchmarks established by the DNR. If we assume that the District reduces UFW to 15 percent, as outlined in Program B, then the proportion of water use in the other sectors will increase slightly. For example, residential water use will account for 57 percent of total District water use in 2030, compared to 55 percent in 2001 (Table 4). According to the WS Plan, total District water use in 2030 is projected to be 1081 MGD with Program B and 1067 MGD with Program C. The residential sector will account for 57 percent of total use, or 616 MGD and 608 MGD with implementation of Programs B and C, respectively. Using the District population projection of 7.8 million people in 2030, per-capita demand for the residential sector will be 79 gpcd and 78 gpcd with Programs B and C, respectively. As described in the paragraph above, average efficient residential water use should be 74 gpcd. Thus with implementation of Programs B and C, District residences will use seven percent and five percent more water than an average efficient home as established by DNR, respectively. As described below, other studies conclude that conservation can reduce residential water use to levels far below the efficiency benchmarks established by DNR. This suggests that additional conservation potential exists in the residential sector.

Table 4: Per-Capita Demand in 2030 by Sector with Implementation of Programs B and C of the WS Plan.

Sector	Fraction of Water Use		2030 Demand (MGD)		Population 2030	2030 Per Capita Use (gpcd)	
	2001	2030	Program B	Program C		Program B	Program C
Residential	0.55	0.57	616	608	7,805,000	79	78
CII	0.27	0.28	303	299	7,805,000	39	38
UFW	0.18	0.15	162	160	7,805,000	21	21
<b>Total</b>	<b>1</b>	<b>1</b>	<b>1,081</b>	<b>1,067</b>		<b>139</b>	<b>137</b>

In addition, the conservation program in the WS Plan fails to meet the efficiency benchmark for UFW. The WS Plan calls for reducing UFW to 15 percent of water system withdrawals. This is significantly less efficient than the DNR efficiency benchmark, which states that “System unaccounted-for water (water leaks and losses) shall not exceed the state’s current maximum 10% standard.”<sup>34</sup>

### ***Comparison with Other Conservation Studies***

Recent water conservation assessments indicate that the conservation potential identified in the WS Plan is low. For example, a 1997 study by the American Water Works Association found that conservation could reduce indoor water use from 65 gpcd to 45 gpcd for single-family homes, a savings of over 30 percent.<sup>35</sup> The largest reductions were realized by replacing inefficient toilets and clothes washers with more efficient models.

Similarly, a Seattle study found that conservation and efficiency could substantially reduce indoor water use. Installing new, water-efficient fixtures and appliances reduced single-family indoor water use from 64 gpcd to 40 gpcd, a savings of nearly 40 percent, and far below the Atlanta targets. The largest reductions were achieved by installing efficient toilets and clothes washers. Further, homeowners rated the performance, maintenance, and appearance of the efficient appliances higher than the older appliances.<sup>36</sup>

While these studies have quantified the indoor conservation potential, a recent study by the Pacific Institute quantified the conservation potential for *all* urban sectors. The Pacific Institute report, “Waste Not, Want Not: The Potential for Urban Water Conservation in California,” quantified the potential for water conservation and efficiency improvements in California’s urban water use. The report concludes that existing, cost-effective technologies could reduce California’s current (2000) urban water use by 30 percent. The cost-effective savings vary by

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<sup>34</sup> Georgia Department of Natural Resources. 2004. Water Conservation Program: Water Conservation Plan Guidelines.

<sup>35</sup> AWWA WaterWiser. 1997. Residential Water Use Summary – Typical Single Family Home.

<sup>36</sup> Mayer, P.W., W.B. DeOreo, and D.M. Lewis. 2000. Seattle Home Water Conservation Study: The Impacts of High Efficiency Plumbing Fixture Retrofits in Single-Family Homes. Aquacraft, Inc. Water Engineering and Management.

sector: 39 percent savings for residential indoor water use, 33 percent savings for residential outdoor water use, and 26 percent for the CII sector.<sup>37</sup>

Caution must be exercised when applying the outdoor and CII conservation potential estimates to any one location. While indoor water use is fairly consistent across the United States, outdoor and CII water use are strongly influenced by local conditions.<sup>38</sup> Thus the conservation potential for these sectors also varies according to local conditions. For example, golf courses and office buildings use (and can potentially save) substantially more water than dairy or meat processors. Thus the industries present in a given area strongly influence the conservation potential of the CII sector.

While a quantitative assessment of the conservation potential in the CII sector is beyond the scope of this report, we can unquestionably assert that the conservation potential identified in Atlanta's Plan is weak and misses important efficiency opportunities. Few of the WS Plan savings result from programs in the commercial and industrial sector: implementation of Program B will save only 4.4 MGD from the CII sector; 50 percent of the savings is due to water audits and the remaining 50 percent is due to installation of 0.5 gpf urinals in new buildings. Other conservation assessments, however, conclude that the actual conservation potential is substantially higher. The most promising measures are discussed in greater detail below.

### ***Economic Analysis***

The economic analysis used in the WS Plan gives an incomplete and misleading picture of the conservation potential in the District because of the type of analysis employed, the perspective taken, and the assumed implementation levels.

The model used to assess the conservation potential in the WS Plan employs a "cost-benefit" approach to evaluate the conservation potential in the District. A cost-benefit analysis can be

<sup>37</sup> Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California." Pacific Institute for Studies in Development, Environment, and Security.

<sup>38</sup> Mayer, P.W. et al. 1999. Residential End Uses of Water. AWWA Research Foundation. Denver, Colorado.

conducted from a number of perspectives, including the “utility,” “customer,” and “community” perspectives. The perspective determines what costs and benefits are included in the analysis. The utility perspective is based on costs and benefits to the water utility; whereas the community perspective is based on costs and benefits to the water utility *and* customer and can include energy savings, as well as savings from reduced landscape chemical and fertilizer application, less landscape maintenance, and reduced detergent application for dishwashers and washing machines.<sup>39</sup> Environmental benefits from greater instream flows are also likely, although these benefits are difficult to quantify and are rarely included in any economic analyses. When they are included, they typically have the effect of making efficiency and conservation estimates even more economically attractive.

The model used in the WS Plan assesses the economics of the conservation measures and programs based on the utility perspective. Community costs and benefits, which for this analysis includes the customer’s cost for installing and maintaining the water-saving device and energy savings, are discussed secondarily, but are not used to evaluate the measures. The utility perspective is much narrower than either the customer or community perspectives and misses important water-use efficiency cost savings that make many water-efficiency measures substantially cost-effective. The classic example is the high-efficiency clothes washer, which may not save sufficient water at present to cover their higher initial capital costs (although this is increasingly less true, as their costs come down). Water utilities therefore often view them as inappropriate for water conservation programs. Yet they have substantial energy savings as well, which makes them tremendously cost-effective to the consumer.

In addition, the “cost-benefit” approach is not the only way (nor necessarily the best way) to evaluate the “cost-effectiveness” of a measure or program. A cost-benefit (CB) analysis is a technique used to compare the costs and benefits associated with an investment. A CB analysis requires that a monetary value be placed on all costs and benefits, including the outcome. Measures or programs are compared based on the net cost (costs minus benefits) and/or the benefit-cost ratio; measures in which the benefits outweigh the costs are deemed “cost-effective.”

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<sup>39</sup> Vickers, A. 2001. Handbook of Water Use and Conservation. Waterlow Press, Amherst, Massachusetts.

A cost-effectiveness (CE) analysis takes a different approach. A CE analysis is a technique used to compare alternatives and is particularly useful if there are multiple ways of achieving the same outcome or if it is difficult to put a monetary value on that outcome.<sup>40</sup> For each alternative, a ratio of net costs (costs minus benefits) to the outcome achieved in physical terms, e.g., the cost per unit water saved, is determined. The alternatives are then compared to a baseline. For new water-supply projects or demand-management programs, the baseline is typically the avoided cost of building new supply or expanding existing supply. Alternatives that are cheaper than the baseline are deemed “cost-effective.” Thus while a CB analysis seeks to maximize the benefits, a CE analysis identifies all measures that provide water supply benefits at a lesser cost than the avoided cost of building new supply or expanding existing supply.

Adopting a CE approach yields a very different answer about the conservation measures that should be included in an effective conservation program. Table 5 provides the cost of savings per unit volume of water saved according to the WS Plan. We can compare these values with the avoided treated surface water cost of \$1,500/MG to determine those measures that are cost-effective.<sup>41</sup> This comparison suggests that 22 out of 27 measures are cost-effective. Program B, however, includes only 11 measures, excluding a significant number of cost-effective measures.

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<sup>40</sup> International Center for Early Childhood Services. 2001. Cost-Effectiveness Evaluation Methodological Report. <http://www.healthychild.ucla.edu/ICECS/resource/materials/outcomes/costEffectivenessReport.pdf>

<sup>41</sup> Metropolitan North Georgia Water Planning District. 2003. Task 7. Pp.15.

Table 5. Costs, Benefits, and Water Savings of the Conservation Measures Assessed in the WS Plan.

Conservation Measure	Present Value of Water Utility Benefits (\$1000)	Present Value of Total Community Benefits (\$1000)	Present Value of Water Utility Costs (\$1000)	Present Value of Total Community Costs (\$1000)	Water Utility Benefit-Cost Ratio	Total Community Benefit-Cost Ratio	Average Water Savings (MGD)	Cost of Savings per Unit Volume (\$/MG)	Net Utility Benefit (\$1000)
RSF ULFT Retrofit on Resale	142,000	142,000	3,200	4,900	44.9	29.2	12.0	23.26	138,800
RMF ULFT Retrofit on Resale	59,400	59,400	2,300	3,800	26.3	15.7	5.0	40.01	57,200
Residential SF Washer Rebate	8,100	27,200	14,900	25,000	0.5	1.1	0.6	2,165.77	-6,900
Residential Shower Retrofit	37,700	138,000	14,200	14,200	2.7	9.7	3.0	412.06	23,500
Residential Water Audits	25,700	44,700	45,700	55,800	0.6	0.8	2.2	1,804.18	-20,000
Public Information	70,300	135,900	51,800	51,800	1.4	2.6	6.0	765.92	18,500
Multifamily Submetering	40,800	89,600	3,000	40,800	13.6	2.2	3.4	78.07	37,800
Irrigation Controller Rebate	6,400	6,400	10,300	13,900	0.6	0.5	0.6	1,452.42	-4,000
Rain Sensor Regulations	8,000	8,000	3,200	10,000	2.5	0.8	0.8	336.02	4,800
Non RSF Landscape Requirements	15,500	15,500	2,700	27,300	5.7	0.6	1.6	146.14	12,800
Commercial Water Audits	25,200	25,200	11,600	18,300	2.2	1.4	2.2	470.68	13,600
Commercial ULFT Rebates	50,800	50,800	12,500	25,100	4.0	2.0	4.1	273.11	38,200
Commercial Urinal Rebate	27,200	27,200	6,700	13,400	4.1	2.0	2.3	261.07	20,500
Commercial Washer Rebate	7,600	25,000	800	1,200	9.0	21.4	0.6	120.52	6,800
Cooling Tower Meter Rebate	4,700	4,700	1,200	2,500	4.0	1.9	0.4	234.68	3,500
Commercial Kitchen Spray Wash	4,300	9,100	1,600	1,600	2.8	5.8	0.4	393.32	2,800
Hotel & Motel Water Audits	2,500	2,500	2,100	2,600	1.2	1.0	0.2	694.72	400
Capacity Buy-Back for ICI	1,500	1,500	15,500	18,500	0.1	0.1	0.1	10,550.51	-14,000
Rebates for X-Ray Recycling Units	5,900	5,900	1,000	22,500	6.2	0.3	0.5	176.06	4,900
Require Self-Closing Faucets for ICI	16,200	16,200	1,000	10,600	16.8	1.5	1.5	58.15	15,200
Efficient Process Equipment for New ICI	12,500	12,500	3,300	14,300	3.8	0.9	1.1	259.51	9,200
Require 0.5 gpf Urinals for ICI	24,700	24,700	1,000	1,000	25.6	25.6	2.2	38.54	23,700
Irrigation Audits for Large Turf Areas	10,400	10,400	22,800	29,300	0.5	0.4	1.0	1,996.24	-12,400
Xeriscape of Public Areas	300	300	300	900	0.9	0.4	0.0	1,013.53	0
UFW Reduction	296,000	296,000	74,300	74,300	4.0	4.0	29.1	225.76	221,700
Conservation Pricing	198,200	254,000	8,800	8,800	22.4	28.8	20.1	38.81	189,400
Modified Residential Water Audits	8,900	15,500	15,000	18,300	0.6	0.8	0.7	1,832.07	-6,100

In addition, implementation assumptions in the WS Plan appear conservative. Implementation, or market penetration, refers to the number of individuals or households that employ a specific conservation measure and provides an indication of the effectiveness of a conservation program. Table 6 compares the implementation levels assumed in the WS Plan with those adopted by agencies who signed the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation in California. The values adopted in the WS Plan refer to implementation over a 30-year period, while those of the CUWCC are for a 10-year period. Note that implementation levels for audits (commercial, residential, hotel/motel, and large turf areas), clothes washer rebates, and sub-meters in multi-family units assumed in the WS Plan are significantly lower than the CUWCC levels.

Table 6. Comparison of the market penetration of conservation measures for the CUWCC 10-year program and the District 30-year program. Note that market penetration for the measures in the District's 30-year program are, in many cases, lower than those of the CUWCC's 10-year program.

<b>Conservation Measure</b>	<b>Market Penetration by End of Program</b>	<b>CUWCC Market Penetration by End of Program</b>
Clothes washer rebate	12%	20%
Distribute retrofit kits	75% of existing non-low flow	75% of houses constructed pre-1992
Residential water audits	10%	15%
Public education	100%	100%
Submetering multi-family	25% existing, 50% new	100%
Commercial water audits	30% of Top 40%	10%
Commercial toilet/urinal rebates	40%/50% (toilets/urinals)	3%
Hotel/motel water audits	25%	10%
Irrigation audits of large turf areas	Top 25%	audits for 20% of accounts w/mixed use meters; water budgets for 90% w/dedicated meters
System water audits	All for UFW > 10%	100%
Conservation Rates	100%	100%

Market penetration affects the outcome of the economic analysis as well as the projected water savings from each measure. The total cost for each measure is based on incentive or unit costs, annual administrative costs, and a one-time set-up cost. Many of the measures have large set-up cost, moderate administrative costs, and low unit costs. The set-up cost "is for measure design by staff or consultants, any required pilot testing, and preparation of materials that will be used in marketing the measure"<sup>42</sup> and ranges from \$10,000 to \$100,000 for this analysis. The administrative costs include staffing and marketing costs and range from \$2,000 to \$25,000. With low implementation levels, the set-up and administrative costs are divided among a smaller number of units, resulting in a higher unit cost. This effectively increases the cost per unit water saved and lowers the benefit-cost ratio. Low implementation also reduces the water savings for a particular measure or program.

### ***Efficiency Measures***

Table 7 provides a matrix of conservation measures and indicates the range of measures currently available to reduce water use. Highlighted are those measures that were included in Program B, the recommended package. Comparing the available measures with those adopted suggests that significant conservation potential exists beyond what is projected in Program B for both indoor and outdoor use. In addition, recycling and reuse can meet future demand. Below we look at several of the available water-efficiency measures for each sector in greater detail.

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<sup>42</sup> Metropolitan North Georgia Water Planning District. 2003. Task 7. Pp.12.

Table 7: Conservation Measures Water Districts Commonly Use to Reduce Water Demand.  
Those Measures Included in Programs B and C of the WS Plan Are Identified.

Conservation Measure	Sector	Indoor/Outdoor	Included In Program B?	Included In Program C?
Toilet retrofit on resale	Residential	Indoor	X	X
Clothes washer rebate	Residential	Indoor		
Distribute retrofit kits	Residential	Indoor	X	X
Submetering multi-family	Residential	Indoor	X	X
Dishwasher rebate	Residential	Indoor		
Dual-flush toilets	Residential	Indoor		
Toilet rebate	Residential	Indoor		
New home efficiency labeling program	Residential	Indoor		
Retrofit-on-resale	Residential	Indoor		
Irrigation controller rebates	Residential	Outdoor		
Rain sensor regulations	Residential	Outdoor	X	X
Landscape requirements	Residential	Outdoor		X
Turf removal programs	Residential	Outdoor		
Landscape professional/contractor education programs	Residential	Outdoor		
Low water-use plants/xeriscape workshops/education	Residential	Outdoor		
Low water-use garden award	Residential	Outdoor		
Landscape contractor certification program	Residential	Outdoor		
Soil moisture sensor rebate	Residential	Outdoor		
Gray water system education	Residential	Outdoor		
Water waste prohibition	Residential	Outdoor		
Rain barrel catchment	Residential	Outdoor		
Swimming pool and spa covers	Residential/CII	Outdoor		
Water audits	Residential/CII	Indoor/Outdoor	X	X
Capacity buy-back for processing equipment	CII	Indoor		
X-ray water recycling unit rebate	CII	Indoor		
Self-closing faucets in new CII buildings	CII	Indoor		X
Efficient process equipment regulation	CII	Indoor		X
Require 0.5 gpf urinals in new CII	CII	Indoor	X	X
Commercial toilet/urinal rebates	CII	Indoor		X
Clothes washer rebate (coin-op)	CII	Indoor		X
Cooling tower meters	CII	Indoor		X
Restaurant low-flow spray nozzles	CII	Indoor		X
Retrofit of existing car washes	CII	Indoor		
Require new car washes to recycle water	CII	Indoor		
Irrigation audits of large turf areas	CII	Outdoor		X
Xeriscape city/county buildings	CII	Outdoor		
Irrigation controller rebates	CII	Outdoor		
Rain sensor regulations	CII	Outdoor	X	X
Landscape requirements	CII	Outdoor		
Dedicated meters w/ET <sub>0</sub> budget	CII	Outdoor		

Table 7 continued.

Conservation Measure	Sector	Indoor/Outdoor	Included in Program B?	Included in Program C?
Reclaimed water for large turf areas	CII	Outdoor		
Hotel/motel water audits	CII	Indoor/Outdoor		X
Public education	Total System		X	X
Conservation rates	Total System		X	X
System water audits	Total System		X	X
Leak detection	Total System		X	X
Distribution system pressure regulation	Total System			

### Indoor Water Use

The proposed conservation programs miss a number of cost-effective measures for reducing indoor water use in existing homes. An estimated 70 percent of the homes in the District were built prior to 1993 and therefore likely do not meet current plumbing code requirements.<sup>43</sup> Thus rebates may encourage homeowners to replace inefficient appliances with newer, more efficient models, resulting in significant water savings. Utilities throughout the country commonly provide their customers with such rebates. Rebate programs can be expanded to include water-efficient appliances that are not currently required under plumbing codes but have been shown to save significant amounts of water and energy, such as high-efficiency dishwashers and clothes washers, making them cost-effective to consumers.

The programs proposed in the WS Plan also lack measures encouraging efficient water use in new developments. As described in the Water Use Projections section, conservation measures were initially screened based on qualitative criteria. The initial screening process excluded nearly 60 percent of the conservation measures for new residential and commercial developments, such as establishing a new home-efficiency rating system. In regions experiencing high growth rates, such as the District, measures aimed at new developments can play an important role in reducing future water demand.

Similarly, the proposed indoor conservation measures for the CII sector are weak. Program B consists of just two conservation measures for reducing CII indoor water use: audits and a 0.5

<sup>43</sup> Metropolitan North Georgia Water Planning District. 2004. Launching Plans Into Action: Activities and Progress Report.

gpf urinal requirements in new CII buildings. A recent report by the Pacific Institute finds that more comprehensive conservation and efficiency can reduce current annual water use in California's CII sector by 39 percent overall. Savings vary by industry, but are largest for schools, office buildings, golf courses, retail stores, and restaurants. Recirculating cooling towers, x-ray water recycling units, and restaurant pre-rinse spray valves are among a few of the most promising technologies.<sup>44</sup>

For example, the California Urban Water Conservation Council (CUWCC) recently demonstrated the cost-effectiveness of restaurant pre-rinse valves. The CUWCC and participating agencies installed nearly 17,000 restaurant pre-rinse spray valves between October 2002 and December 2003, saving over 2.3 million gallons per day (2,600 AF annually) at a water agency cost of \$65 per AF of water saved – far below the cost of providing the water or finding new supply. Customers are expected to save \$500-1,000 annually on their utility bills due to water, wastewater, and energy savings. This program has been a tremendous success and plans are underway to expand it in the future.<sup>45</sup>

### **Outdoor Water Use**

Program B contains only two measures aimed at reducing outdoor water use: audits and automatic rain shut-off valves. Studies have also shown that a number of other outdoor conservation measures are cost-effective and yield substantial water savings. For example, the cities of Austin, Texas and Las Vegas, Nevada offer rebates or direct payments for removing water-intensive grasses and for maintaining water use below budgets that the city reviews.<sup>46</sup> A study conducted by the Irvine Ranch Water District in California showed that evapotranspiration controllers reduced outdoor water use for high residential users by 24 percent.<sup>47</sup> The City of Santa Monica offers funding for new or remodeled innovative garden designs that include one or more of the following: native plants, water-efficient plants, water-efficient irrigation systems,

<sup>44</sup> Gleick, P.H., D. Haasz, C. Henges-jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California." Pacific Institute for Studies in Development, Environment, and Security.

<sup>45</sup> California Urban Water Conservation Council. 2005. Rinse & Save: Final Report Summary. [http://www.cuwcc.org/Uploads/product/CPUC\\_Reports/CPUC\\_Phase\\_I\\_Final\\_Report.pdf](http://www.cuwcc.org/Uploads/product/CPUC_Reports/CPUC_Phase_I_Final_Report.pdf)

<sup>46</sup> City of Austin, Texas Water Conservation. 2006. <http://www.ci.austin.tx.us/watercon/landscape.htm>

<sup>47</sup> Hunt, T. et al. 2001. Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine "ET Controller" Study. Irvine Ranch Water District. <http://www.irwd.com/Conservation/FinalETRpt%5B1%5D.pdf>

stormwater catchment systems, graywater systems, and/or other innovative water-saving features. On their website they note: "Research shows that converting turf and other water-thirsty plants, and traditional, high-volume spray sprinkler irrigation systems to California friendly plants and water-efficient irrigation systems, can save up to 80% of water and 60% of maintenance costs."<sup>48</sup> In contrast, the City of Atlanta's Water Wise Xeriscape Program is limited to small-scale educational trainings by "student" consultants, literature distribution, and consultations for gardeners.<sup>49</sup> While results will vary regionally, the significant water use in landscaping, and the potential for savings both suggest that more aggressive landscape irrigation programs in the District are warranted.

Training programs for landscape professionals and application of efficiency technologies have also been demonstrated to provide significant savings. The Municipal Water District of Orange County initiated a Landscape Performance Certification Program targeting large landscape customers with dedicated irrigation meters in Orange County, California. The program provides technical training sessions to landscape contractors and property managers (includes homeowner associations) and prepares water budgets for all sites owned or managed by the company. Sites are then assessed for compliance with the water budget, and property managers or landscape contractors are awarded a bronze, silver, or gold certification award based on the level of compliance. Companies that achieve certification are promoted with the intention of increasing market opportunities. It is estimated that each customer saves approximately 765 gallons per day on average, a 20 percent reduction of their outdoor water use, at a cost of \$165 per acre-foot – well below the cost of new supply.<sup>50</sup> Educating landscape professionals about native and low-water-use plants and rebates available may also help increase participation in outdoor conservation programs.

Programs focused on curbing outdoor watering in new developments have also been successfully implemented throughout the United States. The Southwest Florida Water Management District

<sup>48</sup> City of Santa Monica. Grants for Landscaping. 2006. [http://santa-monica.org/epd/news/Landscaping\\_Grant.htm](http://santa-monica.org/epd/news/Landscaping_Grant.htm).

<sup>49</sup> City of Atlanta Bureau of Water. 2006. <http://apps.atlantaga.gov/citydir/water/xeriscape.htm>.

<sup>50</sup> A&N Technical Services, Inc. 2004. Evaluation of the Landscape Performance Certification Program. Prepared for the Municipal Water District of Orange County, the Metropolitan Water District of Southern California, and the U.S. Bureau of Reclamation, Southern California Area Office. [http://www.mwdoc.com/documents/LPC-Evaluation\\_000.pdf](http://www.mwdoc.com/documents/LPC-Evaluation_000.pdf)

instituted a Water-Wise Landscape Recognition Program in 2001. The program is designed to “call attention to the efforts of good water stewards in the commercial, government and builders segments of the community” by “spotlight[ing] new and retrofitted water-conserving commercial landscapes, including model homes.”<sup>51</sup> Qualifying landscapes are identified with a “Water-Wise” sign. In addition, one builder from each county is presented with an award based on inclusion of water conservation principles in their landscape design.

### **Recycling and Reuse**

As described in the Current Water Use section, recycling and reuse provide only a minor component of the District’s water supply. While the use of recycled and reused water is projected to increase over the District’s planning horizon, its overall contribution to the water supply remains small. The WS Plan states that

“Based on preliminary calculations, the amount of reclaimed water available for indirect potable reuse could range from 40 MGD to 125 MGD AADD, or 4 to 12 percent of the projected 2030 AAD demand for the District ... Water reuse in the form of indirect potable reuse plays a significant role in meeting the projected 2030 water demands, as does the aggressive water conservation program.”<sup>52</sup>

The WS Plan includes discharge of 117 MGD of treated wastewater to Lake Lanier by 2030. This amount was deemed the most cost-effective due to concern about phosphorous discharge into the Lake. Because 50 MGD of wastewater is currently discharged into Lake Lanier, reclamation will provide an additional 67 MGD of potable water in 2030. Thus planned reclamation in the District will meet only 11 percent of projected 2030 demand. While the District expects to increase indirect potable reuse beyond 2030, it “incorporates it in a modest way, so that experience can be developed before this type of reuse becomes essential.”<sup>53</sup>

<sup>51</sup> Southwest Florida Water Management District. 2005. Water-Wise Landscape Recognition Program. <http://www.swfwmd.state.fl.us/conservation/waterwise/index.html>

<sup>52</sup> Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. Pp. 6-20.

<sup>53</sup> Metropolitan North Georgia Water Planning District. 2003. Long-Term Wastewater Management Plan. Pp. 5-7.

Indirect potable reuse is also feasible in Lake Allatoona, which is located in the Etowah River Basin. Because supply in this basin is projected to exceed demand, however, the District has decided not to pursue this option: “the need to discharge reclaimed water to increase supply in Lake Allatoona during the next 30 years is not as significant.”<sup>54</sup> While opting not to pursue reclamation in Lake Allatoona, the District promotes reallocation of Lake Allatoona to increase the available water supply. This inconsistent policy exemplifies the District’s emphasis on new supply sources rather than conservation, efficiency, and reuse.

Further the District’s reliance on indirect potable reuse misses additional non-potable reuse opportunities. The Wastewater Management Plan, also produced by the District, concludes that non-potable reuse could reduce 2030 potable demand by 71 MGD. Because of the high cost associated with installing a new distribution system and the desire to minimize consumptive water use, however, the District has decided to pursue indirect potable reuse. Water districts throughout the United States practice non-potable reuse, indicating that while it may be more expensive than indirect potable reuse, it is often cost-effective. Further, installing a separate distribution system for non-potable water is significantly less expensive in new developments than in previously developed areas. Because the District is projected to experience significant growth over the next 25 years, dismissing non-potable reuse misses an important potential opportunity.

Although recycling and reuse is projected to meet only 11 percent of the District’s 2030 water demand, it has become an increasingly important component of the water-supply portfolios for water district throughout the United States. For example, the Irvine Ranch Water District, in Southern California, currently meets nearly 20 percent of its total demand with recycled water.<sup>55</sup> In 2004, the South Florida Water Management District reused over 25 percent of the total wastewater treated.<sup>56</sup> This suggests that significant opportunities exist to increase recycling and

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<sup>54</sup> Metropolitan North Georgia Water Planning District. 2003. Water Supply and Water Conservation Management Plan. Pp. 6-21.

<sup>55</sup> Irvine Ranch Water District. 2005. Urban Water Management Plan.  
<http://www.irwd.com/BusinessCenter/UWMP-2005-F.pdf>

<sup>56</sup> South Florida Water Management District. 2004. Annual Agency Reuse Report.  
<http://www.sfwmd.gov/org/wsd/wsconservation/pdfs/reuse/final2004annualreusereport.pdf>

reuse throughout the District, effectively lessening the strain on the District's current water resources and the need to identify and develop new water supplies.

### ***Weak Implementation Levels***

Both the District and the State have taken a number of actions to promote conservation since the WS Plan was completed in 2003. While the District has made some progress, conservation efforts are still weak, and we note that the above actions are mostly focused on new developments, leaving many inefficient water uses and technologies in place. These actions are described below:

- The EPD required all District utilities to implement, at a minimum, a uniform rate structure by January 1, 2004 and a multi-tiered rate structure by January 1, 2006.
- In 2004, legislation was passed requiring rain shut-off sensors on all new commercial and residential irrigation systems in the District.
- The District is preparing model ordinances to encourage local jurisdictions to require sub-meters on all new multi-family developments, including apartments, condominiums, and townhouses.
- The District provided system leak detection training for water utilities, and is developing brochures for homeowners to reduce water use and household leaks.
- Public education and outreach programs, including television and billboard ads and workshops, have been expanded.
- The EPD has adopted an every-other-day watering schedule without hourly limitations.

A progress report released by the District in December 2005 reveals that implementation by local governments is inadequate. Figure 5 shows the water suppliers' responses to a survey about implementation of the adopted conservation measures in graphical form. Note that only conservation education has been implemented by more than 50 percent of the water suppliers. Despite the requirement to adopt a multi-tiered rate structure by January 1, 2006, only 45 percent of the District's utilities have adopted conservation pricing. Sub-metering policies have

been adopted by only 20 percent of the water utilities. And only 10 percent of the water utilities provide retrofit kits to their customers.<sup>57</sup>

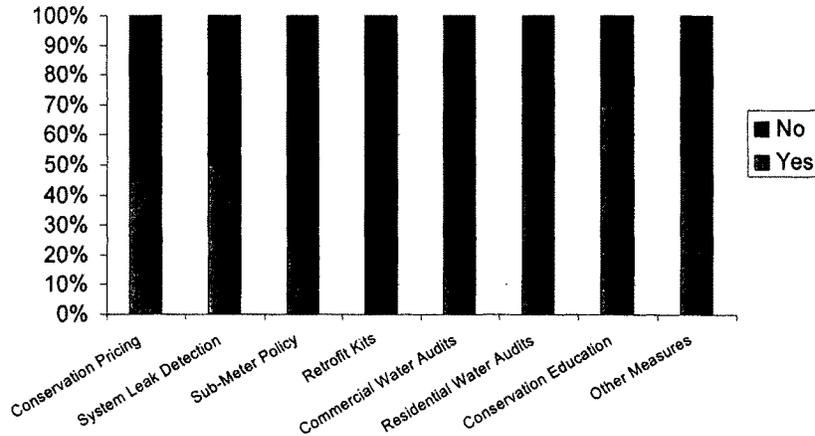


Figure 4. Implementation of Conservation Measures by Water Utilities in the District by December 2005. Many of the most basic water conservation measures remain unimplemented. Source: Metropolitan North Georgia Water Planning District. 2005. Protecting Water Resources: Elements of Success. Activities and Progress Report.

Some of the programs implemented may actually increase water use, such as a restriction on daily watering, requiring outdoor water use to be conducted every-other-day. This restriction allows homeowners with odd-number addresses to water on Tuesdays, Thursdays, and Sundays, and homeowners with even-numbered addresses to water on Mondays, Wednesdays, and Saturdays. Homeowners can water at any time of the day. In some cases, homeowners are watering more frequently than before the watering schedule was initiated: many homeowners believe that because they can water every day, they should water every day. This may actually

<sup>57</sup> Metropolitan North Georgia Water Planning District. 2005. Protecting Water Resources: Elements of Success. Activities and Progress Report.

encourage greater use.<sup>58</sup> A more effective approach might be to establish specific watering times (e.g., after 7 pm) and/or time limitations.

A recently proposed amendment to a key element of Program B in the WS Plan, the retrofit-on-resale measure, may also weaken conservation efforts. The retrofit-on-resale measure, which is estimated to account for 20 percent of Program B's water saving, requires a legislative bill for implementation. However, the bill, sponsored by assembly member Karla Drenner, did not even get a committee hearing.<sup>59</sup> Members of the real estate community strongly opposed the measure. The District organized a Retrofit Steering Committee, which concluded that "Mandatory, heavy-handed tactics are not the answer."<sup>60</sup> Rather, they opted to allow water suppliers to choose which programs they implement to replace older, inefficient fixtures, based on incentives.<sup>61</sup> They also recommended that implementation of the retrofit requirements be postponed from 2004 to 2010. The proposed amendment will reduce the water savings of this important measure and threaten the District's ability to meet its current conservation goals.

A second proposed amendment to the WS Plan would have a yet undetermined effect on conservation goals. The low-flow urinal measure for new commercial buildings was recently eliminated because it was deemed not cost-effective. Interestingly, the assessment in the WS Plan determined that this measure was highly cost-effective, with a benefit-cost ratio of 25.6. Water savings from this measure were relatively small, at an estimated 2.2 MGD (Table 6). In its place, the Board is considering adopting a measure to promote restaurant pre-rinse spray valves. Because the recently passed Energy Bill requires these valves in new construction, the "proposed retrofit education program would focus on education of existing food service establishments."<sup>62</sup> It is not clear, however, whether the District is proposing to provide valves to existing

<sup>58</sup> Vickers, Amy. 2001. *Handbook of Water Use and Conservation*. Waterplow Press. Amherst, Massachusetts.

<sup>59</sup> Shelton, S. 2005. Water Mandate Runs Dry. *The Atlanta Journal-Constitution*. January 30, 2006.

<sup>60</sup> Metropolitan North Georgia Water Planning District. 2005. Technical Coordinating Committee Meeting Summary. June 23, 2005. <http://www.northgeorgiawater.com/pdfs/TCCArchive/2005-6-23%20TCC%20MEETING%20SUMMARY.pdf>

<sup>61</sup> Metropolitan North Georgia Water Planning District. 2005. Water Conservation Retrofit Steering Committee. August 31, 2005. <http://www.northgeorgiawater.com/pdfs/TCCArchive/TCCWS092705/2005-08-31%20RETROFIT%20MTG%20NOTES.pdf>

<sup>62</sup> Metropolitan North Georgia Water Planning District. 2005. Technical Coordinating Committee Meeting Summary. October 12, 2005

establishment, or if it is strictly an education program. Thus the potential effect of this measure on conservation goals remains unclear.

### ***Alternative Supply and Demand Analysis***

The WS Plan presents quantitative data about the projected population and total water demand in 2030. No information is provided about demand for each of the sectors. As a result, only a relatively simple alternative assessment of 2030 water demand is presented here, produced by examining different population projections and minor modifications to the conservation programs. The results of these changes are described below.

Figure 5 presents two different scenarios for 2030 demand. Scenario 1 shows demand under the high-growth scenario with implementation of conservation Program B. Recall that this is the scenario adopted by the District. An alternative scenario, Scenario 2, shows demand under the Atlanta Regional Commission's population projection with implementation of conservation program C. In addition, this scenario includes reducing the UFW to 10 percent, the efficiency benchmark established by DNR. Under Scenario 2, 2030 demand is 838 MGD compared to 1,081 MGD for Scenario 1. Not only is this a substantial improvement, but demand under this scenario never even exceeds current supplies, through 2030. Per-capita demand in 2030 is 130 gpcd in Scenario 2, a 23 percent reduction over the current (2001) per-capita demand of 168 gpcd. Additional conservation and efficiency measures can reduce 2030 demand further.

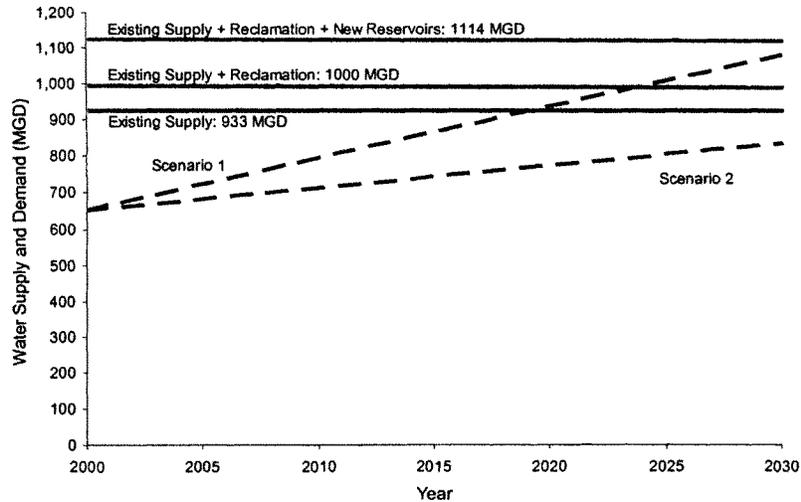


Figure 5: Water Demand and Supply Under Alternative Scenarios. The more efficient scenario (Scenario 2) can postpone, or even eliminate, the need for any new supply for decades to come.

Figure 5 compares the demand projections with various supply scenarios. The existing supply, 933 MGD, is sufficient to meet demand under Scenario 2 well past 2030. Reclamation can further boost the total District supply to 1,000 MGD, and building new reservoirs can increase supply to over 1,100 MGD. Further, reclamation can be expanded, providing significantly more water than is projected in the WS Plan. This additional supply can increase system reliability.

## Conclusions

The Water Supply and Water Conservation (WS) Plan projects substantial increases in 2030 water demand, rising from 650 MGD in 2001 to 1,080 MGD in 2030. To meet future demand, the District largely relies upon new supply options, specifically five new reservoirs and reallocation of Lake Lanier and Lake Allatoona. **Our analysis, however, reveals that the WS Plan may significantly overestimate future regional demand for water and underestimate the potential for cost-effective demand management.** A straightforward re-examination of

conservation scenarios, using more plausible population estimates and the cost-effective conservation efforts described by the WS Plan as Package C, produces a 2030 demand for water that remains below the level of existing supplies. Further, more efficiency improvements, recycling, and reuse can be expanded beyond projected levels.

Future water demand and use depend on many factors. One of the most important is the size of the population to be served. Because official projections were not available, the District produced two future population scenarios. The District projects that 2030 population will reach 6.8 million and 7.8 million in the moderate- and high-growth scenarios, respectively. The District used the high-growth scenario for all water-demand projections in the WS Plan.

Since completion of the WS Plan, the U.S. Census Bureau and the Atlanta Regional Commission have released additional population projections. These projections are substantially lower than the District's high-growth projection, but are comparable to the moderate-growth scenario. Because future water demand in the District is based on the high-growth scenario, the results of the ARC study suggest that the WS Plan overestimates 2030 water demand. Using the moderate-growth scenario reduces water demands, all other things being equal, by nearly 15 percent.

The District identified conservation as essential to meeting projected future demand. The WS Plan assessed implementation of three conservation programs (A, B, and C) with increasing levels of water savings. The District adopted Program B as the recommended program. Program B includes 11 conservation measures and reduces 2030 demand to 1081 MGD, 10 percent below demand with implementation of the plumbing codes alone.

**Our analysis indicates that the projected water savings are likely to significantly underestimate the District's actual conservation potential.** The list of efficiency measures evaluated does not include all cost-effective approaches. Even the more aggressive Program "C" (which was not adopted), appears incomplete. Under Programs B and C, the District does not achieve the efficiency benchmarks established by DNR. Other conservation assessments have also shown that the cost-effective conservation potential is likely to be significantly higher.

The economic analysis used in the WS Plan also gives an incomplete and misleading picture of the conservation potential in the District because of the type of analysis employed and the assumed implementation levels. The conservation potential is evaluated using a “cost-benefit” approach from the “utility” perspective. The “cost-benefit” approach, however, is not the only way (nor necessarily the best way) to evaluate the “cost-effectiveness” of a measure or program. In addition, the utility perspective is much narrower than either the customer or community perspectives and misses important water-use efficiency cost savings that make many water-efficiency measures substantially cost-effective.

**Finally, the implementation levels of the conservation measures appear conservative and implementation efforts are falling below those necessary to capture even the modest savings projected by the WS Plan.** With low implementation levels, the set-up and administrative costs are divided among a smaller number of units, resulting in a higher per unit cost. This effectively increases the cost per unit water saved and lowers the benefit-cost ratio. Low implementation also reduces the water savings for a particular measure or program.

-- end --

**Attachment to the Statement of  
Secretary Castille, Florida DEP**

**Letter from Florida Governor Jeb Bush to  
Governors Riley and Perdue, dated August 4, 2006**

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STATE OF FLORIDA

Office of the Governor



JEB BUSH  
GOVERNOR

THE CAPITOL  
TALLAHASSEE, FLORIDA 32399-0001

www.flgov.com  
850-488-7146  
850-487-0801 fax

August 4, 2006

The Honorable Bob Riley  
Governor  
State of Alabama

The Honorable Sonny Perdue  
Governor  
State of Georgia

Dear Governors Riley and Perdue:

Thank you for your invitations to meet and discuss an agreement to manage water in the Apalachicola, Chattahoochee and Flint rivers. I firmly believe good faith negotiations by all parties in mediation can achieve an equitable allocation of water that protects the economy, environment and quality of life in our respective states.

To ensure a productive meeting, I recommend each state designate a lead negotiator to vigorously pursue the framework and terms of an agreement during the next three months. The success of these negotiations will require a concerted effort by all parties to quickly exchange technical information, such as modeling assumptions and inputs, water use needs, water flow needs and any other scientific data or explanatory material. These negotiations will identify areas of consensus as well as disagreement, which should serve as the basis for a meaningful discussion and resolution of outstanding policy issues.

I have designated Colleen Castille, Secretary of the Florida Department of Environmental Protection, to serve as the lead negotiator for Florida. She will actively seek a solution to the issues while complying scrupulously with the mediation agreement among our three states and the U.S. Army Corps of Engineers. I have asked Secretary Castille to contact her counterparts in your states to establish a schedule for moving the mediation forward.

I look forward to working with you through this important process. Together, I believe we can achieve an agreement that protects the interests of our citizens.

Sincerely,

A handwritten signature in cursive script that reads "Jeb Bush".

Jeb Bush

cc: Charles B. Renfrew  
The Honorable John Paul Woodley Jr.





CITY OF ATLANTA

SHIRLEY FRANKLIN  
MAYOR

55 TRINITY AVENUE - ATLANTA, GEORGIA 30303  
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DEPARTMENT OF WATERSHED  
MANAGEMENT

Robert J. Hunter  
Commissioner

August 7, 2006

The Honorable Saxby Chambliss  
United States Senate  
Washington, DC 20510

RE: Senate Environment and Public Works Field Hearing, August 8, 2006 ACF and  
ACT River Basins & Georgia's Water Resource Needs

Dear Senator Chambliss:

As you prepare for the Senate Environment and Public Works Field Hearing to be held in Gainesville, Georgia, I wanted to contact you to express some observations from my perspective as Mayor of Atlanta. I also want to applaud your efforts to leverage your leadership and influence into this effort – an effort that clearly calls for assistance at the federal level.

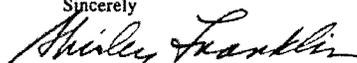
In my role as Mayor of the City of Atlanta, the operation and management of Lake Lanier and the Chattahoochee River are critical issues to the well-being and growth of the 450,000 residents and economy of the City. As a regional leader, I appreciate the efforts of the Governor, Environmental Protection Division, Metropolitan North Georgia Water Planning District and Atlanta Regional Commission to protect this resource for the 4.5 million people in the metro-Atlanta area. As an administrator, I understand the challenges of developing and implementing effective plans to improve conditions and systems. However, my experience has been that those plans need to be focused, well reasoned and implementable and unfortunately that is not the case for the current operations of the Apalachicola-Chattahoochee-Flint (ACF) River system.

The current ACF Water Control Plan is 50-years old. All parties now seem to agree to the obvious fact that it needs to be updated and hopefully all parties will cease the lawsuits and legislative maneuvers to block the update. The ACF system from Lake Lanier through Jim Woodruff Lock & Dam consist of a series of reservoirs that are distinctly different in terms of capacity, recovery time and watershed size. However, they constitute a system whose management impacts everyone throughout the basin. We all need a well-studied and considered plan that operates to the benefit of the entire system and meets the needs of the basin.

The system is currently being operated under an Interim Operations Plan (IOP) that is not only less than optimal but isn't sustainable. The IOP calls for high volume water releases in the spring for one protected species and high summer releases for others. The fact is that the system would never refill under these operations and a prolonged drought would ultimately harm not only the protected species but all other users including the people and economy of Atlanta, the Atlanta region and Georgia. The IOP requires a minimum release of 5,000 cubic feet per second (cfs) or 3.23 billion gallons per day from Woodruff. However, pre-reservoir flow data indicate more than 150 occasions when natural flows were less than half that requirement. A well reasoned plan needs to recognize that during droughts all parties will be impacted, including protected species.

The Atlanta area does need to conserve water, as do all residents of the ACF river system. The City of Atlanta is currently moving forward a legislative package that will strengthen our conservation efforts. However, the impacts of the Atlanta region on the lower reaches of the ACF basin are limited. Only 6% of the ACF drainage basin is above Lake Lanier and the river is over 10 times as large at the Florida state line as at Buford Dam. The IOP asks the system to do the impossible, to produce more water from the upper reaches of the drainage basin than is available. We need to conserve but we also need a sound, well developed alternate to the current IOP. This Alternate Operating Plan needs to be developed in conjunction with the system's stakeholders and serve the needs of those stakeholder's until the full Water Control Plan can be updated. A quick look at Lake Lanier and the other reservoirs of the ACF system confirms that the IOP is not working. We need a reasonable alternative to be developed and implemented now. Otherwise, under continued IOP operation, we will lose the opportunity to refill Lake Lanier this winter and come spring we will once again be discussing water over the dam for seven sturgeon.

Thank you for your leadership efforts on this very important issue. I look forward to working with you to help address this important issue. Please do not hesitate to contact me if I can ever be of assistance.

Sincerely  
  
Shirley Franklin



## **Water Wars: Water Allocation Law and the Apalachicola-Chattahoochee-Flint River Basin<sup>1</sup>**

Roy R. Carriker<sup>2</sup>

This paper discusses the background and litigation involved in the dispute over water reallocation in the Apalachicola-Chattahoochee-Flint River Basin in the southeastern United States. It reviews the legal framework that has been used historically to settle water allocation disputes within and among states, with implications for the process now unfolding as negotiators for the states of Alabama, Florida, and Georgia attempt to find common ground.

### **Introduction**

Throughout much of the twentieth century, states of the western United States confronted one another in disputes over reliable supplies of fresh water. Such interstate water allocation issues were relatively uncommon in the eastern United States where fresh water has been comparatively abundant. A series of severe droughts during the 1980s changed all that for the states of Alabama, Florida, and Georgia, however, forcing them to recognize the strains that continued population growth and economic expansion in the southeast have placed on the water resources of the region (Moore, p. 5).

In 1997, after litigation, studies, and an interim negotiated agreement, Alabama, Florida, and Georgia entered into two interstate compacts for the specific purpose of negotiating a long-term allocation of surface water resources in the major river basins shared by the states (Moore, p. 5). Three years later, having several times extended the deadline set by the compacts, the negotiators for the three states still had not reached agreement on the major water allocation issues confronting them.

This paper discusses the background and litigation involved in the dispute over water reallocation in the Chattahoochee River. It reviews the legal framework that has been used historically to settle water allocation disputes within and among states, with implications for the process now unfolding as negotiators for the states of Alabama, Florida, and Georgia attempt to find common ground.

### **Description of the Basin**

The dispute among Alabama, Florida, and Georgia involves two river basins. The first of these is known as the ACF (the Apalachicola, Chattahoochee, and Flint Rivers). The Chattahoochee

1. This is document FE 208, a publication of the Department of Food and Resource Economics, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Published November 2000. Please visit the EDIS website at: <http://edis.ifas.ufl.edu>.

2. Roy R. Carriker, Professor, Department of Food and Resource Economics, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.

The Institute of Food and Agricultural Sciences is an equal opportunity/affirmative action employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex, age, handicap, or national origin. For information on obtaining other extension publications, contact your county Cooperative Extension Service office. Florida Cooperative Extension Service/Institute of Food and Agricultural Sciences/University of Florida/Christine Taylor Waddill, Dean.

River has its headwaters in the hills and low mountains of northwest Georgia, from whence it flows southwest through metropolitan Atlanta to the Alabama-Georgia state line. The border between the two states follows the Chattahoochee River south to its confluence with the Flint River, which, having formed in the counties just south of Atlanta, flows generally toward the extreme southwest corner of the state of Georgia. The Chattahoochee and the Flint Rivers join just north of the Florida state line to form the Apalachicola River which, in turn, flows south through the Florida panhandle into Apalachicola Bay and the Gulf of Mexico.

The second river basin is the ACT (the Alabama, Coosa, and Tallapoosa Rivers). The Coosa and Tallapoosa Rivers have their headwaters in northwest Georgia (adjacent to, and northwest of, the headwaters of the Chattahoochee River). The two rivers flow southwest out of Georgia into northeast Alabama. Meandering southwest, the two rivers join near Montgomery to form the Alabama River. The Alabama River flows generally south until joining the Tombigbee River to form the Mobile River, and then emptying into Mobile Bay.

#### **Multiple Uses, Multiple Demands**

A series of federal reservoirs operated by the United States Army Corps of Engineers (Corps) provide flood control, navigation support, hydroelectric power generation, water supply, and recreation on both river systems. The rivers also support a complex ecosystem, including the nation's premier oyster and shellfish habitat in Apalachicola Bay.

Many of the uses along these rivers depend heavily on the manner in which the Corps operates control structures on the federal impoundments, managing lake levels and stream flow throughout the river basins. However, no single set of protocols governing reservoir releases is equally suited for all uses. For example, flood protection requires that reservoirs be maintained with unused capacity in order to impound flood waters, regulating their release so as to protect downstream property from flooding. However, assuring adequate municipal water supplies in the event of a protracted drought requires that reservoirs be used to store more, rather

than less, water. Navigation requires that reservoirs release water during dry periods to maintain streams at navigable depths so that commercial barge traffic and pleasure craft can ply the river waters. Natural ecosystems are typically adapted to "natural" hydroperiods, the natural tendency for rivers to alternate between flood stage and low flow in response to normal rainfall events.

#### **Water Allocation as an Interstate Issue**

##### ***History of Water Use in the ACF Basin***

The Corps published its first report on the development of water resources in the ACF River Basin in 1939 (Vest, p. 690).<sup>3</sup> The Corps recommended that Congress approve "full development" of the ACF River Basin for flood control, navigation, and hydroelectric power generation. Congress subsequently authorized specific projects, including the construction of Buford Dam which was completed in 1958.

The Corps' eventual role in reallocation of water to meet Atlanta's water supply needs is based on two acts of Congress (Vest, pp. 690-691). First was the Flood Control Act of 1944, authorizing the Corps to reallocate surplus water at federal reservoirs to industrial and domestic use. The Act defined surplus water as "water in excess of that required to meet project purposes" (Vest, p. 691). The second act of Congress underlying the Corps' role in reallocating water to Atlanta was the Rivers and Harbors Flood Control Act of 1958, of which Section 301 allowed the Corps to store water in federal reservoirs for municipal and industrial uses. Neither of these acts authorize the Corps to make significant modifications to existing projects. If significant modification to a project is needed, specific Congressional authorization would be required.

In the early 1970s, public officials in Georgia began to recognize that the rapidly growing Atlanta metropolitan area would eventually outstrip existing capacity to supply freshwater to domestic and industrial users (Vest, p. 691). In 1972, Congress authorized the Corps to conduct a *Metropolitan Atlanta Area Water Resources Management Study* to develop a long-range water supply plan for the Atlanta area. During this study, the Corps analyzed

over 50 water supply plans, from which it selected three. In 1981, the Corps published a feasibility study for public comment on the three final alternatives: construct a re-regulation dam downstream from Buford Dam, reallocate storage in Lake Lanier from hydropower to water supply, or dredge the Morgan Falls reservoir to increase the storage capacity.

In 1982, the Corps published a final report in which it recommended the construction of the re-regulation dam (Vest, p. 691). This proposal met strong opposition because of its environmental impacts. In 1988, after additional analysis, the Corps issued a revised recommendation favoring adoption of the reallocation alternative. In 1989, the Corps issued a draft Post Authorization Change (PAC) report, recommending that 20 percent of the water currently reserved for hydropower production be reallocated for water supply. The proposed reallocation would provide for the water supply needs of Atlanta through the year 2010. This report included an Environmental Assessment (required by the National Environmental Policy Act) which concluded that reallocation would not have a significant adverse impact on the environment.

#### **Alabama Sues the Corps of Engineers**

In response to the Corps' Post-Authorization Change report calling for reallocation of water from Lake Lanier to supply water to Atlanta, the State of Alabama filed a lawsuit on June 28, 1990 (Vest, p. 692).<sup>4</sup> The lawsuit challenged the validity of the Corps' reallocation plan on five counts.

The first count challenged the reallocation as a violation of common-law water rights, alleging that the PAC would vest Georgia interests with expanded water rights at the expense of downstream interests (Vest, p. 692). The first count also alleged that the Corps had breached its duty to operate the ACF River Basin system in a neutral manner by favoring Georgia interests.

The remaining four counts of the suit alleged that the Corps violated the National Environmental Policy Act (NEPA) by failing to consider fully the environmental impacts of the proposed reallocation (Vest, p. 692). The complaint asked for an injunction to prevent the Corps from implementing the proposed

reallocation or entering into any water supply contracts, and requested a judicial declaration that the Corps failed to comply with the provisions of the NEPA requiring development of an Environmental Impact Statement. In August, 1990, the state of Florida petitioned to intervene in the lawsuit, as did the state of Georgia; the Alabama Wildlife Federation; the Cities of Montgomery and Gadsden, Alabama; and the City of Cartersville, Georgia.

#### **Memorandum of Agreement and Basin Studies**

In July 1990, officials from Alabama and Georgia met twice to seek compromise, but were unsuccessful. In August 1990, the Corps joined Alabama and Georgia in the negotiations and presented a "Memorandum of Agreement" (Vest, p. 693). On August 30, 1990, Alabama, Florida, Georgia, and the Corps negotiated a Joint Stay of Proceedings to be entered into by Alabama and the Corps. The court granted the stay on September 19, 1990, to allow the parties to reach a settlement without further litigation.

In January 1992, Alabama, Florida, Georgia, and the Corps entered into an agreement calling for a "process for cooperative management and development of regional water resources" (Erhardt, p. 202).<sup>5</sup> The agreement required a three-year comprehensive study of local water resources. In the meantime, the Corps would withdraw its 1989 proposals to reallocate water from Lake Lanier, while Alabama, in turn, would request that its lawsuit against the Corps be placed on an inactive docket. The action defused the immediate danger of lengthy litigation, and created an opportunity for all parties involved to make constructive input.

The resulting *Comprehensive Water Resource Study* has since been referred to as "an unprecedented effort to develop the data necessary to fully address the water resource issues in the ACT and ACF" (Moore, p. 7). The study addresses four broad topics: water resource demands, water resource availability, flood and drought management strategies, and coordination mechanisms. The goal has been to produce the technical and strategic information required to develop a basin-wide management plan for water resources.

### The Interstate Compacts

One significant result of the \$27 million comprehensive study was agreement among the three states that the water resource issues should be resolved in the context of two interstate compacts—one for each basin (Moore, p. 7). In early 1997, Alabama and Georgia entered into the ACT Compact, and Alabama, Florida, and Georgia entered into the ACF Compact. On November 20, 1997, President Clinton signed the legislation that provided Congressional approval of the compacts.<sup>6</sup>

The essence of the ACT and ACF compacts is the agreement to negotiate an "equitable apportionment" of the surface waters in each basin (Moore, p. 7). Neither compact contains an allocation itself; rather, the compacts establish a Compact Commission for each basin, which can approve an allocation formula for the next 50 years.

To understand the context within which the new Compact Commissions must seek an "equitable apportionment" of the surface waters in these river basins requires a review of the legal framework for resolving water allocation disputes that has evolved in the United States over the past two centuries.

### Water Allocation Law and Interstate Water Disputes

#### State Water Allocation Laws

State governments have been primarily responsible for defining rights relative to the quantity of water used (Cox, 1981, pp. 108-109). Much of the state water law that still governs public and private relationships as they pertain to water resources in the United States is not a product of legislation. Rather, it is the cumulative product of court decisions. The judicial rule-making process, referred to in the legal literature as the "common law" process, is a mechanism of long standing in the United States, with historical roots in English common law. Although the courts in the United States inherited a body of general principles from England, the body of common law that emerged over time was shaped by the kinds of disputes brought before the courts, and by the tendency of courts to adhere to precedent (Brion, 1979). That is, courts of a jurisdiction

typically applied certain principles to similar cases, and as the disputes presented to the court covered a variety of basic issues, the courts evolved a comprehensive body of judicial doctrine pertaining to water allocation disputes.

In general, water law has evolved separately for each of several phases of the hydrologic cycle. Accordingly, specialized doctrines of watercourse law, groundwater law, and diffused surface water law have evolved. Moreover, western jurisdictions produced water law doctrines that are distinctly different from those produced in eastern jurisdictions. Finally, a number of states have initiated basic changes in water law by legislation and the creation of administrative bodies with regulatory authority.

The issues concerning the ACF and the ACT basins are surface watercourse issues. Water law has seen its greatest development with regard to water in streams because surface water bodies were, historically, the first to be developed for water supplies and power (Cox, p. 190). Two basic doctrines of watercourse law evolved as the individual states, through custom and case law, resolved water rights issues: the "riparian doctrine" in the east and the "doctrine of prior appropriation" in the west. Some states have applied the two doctrines jointly, and others have adopted legislation creating various forms of administrative water law. However, the riparian and prior appropriation doctrines still form the basis of water law for most states.

#### Prior Appropriation Doctrine

The doctrine of prior appropriation developed in the western states and is still predominant in those states (Carriker, p. 5). The basic principle of water rights under the doctrine of prior appropriation is "first in time, first in right." In principle, the rights of water users of a common water source are ranked in the order of the dates on which each water use was initiated. The right of an earlier (senior or prior) appropriator is superior to that of a later (junior or subsequent) appropriator.

The doctrine of prior appropriation was originally developed as common law, and its basic concepts were refined through the judicial process. However, most western states have adopted water use

legislation and have established detailed administrative procedures for implementing the water allocation function of the doctrine (Carraker, p. 6). The water right under prior appropriation is initiated by application of water to beneficial use and does not arise as a function of land ownership. Use of water is not necessarily restricted to land in contact with the watercourse, and water may be transported for productive uses both within and between watersheds. This flexibility as to place of use has been restricted by statute in some states. The water right in most of the western states is transferable. A feature that enables the system of water rights to accommodate new rights is that other appropriators, including junior appropriators, must not be adversely affected by the assignment and exercise of new rights.

#### ***The Riparian Doctrine***

The riparian doctrine is a collection of judicially developed principles used by the courts in the eastern United States to decide cases involving water-use conflicts (Carraker, p. 4). The basic concept of the riparian doctrine is that private water rights are tied to the ownership of land bordering a natural watercourse. The riparian right is constitutionally protected and cannot be taken without due process of law. The right is of a "usufructuary" nature, meaning, essentially, that it represents a right to use and profit from the water as long as that use does not reduce the quality or accessibility of the water to other riparians.

Two independent theories of riparian rights have been identified: the natural flow theory and the reasonable use theory (Carraker, p. 4). Under the natural flow theory, each riparian owner is entitled to the natural flow of the stream except as diminished by the domestic uses of upstream riparians. Nondomestic uses are permitted only to the extent that they do not perceptibly diminish the natural flow.

The reasonable use theory, on the other hand, is based on the principle that each riparian landowner has the right to make any use of water, provided that the use is reasonable in relation to the needs of other riparian owners (Carraker, pp. 4-5). The reasonable use theory is based on a concept of sharing. The limits of an individual water right are determined by the impact of the water use on others and do not necessarily prohibit a reduction in stream flow.

#### ***Critique of the Common Law Dispute-Settlement Process***

In recent years, criticism has been directed toward the common law riparian system. The general point of this criticism is that the common law standards of reasonableness and the resolution of conflict through litigation are not adequate to deal with the impending water problems brought on by population and economic growth (Carraker, p. 14).

Critics point to the fact that the common law riparian system restricts the use of stream water to riparian owners on riparian land and asserts that better use may be made at other places by riparian or nonriparian owners (Carraker, p. 14). "Reasonable use" as a condition of the riparian right entails uncertainty for riparian owners, since reasonableness of each use depends, in part, on the needs of other riparian owners, including the unforeseen exercise of a previously unused right as new water uses emerge. Additional uncertainty results from the need for litigation in order to establish the extent of a riparian's entitlement to reasonable use. Critics argue that such uncertainty has costly economic consequences, as when industries refuse to locate in an area for fear that the legal right to water may be diminished in some unforeseen manner. Moreover, critics argue that the courts are incapable of uniformity in application of the law because of their lack of expertise and the inefficiency of a case-by-case approach. The common law dispute-settlement process also is not well-suited to protecting environmental values associated with a watercourse, since environmental quality considerations transcend individual riparian landowner interests.

#### ***Administrative Water Allocation Law***

In response to criticisms of the common-law dispute-settlement process based on riparian doctrine, several statutory proposals providing for comprehensive regulation of water resources in a riparian jurisdiction have been suggested and/or adopted (Carraker, p. 16). Florida, historically a riparian state, is foremost among states that have adopted aspects of administrative water law. The Florida Water Resources Act of 1972 brought into existence a form of administrative water law based

largely on "A Model Water Code" which had been developed by scholars at the University of Florida's College of Law (Carriker, p. 23). It provided for a system of administrative regulation within the framework of the riparian water law system. It created five water management districts, encompassing the entire state. A nine-member governing board makes policy for each district subject to provisions of the statute, a statewide water policy, and oversight by the Florida Department of Environmental Protection. The districts are required by statute to regulate consumptive use of all waters of the state, all alterations in natural flow patterns of water, and the design and installation of wells. The basic standards for evaluating applications for consumptive use permits are provided by the statute. A proposed water use must be "reasonable" with respect to uses of other riparians, or, in the case of groundwater, to adjacent landowners. The proposed water use must be "beneficial" and must involve only the quantity of water necessary for an economically efficient operation in a use which is consistent with the public interest. Established minimum stream, lake, and groundwater levels are included in the consideration of reasonable beneficial uses and in the granting of permits.

Georgia water law was traditionally based on the riparian reasonable use doctrine (Carriker, p. 24). A 1964 Georgia Water Quality Control Act was amended in 1977 to require permits for withdrawals, diversion, or impoundment of surface water in excess of 100,000 gallons per day and to require limits to permissible use of surface waters. Agriculture was exempt. Competition for limited water supplies was to be managed by adherence to a classification system which assigns priorities. In cases involving a proposed transfer of water outside the basin of origin, consideration must be given to competing intrabasin uses. A state groundwater permitting system was authorized by the Georgia General Assembly in 1972 (Carriker, p. 25). It required a permit for withdrawal of groundwater in excess of 100,000 gallons per day, exempting agriculture. Permit provisions cover timing of withdrawals, protecting against salt water encroachment in coastal regions, adverse effects on other uses, well depth, spacing, pumping levels, and pumping rates.

Alabama law for water allocation and use has not been the subject of significant legislation (Carriker, p. 20). Such law, as exists, is based largely on case law according to which rights to surface water are attached to the ownership of riparian land. Riparian owners cannot convey their rights, and they must use the water only on riparian land. Alabama courts have not clearly distinguished the riparian natural flow and reasonable use theories, having, instead, used both and sometimes mixed the two.

#### **Implications of State Water Allocation Law for ACF Issues**

While both Alabama and Georgia adhere to water allocation law grounded in the riparian doctrine, that doctrine, as such, does not clarify which of the two states controls use of water from the Chattahoochee River, which defines the common border between the two states throughout much of its length. Shannonhouse,<sup>7</sup> writing in 1962, found that the "title to land bounded by a watercourse includes the bed of the stream to the thread or center of the main channel, nothing to the contrary appearing in the landowner's instrument of title." If Shannonhouse is correct, it would appear that, where it comprises their common border, Alabama and Georgia have equal claim to the Chattahoochee River (Erhardt, p. 207). However, the United States Supreme Court ruled in *Alabama v. Georgia* [64 U.S. (23 How.) 505 (1859)] that the west bank of the Chattahoochee River constituted the eastern border of Alabama. The Court found that Georgia specifically intended to maintain control of the river when it sold its rights to all of its territory west of the Chattahoochee in 1802. If the Court's decision in *Alabama v. Georgia* still has the force of law, it may preclude Alabama from now claiming any riparian rights to the Chattahoochee River (Erhardt, p. 208).

Erhardt (p. 209) asserts that observation of the actual use of the Chattahoochee River weakens any argument favoring an exclusive right for Georgia to control the river. While Georgia may have validly claimed the Chattahoochee River to be wholly within its territory, Alabama has always had the right of navigation on the river. Moreover, riparian rights typically accrue to the party owning land abutting a watercourse, without reference to ownership of the

bed of the watercourse. In any case, users along the Alabama side of the Chattahoochee River have done more than simply navigate the waterway: They have been withdrawing water from it (a fact generally known and acknowledged by all parties). Erhardt (p. 210) points to the "doctrine of adverse possession" found in real estate law, whereby a right to use of property may be established *de facto* by a pattern of unchallenged use of the property over a period of time. Finally, Erhardt points to a 1965 agreement between the State of Alabama Water Improvement Commission and the State of Georgia Water Quality Control Board, in which the state of Alabama was delegated regulatory authority over the discharge of waste into the Chattahoochee River by an industrial plant located on the Alabama side of the river.

In summary, the erosion over time of a strict reading of the language by which Georgia ceded land to Alabama, as well as Alabama's open use of the Chattahoochee River as if it were a true riparian system, strengthens Alabama's claim that it has riparian rights to the Chattahoochee River (Erhardt). Since the Apalachicola River, formed by the confluence between the Chattahoochee and Flint Rivers, is bounded on both sides by the state of Florida, no similar doubts as to Florida's riparian status seem to exist.

#### **Methods for Addressing Interstate Water Disputes**

If it is granted that Alabama, Florida, and Georgia share riparian status with respect to the ACF River Basin, some basis is required for resolving interstate disputes over the watercourse. Historically, there have been three means by which interstate water conflicts have been resolved: by congressional apportionment; by the doctrine of equitable apportionment, as applied through an exercise of original jurisdiction by the United States Supreme Court; and through the formation and operation of interstate compacts.

#### **Congressional Apportionment**

The United States Constitution, Article I, Section 8, gives Congress the authority to apportion waters of interstate rivers through its use of the power to regulate commerce among the states (Erhardt, p.

211). The Supreme Court had originally held in *Kansas v. Colorado*<sup>8</sup> that congressional apportionment of water rights was not valid under the Constitution. This ruling was overturned over 50 years later, when the Court held in *Arizona v. California*<sup>9</sup> that Congress' implied powers, especially under the Commerce Clause, allowed for Congressional apportionment of water rights in the Colorado River. However, Congress has generally refrained from applying this power to all interstate water disputes. The only instance in which Congress has apportioned interstate water rights since *Arizona v. California* occurred in 1990, apportioning waters between California and Nevada in the Truckee and Carson Rivers as well as in Lake Tahoe.<sup>10</sup>

Congress' manifest reluctance to invoke the Commerce Clause and intervene in interstate water disputes has been attributed to the particular political difficulties attending such action (Erhardt, p. 212). Interstate water disputes are likely to focus on water supplies that are crucial to long-term regional economic development. Congressional intervention would "destabilize the precept that each of the states is equal in the control of shared water resources."<sup>11</sup> Moreover, legislators from states not involved in the dispute are reluctant to incur political risk by voting to impose a water allocation that may be unpopular with one or more disputant states. While Congressional apportionment remains a valid option for addressing disputes over the Apalachicola-Chattahoochee-Flint River Basin, the possibility of its use in this instance is remote.

#### **The Supreme Court: Original Jurisdiction and Equitable Apportionment**

A second method for addressing interstate water allocation disputes is rooted in the constitutional authority of the Supreme Court over "controversies between two or more States."<sup>12</sup> Additional authority was provided by Congress, stipulating that the Court "shall have original and exclusive jurisdiction over all controversies between two or more States."<sup>13</sup>

### **Conflict of Laws and the "Doctrine of Equitable Apportionment"**

Once the Supreme Court decides to accept original jurisdiction for litigation between or among states, it must confront an issue of applicable law. If the dispute is between two states that use the same doctrine regarding their water rights, then local law can be applied (Erhardt, pp. 212-213). However, where the laws of the states differ, or where the Court decides that the local law will leave one state inequitably disadvantaged, it does not have to rule consistently with local law. Instead, equity is stressed over local rules (Erhardt, p. 213).

The doctrine of "equitable apportionment" resulted from the Court's ruling in the case of *Kansas v. Colorado*<sup>14</sup> in 1907 (Vest, pp. 694-695). This case originated as a "conflict of laws" case. The State of Kansas brought suit in the Supreme Court to prevent Colorado from diverting waters from the Arkansas River. Kansas was a riparian rights state which vested property rights in land owners to the flow of the river "as it was accustomed to run" (an application of the "natural flow" theory of riparian water rights). Conversely, Colorado law adhered to the doctrine of prior appropriation which allows upstream landowners to "appropriate" the waters of a stream "for the purpose of irrigating its soil." The Court decided to apply "interstate common law" and held that the two states were entitled to an "equitable division of benefits" from the river.

### **Expanded Applicability of the Doctrine of Equitable Apportionment**

Although *Kansas v. Colorado* involved a conflict of laws issue, the Court soon expanded the doctrine of equitable apportionment to states which followed similar laws in resolving their internal water rights disputes. For example, in *Wyoming v. Colorado* (1922), both states followed the doctrine of prior appropriation. However, the Court applied a form of the doctrine of prior appropriation that imposed on both states a duty to use the water reasonably (Vest, p. 696). Later in *Nebraska v. Wyoming* (1945), the Court held that although "priority of appropriation is the guiding principle" in equitable apportionment cases, the Court will look to many factors in order to reach a just and equitable result. In *Connecticut v.*

*Massachusetts* (1931), both states were riparian rights jurisdictions. The Court held that "a consideration of the pertinent laws of the contending States" would be one of several factors the Court would consider in arriving at an equitable apportionment (Vest, pp. 695-696). In *New Jersey v. New York* (1931), the Court held that New Jersey, the downstream state, could not require New York to give up its right to use the river in order that New Jersey would receive an undiminished flow, asserting that "the effort always is to secure an equitable apportionment without quibbling over formulas" (Vest, p. 697).

### **Limiting the Applicability of the Doctrine of Equitable Apportionment**

Beginning with its decision in *Washington v. Oregon* (1936), the Court limited the invocation of the doctrine of equitable apportionment by requiring that the complaining state adhere to a higher standard of proving injury (Vest, p. 697). The Court concluded that Washington had not shown injury by clear and convincing evidence. In *Colorado v. Kansas* (1943), the Court granted Colorado an injunction to prevent Kansas users of the Arkansas River from bringing further lawsuits against Colorado for violating Kansas water right. The Court found that Kansas could not show that Colorado's increasing water diversions had "worked a serious detriment to the substantial interests of Kansas."<sup>15</sup> These two cases indicate the Court's reluctance to adjudicate water rights disputes between states and the Court's preference to have such disputes settled pursuant to the Compact Clause of the U.S. Constitution (Vest, pp. 697-698).

In these cases, the Court required proof of injury in satisfying the ripeness requirement for adjudication. States were required to prove injury by a clear and convincing standard. In a more recent set of cases, the Court has further expanded the burden of proof requirements necessary to sustain an action for equitable apportionment by extending the standard of proof to allegations, in defense of diversions, that reasonable conservation measures by the downstream state could avert any injury to the downstream state when an upstream state proposes to divert water from a river (Sherk, p. 578; as cited by Vest, p. 699).

A final limitation on the doctrine of equitable apportionment is represented in *Arizona v. California* (1963), in which the Court refused to apply the doctrine of equitable apportionment because the Boulder Canyon Project Act, passed by Congress, created its own scheme of apportionment; and, therefore, the Court ruled that it was without power to decide the case (Vest, p. 699). The Court declined to substitute its judgment for that of Congress.

#### **Implications for Interstate Water Allocation Disputes**

One component of equitable apportionment is that once a complaining state has proven its injury by clear and convincing evidence, the burden shifts to the state proposing the diversion to justify the diversion by clear and convincing evidence (Vest, p. 701). The justification must show that the benefits of diversion outweigh the detriment to other users or that conservation measures will eliminate the detriment. A second component of equitable apportionment is that the Court will consider the laws of the respective states as only one of many factors relevant to resolving the dispute. In all the cases in which the Court considered equitable apportionment, it has weighed the benefits of diversion against the detriments of opposing users. The doctrine of equitable apportionment has been referred to as the doctrine of "equitable priority."<sup>16</sup> In other words, the Court determines if it is fair to give one user priority over another.

Alabama's lawsuit against the Corps probably could not have been brought as an action under the original jurisdiction of the Supreme Court because Alabama would probably be unable to prove injury by clear and convincing evidence (Vest, p. 700). Although the underlying dispute deals mainly with the method by which the Corps manages the system, the effect of Alabama's complaint could be to deny Atlanta the use of water resources it may rightfully be able to use. In order to avoid this effect, the State of Georgia could consider invoking the original jurisdiction of the Supreme Court to have the water equitably apportioned. Presumably, Georgia would then be required to justify the diversion by clear and convincing evidence.

In any case, there is doubt as to whether the Court is well-suited, institutionally, to render decisions about equitable priority among states. According to some legal scholars, the Supreme Court does not have the expertise needed to sufficiently examine the criteria it has established.

"The Supreme Court as an institution is not equipped to deal with the mass of technical data introduced into evidence in equitable apportionment litigation . . . . The technical evidence can tell us what supply we have to divide, how much reservoir evaporation to expect, the amount of return flow, and the point at which it returns to the stream. Evaluating conflicting evidence on these points requires the help of a trained technician, and the tradition of the courts tends to restrain them from securing such help."<sup>17</sup>

A state considering litigation before the Supreme Court as court of original jurisdiction is likely to be inhibited by the particular challenges and limitations inherent in application of the doctrine of equitable apportionment. These include the high standards of proof of injury required to establish ripeness, the costs of litigation before the Supreme Court, and the difficulty of representing complex and technical information in defense of states' claims (Erhardt, p. 214).

#### **Federal-Interstate Compacts**

##### **Interstate Compacts and the Compact Clause**

A third method for addressing interstate water disputes is the interstate compact. A state may enter into a compact with another state pursuant to the Compact Clause of the Constitution which provides that "no State shall without the consent of Congress . . . enter into any Agreement of Compact."<sup>18</sup> *Hinderlider v. La Plata Co.*<sup>19</sup> was the first case in which the Supreme Court was asked to apply the Compact Clause to interstate water disputes (Vest, p. 702). In this 1938 decision, the Court held that a judicial decision was not the sole remedy for interstate water disputes. It found that the Constitution provided two means of adjusting interstate controversies: legislative compact and judicial decisions (Vest, p. 703). The Court also

found that resorting to litigation is never essential unless states are unable to reach an agreement or unless Congress refuses to consent to a compact. The Court ruled that states have the power under the Compact Clause to divide the flow of a river, and that once the states have apportioned interstate water through a compact and Congress has consented, the compact is binding on all citizens of the respective states.

In *Texas v. New Mexico*,<sup>20</sup> the Court again ruled that, unless the compact is unconstitutional, "no court may order relief inconsistent with its express terms." The Court added, however, that it would not construe a compact, in absence of an explicit provision to the contrary, to "preclude a state from seeking judicial relief to resolve disputes." Consequently, the Court allowed litigation over the terms of the compact to proceed (Vest, p. 703).

Since Congress first approved a water compact dealing with the Colorado River in 1922, it has approved at least thirty other compacts dealing with various interstate water rights issues (Copas, p. 721).

#### **Characteristics of Interstate Compacts**

A key issue underlying the negotiation of interstate compacts pertains to prior appropriation of water for future use. States attempt to anticipate future uses of water and apportion rights accordingly (Copas, p. 719). The enforcement mechanism is an important aspect of any compact, and can take one of two forms.

The first model uses a prescriptive mechanism that provides guidelines for state agencies to implement, delimiting the scope of the arrangements to control the use of the resource and to control the activities of the management agencies themselves. In effect, the agreement becomes the enforcement mechanism for apportioning water rights between the states.

A second approach is the use of a standing interstate commission or agency (Copas, pp. 719-720). Such commissions consist of representatives of each state involved and may include the federal government. Commissions, as permanently standing bodies, can accumulate

information, remain constantly in negotiation, and adapt to changing circumstances. These commissions can retain professional staff, centralizing the collection of information and allowing for resulting efficiencies in communication and negotiation among parties.

#### **Regional Approaches to Water Compacts**

Water allocation issues in the Alabama, Florida, and Georgia tri-state area resemble those facing states in other regions of the United States. The Colorado River and the Delaware River both pass through several states, each with conflicting claims to the waters. These conflicting claims have led to the development of three main region-based compacts to deal with water apportionment (Copas, p. 724). These are the Colorado River Compact,<sup>21</sup> the Upper Colorado River Compact,<sup>22</sup> and the Delaware River Basin Compact.<sup>23</sup>

*The Colorado River Compact.* The Colorado River Compact of 1922 is based on the notion of "equitable division and apportionment of the use of the waters of the Colorado River system" and beneficial consumptive use (Copas, p. 725). It provides 7.5 million acre feet of water per year for economically beneficial use to the states of both the upper and lower basin. The compact preserves "present perfected rights" in the beneficial use of the Colorado River, thus reducing the uncertainty of past users. The Compact lacks any kind of standing commission, and any disputes must be addressed on an ad hoc basis. The lack of a standing commission increases transaction costs when a dispute must be addressed. Commissioners must be appointed, negotiations organized, information gathered, and ultimately, a new agreement must be worked out. The Colorado River Compact requires the *ex officio* cooperation of the U.S. Department of the Interior's Bureau of Reclamation and the United States Geological Survey. However, no agency of the United States government was signatory to the compact, and nothing in the terms of the agreement addresses the claims of the federal government. Exclusion of the United States as a signatory is said to limit the effectiveness and efficiency with which the compact addresses water allocation issues in the Colorado River Basin.

*The Upper Colorado River Compact.* The Upper Colorado River Compact exists specifically to allocate the 7.5 million acre feet of water provided to the upper river basin in the Colorado River Compact (Copas, p. 726). Rather than set fixed numbers, the Upper Colorado River Compact grants to each signatory state a percentage of the stream flow. This apportionment works in conjunction with Article III of the Colorado River Compact to maintain exact proportions, depending on water supplies in the Colorado during times of surplus and shortage. The Upper Colorado River Compact provides for the formation of the "Upper Colorado River Commission." The Commission is authorized to adopt rules and regulations, conduct studies of stream flows and uses, and determine the quantity of the consumptive use of water apportioned by the compact. The Commission represents a mechanism allowing for the flexible application of the terms of the compact. Transactions costs are lowered as long-standing commissioners work together, share information equally available to all, and are available to negotiate anew as circumstances require. The Upper Colorado River Compact requests the President to appoint a commissioner, but, again, the federal government is not a signatory to the compact, and the compact does not bind the federal government to any set level of consumptive water use. In fact, the compact stipulates that nothing within the statute can affect the rights or powers of the United States government in the waters of the upper Colorado river system. The exclusion of the United States government as a signatory is deemed to limit the effectiveness of the compact at addressing water allocation issues.

*The Delaware River Basin Compact.* The Delaware River Basin Compact<sup>24</sup> resulted from water supply concerns for the projected 40 million people who will live within the basin by the year 2010 (Copas, p. 728). The Delaware River Basin Compact represents one of the first attempts to create a truly integrated water allocation mechanism. It accomplishes this by including the federal government as a signatory to the pact, thus replacing the overlapping authority of 43 state agencies; 14 interstate agencies; and 19 federal agencies, with one commission given broad powers for administration of the river basin. By granting generous powers to the

Commission and by providing for the active participation of the federal government, the compact assures a regional approach.

#### **Arguments for a Federal-Interstate Compact**

The virtues of the federal-interstate compact, as illustrated by the Delaware River Compact, are typically identified with reference to shortcomings of interstate compacts that do not adequately integrate the federal government into their structure and conduct.

The federal government has neither been a party to the traditional compacts nor been formally committed in any way to support the compact programs . . . . The federal government in those situations appears to be little more than an honored observer, without obligation to see that federal plans or programs in the region are coordinated to the maximum extent feasible with those of the states.<sup>25</sup>

Critics of interstate compacts question the commitment of individual states to the regional approach, noting that the participation of member states has been cautious and hesitant, concerned primarily with preservation or promotion of their individual and parochial interests (Erhardt, p. 224). However, federal-interstate compacts provide states with the opportunity to define their own roles, the roles of other member states, and the role of the federal government. As an on-going process, it enables each party to acquire some control through continuous monitoring of the other parties, and offers a comparatively attractive method by which to resolve interstate water rights disputes as they arise. Otherwise, conflicts end up in court, and the parties are subject to increased costs, lengthy delays, and fewer opportunities for direct negotiation.

#### **The Apalachicola-Chattahoochee-Flint River Basin Compact**

In early 1997, Alabama, Florida, and Georgia entered into the Apalachicola-Chattahoochee-Flint (ACF) Compact [Public Law Number 105-104, 111 Statute 2219 (1997)], and on November 20, 1997,

President Bill Clinton signed the legislation that provided congressional approval of the compact (Moore, p. 7). The ACF compact contains agreement to negotiate an equitable apportionment of the surface waters of the ACF basin. The compact does not contain an allocation itself; rather, the compact establishes a Compact Commission for the basin, which can approve an allocation formula for the next 50 years. Each party to the compact has a voting member of the commission, and approval of any allocation must be unanimous.

#### **The ACF and the Federal Commissioner**

The language of the ACF Compact is based in part on the Delaware River Basin Compact (Moore, p. 7). While the Delaware Compact provided a template, the ACF Compact differs in certain aspects from that agreement. Most notably, the ACF Compact does not include the federal government as a signatory to, and full voting member of, the Commission. While early negotiations leading up to the ACF agreement included the federal government, represented by the Department of Justice, the states initially agreed on compact language that did not include a major role for the federal government. The Department of Justice and its Congressional allies threatened to withhold Congressional approval of the ACF Compact unless certain recommendations were incorporated into the language of the compact. Accordingly, the final compact provided for a non-voting federal member on the Compact Commission.

The federal commissioner cannot vote (Moore, p. 7); however, the compact stipulates that, if the state commissioners agree on an allocation, the federal commissioner then has 255 days to concur or "nonconcur" in the allocation. If the federal commissioner does not concur, then he must set forth his reasons in writing. According to the compact, "the reasons for nonconcurrence shall be based solely upon federal law." The compact also instructs the federal government and its agencies "to the maximum extent practicable, to exercise their powers, authority, and discretion in a manner consistent with the allocation formula, so long as the exercise of such powers, authority, and discretion is not in conflict with federal law."

Taken together, these provisions suggest that the federal commissioner holds an effective veto over any allocation formula that is not in compliance with federal law.

#### **Allocation Negotiations Under the Compact**

The compact commission created a negotiating committee to negotiate and recommend an allocation formula to the commission for approval. The negotiators from each state have met approximately monthly since February 1998. The compact established a deadline of January 1, 1999, for reaching agreement on an allocation formula (Moore, p. 8). However, the compact also permits the states to extend the deadline for up to one year, and in December 1998, with no agreement in sight, the states agreed to the maximum extension, giving themselves until January 1, 2000, to reach agreement.

The negotiations have included broad and continuous stakeholder participation (Moore, p. 8). However, stakeholder input has been largely informal to this point. While the compact provides for a formal "public comment period," that opportunity arises only after the states have reached agreement.

In March 1998, negotiators from each state presented a statement of "principles" on which they would base an allocation formula (Moore, p. 8). These statements of principles revealed some early differences among the states in perceptions of how water resources in the basin should be shared. Alabama and Florida argued that consumptive uses should be defined and allowable limits on consumptive uses should be set. In contrast, Georgia argued for state sovereignty, resisting external limits on consumption patterns, provided minimum state line flows are delivered.

The states also disagreed on how the negotiations should proceed. Alabama urged the states to adopt a framework for the allocation formula and proceed by establishing acceptable definitions (Moore, p. 8). Georgia insisted that the states move directly to the substantive issues of reservoir releases and minimum river flows, leaving definitions and formalities to be

worked out after the parties had reached an agreement in principle.

Given its choice of simulation model by which to generate information to guide allocation decisions, Georgia argued that the large federal reservoirs should be operated "as if drought were imminent," keeping them full until drought conditions require releases to supplement river flows (Moore, p. 8). Georgia summarized this suggestion as a proposed minimum flow that would always be matched or exceeded. Georgia's negotiating position reflects its preoccupation with satisfying the water demands of its rapidly growing Atlanta metropolitan area.

Alabama and Florida opposed this approach. Florida wanted assurances that it would receive a minimum flow only on very rare occasions, proposing instead that reservoirs be operated to mimic the "natural flow regime." Florida is explicit about the environmental and ecological basis for its negotiating position (Moore, p. 9). Florida has received help from the Nature Conservancy in developing its proposal, and the Nature Conservancy has promoted the natural flow regime in other river basins. The Nature Conservancy explains the natural flow regime as one that propagates the natural cycles of flood and drought through the basin, with the frequencies and durations experienced over the period of record. Florida places great economic value on the "natural flow regime," arguing that oysters in the Apalachicola Bay, which account for 90 percent of Florida's oyster production, will benefit from the natural flow regime.

Alabama's proposal focuses on using the federal reservoirs as Alabama claims they were originally intended (Moore, p. 9). The reservoirs in the ACF were planned in 1945, when the 76th Congress authorized the Apalachicola-Chattahoochee-Flint Rivers navigation project. Four large reservoirs were built on the Chattahoochee River, primarily for navigation purposes. Today, however, the reservoirs are very important for recreation and for domestic water supplies. The Corps has used its discretionary authority to permit water withdrawals and to take recreational interests into account in the operation of the federal reservoirs. As the demands on the federal reservoirs have increased, navigation has suffered.

Alabama's proposal points to the original purposes of the reservoirs to argue that they should not be kept full at the expense of navigation and the associated higher water flows.

By December 1998, Alabama, Florida, and Georgia had accepted a common format for the allocation agreement, and each state had issued a full proposal (Moore, p. 10). Several issues remained unresolved, however, including whether to provide for an interim allocation, compensation for adversely affected parties, verification and enforcement, and basic reservoir operating questions. Moreover, the states had not agreed on the choice of simulation models by which to generate information needed to evaluate various stream flow and reservoir management protocols. One observer believes progress has been slow because the public nature of the negotiating sessions tends to restrict the candidness of the negotiators and limits their incentives to compromise (Moore, p. 9).

#### **The National Environmental Policy Act and the Federal Commissioner**

In 1998, President Clinton named Lindsay Thomas as federal commissioner for the compact (Moore, p. 7). Thomas is a former Georgia congressman and president and CEO of the Georgia Chamber of Commerce.

Commissioner Thomas was careful to avoid debate or comment on the various allocation proposals advanced during the first rounds of negotiations. However, his office and a dozen federal government agencies maintain a keen interest in the negotiations. Their interest is structured in large part by requirements set forth in the National Environmental Policy Act<sup>26</sup> (NEPA) of 1969. NEPA requires that the federal commissioner prepare an Environmental Impact Statement (EIS) and a Record of Decision before he issues a letter of concurrence or nonconcurrence with respect to any agreement negotiated by the three states that are party to the compact (Moore, p. 10). The United States Army Corps of Engineers has been designated the lead agency for purposes of preparing the EIS, although more than a dozen federal agencies are participating in the process.

The Corps immediately recognized that analyzing the environmental, social, and economic impacts of a 50-year water allocation formula covering large portions of three states would be a tremendous undertaking, and that the 255 days provided by the compact for the federal commissioner to concur or nonconcur with a selected allocation formula will not be enough time to complete an EIS for each formula (Moore, p. 10). The Corps has had to move ahead with the NEPA process on a schedule parallel to the negotiations themselves. Accordingly, the Corps is analyzing the impacts of a decision that will respond to an as-yet-unknown allocation formula.

To address this problem, the Corps has prepared a draft EIS that evaluates a high-, medium-, and low-flow scenario (Moore, p. 10). The Corps' analysts hope that these flow conditions will "bracket" the actual formula developed by the Compact Commissions. The lack of specificity under this approach leads the Corps to describe this NEPA document as a "programmatic EIS," which takes a broad look at the overall impacts, leaving local detail regarding the implementation of an allocation agreement to future NEPA investigations which will take the form of new, site-specific environmental assessments.

Another factor bearing upon the complexity of the EIS requirements stems from the sheer number and diversity of federal government agencies involved in the NEPA process (Moore, p. 10). These include the Environmental Protection Agency, the Fish and Wildlife Service, Southeastern Power Administration, U.S. Geological Survey, Department of Agriculture, U.S. Forest Service, U.S. Park Service, Maritime Administration, and the National Oceanic and Atmospheric Administration. Each agency has a different interest in the allocation and each is identified with different stakeholder groups and with different authorizing and appropriations committees in Congress.

#### **Current Status**

The January 1, 2000, deadline came and went without significant progress in negotiations. The failure to complete negotiations was, perhaps, not surprising, given the limited progress on substantive issues from the first months of negotiation in 1998.

At one point, Georgia indicated that it may proceed with construction of the proposed reservoir in western Georgia that spurred controversy in the first place (Moore, p. 66). While all three states have announced a preference for avoiding litigation, each has said it is prepared for litigation if necessary. Meanwhile, the commissioners have voted another one-year extension of the deadline for completing the negotiations, and have contemplated engaging the services of a professional mediating team.

#### **Conclusion**

One observer has described the Apalachicola-Chattahoochee-Flint River Basin Compact negotiations as the Comprehensive Study/Interstate Compact/Negotiated Allocation Formula approach (Moore, p. 66). If negotiations on formulae for allocating the waters of the river basin eventually succeed, this approach may form the new paradigm for resolving interstate water disputes, especially in the eastern United States.

Despite the slow start experienced by the negotiating teams, the ACF process is a potential model for resolving future water disputes for several reasons. First, the Supreme Court has indicated its preference for this kind of effort, and has shown an unwillingness to assume original jurisdiction and preside over judicially determined equitable apportionment. Second, the ACF and ACT models have included a comprehensive study of the water resources of the two basins. As demands for domestic water supplies continue to grow, and as competing demands for recreational, environmental, and commercial fishery amenities of the resource intensify, complex water resource studies will be required in order to generate information by which to support water management protocols. Third, the ACT/ACF Compacts may have identified a viable role for the federal government. Some states oppose voting membership on a Compact Commission for the federal government. Yet the federal government is obliged, by numerous and diverse statutory mandates, to play an instrumental role in decisions concerning the management and use of water, and must therefore be involved in decisions concerning the interstate allocation of water. Therefore, the non-voting federal commissioner, who must concur in the ultimate

allocation decision of the states, may represent a workable compromise. In any event, the ACT/ACF process represents the most recent interstate compact negotiations, as well as the most complex. Any future efforts to craft a solution mechanism for interstate water allocation issues will benefit from the ACT/ACF experience.

Progress has been made, regardless of the status of negotiations. The Comprehensive Study represents the region's most complete data base of hydrologic information. It will be the single, most complete source for information on water demand from all uses, the economic value placed on these uses, and projected changes in patterns of water use over the next 50 years (Moore, p. 67). And finally, the representation of environmental concerns to be served by a "natural flow" criteria for controlling levels and flows in the rivers is unprecedented in the history of interstate compact negotiations.

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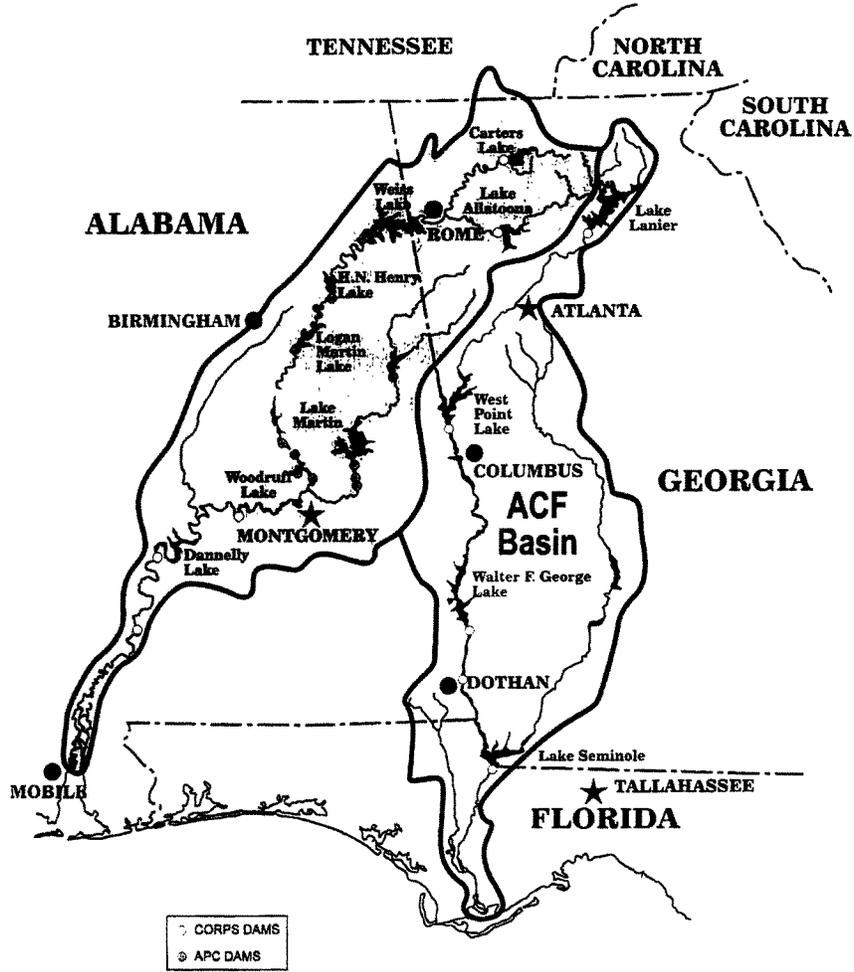
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### Additional Notes:

3. Vest cites *Long-Term Water Supply Needs of the Atlanta Region from the Apalachicola-Chattahoochee-Flint River Basin and the Operation of Buford Dam and Lake Sidney Lanier in Meeting Those Needs, 1991: Hearing Before the Subcommittee on Water Resources of the House Committee on Public Works and Transportation*, 101st Congress, 2d Session, 1990.
4. Vest cites, *Downstream Impacts of Water Supply Allocation and Management Along the Apalachicola-Chattahoochee-Flint River Basin and the Alabama-Coosa River Basin: Hearing Before the Subcommittee on Water Resources of the House Committee on Public Works and Transportation*, 101st Congress, 2d Session, 1990.
5. Erhardt cites *Memorandum of Agreement by, between, and among the State of Alabama, the State of Florida, the State of Georgia, and the United States Department of the Army*, January 3, 1992 (on file with the *Stanford Law Journal*).
6. *Apalachicola-Chattahoochee-Flint River Basin Compact*, Pub. L. No. 105-104, 111 Stat. 2219 (1997); and *Alabama-Coosa-Tallapoosa River Basin Compact*, Pub. L. No. 105-105, 111 Stat. 2233, 1997.
7. Shannonhouse, Royal G. "Common Law Rules Regarding the Use of Surface and Groundwater in the Southeastern States." *Water Law and Policy in the Southeast: Papers Prepared for Presentation at the Southeastern Water Law Conference*, University of Georgia, November 7-10, 1961, 1962, p. 7. (As cited in Erhardt, p. 207).
8. 206 U.S. 46 (1907). See also, Copas, page 714.
9. 373 U.S. 546 (1963) See also, Copas, page 714.
10. Public Law Number 101-618, 104 Stat. 3289, Title II (1990).
11. Sax, Joseph L., Robert H. Abrams, and Barton H. Thompson, Jr. *Legal Control of Water Resources: Cases and Materials*, second edition, 1991, p. 137. (As cited in Erhardt, p. 207).
12. U. S. Constitution, Article III, Section 2, Clause 1.
13. 28 U. S. Code, Section 151(a)(1) (1993 & Supp. 1997)
14. 206 U.S. 46 (1907).
15. 320 U.S. 383 (1943).
16. Vest, page 701, cites: Sherk, George W. "Equitable Apportionment after *Vermejo*: the Demise of a Doctrine." *Natural Resources Journal* 29 (1989): 565

17. Erhardt, page 213, cites: Meyers, Charles, and A. Dan Tarlock. *Water Resource Management*, second edition, 1980, pp. 401-402.
18. U.S. Constitution, Article I, Section 10, Clause 3.
19. 304 U.S. 92, 104 (1938).
20. 462 U.S. 554 (1983).
21. Colorado River Compact, *Colorado Revised Statutes Annotated*, Section 37-61-101 (West 1990).
22. Upper Colorado River Compact, *Colorado Revised Statutes Annotated*, Section 37-62-101 (West 1990).
23. Delaware River Basin Compact, *Delaware Code Annotated*, Title 7, Section 6501 (1974).
24. Public Law Number 87-328, 75 Stat. 688 (1961).
25. Erhardt, page 224, cites: Tarlock, A. Dan. *Law of Water Rights and Resources*, 1991, pp. 94-95.
26. 42 United States Code, Sections 4321 *et seq.*



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## United States Senate

WASHINGTON, DC 20510

April 29, 2005

HEALTH, EDUCATION,  
 LABOR, AND PENSIONS  
 SUBCOMMITTEE ON  
 EMPLOYMENT AND WORKPLACE  
 SAFETY, CHAIRMAN

ENVIRONMENT AND PUBLIC WORKS

VETERANS' AFFAIRS

SMALL BUSINESS AND  
 ENTREPRENEURSHIP

The Hon. John Paul Woodley, Jr.  
 Principal Deputy Assistant Secretary of the Army (Civil Works)  
 108 Army Pentagon  
 Washington, DC 20310-0108

Dear Secretary Woodley:

We are writing in response to your April 26, 2005 letter to Senator Richard Shelby. We do not believe that the letter fully and adequately represents the conclusions of the meeting held on April 26, 2005. In addition we disagree with the Army Corps of Engineers' decision to "withdraw and disclaim any intention to re-evaluate or update the relevant operating procedures and manual(s) until all relevant litigation has concluded, or the three States' Governors reach an agreement."

We do not agree with the Corps' decision to acquiesce to Senators Shelby, Sessions, and Martinez's April 26, 2005 request to reverse course on the water control plans until the litigation is concluded or the three Governors reach an agreement. While we agree that the Corps should not show favoritism or bias to one state or the other and that it is imperative that the Corps avoid any alteration of the status quo, we also believe that the Corps is obligated to follow the law and its own regulations in an even-handed manner. To that point, our understanding of "maintaining the status quo" was that the Corps would not favor one state over another but that the Corps would go forward with that which was required or not prohibited by court order and/or that which was required by law or federal regulation.

We certainly agree that we can find common ground on this matter. All parties present at the meeting were in agreement that the best solution would be for the Governors of the States of Alabama, Florida, and Georgia to reach an agreement on the apportionment of water between the states. Unfortunately to date that process has not resulted in an agreement, and we reiterate our hope that the Governors will soon resume negotiations leading towards a tri-state water compact. We also agree that the Corps does not have the authority to apportion water between the states, and that authority is vested in the Governors themselves in the form of an interstate compact. We further agree that, if no compact can be agreed upon, it is the least desirable solution to have the United States Supreme Court or the United States Congress apportion water. Regardless, though the Corps should not directly or indirectly apportion water, it still must follow the law and its own regulations that mandate the completion of an update of all relevant operating procedures and manual(s).

We call upon you to resume the Corps reevaluation and update of all relevant operating procedures and manual(s) with regards to the operation of the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) river basins. We remind you that this is consistent with the Corps' own regulations and with federal law; specifically those laws that require the Corps to update its water control plans. We also remind you that the State of Alabama has filed suit in District Court in Alabama in which, on page 64 of its Third

Amended Complaint, it states that the "Court enter an order compelling the Corps to develop and finalize Water Control Plans . . . in accordance with applicable law." **This is in contradiction to the request of Senators Shelby, Sessions, and Martinez.**

We further call your attention to the Corps' March 25, 2005 filing with the United States District Court for the Northern District of Alabama and call upon you to confirm that the Corps will carry out those actions described by the Corps and the United States Department of Justice in that certain March 25, 2005 filing with the styled "Federal Defendants' Notice of Proposed Actions." These actions include not only the updating of the existing water control plans but also the approvals and updates necessary for the relicensing of the numerous Alabama Power Company's projects within the ACT Basin.

Finally, we ask that the Corps reconfirm its intent to abide by the terms of the Settlement Agreement executed in the D.C. Litigation and assure the State of Georgia that it and the Department of Justice will continue to work in good faith toward the enforcement of that agreement through the courts.

We understand the position the Corps is in with regards to this matter, and are only asking that the Corps comply with its own precedents, regulations, and federal law. We appreciate your prompt attention to this matter, and look forward to your reply in no less than two business days from the date on this letter.

Sincerely,



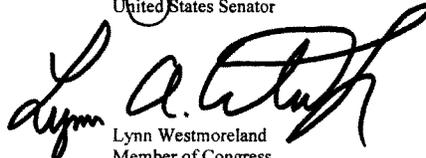
Johnny Jackson  
United States Senator



Saxby Chambliss  
United States Senator



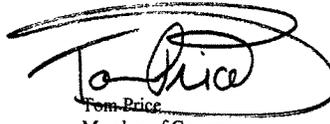
Nathan Deal  
Member of Congress



Lynn Westmoreland  
Member of Congress



John Linder  
Member of Congress



Tom Price  
Member of Congress

United States Senate

WASHINGTON, DC 20510

December 14, 2005

Hon. John Paul Woodley, Jr.  
Asst. Secretary of the Army (Civil Works)  
108 Army Pentagon  
Washington, DC 20310-0108

Dear Asst. Secretary Woodley:

We are writing in regards to letters we have sent to you which summarized our recent meetings regarding the Appalachian-Chattahoochee-Flint (ACF) river basins and the Alabama-Coosa-Tallapoosa (ACT) river basins. We were very pleased to see that the Corps was moving forward and reevaluating and updating the relevant operating manuals for the ACF and ACT river basins, and were pleased when you stated the Corps' intent to take action on pending applications for Gwinnett, Cherokee, and Forsyth Counties in the near future.

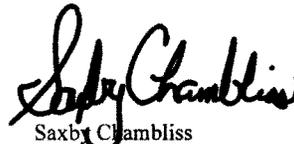
We have been recently informed by these counties that the Mobile office has stated that no such agreement exists and there is no authorization to move forward on these three permits. This statement was made by the Mobile office when these counties called to check on the status of their permits. We are sure that this is simply a miscommunication on the Corps' part, but would appreciate a letter to the Corps office in Mobile clarifying that it is your intent to move forward with these applications.

We appreciate your prompt attention to this matter, and look forward to your response within seven business days of the date on this letter. Should you or your staff have any questions please do not hesitate to contact us or Michael Quiello (Isakson), Camila Knowles (Chambliss), or Scott Cleveland (Deal) in our offices.

Sincerely,



Johnny Isakson  
United States Senator



Saxby Chambliss  
United States Senator



Nathan Deal  
Member of Congress



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
CIVIL WORKS  
108 ARMY PENTAGON  
WASHINGTON DC 20310-0108

30 JUN 2005

Senator Johnny Isakson  
120 Senate Russell Office Building  
Washington, D.C. 20510

Dear Senator Isakson,

I have received your letter of June 28, 2005. I trust that you can appreciate my strong and unwavering desire to have the long-standing water allocation issues affecting the ACT and ACF river basins resolved. It seems inevitable that resolution of these issues will require either additional judicial intervention or the personal involvement and leadership of the Governors of Georgia, Florida, and Alabama. I remain convinced that the quickest and most preferred alternative is for the three Governors to reach a tri-state agreement. With this objective in mind, I have as you know stated my willingness to assist in whatever way I may be helpful.

I have now met with Governor Perdue and Governor Bush and will soon be meeting with Governor Riley. I have learned a great deal from these meetings. Both Governor Bush and Governor Perdue expressed openly their desire and personal commitment to help reach an equitable solution to the underlying water allocation issues. I am confident that Governor Riley will have a similar perspective.

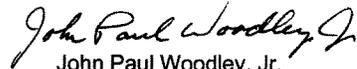
With regard to updating the water control plans and manuals for these two river basins, I shall continue to assess my April 26<sup>th</sup> decision (withdrawing my previous intent to update the water control plans and manuals) in light of various court decisions and the agreements between the States. I am therefore anxious to learn the outcome of today's hearing before the U.S. District Court in Alabama. Moreover, as I continue to meet with the Governors I look for avenues that may result in consensus. I assure you that were the three States to agree that updating the water control plans and manuals would not "alter the status quo", an agreement which currently does not exist, I would begin the required analysis immediately.

I deeply regret your disappointment with the notification for the meeting with the Georgia state officials on June 17, 2005. In deferring to state officials on matters associated with the meeting, I regrettably overlooked notifying you and Senator Chambliss of my visit to Atlanta in a timely manner. You have my sincere apology.

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I would be delighted to seek an additional meeting with Georgia state officials at a time convenient to you to further discuss this matter.

Very truly yours,

A handwritten signature in cursive script that reads "John Paul Woodley, Jr.".

John Paul Woodley, Jr.  
Assistant Secretary of the Army  
(Civil Works)

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## United States Senate

WASHINGTON, DC 20510

June 28, 2005

HEALTH, EDUCATION,  
 LABOR, AND PENSIONS  
 SUBCOMMITTEE ON  
 EMPLOYMENT AND WORKPLACE  
 SAFETY, CHAIRMAN  
 ENVIRONMENT AND PUBLIC WORKS  
 VETERANS' AFFAIRS  
 SMALL BUSINESS AND  
 ENTREPRENEURSHIP

Hon. John Paul Woodley, Jr.  
 Asst. Secretary of the Army (Civil Works)  
 108 Army Pentagon  
 Washington, DC 20310-0108

Dear Asst. Secretary Woodley:

I am in receipt of your letter dated June 15<sup>th</sup>, 2005. I wish to respond to some of the points raised within it. I am concerned that the Army is saying one thing and doing another in its actions involving the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) River basins.

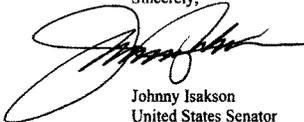
In your June 15<sup>th</sup> letter you write: "...it is particularly important for the Army to avoid even the appearance of altering the status quo toward any State in this matter. I assure you the Army will manage and operate its federally authorized projects in these river basins consistent with all applicable laws and regulations. The Army will not show favoritism or bias to any State and will assist in every possible way to help all parties find common ground on this matter." I appreciate the Army's stated goal to not show favoritism to one State, however the Army's actions to date have not been consistent with those goals.

The only way the Army can "manage and operate its federally authorized projects in these river basins consistent with all applicable laws and regulations" is to complete its Water Control Plan for the ACT and ACF river basins. The Army's voluntary cessation of this plan shows a bias and favoritism towards the other two States involved in this matter, and is an alteration of the status quo. The Army should immediately resume its work on the Water Control Plan.

Finally, while I appreciate your willingness to meet Georgia State officials in Atlanta recently, I am very disappointed that my staff and I were not notified of this visit until the day the visit occurred. My staff received a phone call notifying my office of your visit on the morning of June 17<sup>th</sup>, and your letter dated June 15<sup>th</sup> did not arrive in my office until June 27<sup>th</sup>. Given my stated interest in this matter, I would have appreciated the opportunity to attend your meeting with Dr. Couch and Mr. Melton.

I appreciate your prompt attention to this matter, and look forward to your response within two business days of the date on this letter.

Sincerely,



Johnny Isakson  
 United States Senator



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
CIVIL WORKS  
108 ARMY PENTAGON  
WASHINGTON DC 20310-0108

15 JUN 2005

Honorable John Isakson  
United States Senate  
120 Russell Senate Office Building  
Washington D.C. 20510

Dear Senator Isakson,

I wish to respond to your letter of April 29, 2005 regarding the U.S. Army Corps of Engineers' actions involving the Alabama-Coosa-Tallapoosa (ACT) and the Apalachicola-Chattahoochee-Flint (ACF) River basins. I sincerely appreciated the opportunity to meet with you and Senators Chambliss, Shelby, Sessions and Martinez on April 26, 2005 to address the challenges raised in your letter and to clarify our intentions regarding updating the Water Control Plans.

As was stressed in that meeting, it is particularly important for the Army to avoid even the appearance of altering the status quo toward any State in this matter. I assure you the Army will manage and operate its federally authorized projects in these river basins consistent with all applicable laws and regulations. The Army will not show favoritism or bias to any State and will assist in every possible way to help all parties find common ground on this matter.

The concerns raised in your letter are complex and difficult and should be the basis for more detailed negotiations. General Strock and I are anxious to work with you and other concerned parties in an effort to bring the States back together to discuss these issues. In furtherance of that goal, I have scheduled a meeting with Dr. Carol Couch, Director of the Georgia Environmental Protection Division and Harold Melton, Executive Legal Counsel for Governor Purdue's office on Friday, June 17 at the State Capitol. I recently met with Florida officials, and have scheduled a meeting with Alabama state officials on Tuesday, July 5.

Thank you for meeting with the Army to provide expert guidance and direction on this issue. The Army is receptive to further advice and discussions as we work together to address the water resources needs of this region and the nation.

Very truly yours,

A handwritten signature in cursive script that reads "John Paul Woodley, Jr.".

John Paul Woodley, Jr.  
Assistant Secretary of the Army  
(Civil Works)



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
CIVIL WORKS  
108 ARMY PENTAGON  
WASHINGTON DC 20310-0108



REPLY TO  
ATTENTION OF

26 APR 2005

The Honorable John H. Isakson  
United States Senate  
120 Senate Russell Office Building  
Washington, DC 20510

Dear Senator Isakson:

I appreciate the opportunity to meet with you and Senators Shelby, Sessions, Chambliss, and Martinez this afternoon to discuss the challenges associated with operation of the Alabama-Coosa-Tallapoosa (ACT) and the Apalachicola-Chattahoochee-Flint (ACF) river basins.

As we discussed, it is critically important for the federal government to avoid any alteration of the status quo that would provide even the appearance of favoring any State in this matter. Accordingly, the U.S. Army Corps of Engineers will withdraw and disclaim any intention to re-evaluate or update the relevant operating procedures and manual(s) until all relevant litigation has concluded, or the three States' Governors reach an agreement.

Thank-you for your leadership and guidance in this matter. I look forward to further discussions as we work together to address the water resource needs of Georgia and the Nation.

Very truly yours,

John Paul Woodley, Jr.  
Principal Deputy Assistant Secretary of the Army  
(Civil Works)

SAXBY CHAMBLISS  
CCCP/SA

# United States Senate

WASHINGTON, DC 20510-1007

COMMITTEES  
AGRICULTURE  
FOREIGN AFFAIRS  
HEALTH, EDUCATION & LABOR  
INTELLIGENCE  
RULES

October 12, 2005

John Paul Woodley, Jr.  
Principal Deputy Assistant Secretary  
Civil Works  
Department of the Army  
108 Army Pentagon  
Washington, D.C. 20310-0108

Dear Assistant Secretary Woodley:

Thank you for taking the time to meet with us on October 6, 2005, to discuss the need to move forward in light of the recent decision of the 11<sup>th</sup> Circuit Court of Appeals regarding the "D.C. Settlement Agreement" and its effect on operations of the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) river basins.

We are very pleased that you intend to ensure that the Corps of Engineers will comply with the obligations of the D.C. Settlement Agreement and examine whether the contracts for water inputs and withdrawals are reasonable once they pass a NEPA review. We appreciate your willingness to ensure that action is taken on the pending applications for Gwinnett, Forsyth, and Cherokee counties in the near future.

As you stated in the meeting, we now have another opportunity to encourage the Governors of Georgia, Alabama, and Florida to come together to develop a framework for water allocations. We recognize that the Corps does not have the authority to apportion water between the states because that authority is vested in the Governors themselves in the form of an interstate compact. If no compact can be agreed upon, the least desirable solution is to have the United States Supreme Court or the United States Congress apportion water. Although the Corps should not directly or indirectly apportion water, it is obligated to follow the law and its own regulations that mandate the completion of an update of all relevant operating procedures and manuals.

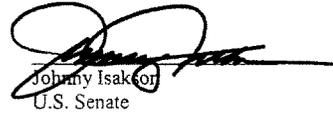
We applaud your decision to resume the Corps' reevaluation and update of all relevant operating procedures and manuals with regards to the operation of the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) river basins. Not only is this decision consistent with the Corps' own regulations and with federal law – specifically, those laws that require the Corps to update its water control plans – it has also been requested by the State of Alabama as part of the ongoing litigation. (See page 64 of the State of Alabama's Third Amended Complaint, stating that the "Court enter an order compelling the Corps to develop and finalize Water Control Plans . . . in accordance with applicable law.")

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As long as you keep moving forward with implementing the D.C. Settlement Agreement and with good faith attempts to bring the Governors of the three states together to establish a framework for water allocations, you will have our full support. Thank you for your efforts on this issue that is so critical to our state. We ask that you continue to provide us with updates on this matter and let us know if we can be of assistance to you.

Very truly yours,

  
Saxby Chambliss  
U.S. Senate

  
Johnny Isakson  
U.S. Senate

STATE OF FLORIDA

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August 4, 2006

The Honorable Johnny Isakson  
United States Senator  
SR-120 Russell Senate Office Building  
Washington, DC 20510

Dear Senator Isakson:

I write to offer Florida's assistance and expertise at a hearing scheduled by the United States Senate Committee on the Environment and Public Works for August 8, 2006 in Gainesville, Georgia. Representatives of the State of Georgia, the U.S. Army Corps of Engineers, the Forsyth County Commission, the Lake Lanier Association, and Chamber of Commerce are scheduled to appear. Many of these entities are involved directly or indirectly in ongoing litigation between Florida, Georgia and Alabama over the Corps of Engineer's management of water in the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) river basins, which are shared by the three states.

As you know, Florida has a vital interest in the Corps' operation of the ACF Basin. The Apalachicola River is the lifeblood of the Florida panhandle's environment, quality of life and water-based economy. While many Northwest Florida residents rely on the Apalachicola River and Bay as a critical recreational and commercial fishery, it is today home to more than one hundred species of plants, birds and animals listed as rare, threatened or endangered. Of these species, at least three require specific freshwater flows for their very survival. For its part, Florida has taken extensive steps to preserve the biological diversity sustained by the river, investing one hundred million dollars to preserve more than 253,943 acres along the river, including 30 percent of the floodplain.

Just as significant, the Apalachicola River discharges its nutrient-rich freshwater into the Apalachicola Bay, one of the most productive estuary systems on the Gulf of Mexico coast. The Bay provides 90 percent of Florida's rich oyster harvest and 10 percent of the nation's harvest, supports an active finfish industry, and serves as an important nursery area for many marine species. Reduced flows to Apalachicola Bay endanger the shrimp, oysters, and fish on which many panhandle communities - and a way of life - depend.



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I appreciate your efforts to raise awareness of this important issue to Florida, Georgia and Alabama. Florida would welcome the opportunity to host your esteemed committee in Apalachicola. It would provide an opportunity for you and the members of the committee to hear a wealth of environmental, economic and cultural information about the impact of water decisions in Georgia on the economy and environment of Florida's Panhandle.

Thank you for your prompt attention to this matter.

Sincerely,

A handwritten signature in black ink that reads "Jeb Bush". The signature is written in a cursive, flowing style.

Jeb Bush

cc: The Honorable James M. Inhofe  
The Honorable James M. Jeffords  
The Honorable Bill Nelson  
The Honorable Mel R. Martinez